Adult Learning at the Columbia University School of Professional Studies: Exploring Our Learners and Learning Environments

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This literature review is intended to aid educators and designers at the Columbia University School of Professional Studies (CUSPS) in grounding their work in adult professional learning. To that end, it will seek to introduce key elements that should inform our work across the team, our course design and design conversations, experiments, further research, and, ultimately, teaching. An extended Adult Learning Bibliography has been created, only a portion of which is referenced in this paper. References are therefore not provided at the end of this paper, but can easily be located in the bibliography. A searchable bibliographic tool is in the works. These three resources have been developed as a foundation for OCI discussions, everyday practice, and research - notably as regards the design of online courses and programs. As such, it is a work in progress. We hope our colleagues will explore, and help us build upon, this knowledge base.

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Introduction

It need hardly be said that higher education is experiencing a profound shift - not only in focus and scope, but also in the demographics it serves and the aims it seeks to accomplish. One aspect of that change is an increase in learners entering into formal higher education programming as adults. Adult learners (often referred to as ‘nontraditional’ learners) are embracing online delivery options in unprecedented numbers: graduate students taking at least one distance education course in the US grew by 27.6% from 2012 to 2016. The growth over the same period for private non-profit institutions, such as Columbia University, was 50% (Seaman, et al., 2018, pp.12-15).

The business model of education is also evolving with the growth of online education. ”Distance education on campuses across America now faces a new strategic model, an emphasis on 'the business of education' (Ausburn, 2004, p. 328). For-profit online institutions have grown explosively in the past decade. Much of their success has been directly attributed to their focus on the adult market, their understanding of the needs and preferences of adult learners, and their “core value of superb adult customer service” (Symonds, 2003, p.72).

Despite this shift toward adult learners - the student population CUSPS seeks to serve - there is very little research in (adult) online learning that specifically targets graduate, professional, or executive students. And, considering the breadth of research being undertaken around the world, the academic community--including our own school--still does not yet fully understand what is going on with students while they are enrolled in higher education. There is insufficient information and knowledge of what, why and how students learn and develop in a higher education context. This is problematic.

This white paper seeks to begin a necessarily complex process of accomplishing that research, in hopes that it will allow CUSPS to lead the academic landscape in professional

studies of which it is a part, more than it does already. It is our assumption in this project that "being a leader in higher education is going to mean being a leader in adult learning" (Eduventures, 2008).

Essential to adult student engagement (and ultimately, satisfaction) with their learning experiences are their perceptions of the value of the education they are pursuing. This paper will discuss aspects that inform that perception. For many the outcome measure of graduate employment or enduring usefulness of the degree is the central criterion of satisfaction (Podolny, J. M. & Hill-Popper, M., 2004, p.7). This paper will also seek to explore some of the theoretical foundations upon which teaching adults at the graduate level will entail. In the first part of this white paper, we will describe the adult learners that make up the student population at CUSPS. We then move into a brief description of some major learning theories that are currently shaping the adult education literature. We then move into our own interpretation of these theories and profiles, by isolating two key aspects of what learners at CUSPS need and want out of a graduate experience. We conclude by discussing some of the outstanding items we would recommend our research could explore - gaps we might fill - that would inform a research initiative that serves not only our students but also the larger educational community. Each section of this white paper concludes with "Talking Points" for further reflection at CUSPS.

What's out there in the research?

The literature in white papers, journal articles, dissertations, monographs, books, textbooks, blog posts, and other digital media surrounding adult learning has grown exponentially since the 1970s, when we began to see dramatic increases in the number of nontraditional programs in US education. The advent and subsequent proliferation of e-learning has clearly exacerbated the rate at which such literature is being produced. This literature largely addresses undergraduate degree completion, as well as workforce training and development. We have

limited our focus in this literature review to uncovering research that we believe can inform and support our work - but not necessarily define it. Beginning with the existing modes of inquiry is necessarily a point of departure. Otherwise, accomplishing an exhaustive survey of the literature would be a daunting and (detrimentally) ambitious task. There are, however, several key resources, such as the Association of Adult and Continuing Education's *Handbook of Adult and Continuing Education*, which has been published since the 1930s as part of a long tradition in adult and continuing education, one that is interested in tracking theoretical and practical evolution of adult and continuing education.

Key thinkers and trends in the adult learning thought-space have come in and out of popularity among scholars and practitioners in the past century. But for our purposes we begin our project with thinkers from the late 20th century. We mention first K. Patricia Cross, whose initial work in the 1970s and 80s was with the Commission on Non-Traditional Study. Her study was funded by the Carnegie Corporation and sponsored by the College Entrance Examination Board and the Educational Testing Service. It was a 2-year study dealing with lifelong learning, external degrees, new institutions, faculty involvement, new evaluation modes, educational technology, and college and community cooperation. Her work remains relevant today both as a source of findings to react to, and (more important) a framework from which to draw. Cross defines the non-traditional student as "one who needs or desires one or more of the kinds of flexibility introduced by non-traditional programs...the rationale for non-traditional study is that where or when learning takes place is not nearly as important as its impact on the learner" (Cross, K.P., 1976, p.1). Our findings below will develop this thesis in much more detail. She also contributed the prescient and important observation that as regards adult education, "the trend is toward different forms of education and services for nontraditional learners as opposed to an expansion of traditional education to include adult learners" (Cross, P. & Zusman, A.,

1977). Perhaps it will be the work of CUSPS to explore what those different forms of education will look like.

Another group of key thinkers for our purposes are the humanists who have contributed to the understanding of adult learning, starting with Malcolm Knowles. He maintained that the purpose of education is to enable people to develop skills to engage in continuous learning (Knowles,1976), and that the very survival of civilization requires continuous learning after the formative years (Knowles,1968). This perspective seems to lend itself to the context of professional studies in which our own work occurs. While his theory of andragogy is but one of several theoretical frameworks discussed in this review, it has spawned a continuous stream of research to this day, and as such continues to remain relevant. Current researchers such as Taylor, B. & Kroth, M. (2009) are pursuing the creation of instruments to provide measurable data on the assumptions put forth by Malcolm Knowles - and we are coming a bit closer with each generation of thinkers and the emergence of more “granular” andragogical frameworks.

Part 1: Profile of the Adult Learner

If we are to continue striving for academic excellence at CUSPS, it behooves us to learn as much as we can about the adult learners we are designing courses and programs for. This section seeks to present a portrait of adult learners (sometimes referred to as ‘non-traditional students’), including their peers at CUSPS. This variegated portrait draws upon industry data, academic research, and CUSPS student entry data from Fall 2017.

Adult students have many identities, and their motivations for enrolling in graduate programs are equally diverse. They may be attending full-time or part-time, working full-time as professionals, and may have other significant responsibilities outside of school. They may be in the process of acquiring English as a second language. And, according to the National Institute for Mental Health (NIMH), nearly 1 in 5 may be experiencing mental illness in any given

academic year (in direct proportion to the number of US adults presenting with the same issues in the general population). In addition, they may struggle with digital or technological literacy. For any combination of these reasons, adult learners face unique challenges as students (Caschera, K., 2013). These include: work/life/study balance, time management, balancing classroom friendships with professional relationships, scheduling conflicts between work and school, cultural displacement, and academic readiness. For online students, there is also the challenge of transactional distance from other students and from the institution, which is a persistence factor (Caschera, K., 2013). It is important for educators, designers, and faculty to understand these challenges and to develop strategies to ensure they don't become barriers to student success.

One common characteristic adult learners share is that they are highly motivated to learn, because "they have a clear vision of what they want to do after they graduate and are confident in obtaining their dream" (Wagschal, K., 1997, p.22). They have made a personal choice to return to education later in life, primarily in order to improve job skills and achieve professional growth. Rapid population growth is propelling adults to independently seek out new knowledge due to "the increasingly competitive and globally oriented economy, the increasing availability of learning resources due to technology, and the now permanent need to engage in learning" (Maehl, W., 2000, p. TK). While "improving performance or pay is the overriding motivation of approximately 30% of adult learners, personal enrichment is an important secondary and tertiary motivation (Hegarty, N., 2011, p.3).

According to the Education Advisory Board (2015), adult learners are working professionals within one of 4 segments:

- Career Starters: recent graduates seeking a professional degree before entering the workforce. (these, don't really fit the 'non-traditional' or 'working professional' profile; 19% of CUSPS students fall into this category)
- Career Changers: mid-career adults seeking graduate degrees to move into new fields.
- Career Advancers: mid-career professionals seeking graduate degrees in order to earn a promotion or a raise.
- Career Crossers: mid-career professionals seeking cross-training to advance in current fields.

At CUSPS, 91% of students enroll for career-related reasons (SPS, 2017). In response to the question 'Why are you pursuing this degree'?, our internal data shows that 40% seek to acquire new knowledge in their chosen field; 28% wish to advance their career; close to 7% would like to change their career; and 6% left this question blank (from which we might draw any number of inferences). It would be useful to understand how these variations in career-related motives might influence the design of our courses.

Another common characteristic of adult learners is that they generally have a "consumerist ethos towards higher education, wanting 'value-for-money'" (Kandiko, C. & B. Mawer, 2013, p.7), with high expectations. They want to be taught about things that will be useful to their work, and expect to have immediate results. They expect an education that will maximize their advantages, meet their individual needs, and address their learning challenges. One of the biggest advantages of professional programs such as those at CUSPS, students say (Hegarty, N., 2011), is the opportunity to connect with students and faculty who work in the field. They seek the ample opportunities for networking, internships, and other career advancement benefits. The relationship between [adult] student expectations and the outcomes of their learning experiences is expressed by the concept of learning satisfaction, and is itself a

customer-centric factor. It has been defined as the “emotional affordance” (Calli, L. et al, 2013) and the “subjective perceptions” (Lo, 2010) of the degree to which students’ learning experiences match students’ learning expectations on a given subject or a course.

In classrooms across the US today, virtual or campus-based, it is not uncommon for a class of students to belong to more than one generation. At CUSPS, the average age of our students is 28.5 years old, with the youngest being 22 and the oldest 59. The majority of CUSPS students are in their twenties, and more than half are male (SPS, 2017). Accommodating - or even integrating - the unique experiences and perspectives of different generations and cultures is another dimension to consider in responding to the individual needs of our students and addressing their expectations.

Our student population at CUSPS features a significant cross-cultural mix of students from around the world. 34% of our students are citizens of countries other than the US (of these, 65% are from the People’s Republic of China). This might well have something to say to our pedagogy and pedagogical sensibilities. For example, Merriam, S. B. (2007) discusses how non-Western perspectives emphasizing community, lifelong learning, and holistic conceptions of learning are expanding our understanding of adult learning. Sadykova (2014) finds that international students experience identity conflict. Winter (2013) observes an increase in the participation of non-native English speakers in the online environment, vs. face-to-face.

There is not much gender-focused research on adult learners at CUSPS or elsewhere in the adult learning landscape, but what there is suggests there could be some differentiation. Justice and Dornan (2001) contend that just as with younger students, gender can play a differential role in adults’ motivation. Their research shows that female students tend to be more self-determined and intrinsically motivated than male students (Justice & Dornan, 2001). Other research (Kirkup & von Prummer, C., 1990) shows that the needs of women adult learners are

not identical to men's needs: there appears to be a pattern of preference among women for shared learning; and that women distance education students were more motivated than men by elements of interactive learning. MacKeracher, D. (1996) provides a chapter in her book that is focused on related issues, titled "Social Aspects: Gender and Cultural Bases in Learning." Campbell (2000) argues that "instructional design practices have, up to now, been rooted in a domain constructed in, and reflecting, androcentric values" (p.131). Brookfield (1995) echoes that with his comment that "many more cross-cultural perspectives are needed to break the Eurocentric and North American dominance in research in adult learning and to understand intercultural differences in industrialised societies" (p.8).

Because learning requires complex, often uneven developmental steps like building on prior knowledge, forming conceptual structures slowly, and varieties of repetition, adult learners benefit when instruction provides various ways to enter into learning. Ambrose et al. (2010) propose that alternating modes of learning can serve different students' aptitude, level of self-awareness as a learner, and cultural background; and that instructors should imagine students to be neither uniform, nor categorized, in their learning, but instead experiencing similar development through singular personalities and experiences. Multiple learning modalities can assist all students: research shows, for instance, that students learn more deeply from words and visuals than from words alone. Multimedia presentation encourages active cognitive processing, promoting meaningful learning (Mayer, 2003).

Learning mode or modality are not to be confused with learning style, a theoretical framework which, despite having been more or less debunked (Newton, P. M., & Miah, M., 2017), continues to be used by many instructors. In a nuanced view of the issue, Felder (1996) argues that "functioning effectively in any professional capacity requires working well in *all* learning style modes" (1996, p.1). He also argues that if instructors "teach exclusively in a way

that favors their students' preferred modes, the students may not develop the mental dexterity they need to reach their potential for achievement at school and as professionals" (1996, p.1).

Choice of course modality is a major consideration for adult learners. Survey findings and market data (Eduventures, 2008) show that 38% of prospective adult students prefer to study fully or mostly online. Students who have outside responsibilities typical of adult learners are attracted to the flexibility that online courses offer. The virtual world of the online campus stems from home and/or work, and adults can resume or maintain their lives while reinventing their futures through online studies. However, not every student is prepared to learn online, and many online students experience considerable fear. Sendall, P. et al. (2010) identified *the fear of loss of control, the fear of technology and the fear of the unknown*, as having the greatest impact on adult learners" (p.2) considering enrollment in online courses or programs. Cercone (2008) contributes very specific recommendations for online course development based on the characteristics of these adult learners. Anecdotal evidence and SPS data (2017) suggests that the characteristics here-mentioned fit the profile of most of our CUSPS students quite well. Given that the online educational environment is increasingly being used by adults, it should be designed based primarily on the needs of adult learners.

One interesting dimension that receives very little attention concerns the interplay between the adult learner's goals and those of the institution itself. The majority of graduate part-time programs are fueled by adult learners seeking to enhance their human capital and advance professional careers. In contrast, degree-granting programs seek to impart knowledge and advance learning in a particular discipline. Hegarty points out that "at this intersection lies the individual student's motivation to satisfy their personal goals while also satisfying a university's knowledge requirement in a specific area" (2011, p. TK). This raises the question as

to whether there could at times be a conflict of interests between individual student goals and the goals of the academy.

Talking Points for the Design and Delivery of Courses and Programs at CUSPS

We offer the following as a series of general reflections that can ground further conversation about course design.

1. How should the research on adult learners and the data we can collect about CUSPS students inform the design of our courses, the design of course activities? Online, face-to-face? What role could learning analytics play? Is it possible to evaluate student satisfaction with course design (vs. delivery)?
2. Can we increase our effectiveness as designers of adult learning experiences by cross-referencing QM standards for online course design with corresponding recommendations developed specifically for adult learners? Can we expand our understanding of "quality" to include addressing the specific needs and challenges of adult learners? See Cercone (2008).
3. Re. transactional distance and persistence: which strategies might be most effective for adult students in reducing or offsetting transactional distance, student-to-student as well as student-to-instructor? Student-to-institution? How does co-curricular programming contribute to program persistence?
4. Elias and Drea (2013) referenced the "decades of research [that] have highlighted the intrinsic value in co-curricular engagement" (p. 2) and pointed out that "rather than being a means to an end, education can be the journey that will help define that end . . . [because] the reality of today's economy is that many people will have multiple careers" (p. 2), which suggests that the focus in [post-secondary] education should be on the development of the self and not simply job preparation. Should we become more

involved in the design of co-curricular activities (in collaboration with the Career Design Lab and programs) that complement and reinforce curricular learning? Research suggests that supporting all students requires a multi-faceted approach in which curricular and co-curricular strategies are aligned to ensure that the learning environment is challenging, rich in diverse experiences, capable of resonating with different types of learners, and relevant to learning goals (Elias & Drea, 2012).

5. There is a significant amount of discussion in NACE circles regarding the career readiness of graduates and its relationship to institutional outcomes. Studley (2016) reports “the hunger of career professionals for deep collaboration among the many people and functions within the institution who need to commit their expertise, clout, visibility, tools, energy, and resources to the common purpose of making the marriage of learning and career development succeed.” How should responsibility for rich learning and skills development, career readiness, and evaluation be shared by their various stakeholders at CUSPS? What bridges among faculty, advisers, career development professionals, and employers will support design of curricula to incorporate workplace experiences? How will these stakeholders work together to collect and use information to track whether the shared goals are being achieved?
6. An important component of career readiness is the development of the learner’s narrative identity. “The self comes to terms with society through narrative identity.” (McAdams, 2008, p. 1). Narrative identity is highly relevant to andragogy in practice and the “core adult learning principles” defined by Knowles et. al. (2012, p.4) This could become particularly important as we consider introducing the academic/professional ePortfolio at SPS (Spring 2019?), which aims to create a text representing a student’s identity in way that allows others - notably potential employers - to connect with their

accomplishments, abilities and aspirations. If narrative identity is a key concept for adult learners, how can we support its development and/or refinement as a co-curricular component of the (experiential) learning process?

7. Regarding student motivation: Motivation is a key element to understanding students' engagement, satisfaction, and level of achievement in learning (Eccles & Wigfield, 2002; Wentzel & Wigfield, 2009). Empirical results concerning adult learners' motivation are consistent with foundational adult education models like andragogy and self-directed learning that assume adults to be purposeful, self-directed learners, led by internal rather than external factors (Knowles, 1980). What else can we learn about motivation factors for CUSPS students given that it is a key factor in student engagement?
8. Regarding the 'value' of education: In reading Podolny, J. M. & Hill-Popper, M. (2004) one could infer that the 'value-for-money' concept is evidenced in the singular, and at times exclusive, attention many graduate-level prospective students and alumni pay to school rankings. The issue that arises is articulated by Podolny and Hill-Popper (2004), who argue that such a 'hedonic conception of value' carries with it an "inherent passivity on the part of the students toward their education," wherein students don't see themselves as "looking for a relationship with an institution whose value emerges as much from the investment that the students make...as from any deliverables that are provided to them." (Podolny, J. M. & Hill-Popper, M., 2004, p.7). How do we define the value of education, and for whom?
9. Re. faculty development. Bierema (2011) raises and discusses several questions of interest to CUSPS about the profession and professionalization of adult education: "Who is the adult educator?" "What is adult education's vision?" "Where does adult education

happen?" "What is the identity of an adult educator?" "What are the considerations related to professionalization?"

Part 2: Adult Learning Theories

Malcolm Knowles, who popularized the theory of andragogy discussed further on, described adult learning as a "trip up the Amazon of educational psychology to the jungle of learning theory" (Knowles, 1973, p.13). This section is our attempt to navigate that jungle. Just as there is no single explanation or all-encompassing theory that explains how learning happens generally, neither is there such an explanation or theory as to how adults learn. The adult learning process is complex, context bound, and highly personal. This complexity is, of course, exacerbated by the realities of online learning environments. Indeed, in many ways online learning has presented new challenges (such as netiquette) and new opportunities (flexible scheduling, enabling more learners the opportunity to study); it has also called into question some of the established best practices in adult learning. It has not, however, called into question the nature of how learning itself happens. In other words, although online contexts have enabled educators to re-imagine the nature and function of education in society, they have not required educators to reconsider fundamentally how the process of learning happens.

There are a number of standard models and theories for how learning happens – each of which having its own distinct scholars, loyalists, literature, strengths, and weaknesses. The literature of the past century has yielded a variety of models, sets of assumptions and principles, theories, and explanations that make up the adult learning knowledge base. This knowledge base, though, still draws from the classic theories of learning that have informed inquiry into education for centuries. As we will see, most of the advances currently en vogue in adult

learning emerge out of the branch of learning theory known as humanism: specifically, andragogy and transformative learning (TL).

Context of, and Need for, This Section

This project is specifically applicable to the Online Curriculum and Instruction unit (OCI) at CUSPS. It is the goal of this section to ask very generally how those theories might be manifested within online contexts that are geared toward the adult learner. It stems from several presuppositions:

- Faculty and instructional designers draw *implicitly* from theories of learning – perhaps even unconsciously. These theories of teaching and learning impact their approach to content, design, and delivery.
- Familiarity with learning theories will enable more scaffolded creativity in crafting innovative learning experiences
- The field of adult learning is a vast and complicated entity – with many potential avenues for exploration
- These theories are very rarely “pure” in the minds of educational practitioners. In other words, educators often hold certain aspects of each in their respective approaches – and indeed draw from them
- Each of the respective theories informs and privileges distinct (and distinctly aimed) learning activities.
- “The role of learning theories in online instruction is underexplored…More qualitative studies are needed to explore further how an instructor’s ability to utilize theoretical principles to improve instruction can make a difference in learning” (Arghode, Brieger, and McLean, 2017, pp. 594 and 604). These roles included five considerations:
    - educational psychology

    - educational/learning theory
    - instructor and student role in online learning
    - philosophy of education
    - the relative importance of student engagement

- Of each of these, the below focuses only on the role of learning theories. There are, clearly, a number of other considerations at play.

Kenner and Weinerman (2011) argue that there are essentially three ways learning theories can inform instructional life: formally, informally, and tacitly. Since formal learning theories exist primarily in the realm of theory, the most probable methods for introducing a learning theory to students will be informal or tacit. They argue that,

> "According to *tacit theory*, adult learners acquire their metacognitive skills from peers, teachers, and the local culture…Individuals who use informal theory still acquire their metacognitive skills over time from their peers and their environment, but they have at least a rudimentary conscious thought process regarding their metacognitive framework"..."By having an *awareness* of the different learning styles of adult learners, *framing* learning strategies in immediately useful ways, and using *competition and repetition*, the developmental educator can enhance the integration of the adult learner into the collegiate environment" (Kenner and Weinerman, 2001, p.90; emphasis in original).

This paper is not intended to articulate a coherent theory for learning. It is, instead, intended to help interested educational practitioners understand what theories are currently most prominent in educational literature, introduce those models, and discuss their potential import for online learning contexts. "Adult learning is a complex phenomenon that can never be

reduced to a single, simple explanation…what we have is an ever-changing mosaic where old pieces are rearranged and new pieces are added" (Merriam, 2008, p.94).

Classic Theories of Learning, with Focus in Application to Online Settings

The following categories represent the most common approaches to learning acknowledged by the majority of scholars of education. Each of these could easily warrant a treatment the length of many volumes, so the following represents only a brief, introductory sketch. Each of these treatments is intended to accomplish two (admittedly daunting) tasks: to introduce a major theory in a succinct and tangible way (i.e., neglecting some of the more complicated aspects of each, such as neuroscience and speculative psychology), its presuppositions, and key tenets – as well as to apply those tenets to how learning might take place within an online setting. The goal is that the information in this section could inform conversations related to the use and application of learning theory within an online context.

Behaviorism

The premise of behaviorism is that learning is a reciprocal process between the learner and his/her environment. BF Skinner remains behaviorism's most important, and frequently cited, thinker. Behaviorism's focus on conditioning is a genuine strength. "Behaviorism principles are put to good use if online educators can design activities that condition a response cycle in learners" (Arghode, Brieger, and McLean, 2017, p. 595). What, specifically, a "response cycle" might mean in the case of online learning contexts might look different depending on the discipline or Learning Management System. The emphasis has to do with "observable behaviors" (Arghode, Brieger, and McLean, 2017, p. 595). Behaviorist principles are most easily seen when learning a rote, mechanical/physical skill – or perhaps when ensuring comprehension of a concept or idea.

There are learning activities that are representative of a behaviorist approach: quizzes; quick-check comprehension guides (like in the QM PRC).

Cognitivism

The premise of cognitivism is that learning is an internal process within the mind of the learner. Jerome Bruner is surely its most well-known champion. Cognitivism provides the scaffolding for metacognitive reflection. Cognitivism is much more concerned with "what learners know and how they come to acquire it than what they do" (Yilmaz, 2011, p. 205). This theory is interested, in other words, in the methods for knowledge acquisition – rather than application. As a general rule, cognitivism will privilege the kind of learning activities that present information in systematic and structured ways. It also structures learner interaction with that content (such as specifying in a consistent manner what students are to do with the content of a class).

There are learning activities that are representative of cognitivist approaches to learning, such as lectures; reading; discussion prompts that follow a pattern.

Constructivism

The premise of cognitivism is that learning happens through a complex interchange between a learner's mental scaffolding and the social context of that learning. John Dewey and David Kolb are important thinkers in this area. Constructivism scaffolds an understanding of meaning making. Unlike behaviorism and cognitivism, constructivism presupposes that knowledge isn't "out there" and able to be acquired. It assumes, rather, that knowledge is generated "in there" and is therefore distinct and unique per each learner. The role of the faculty, therefore shifts from one of knowledge transfer to the construction of mental scaffolding to allow students to create knowledge. Constructivism depends, however, on much more

student agency and proactivity than the other models (Arghode, Brieger, and McLean, 2017, p. 596). But, as we implied above, constructivism also depends largely on the social interaction of the learner, a separate (though equally crucial) aspect to the learning experience. In other words, it is the aim of constructivism to name the impact that collaborative learning environments can and do have on adult learning. It is within that incredibly complicated interplay of content and context that adults are empowered (or not) to make meaning out of a situation. Ruey (2010) argued, from a constructivist perspective, that collaborative activities not only increase student learning; they also increase student support as learners – thereby enabling, organically, learners to become more self-directed. Jonassen et al. (1995) proposed that constructivism should be the favored theoretical framework in distance education and educational technology.

Some representative learning activities from constructivism include group work and discussion forums.

Humanism

The premise of humanism is that learning happens only as an individual becomes self-aware and independent. Humanism is a holistic framework that takes an entire person's being into consideration. It "envisions an education for the sake of an individual's independence, self-reliance and self-awareness" with a focus on "human development, human feelings and other affective parameters" (Arghode, Brieger, and McLean, 2017, p. 596). In other words, humanism concerns itself with aspects of education (i.e., the affect) that are often not readily visible within other theories.

Some representative learning activities from humanism include learning journals; self-assessment surveys.

Humanism has undergone the most substantive expansion of any major learning theory in the late 20th century. It has spawned distinct sub-genres, each of which developed its own respective bodies of work. The most relevant to our work are: Andragogy, Experiential Learning and Transformational Learning (TL). It is important to note, however, that these sub-genres still draw from the general premise of Humanism and therefore are natural extensions of it. By that, we mean to say that these frameworks take into account self-actualization and affect as part of their core principles. The distinction, as we will see, has to do with the learner characteristics (i.e., age).

Andragogy

The premise of andragogy is that adults learn differently than do children, and therefore need differing learning environments. Malcolm Knowles is universally recognized as the most prominent thinker in andragogy. Andragogy is but one framework of adult learning, based within humanistic principles. Andragogy is referred to as learner-focused education, whereas pedagogy is referred to as teacher-focused education. According to Taylor and Kroth, "andragogy can be traced back to 1833, when Alexander Knapp developed the term while trying to describe the practice Plato exerted when instructing his pupils who were young adults" (2009, p.3) The term disappeared until the 1920s, when the number of adults returning to academia increased significantly, which popularized the concept of adult education.

The theory of andragogy contends that adults should be taught differently than children based on the assumption that the learning processes are different for adults than children (Cross, 1981; Knowles, 1975, 1980; Knowles, Holton, & Swanson, 1998). Learners themselves are important resources for activating and incorporating rich experiences into the teaching material – making content more *relevant*. The education of adult learners, therefore, has to go

beyond the transmission of knowledge from one person to the next, moving to helping persons to direct and manage their own learning. Knowles's position was that andragogy presents core principles of adult learning that in turn enable those designing and conducting adult learning to build more effective learning processes for adults. Those principles are as follows (as summarized by Kenner and Weinerman, 2011, pp. 88-89):

1. Adults tend to be more self-directed as they mature. This means that the role of the teacher is therefore quite different within the framework of andragogy. The teacher becomes more responsible for crafting a learning environment than for disseminating knowledge.
2. Adults use their life experiences as a scaffolding for learning. They tend to learn more through discussion and problem solving than through passive listening. This assumption implies that there is a certain formative element to prior experience.
3. Adults are aware of specific learning needs that are generated by real-life events. In other words, "They are ready to learn" (Kenner and Weinerman, 2011, p.89).
4. Adults are competency-based learners wanting to apply their new skill or knowledge to their circumstances. In other words, "They are task motivated" (Kenner and Weinerman, 2011, p.89).

To supplement this summary, we direct the reader to Taylor & Kroth (2009a), who present a comprehensive meta-analysis and integrative literature review on andragogy. While originally andragogy research was defined by the age of the learner, scholars and concerned practitioners now view it as a dynamic, self-driven approach to learning that is more commonplace among mature learners (Halx, 2010, Taylor & Kroth, 2009a; Taylor & Kroth, 2009b). Since the emergence of adult education as a professional field of study in the 1920s,

andragogy and self-directed learning have served as the two dominant, foundational theories of adult learning."

Andragogy is a fundamentally democratic understanding of the learning process, in that it bespeaks "a spirit of mutuality between teachers and students as joint inquirers" (Knowles, 1980, p.47). Andragogy assumes that adult learners are less comfortable with learning hierarchies and therefore want to draw from their own experience as part of the learning resources. This is indicative, in our telling, of a certain *epistemic preference* for lived experience. This can of course be complicated for learning environments that serve a blended audience, including younger and more mature learners into a single learning cohort.

Experiential Learning

Experiential learning has been influential in the literature of management training (Kolb, 1976; Silberman, M., 2007) as well as adult education per se (Savicevic, 1991; Moon, 2004). It maintains the humanistic belief in every individual's capacity to grow and learn, which underlies the concept of lifelong learning. Two concepts characterize the approach most clearly: experience and reflection. The emphasis on experience as a defining feature of adult learning was expressed by Lindeman as follows: "experience is the adult learner's living textbook" (1926, p.7), from which he concluded that adult education is, therefore, "a continuing process of evaluating experiences" (p. 85). This emphasis on experience is central to the concept of andragogy that has evolved to describe adult education practice in societies as diverse as the United States, Britain, France, Hungary, Poland, Russia, Estonia, Czechkoslovakia, Finland and Yugoslavia (Savicevic, 1991). The belief that adult teaching should be grounded in adults' experiences, and that these experiences truly represent a valuable learning resource, is currently cited as crucial by adult educators of every conceivable ideological hue. Many models of experiential learning have been developed, but Kolb's has probably been the most influential

in prompting theoretical work among researchers of adult learning (Jarvis, 1987). For Kolb "learning is the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38).

Some representative activities include games, simulations, case studies, ePortfolios, psychodrama, role play and internships.

Transformational Learning (TL)

The premise of TL is encouraging learning in which individuals think about themselves and their world – where this thinking involves a shift of consciousness. Jack Mezirow is its key figure, basing his work on earlier critical pedagogies (such as those of Paulo Freire). Since the late 1970s, transformative learning (TL) has become one of the most prominent and debated theories in adult learning research, with the version of TL proposed by Mezirow receiving a lot of (positive and negative) attention. It argues that as individuals reflect on and discuss their assumptions about the world, they often experience a shift in their frame of reference or world view. For this to happen, individuals engaging in reflective discourse need to challenge each others' assumptions and encourage group members to consider various perspectives. A criticism often leveled at Mezirow's theory is that it does not account for the effect of the individuals' race, class, and gender, or the historical context in which the learning occurs. This inattention to context is, indeed, a central issue – one that thinkers like Taylor (2008) have gone to great lengths to address. See also Merriam 2008.

Emergent Theoretical Trends

Three trends in the study of adult learning that emerged in the 1990's, and that promise to exercise some influence into the twenty first century, concern: (1) the cross-cultural dimensions of adult learning, (2) adults' engagement in practical theorizing, and (3) the ways in which adults

learn within the systems of education (distance education, computer assisted instruction, open learning systems) that are linked to recent technological advances.

Applications

There are a number of outstanding considerations for applying these frameworks to Instructional Design in an online setting at CUSPS. For example, Arghode, Brieger, and McLean (2017) summarize the implications for educators in this way: “Humanism (and andragogy) involves the most instructor involvement, whereas constructivism and cognitivism are at the other end. Humanism and andragogy emphasize individual motivation and proactivity more than imposing concepts and learning” (Arghode, Brieger, and McLean, 2017, p.598). We take issue with their categories. Is it necessarily less involved to create a scaffolded context for learning?

In the minds of the author (Vaughan), the most pressing outstanding items relating these theories (all of them, not just Humanism) to adult learning contexts have to do with the role of the participants involved in the learning process – be that process individual or communal. For example, what is the role of faculty? What is the role of the learner? What is the role of the learner’s community? These seemingly straightforward questions have implications through the design and implementation of learning environments and activities.

Another outstanding consideration is the role of non-Western learning theories within American universities (Merriam 2008). This is particularly relevant to work at institutions such as CUSPS, where the majority of students in some of our programs are from Asia. Although the literature base in the area of cross-cultural adult learning is still sparse, there are indications that the variable of ethnicity is of increasing interest (Cassara, 1990; Ross-Gordon, 1991). As China started to open its borders to adult educators in the 1980's, research on Chinese conceptions of adult learning started to emerge (Pratt, 1992). How does the cultural framework these learners bring with them to the classroom inform their respective approaches to the learning process?

And (how) are professors, designers, and support staff (perhaps inadvertently) imposing Western frameworks on these learners? And might that necessarily be a weakness? A case might be made that learners coming to a Western university should, as part of that experience, be familiarized with learning styles en vogue in the West. What is the function of group work, as it relates to adult learning? How do learners interact with the content, the faculty, each other, and themselves as part of a group? And how to the theories of learning articulated in this essay inform that approach – if at all? What does it mean to incorporate student experience into the learning process? This question has multiple manifestations: leveraging one's own experience within the conceptual frameworks of one's own learning (as per cognitivism and constructivism), and incorporating the experience of others into one's own frameworks.

Two important insights for our work have been suggested by research into cross-cultural adult learning. First, adult educators from the dominant American, European and northern cultures will need to examine some of their assumptions, inclinations and preferences about 'natural' adult learning and adult teaching styles (Brookfield, 1991). Second, 'teaching their own' is a common theme surfaced in case studies of multicultural learning. In other words, when adults are taught by educators drawn from their own ethnic communities, they tend to feel more comfortable and to do better.

Considering the professional studies context of CUSPS, and the career and leadership aspirations of our student population, we should probably explore the value to us of an experiential learning model that is widely used in management and organizational learning contexts: *action learning*. Marquardt, M. & Banks, S. (2010, p.159) provide the following data related to the prevalence of action learning in the organization:

- The October 10, 2005, issue of BusinessWeek described action learning as one of the key management development programs introduced during the past 125 years.

- A 2008 study by the American Society for Training and Development indicated that 63% of all executive leadership programs in the United States used action learning.
- A more recent study by the Corporate Executive Board (2009) noted that 77% of learning executives selected action learning as the top driver of leadership bench strength.

Raelin (2008) notes that what distinguishes action learning from other experiential pedagogies is its application to real-world experience. Article 4 of Yorks et al. (1999) looks specifically at leadership development, comparing action learning to other methodologies currently in use. The article also shows how action learning can be tailored to develop specific leadership competencies identified by individual team members, while, at the same time, developing other leadership skills needed in organizations. Marquardt & Banks (2010) point out that organizations typically rely on innovative uses of technology to support action learning.

Talking Points for the Design and Delivery of Courses and Programs at CUSPS

We offer the following as a series of general reflections that can ground further conversation about course design.

1. Is it the responsibility of a faculty member (and/or a designer) not only to take a student through the chosen subject material, but also orient him/her to the theoretical and methodological frameworks that inform the instructional process? These considerations are, as we (the authors) understand them, an outgrowth of a cognitivist approach to learning – one that sees one's mental processes as paramount to the learning process.
2. Do we agree with the premise that learning theories tend to be tacit? And if so, what are the implications thereof for designed learning contexts?
3. Arghode, Brieger, and McLean (2017, p.604) argued that there are several key implications for designers in light of the myriad complexities of divergent learning

theories. Online learning environments should be contexts for self-directed learning. This means flexibility with “time, space, learning pace.”

4. Choice in learning experience is important to adult learners. Fun should be an element to adult learning design. Adults do well when oriented to the scaffolding of the course’s design. Less instruction and more autonomy are important. Group work is an important learning principle. The instructor’s role should be that of a facilitator.
5. Arghode, Brieger, and McLean (2017, p.603): “Instructor presence and feedback appears to be necessary regardless of which adult learning theory is used in the online classroom.” What efforts might faculty and staff do to encourage, bolster, and inform that presence and feedback (two admittedly difficult and complex entities – each with its own potential for disagreement)?
6. Huang (2002, p. TK), in reference to constructivism within the online course context: “Instructional designers and instructors alike should design online learning to include weekly collaborative discussion activities that elicit students’ sharing of past experiences, with openings for instructor feedback and guidance as well as instructor-to-student reflection assignments.”
7. How much attention do we give to the prompts, methods, and netiquette (structured or not) within our discussion forums. Arghode, Brieger, and McLean (2017) argued within virtually every theory that there were implications for discussion forums.
8. This might also be a context for rethinking the nature and function of group work within our classes. When faculty or Program Directors request group work, do they do so with a certain bias toward one learning approach over the others? This would be evident through an examination of the expectations (i.e., netiquette), content (i.e., structure of

the reflections and responses), and approach to student experience (can we learn from students?).

9. Might it be that one mark of a well-designed course is one that draws from multiple theories of teaching and learning? In other words, is a holistic approach to learning necessarily a better approach?
10. Could one role for IDs be to name the theory or frameworks that our faculty are coming in with? Indeed, what are the most prevalent (if implicit) theories of learning at CUSPS? Or perhaps could we be tasked with imposing a certain learning framework?
11. Where (under which theory) might most of our currently-designed activities fall? Specifically important here would be reading assignments, discussion boards, asynchronous calculations, learning journals, quizzes, exams, presentations, group work, and video submissions. Do these speak to one theory of learning over another?
12. Could/Should the naming of learning frameworks be part of AEC review? Such considerations might enable the committee(s) a more holistic sense not only for the nature of the content in a given course, but also the relationship between the content and the pedagogy that the faculty is using to implement it.
13. Cultural framework is an important factor. Winter, C. S. (2013) found that there was an increased activity on the part of non-native English speakers in the online environment vs. their contributions in face-to-face settings. Merriam (2007) discusses how non-Western perspectives emphasizing community, lifelong learning, and holistic conceptions of learning are expanding our understanding of adult learning.
14. The QM rubric has been adapted to Chinese higher education online course quality standards as the result of a bilateral research phase that took place from 2015-2017. The goal was to “develop a set of standards that are culturally appropriate and

pedagogically acceptable to the Chinese higher education community in order to promote and foster a quality assurance process in its online education practice" (Adair, D. & Gao, Y. , 2017). Initial discrepancies between the QM standards and corresponding Chinese online course design standards (some low-suitability standards identified did not correspond with the importance level assigned to QM Standards) were attributed to three factors: 1) influence by language and translation; 2) influence by contextual factors; and 3) influence by cultural factors. What could we learn about about our Chinese students' motivations, expectations, and habits of learning by comparing the US and Chinese versions of the QM rubric standards?

Part 3: Two Theses Regarding the Learning Needs of Adults

In this section we offer our own summary of the findings of the literature around adult learners in the 21st century – more specifically, adult learners as they relate to graduate degree-granting programming in the United States. We have broken our reflections into two key categories, each of which speaking to a different need of this learning population: *relevance* and *portability* of learning. Of particular importance here were several key texts: Kendall, A., Carey, D., Cramp, A. & Perkins, H. (2012); Gorges, J. & Kandler, C. (2012); Knowles (1980); King (2017). A goal for this section is to inform educators and designers at CUSPS on the learning needs of these students, in hopes that they might be incorporated into the curricula and culture of our programming. The following may, however, serve as a summary: "Adults value course designs containing options, personalization, self-direction, variety, and a learning community" (Ausborn, L., 2004, p.327).

Relevance

Adult learners are looking for a curriculum that is *relevant*, defined as applicable within their current work contexts (King, 2017). Knowles (2002) argued that adult learners need to know what they are learning, why it is important, and how it will be useful. The relevance factor should impact assessment procedures, and has several manifestations: financial gain, individualization, self-awareness, employability, and career advancement.

Relevance is often measured by discernable, relatively immediate financial and/or career gains. How will this course or program make me money, get me a good job? For most students the outcome measure of graduate employment or enduring usefulness of the degree is the central criterion of satisfaction (Podolny, J. M. & Hill-Popper, M., 2004, p. 7). Relevance can also be developed through service learning, a concept that fits well with the mission and vision of CUSPS, and that could resonate well with students in certain programs (e.g., NOPM, BIET). Service learning is an academic model providing students and faculty with hands-on experiences and an opportunity to develop in-depth knowledge and skills through projects aimed at identifying and meeting real community needs. In this model, relevance is measured subjectively in the recognition that one is learning in a meaningful way.

Adult learners are typically looking for a contextualized learning experience informed by their needs, goals, preferences, and resources in the context in which they need to function (Brown, 1998). “As a learner-centered approach, contextualized learning is best constructed by the learners in order for them to identify the needs and challenges they truly encounter” (King, 2017). King finds, for instance, that there is a great need for adult learners to master critical thinking, problem-solving, and collaborative teamwork; this based on the fact that these characteristics dominate employees' responsibilities, position descriptions, and organizational expectations.

Learning flexibility/adaptability and responsive instructional design: “Because our world is constantly changing in so many ways, the conditions in which we use our learning shifts continually. This dynamic environment necessitates the development of perspectives and practices that are able to adapt” (King, 2017). This type of relevance will, by default, mean that a certain level of individualization must be possible. Indeed, in one study, individualization or customization of learning was ranked as first in importance by adult learners (Ausborn, L., 2004). L. Lee Knefelkamp directs us to the work of K. Patricia Cross and “the (consequent) need to design curriculum that is responsive” (Donnelly-Smith, L., 2011). And: “we need to see how we can assess who that learner is and what they’ve experienced and how they learn, and put that into dialogue with what we need to teach and how we teach it. The adult learner is almost the classic example of how we need to match what we’re teaching to students’ needs” (Donnelly-Smith, L., 2011). This suggests we need to continually evaluate the quality of the student learning experience (using a consistent evaluation framework), and be prepared to make adjustments to improve that experience, while assessing needs for further learning.

Learning models based on the concept of flexibility/adaptability and developed specifically for adult working professionals are rare. Cornelius et al. (2009) present a “flexible model of learning for adults which allows them to make choices and contextualise their learning in a manner appropriate to their own professional practice whilst also developing as a member of a learning community” (p.381). In their model, the design of online learning activities draws on constructivism, collaborative learning and reflective practice. The learners’ experience is also discussed. This work seems quite relevant to our context and worthy of further exploration. One example of a flexible model for adult professionals that has been shown to promote learning effectiveness in online (and hybrid) programs is the blending of online learning activities with local experiences. This approach accommodates diverse student populations and learning

needs and allows theory and practice to be combined with locally relevant issues providing real-world learning experiences (Moloney, Hickey, Bergin, Boccia, & Polley, 2007).

Cheetham, G. & Chivers G., (2001) take a look at how professionals actually learn, once they are in practice. The latter is based on empirical research conducted across 20 professions. They also report on the range of experiences and events that practitioners have found particularly formative in helping them become fully competent professionals; usually long after their formal professional training has ended. They relate the formative experiences reported by young professionals to certain theoretical approaches to learning. These experiences are classified into a number of general kinds of "learning mechanism" and these are placed within a "taxonomy of informal professional learning methods" (p.247). Petraglia (1998) reinforces this view by arguing that we should "make learning materials and environments correspond to the real world prior to the learner's interaction with them" (p.53).

We include notions of self-direction under the header of relevance. For Maehl (2000), the dimension of self-direction is perpetuated by societal conditions. He argues that rapid population growth is propelling adults to independently seek out new knowledge due to "the increasingly competitive and globally oriented economy, the increasing availability of learning resources due to technology, and the now permanent need to engage in learning" (p. 16). Moreover, adult learners tend to resist learning that is in conflict with the direction they believe their learning should go. In a study conducted on web-based distance education (WBDE) for adult learners, Zhang (2009) claimed that learning is more meaningful if both the educator and the learner shared the responsibility for the design of learning goals and objectives, interacted with other members of the class, promoted reflection on experiences, related new examples that made sense to the learner, maintained self-directed learning, and evaluated learning. This shared responsibility is both an opportunity and challenge for WBDE according to Zhang (2009).This is

not a new concept, of course: such thinking was en vogue even in the late 20th century: “The key to working successfully with adults is participation. Ideally, the learner should be an active participant in a learning activity that is a cooperative venture” (Conti, 1989, p.5).

Self-awareness is an important condition for effective self-direction. For adult learners to participate meaningfully in their education, they need an in-depth understanding of their own strengths and weaknesses and to be able to apply appropriate individualized strategies to the educational process.

> “Adult learners bring a rich array of life learning and life experiences to the classroom. Good teaching for adult learners needs to first assess who they are and then needs to connect the classroom material to that rich archive of their life learning. There’s a triad of adult learning: Who the students are—their knowledge and background and situation; what we have to offer them—the knowledge base; and what they are going to use the knowledge for—the job they’re going to do … adults come with a variety of experiences that are crucial to their learning; through those experiences, they come with predefined ideas for what they need to learn” (Merriam & Brockett, 2007).

Many of the career education activities of the SPS Career Design Lab are focused on iterative self-assessment aimed at building self-awareness (of strengths, blind spots, soft skills, career competencies, etc.). These co-curricular activities are a type of formative assessment that adult learners need to succeed in their curricular activities and job searches - but students at CUSPS are not required to engage with them, and so engagement levels are very low. An ePortfolio pilot was launched this fall to explore if we can increase engagement using a new approach: a mix of ‘contextualized learning’ activities of various types (research, reflection, self-assessment, knowledge transfer) that have been sequenced into a “career design experience” supporting the career goals they entered their program with.

Clark (2012) discusses the extent to which formative feedback actualizes and reinforces self-regulated learning (SLR) strategies among students. Formative assessment is “a unifying theory of instruction, which guides practice and improves the learning process by developing SRL strategies among learners” (p.205). In a postmodern era characterized by rapid technical and scientific advance and obsolescence, Clark finds that there is a growing emphasis on the acquisition of learning strategies which people may rely on across the entire span of their life, and that SLR “supports the drive for lifelong learning by: enhancing the motivational disposition to learn, enriching reasoning, refining meta-cognitive skills, and improving performance outcomes” (p.205).

Peer review is a type of formative assessment carried out by professional colleagues, peers, and/or other external reviewers. Peers can be experts in the field or classmates who assess the work of other students (Lavy & Yadin 2010). Lavy and Yadin explain the value of formative assessment in any classroom setting and how this has received large backing from numerous research studies. Using a rubric or a guide when reviewing a peer’s paper or project can greatly increase student learning in multiple ways.

There are numerous studies supporting the use of ePortfolio systems (PebblePad among them) to support formative assessment strategies for experiential learning and social pedagogies. Social pedagogies are increasingly seen as design approaches that help students deepen their reflections, build links across courses and semesters, and bridge between formal curricular and co-curricular learning. The ePortfolio is a strong tool with the ability to capture, and help students authentically describe, experiential and high‐impact learning gains across topics and environments. For example, Heinrich, B., & Rivera, J. (2017) describe a method for assessing video-based reflective learning artifacts in ePortfolios “from multiple perspectives for holistic and authentic learning and career development.”

Kasworm, C. E. and Marienau, C. A. (1997) provide another perspective on adult assessment practices and propose five key principles that can guide them:

- Learning is derived from multiple sources: assessment strategies should recognize multiple sources of knowing, that is, learning that occurs from interaction with a wide variety of informal and formal knowledge sources.
- Learning engages the whole person and contributes to that person's development: assessment strategies should recognize and reinforce the cognitive, and affective domains of learning.
- Learning and the capacity for self-direction are promoted by feedback: assessment strategies should focus on adults' active involvement in learning and assessment processes, including active engagement in self-assessment.
- Learning occurs in context; its significance relates in part to its impact on those contexts: assessment strategies should embrace adult learners' involvement in and impact on the broader world of work, family, and community.
- Learning from experiences is a unique meaning-making event that creates diversity among adult learners: assessment strategies should accommodate adult learners' increasing differentiation from one another given varied life experiences and education.

Portability

Adult learners are looking for an experience with that curriculum that is *portable:* applicable to multiple contexts and scenarios. Students of learning theory will immediately see a resonance here with the *UbD* definition of learning, in that students are seeking the ability to *transfer* their learning into new contexts (Wiggins and McTighe, 2005). One aspect of portability is allowing learners the opportunity to apply their learning at their own pace, and at their own discretion. Relevance are not, however, the only metric for discerning relevance or satisfaction.

A study of 1,800 adult learners in 542 distant learning enrollments for fall 2007 in the USA concluded that neither age, nor level of external commitment, nor campus proximity but rather prior experience is the unique significant factor of learners' satisfaction (Ellis, K. A., 2007). The research was based on the assumption of an intrinsic difference between undergraduate and graduate students. The adult learners in Ellis' study resemble the SPS online student population fairly closely: graduate students with adult responsibilities and workloads outside of the classroom.

In a City University of Seattle collection of proven practices, the ability to design authentic instruction that models the demands of the workplace was shown to enhance the students' understanding of the professional relevance of the coursework. "Such a learning environment avoids an over-emphasis on lecture and reading and, instead, requires students, either individually or in groups, to produce work that resembles or directly models the demands that will be placed on them in a current or future job. The challenge in this area is to ensure that the instructor has current knowledge of and experience in a particular field to provide authentic instruction that is relevant to that field" (Kirstein, K. & Flores, K., 2011, p.4).

One aspect of transferability and portability is the ability to work within groups, teams, and large-scale collaborative projects. Although adults need to be self-directed and able to plan, implement, and assess their own learning, they also need to know when collaboration is a valuable complement to those processes (Palloff & Pratt, 2010; Topping, 2005). The concept of the independent, place-bound, adult, self-motivated, disciplined self-starter, and goal-oriented learner, which largely characterized the classic distance education learner, is now being challenged with socially mediated online learning activities that de-emphasize independent learning and emphasize social interaction and collaboration. As stated by Anderson and Garrison: "The independence and isolation characteristic of the industrial era of distance

education is being challenged by the collaborative approaches to learning made possible by learning networks" (Anderson, T.D., & Garrison, D.R., 1998, p. 100). In online learning environments the need for affiliation can be interpreted as the need to be connected or to belong to supportive groups (MacKeracher, D., 1996).

Learning is a social (communal) process, as the Constructivists remind us. "A community of practice (COP) is a pedagogical model grounded in a theory of learning as a social process" (MacKeracher, D., 1996) This collaborative learning may take the place of cohorts. For working professionals who are part-time online learners, moving through a degree program as a cohort is important: "the cohort approach fosters the building of an online learning community" (MacKeracher, D., 1996). There are implications for networking here, as well: "graduate students will take the initiative to work with others to create and acquire knowledge that creates a sense of professional connection with each other and with the profession overall" (Bone, T. J., 2013). Online learners must be ready to share their work, interact within small and large groups in virtual settings, and collaborate on projects online or otherwise risk isolation in a community growing increasingly dependent on connectivity and interaction. "Online learners must understand and value the learning opportunities afforded by collaborative and communication technologies in order to engage actively and constructively in learning. Some learners are inherently drawn to peer interaction or collaboration, while others need to understand the educational value of these pedagogical constructs" (Kasworm, C. E. and Marienau, C. A., 1997). Adult learners expect and need assessments for feedback, motivation, and evaluation purposes. Evaluations and grading are complex and an important part of the communication process between educators and learners. Effective assessments can lead to learning experiences that are more meaningful, and alternative approaches should be considered. (Beaman, R., 1998).

We offer the following as supplemental suggestions. This means that for educators, the goal is really to facilitate learning, rather than to transfer it. The transfer happens on the part of the learner. Providing an abundance of facilitated learning opportunities with new technologies guides adults toward greater self-sufficiency and self-directedness in their learning efforts and careers (Miflin, 2004; Selwyn, Gorard, & Furlong, 2006). Interdisciplinarity will become a hallmark of robust learning experiences. The learning and research have become essential approaches to solve the complex concerns and problems of the digital age (National Research Council [US], 2005). And finally, supporting the diversity of our adult learners requires a multi-faceted approach to ensure that the learning environment is challenging, rich in diverse experiences, capable of resonating with different types of learners, and relevant to learning goals (Elias & Drea, 2013).

Talking Points for the Design and Delivery of Courses and Programs at CUSPS

We offer the following as a series of general reflections that can ground further conversation about course design.

1. Opportunities for self-direction need to be built into course activities: “inclusion of opportunities for self-direction in all parts of the design, delivery, and even the review process can be a valuable method of ensuring that self-direction opportunities remain at the forefront during the program and course development process….Inclusion of opportunities for self-direction in all parts of the design, delivery, and even the review process can be a valuable method of ensuring that self-direction opportunities remain at the forefront during the program and course development process.” (Kirstein, K., Hinrichs, J., & Olswang, S., 2011, p.71-72).
2. The dimension of self-direction is perpetuated by societal conditions. Maehl (2000) states that rapid population growth is propelling adults to independently seek out new

knowledge due to “the increasingly competitive and globally oriented economy, the increasing availability of learning resources due to technology, and the now permanent need to engage in learning” (p. 16). This suggests that self-directed adult learners prefer a flexible learning strategy.

3. Meanwhile, Brookfield (1991) found that whilst self-directedness is a defining indicator of adulthood for Knowles, many adults do not pursue their lives in a way that indicates that self-directedness influences their behaviour. In fact Brookfield believes that there are good grounds for maintaining that self-directedness in adult learning is an "empirical rarity", and goes on to describe the discomfort experienced by adults, in groups that he has taught, when they were required to assume a degree of responsibility for their own learning. Hence adult education might better be conceived of as education devoted to nurturing those attributes that Knowles believes adults possess rather than as a facilitating activity with adults who already know what they want to learn.
4. Manganello, et al. (2013) offer a number of insights about what it means to introduce self-driven learning. This type of learning is readily facilitated by effective technology integration. Specifically the learning environment of adult learners should be structured in a way that (a) allows learners to easily select, organize and retrieve the resources they want, at their own pace and discretion; (b) streamlines the interaction process among learners; and (c) allows for trust and personal relationships among fellow students and the instructor(s). This type of learning environment is referred to by the authors as a Personal Knowledge Space (PKS), and is thought to allow for more dynamic adult learning both in terms of pace and content (Manganello, F., Falsetti, C., Spalazzi, L. & Leo, T., 2013).

5. Several other strategies are available to enhance self-direction in organized education. Four such strategies are signals, reward systems, transformational leadership, and symbols. To engage learners and capitalize on their sense of self-direction, instructors need to build learning environments that can utilize or reinforce these strategies (Kirstein, K., Hinrichs, J., & Olswang, S., 2011).
6. Narrative learning for adults: using stories to teach has always been part of the practice of adult educators. What is more recent is the theorizing of how we learn through narrative (Clark, M.C. & Rossiter, M. , 2008), who believe that “narrative learning is a twofold concept: fostering learning through stories, and conceptualizing the learning process itself.” Narrative learning falls under the category of constructivist learning theory, which understands learning as the construction of meaning from experience. Learning in adulthood is integrally related to lived experience. This relationship is understood in various ways by theorists of experiential learning (Fenwick, 2013; Merriam, Caffarella, and Baumgartner, 2006) but has been a theme running through the literature since the earliest conceptions of adult learning. Lindeman, drawing on the work of Dewey in the 1920s, advocated for adult education structured around the life world of the adult learner because this is the source of the adult’s motivation to learn. His claim that “experience is the adult’s living textbook” (Lindeman, 1961, p. 121) has served as a mantra for experience-based adult education for nearly a century. In Knowles’s conception of andragogy (1980), experience has a prominent role also. What do we know about the experience of students at CUSPS? What are they bringing to the learning process? What role does or could narrative learning play in course design? Or in teaching students how to leverage academic work in other contexts? Or in the use of ePortfolios to demonstrate their achievements and ‘narrative identity’?

7. Facilitation is more effective than lecturing to engage students in setting the course objectives, tapping into prior experiences, and helping learners reach consensus. Facilitation can establish goals and clarify expectations. It should use questioning techniques. Adults have something to lose in the classroom, and an effective facilitator develops a learning environment that allows for diverse opinion and experience and resolution to problems. They reinforces participants' contributions and accomplishments (Brookfield, 1995). Provide learners with opportunities to use new skills and knowledge in small groups that provide for safe interactions that allow adults to contribute and collaborate. MacKeracher begins her discussion of methods and models for facilitating adult learning by outlining how she regards facilitation "as a responsive activity adapting to the learner's activities and the natural learning process" (1996, p.TK).
8. Johnson, Wisniewski, Kuhlemeyer, Isaacs, and Krzykowski (2012) make the observation that faculty, as adult learners as well as adult educators, need to be aware that their own (current) learning experiences should mirror the experiences of their students; orientation in terms of professional development should focus more on faculty learning than faculty teaching.
9. Moore (2010) also adds that adults tend to have very established preferences as to what their learning styles are and that, to be effective, instructors must prove amenable to adapting their teaching to accommodate those styles. Paraskevas and Wicken's (2003) studies about law school instructional methods also showed that educational practices can only work when instructors are sensitive to adult students and their reactions to these teaching methods.
10. Online education is still in a highly preliminary stage regardless of its extensive acceptance in many fields or disciplines in higher education. It is conceivable that faculty

members will attempt to build up from their traditional teaching experiences, especially if CUSPS does not provide practical guidance and preparation on how to deliver online instruction.

11. Assessing the Learning Strategies of Adults, or ATLAS (Conti, 2003), is a self-assessment instrument that classifies learners into three groups, based on their preferred strategy or approach to learning: Navigators, focused and results-oriented learners who favour efficient and effective learning through a carefully charted learning plan; Problem Solvers, critical thinkers who explore a variety of options in working with learning problems and avoid rapid closure until multiple paths are explored; and Engagers, passionate learners who love to learn, approach learning from the affective domain, learn with feeling, and seek personal identification and a high level of involvement in a learning project (Conti & Kolody, 1995, 1999). Is the concept of differentiated learning and assessment activities - based on student learning style - something that we want to explore? How can the preferred learning strategies of adult learners inform course design?

Part 4: Additional Considerations for the Design of Adult Learning

Considerations for the Role of Educational Technology

Learning theorists have applied themselves to exploring the role of technology in learning. For Bruner (1966), technology is a powerful tool for instruction. He believes that the "principal emphasis in education should be placed upon skills-skills in handling, in seeing and imaging, and in symbolic operations, particularly as these are related to the technologies that have made them so powerful in their human expression" (1966, p.34). For Jonassen (2000), technologies are cognitive tools to help learners to elaborate on what they are thinking, and to

engage in meaningful learning. In addition, Jonassen (2000, p.24) argues that learners use technologies as intellectual partners in order to:

1. Articulate what they know
2. Reflect on what they have learned
3. Support the internal negotiation of meaning making
4. Construct personal representations of meaning
5. Support intentional, mindful thinking

For Huang, the role of technology in education “is the same as the instructor's: to be a facilitator in online learning” (2002, p.31). If technology is to truly be a ‘facilitator’ of learning, there are two dimensions to consider: 1) the nature of the digital learning environment itself tools it integrates; and 2) how we are using that technology to facilitate learning, which is not an intrinsic characteristic of the technology. In most online learning, the learning management system (LMS) is, by default, the learning environment. In contrast to the Web, which provides immense resources for adult learners, and “becomes a common tool for learner-centered or constructivist learning” (p. 30), the learning management system (LMS) is the opposite: rather than being learner-centered, it is a ‘walled garden’ conceived primarily to enable the administration of learning, rather than the learning itself, as its name implies.

This raises important questions about technology’s role in shaping the student learning experience. What does that experience look like? What is our strategy for designing effective technology-enabled teaching and learning? What are its drivers? How are interactions mediated? What is enabled or disabled by a given technology in the learning process? Price & Kirkwood (2014) recommend that practitioners make much better use of research to inform the design and implementation of technology in courses. They note a general “under-utilization” of evidence-informed design of education technology interventions in higher education, and

propose that such interventions needs grounding “in a better conceptualisation of what constitutes and shapes learning and how interventions can be integrated within the context of their implementation, rather than a focus on technology as the agent of change” (p.341). The authors argue that informed designs need to take thorough account of various contexts: the teaching context, the institutional context and the student context; in addition to contextual constraints and influences.

There has been a movement over the last 5 years to explore the gaps between the LMS and a digital learning environment that could meet the changing needs of higher education and its students. Research funded by the Bill & Melinda Gates Foundation and led by EDUCAUSE has promoted the concept of a ‘Next Generation Digital Learning Environment’ (NGDLE). Findings related to this NGDLE research were presented in a white paper (Brown et al., 2015), with the premise that “initial LMS designs have been both course- and instructor-centric, which is consonant with the way higher education viewed teaching and learning through the 1990s” (p.2). And at CUSPS, in 2018, we still do. In the researchers’ view, as long as the LMS is still anchored in semester-based sections of instructor-led courses, anything resembling an innovation is still largely "bolted on" rather than transformational.

An early conclusion from the research is that the learning environment is moving towards a cloud-like space in which students “will aggregate and connect content and functionality, similar to a smartphone; in which they will be able fashion their environments directly with self-selected apps” (p.3). The vision is that everything will be in one place – apps, learning services, and the learning management tools. For instance, the software will have all the components we look for in various products in one place. The NGDLE will include functions such as submission, testing, data management, timetabling, learning analytics, multimedia, collaboration and communication tools, tools for sharing materials, and learning support.

This is a vision for a learning ecosystem that enables learners and instructors to act as the architects of their environments and learning processes. It may seem very far-fetched to us today at CUSPS, but the NGDLE is a paradigm that is gaining traction and starting to generate early-stage models and prototypes, such as the 'ELMS: Learning Network' (Penn State), and the 'University API' at Brigham Young University, the "FYE" course at the University of Notre Dame.

Throwing down the gauntlet, Brown et al. argue that the very code underlying education technology applications is like the built environment: it imposes a point of view. Thereby, the LMS, like all other technology applications, "imposes a pedagogical model" (p.3) - just as physical classrooms are instances of built pedagogy (Monahan, T., 2002). The authors declare that in today's world, "any approach [to designing the learning environment] that posits a single chunk of new code is out of sync with the wide variety of postsecondary teaching and learning" (p.3), particularly as higher education pivots away from the transmission model of education towards one built on concepts such as active learning, personalization, and multi-modal course design. This perspective is included here in order to encourage reflection on the implicit role that technology plays in shaping pedagogy.

Our current technology priorities at CUSPS are necessarily focused on facilitating course design consistency and quality, and standardization of the course site's form factor. However, with NGDLE development well underway across K-12 and higher education sectors, it is a topic that in this author's opinion (Enders) belongs to any long-range strategy (5-10 years) for online learning developed at CUSPS. In the meantime, it can provide valuable food for thought.

The push to scale online learning at CUSPS does create an imperative for us to consider how we teach and learn with technology, both for asynchronous and hybrid courses--and how we would like to going forward. How can we use technology to address student needs in an

online learning experience? How can we ensure that it does not become simply classroom instruction delivered through the Internet? Can we resist the urge to bring new tech into the online classroom thinking we can solve complex challenges such as ‘engagement’ or ‘interaction’ with technology? Can we afford to introduce new tools that could have a positive impact given the additional resources required to support instructors and students? Or, given that these tools have not been proven to address our challenges effectively yet? How do we prioritize technology exploration and implementation to support new online course design efficiently and effectively?

The ability to integrate LTI tools with the LMS allows us to customize the framework for teaching and learning a bit more strategically to meet the needs of instructors and students in a given program or course. One significant barrier to exploring these types of technologies is the inconsistent (and sometimes low) level of digital and technological literacy of faculty and students. The consequence, as Huang (2002) points out, is that if the learner is not skilled in interacting with the delivery system (the LMS and any additional tools integrated with it), the learner has to learn not only the course content, but also the technology tools. This can become a barrier to tech-enabled teaching and learning, and is costly to support.

Data generated through digital tools and content contains valuable insights for students, instructors, institutions, and edtech companies alike: insights that more traditional materials couldn’t provide. Each could see what’s working and what can be improved. Today it’s possible to leverage data to gain a broad and deep awareness of what is going on in the (online) classroom, providing real-time instructional value. We have no data intelligence capacity on our team yet, but hopefully we will keep working towards the goal of developing actionable data capacity - for faculty, designers, and technologists alike.

There is a lot of research that examines the factors and the process by which mainstream university faculty members adopt and implement technology in teaching and learning. The ‘diffusion of innovation’ perspective is prevalent in the literature that addresses professional development for faculty. Rogers’ (1995) theory of adoption of technology, Diffusion of Innovations, was originally written in 1960 in a different technological world; yet it has become a framework used frequently for introducing new technology to academic staff. The theory seeks to explain how, why, and at what rate new ideas and technology spread, and posits that diffusion occurs based on five adopter categories: Innovators, Early Adopters, Early Majority, Late Majority, and Laggards. In keeping with the theory’s findings, 68% of our faculty fall into the categories of early and late majority, which means that in order to adopt new technology, they need to believe in the inherent ability of technology to achieve desired learning outcomes based on proof, and based on their own needs and values.

Baran et al. (2011) describe an interesting faculty mentoring program developed at Iowa State, where graduate students (mentors) worked with the faculty members (mentees) on various technology integration projects. The program originated in the Department of Curriculum and Instruction to meet the challenges that faculty experienced during technology integration to their curricular practices. The program is a part of a graduate course, Technology and Teacher Education, and has been used successfully for many years.

Technological development never stands still. Keeping pace with change is challenging, particularly when technologies can disrupt traditional industries and professions. Institutions need to teach future professionals how to embrace and adapt to these disruptive changes. This is the meaning of technological literacy for today’s young professionals. Cathrine Hasse, a Danish education researcher, offers this holistic definition for technological literacy:

> ”The learnt ability to gain and combine technical know-how together with other forms of social and cultural understanding to identify and qualify opportunities for the deployment, use and application of new and disruptive technologies within a professional context” (Hasse, 2015).

Through the learning activities she designs for professionals in training and development contexts, Hasse emphasizes the need for professionals to develop insights into how “situational practices reconfigure technology and how technology reconfigures practices” (Hasse, 2015).

Digital literacy is a close companion to technological literacy. Learning to write, learning to think, and—these days—learning to form computational structures and to think digitally are requisites not only for employment but also for intellectual independence. Meanwhile, there is a well-documented gap between employers' expectations and graduates' as demonstrated by disparities in perceptions of students' readiness to enter the workforce. In a recent study, when students were asked if they felt digitally prepared for work, 44% responded that they felt "well-prepared" or "very prepared." In contrast, only 18% of surveyed employers responded that students are prepared for entry-level positions, (Internships.com, 2014).

A final, somewhat provocative perspective is offered, that of Audrey Watters, who describes herself as a “Cassandra of educational technology” and a “recovering academic.” She brings a rare and necessary skepticism to the omnipresent innovation-and-disruption boosterism that plagues ed tech. Animating her work is a conviction that technology needs to be not just used but also questioned, its power structures and exclusions challenged, its makers’ narratives not taken for granted. In Watters view, enterprise applications ultimately seek a monopoly on the “explanation” or meaning-making of technology - and this is the issue: “It’s that this explanation tends to foreclose questions we might have about the shape of things” (Watters, A., 2015). That matters, she says, "because the tech sector has an increasingly

powerful reach in how we live and work and communicate and learn" (Watters, A., 2015). This perspective, in the author's opinion (Enders), aligns well with the concept of technology as a 'facilitator' of learning, and with Hasse's notion of technological literacy, in which the student-technology interaction is ideally a dynamic, two-way proposition. This is also a characteristic of the NGDLE.

Engagement and Interaction

Engagement theories have emerged from the experience of numerous faculty teaching in online education. The fundamental idea underlying engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks. While, in principle, such engagement could occur without the use of technology, Kearsley, G. and Shneiderman (1998) believe that technology can facilitate engagement in ways which are difficult to achieve otherwise. For these authors, "engagement theory is intended to be a conceptual framework for technology-based learning" (p.20). While not consciously derived from other theoretical frameworks for learning, it aligns with theories of adult learning mentioned previously since it is focused on experiential and self-directed learning.

Interaction is one of the most important components of the online learning environment, as it supports the learning process and the formation of learning communities. Trentin (2000) concludes from Moore's (1989) quality analysis model that "one of the key ingredients for raising the quality of an online course is strong interaction between the players in the process" (p.23). Sims (2003) in researching the expectations of learners for an interactive online environment that engages them, concluded that learner control of the environment with active communication providing feedback were essential components of interactivity.

Interactivity is a key dimension of the QM Rubric Standards, and impacts student learning, motivation, and persistence. Flottemesch (2000) reports on a range of research on

interactivity in online education that finds that students tend to judge an online course according to their perception of the instructor's interactivity. It is obviously important for us to be in a process of researching effective interaction design for our online courses and students.

There are several interaction typologies discussed in the literature. The most commonly referenced is Moore's (1989) which includes learner-learner, learner-instructor, and learner-content interactions and stems from the field of communications. For Siemens (2012), effective interaction design needs to be coupled with social technologies in order to foster communication and interaction in learning communities. However, as Bolliger et al. point out, online learning communities, are "rarely sustained over extended time periods" (p.310). What implications does this have for community-building in our asynchronous course offerings?

Kirstein et al. (2011) found that the quantity and quality of student interaction in online courses depends on the active engagement of instructors, and on the quality of the instructors' engagement. Instructors who limited their interactions to scattered and short comments to students were ineffective. Successful facilitators started by soliciting complex and interesting problems or questions that compelled students to use course concepts and to make references to concepts learned in previous courses or professional experiences. They moved discussions to a deeper level by emphasizing the advantages and disadvantages of students' approaches and alternative viewpoints, as well as the results and the importance of their original perspectives. Simultaneously, instructors facilitating online activities advocated clarity of response by persuading students to elaborate in their posts. As Maor (2003) pointed out, online instructors need to be ready to intervene in the discussion when it stalls or goes off track and ensure that student postings are professional, scholarly, and serve as experiences that connect the students to one another. They consistently found that students in classes with active facilitation of discussion are often more engaged than those in sections with less attentive

instructors. It is clear that a well-defined role for the online instructor, as well as the design of the course, play key roles in the level of motivation for online students. This is important for instructors as well as for instructional designers to consider (Cholewinska, 2011).

Although the literature shows the importance of interaction for online education, *quality* interaction is often missing in many online courses (El-Tigi & Branch, 1997). Stenhoff, Menlove, Davey and Alexander (2001) point out that instructor unfamiliarity with technology is one of the key reasons why they do not know how to promote online interactions in practice. How do we measure the quality of course interaction? Which types of interaction should we prioritize for our professional students? If one of the advantages of taking online courses is the flexibility of taking them anytime from anywhere, how should we balance new interactive technologies, accessibility, and flexibility in the online courses we will be designing? Is this dilemma an inherent feature of online education? Or is it something that can be solved by extensive prototyping of the different ways technology and pedagogy can be integrated to facilitate quality interaction? There is not much research providing exemplary practices regarding how and which new technologies can be utilized to enhance the interactive communication environment without decreasing accessibility and flexibility.

Purarjomandlangrudi, et al. (2016) conducted an extensive literature review to identify and classify the factors contributing to effective online interaction, as well as to developing or improving student engagement. Their literature review proposes four main groups for these influencing factors, also presented in a simple diagram (p.277):

- Student's Individual Characteristics: Expectation - Self-expression - Interest - Cognitive Abilities - Leadership - Self-efficacy - Creative Thinking - Confidence - Learning Flexibility - Knowledge Sharing

- Student's Behavioural Factors: - Social Intimacy - Attitude - Readiness - Interaction - Content Understanding - Group Functioning - Collaboration - Cooperation - Participation
- Course Design Factors: Course Clarity - Task Design - Academic Integrity
- Administrative Factors: Active Discussion - Feedback - Technical Support - Academic Support - Pedagogical Support - Connectivity

York, C. & Richardson, J. (2012) provide additional insights related to factors that influence interaction in online courses, based on interviews conducted with faculty who had at least 5 years of experience teaching online. Three themes emerged from the interviews relating to the impact of interpersonal interaction: course structure factors, feedback factors, and facilitating discourse factors.

- Course structure factors that might influence interaction included: teamwork/group work, environment, models/guidelines, activities, and community.
- Feedback factors included variety of feedback and assessing discussion questions. Variety of feedback could include instructor, peer, and practitioner feedback as well as the medium used to provide that feedback (e.g., audio, written).
- Facilitating discourse factors included: immediacy behaviors, discourse guidelines, discussion questions, and instructor participation.

In addition, the following factors contributed positively to instructor-student interaction: (a) timely response, (b) casual communication style, and (c) informal discussion board.

Bolliger, D.U. & Shepherd, C.E. (2010) researched a model of online interaction focused on community-building using ePortfolios in the Department of Professional Studies at the

University of Wyoming. They focused their research on graduate students' perceptions of "communication, connectedness, value, and perceived student learning through ePortfolio integration and formative peer review to support a sustained community of learning" (p.295). As regards the community-building dimension, their findings indicate that ePortfolios promote sharing with faculty and peers and spur communication. They conclude with an interesting question: how do ePortfolios compare with other community-building approaches?

Discussion is a prominent strategy used in online education to support the need to learn in socially negotiated spaces, notably for adult learners. Discussion types are either instructor-led or student-led. Mazzolini and Maddison (2003) questioned whether, when facilitating online discussions, online instructors should take a prominent 'sage on the stage' role to lead online discussions or a more constructivist 'guide on the side' role for students to lead the discussions? Online discussion literature seems to suggest a predominant view that online instructors should act as more a 'guide on the side' or a facilitator (Blignaut, & Trollip, 2003). Dennen and Wieland (2008) report that when students are involved in monologic posts that are oriented toward the instructor, there is less peer interaction among learners; and hence less social interaction or collaborative knowledge construction. Ke, F. & Xie, K. (2009) found that group discussions, in comparison with class-wide discussions, predicted higher satisfaction level and stronger sense of community among adult students. But they also found that a strategy that integrates both group discussions and class-wide discussion is ideal, providing the highest level of social interactions and self-regulated learning interactions.

Participants in the study also felt that the instructor should model the behavior they expect on the discussion board. One of the key challenges facing online instructors is how to provide clear and visible guidance in a virtual environment. In the traditional classroom, facilitation relies on both verbal and non-verbal cues to initiate understanding of ongoing

communication and course tasks. Communication online, however, relies mainly on written language without paralinguistic cues.

An additional factor affecting the quality of course interaction is that of class size, which we have no control of at CUSPS. But, an instructor could be provided with equivalent alternatives for interaction-based activities based on class size. York, C. and Richardson, J. (2012) reviewed a study in which the authors “noted that the small class size (9) negatively influenced interaction in the online discussions... the instructor of the course commented that, “community was never built because it was too small” (2012, p.91). Another study they reviewed looked at class size and student discussion posts in 28 online courses to determine if there was a relationship. These researchers found that as the class size increased, students wrote shorter discussion posts yet they wrote more posts. As class size increased, students also opened fewer posts, from which one can assume they read fewer. We could easily analyze discussion patterns in a relevant sampling of our own courses to quickly determine if class size is a significant factor influencing interactions in CUSPS courses.

Collaboration is a key and formative type of student-to-student interaction. Stacey (1999) found that small collaborative groups, when committed to regular online interaction, could learn extremely effectively at a distance. Wasson et al. (2003) is a valuable reference resource on this topic. It compiles 60 research papers presented at the International Conference on Computer Support for Collaborative Learning, on the theme of ‘Designing for change in networked learning environments’, and from a wide range of perspectives. Mulder et al. (2003) focuses on ad hoc teams that rely on videoconferencing, like the groups our students create using BigBlueButton. In such teams, understanding each other is not as easy as it may seem, though crucial. “Questioning is one of the most important means of facilitating learning and understanding, not only for the individual asking the question, but for the group as a whole….It

can also help other group members by forcing them to present information and concepts more precisely" (p. TK). Fiehn et al. use recorded live lectures as the basis for collaborative learning. Their approach supports both the personalization of documents through annotation and the sharing of such notes to stimulate structured discussions anchored directly at the relevant content objects in the multimedia documents. They also show how student-authored multimedia documents combined with anchored discussion can be used for peer assessment. Other studies that could be of potential interest to our team address:

- the development of communication networks in self-organizing online discussion groups;
- using social network analysis to measure cohesion in collaborative distance learning;
- analysis methods for collaborative models and activities;
- sharing perspectives in virtual interaction: review of methods of analysis;
- nonverbal signs in virtual environments;
- designing for divergence.

Kearsly and Shneiderman's theory promotes interpersonal interaction in the context of group activities, rather than individual interaction with an instructional program. The authors apply it to the design of learning communities focused on creating successful collaborative teams that work on ambitious projects meaningful to someone outside the classroom (potential employer, mentor, client). The authors offer the following research questions for further exploration:

- With what curricula, disciplines, or age groups is engagement theory most/least effective?

- What skills do students need in order to effectively participate in collaborative activities? How should they acquire these skills?
- How should individual differences be addressed in collaborative work?
- What kind of student evaluation methods are most appropriate to the application of engagement theory?
- How do we best prepare instructors to apply engagement theory?
- What kind of groupware (collaborative software tools) would best support engagement theory?
- How does engagement theory "scale up" for large classes and many simultaneous courses at the same or different institutions?

Readiness to Teach and Learn Online

Throughout the literature, it's clear that the student's ability to be successful at online learning, and the faculty's ability to teach successfully online, are the critical factors determining the success of an institution's online offerings. This seems to be true regardless of how well courses and programs are designed, or how reliable or high-quality the technology infrastructure is. The first hurdle is faculty buy-in. How do academic leaders promote faculty buy-in to teach online? What motivates instructors to teach their courses online? In the fall of 2012, only 30.2 percent of academic leaders agreed that faculty at their university accepted the value and legitimacy of online education, the lowest level since the fall of 2005, and a drop from 32 percent in 2011 (Allen & Seaman, 2012).

The second hurdle, once faculty motivation is in place, is how well prepared faculty are. Many universities with huge online enrollments use self-assessment forms to evaluate faculty readiness to teach online. Penn State has one that is publically available under a Creative Commons license. The University of Central Florida uses a web-based form and a

corresponding rubric (Cavanaugh, T., 2011). The instrument is competency-based and assesses experience, practices, and teaching philosophy to determine if they meet university standards and conventions.

A competent, confident online instructor is a new and different role for academic staff, whether full-time or part-time. The major roles of a competent online teacher were outlined as (Goodyear, et al., 2001) follows:

- The role of content facilitator, concerned directly with facilitating the learners' growing understanding of course content;
- The role of technologist, concerned with making or helping make technological choices that improve the environment available to learners;
- The role of process facilitator, concerned with facilitating the range of online activities that are supportive of student learning;
- The role of adviser/counsellor, concerned with offering advice or counselling to learners on an individual or private basis to help them get the most out of their engagement with the course;
- The role of assessor, concerned with providing grades, feedback, and validation of learners' work; and
- The role of researcher, concerned with engagement in production of new knowledge of relevance to the content areas being taught.

These competencies constitute a tall order for CUSPS from today's vantage point. They also suggest that the ideal online instructor should be an adaptable, versatile scholar-practitioner. Goodyear, et al. (2001) also identified six important task types for the 'process facilitator' role: welcoming, establishing ground rules, creating community, managing communication, modelling social behaviour, and establishing own identity. This facilitator role is a competency area that is

closely aligned to Northrup's (2001, p.31) five attributes of interaction online: 1) interaction with content, 2) collaboration, 3) conversation, 4) interpersonal interaction, and 5) performance support. The instructor's ability to structure and facilitate interaction within this framework is somewhat specialized and surely not a given. Professional development is definitely required to ensure delivery of a course with confidence and competence.

As regards student readiness to learn online, Geiger, Leah A., et al. (2014) offer direction on how to better prepare students for online learning and enhance student success, while noting course design recommendations to enhance the quality of online learning andragogy and practice. Cheurprakobkit et al. (2002) reported that students in online learning environments must possess 'self' behaviors such as self-discipline, self-monitoring, self-initiative, and self-management, which are characteristics of self-regulated or self-directed learning.

Knowles believed that adult learners are fundamentally self‑directed in their learning, meaning that they can "take the initiative without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes" (Knowles, 1975). Yet Brookfield (1991) found that many adults do not pursue their lives in a way that indicates that self-directedness influences their behaviour. In fact he believes that there are good grounds for maintaining that self-directedness in adult learning is an "empirical rarity", and even describes the discomfort experienced by adults, in groups that he has taught, when they were required to assume a degree of responsibility for their own learning. Hence adult education might better be conceived of as education devoted to nurturing those attributes that Knowles believes adults possess rather than as a facilitating activity with adults who already know what they want to learn.

Given the physical absence of an instructor in online learning, the ability of learners to monitor and regulate their own learning is critical. Dabbagh (2007, p. 219) claims “research indicates that interpersonal and communication skills and fluency in the use of collaborative online learning technologies are critical competencies for the online learner.” She adds that “online learners must understand and value the learning opportunities afforded by collaborative and communication technologies in order to engage actively and constructively in learning. Some learners are inherently drawn to peer interaction or collaboration, while others need to understand the educational value of these pedagogical constructs” (Dabbagh, 2007, p. 220).

A survey of online instructors and administrators (all members of MERLOT or WCET), found that the following factors can improve online learners' success: training students to self-regulate their learning was first on the list, followed by better measures of student readiness, better evaluation of student achievement, and better CMSs to track student learning (Kim & Bonk, 2006) upon graduation. The authors found the concern about learner self-regulation to be ironic in a world dominated and driven by LMSs that are primarily used to manage students.

Given that student readiness is a key factor in student satisfaction with their online learning experience, how will we evaluate our prospective students’ readiness for asynchronous learning? Ohio State University and Penn State World Campus have developed an ‘Online Readiness Tool’ that they use to introduce students of all ages to online learning, helping them navigate the differences from traditional on-the-ground courses, such as technology use, time management, and self-motivation. It helps students gauge their readiness to learn online, manage their expectations of the learning experience, and provides information and data to those administering courses. How will we ensure our students’ online readiness? How can we support online student readiness at scale?

Supporting the Online Learner

Personalized support and guidance for the online student are essential: “universities that provide high-touch services throughout a student’s educational journey see the best student outcomes” (Regier, P., 2018). Students need a wide range of skills to learn successfully in online settings: they need to be tech savvy, know how to collaborate with peers, be able to conduct online research, navigate proficiently within the LMS, manage their time effectively and engage in the learning process by interacting with content, peers and completing coursework via the learning platform. Some students may have a skill gap in one area or another, especially if they have never taken an online course before. Many online institutions (Western Governors University, Penn State World Campus, eCornell, etc.) create dedicated services and resources for online students to address such gaps. Such resources are designed to be delivered remotely and conveniently for the student.

According to Lehman, R. M., et al. (2013) support for the online learner falls into several categories: instructional support, institutional support, and (student) self-care. Instructional support is understood as mainly faculty-driven. Among the top recommendations for faculty (and designers working with them): create activities that orient students to the course and help them meet each other and develop trust and community; include forums for formal and informal conversations; provide for individual and group feedback; be flexible in accommodating students’ needs. The authors provide a useful table outlining important instructional and online support strategies (Table 4.1, p.74). They also provide an example of an effective student orientation, from the Erickson Institute (Exhibit 4.2, p. 78). Built in the LMS, the online orientation is interactive, and provides a sequence of activities that students can navigate to learn about, and try out, the tools they will need for participating and contributing to the online

learning community when the course begins. Perhaps these course-based strategies could become influence how we help students evaluate their online readiness.

Some institutions support their students by giving them choices and flexibility in how they interact student-to-student and student-to instructor in courses. Drexel's online students can use a variety of interactive technologies to submit their assignments and communicate with their professors and classmates – many of which are designed to "replicate the social and cognitive presence of face-to-face learning" (Aldridge, n.d.). As for other forms of communication, students have the option of connecting and collaborating with their professors and classmates by Skype, phone, or email. Developing a 'communication design' strategy for CUSPS courses, starting with technologies already in place, will be very important to the success of online programs.

There is a growing trend towards a holistic model of student services, which aims to achieve integration across supports (academic, co-curricular, advising, financial, technical, etc) to serve the *whole* student. In most institutions, the range of students support services are still typically siloed (as they are at CUSPS). The holistic model is facilitated by technologies such as the mobile-first ecampus, and made possible by the delineation of clear lines of responsibility for student supports, and the strengthening of communication channels between institutional stakeholders (Tyton Partners, 2018). However, even in these cases, Tyton Partners report, functional silos tend to persist. Limited direct engagement and regular coordination between stakeholders tend to remain as obstacles to achieving an integrated student experience.

Select findings from a recent report (Magda, 2018) on online learning in continuing higher education - an assessment of American Continuing Higher Education (ACHE) member institutions - include the following as regards support for the online learner:

- 75% or more of provide ***online*** academic advising, career, tutoring, and writing services for their online students
- More than one-third pointed to issues with services for online students, namely providing special services (37%), identifying those in need of special services (35%) and providing “off hours” for services (35%)
- 60% reported that they have made their learning environments mobile-friendly, while another 33% have this project on their priority list.

Will we have enough resources to provide a sufficient ratio of teaching assistants to students when we scale our operations? The Georgia Institute of Technology has been using AI to develop ‘virtual teaching assistants’ for several years. The AI TAs can’t answer deep questions about content, but they are useful “because students tend to ask the same questions again and again” (McKenzie, L., 2018).

Virtual Campus Communities

In an online interview addressing the online student service-success relationship, Drexel University Online President Susan Aldridge, Ph.D. pointed out that providing students with an online learning experience that not only meets but exceeds their expectations means “we have to create and nurture a *virtual campus community* that incorporates the support services and systems they need to be successful throughout the student lifecycle – from enrollment to graduation and beyond” (Aldridge, n.d.). Many online institutions create some kind of an ecampus for their online students, and they have years of experience developing it: Florida Virtual Campus, the Open University of Catalonia, University of Phoenix, Michigan State University, Oregon State University, and Stanford - to name only a few. The ecampus typically

takes the form of a student portal, providing access to academic and co-curricular activities, an aggregated communications feed, student accounts, and a (social) commons of some sort.

Mobile-first ecampus solutions capitalize on being able to reach and engage students 24/7, and are able to personalize the campus experience, whether virtual or bricks-and-mortar. They significantly narrow the gap between the online and campus-based experiences as they are able to aggregate and disseminate relevant information, resources, and communications in real time, adjusting for the variation in student support needs at any given point in the lifecycle. Mobile ecampus solutions are also able to track student engagement with any kind of campus support service: academic, co-curricular, advising, IT, etc. This allows the institution to reach out to students who are not engaged, while also facilitating continuous improvement of services.

As regards student-generated communities: the mobile ecampus enables social interactions driven by students. In addition, Aldridge reports that social media has become a very effective forum for offline communication among online students who, in addition to using Drexel's 'official' social sites, have been known to create their own virtual meeting spaces outside of the classroom.

Video and Multimedia in Online Courses

Video has supported education for many years, and instructional videos are often a key component in online courses. Considering that one of the most significant factors of online course quality is instructor presence and interpersonal interaction, one of the benefits video can offer is creating faculty presence in an online environment. Yet much remains unknown as to what makes compelling instructional video, especially in the online environment. What characteristics do students perceive as influencing their learning? What videos receive the most views? These questions are important in online course design, and the teaching and learning experiences. It is also important when considering that even though producing video is less

complicated and less expensive than ever, media still requires production resources and therefore strategizing the best ways to allocate those resources. How might student-produced media (using Panopto, mobile devices, or webcams) influence instruction and social interaction? How do graphic design elements (such as the video thumbnail, a video embedded on a course page, or types of text surrounding a video) influence viewing habits? It will be important to our online initiative to encourage and support further research on these topics at CUSPS.

A major affordance of video is the ability to produce multimedia elements and create dynamic learning artifacts. In a 2014 case study completed by Melanie Hibbert at SCE (now CUSPS), students were interviewed regarding their experience and preferences with video and multimedia. A consistent finding across numerous courses and programs was that the “average amounts of time viewers watch media (in aggregates) is approximately four minutes [and that] this average viewing time repeated across programs and courses, even when considering longer-form videos.” This four-minute finding is still considered a best practice for instructional design and media strategy of video production at CUSPS. In addition, she reminds us of the important insights that data analytics provide, and how these can (and should) influence instructional design: “there is something to be deduced about a video, embedded in an online course with 30 students, that has 100 views in contrast with a video embedded in the same context that has 10 views. Similarly, there are inferences that can be made about a video that was watched, on average, at a playthrough rate of 20% (for instance, the average viewer watched a 10-minute video for only 2 minutes) in contrast with a video that had a play-through rate average of 95%...another correlation demonstrated in the analytics is that videos directly connected to course assignments, especially course assessments, (have) the highest numbers of views” (Hibbert, 2016, p.2).

Most importantly, Hibbert's qualitative research evolved from this focus on the video artifacts themselves and their characteristics, to exploring how students experience these artifacts. Her research questions: "How do students make sense of their learning experiences from videos, in an online environment? How do students engage with various modes and design elements of instructional videos in their process of meaning-making?" (Hibbert, 2016, p.13). This work could be very useful to the OCI team in developing a strategy for video use in online learning design.

Regarding the use of multimedia in courses, students found the audio/visual elements of video to be useful to them. "Throughout the interviews, all participants evaluated charts, graphs, photographs, and other visuals relevant to the content area in positive terms. Conversely, a couple of students voiced their dissatisfaction with videos that they did not perceive as a value-add over text (they said videos they viewed did not include useful audio/visuals and that they could have just as easily read a transcript for the same information). A few participants discussed how visuals in course videos enhanced their learning and retention of subject content" (Hibbert, 2014).

Tools for producing, accessing and modifying digital video are enabling new educational practices. Here at CUSPS, the proliferation of student-produced Panopto videos provides opportunities to explore how such new multimedia activities could inform the design of collaborative learning practices; how they can help students become effective collaborative creators of digital media, demonstrating competencies and communicating ideas through dynamic storytelling, data visualization and content curation. Such opportunities realize the potential of digital video and authoring tools to foster the 'active spectatorship' of students as information designers and critical thinkers. Iaccuci et al. conducted a fascinating study (published in Wasson, et al., 2003), looking at student-generated media in the context of

video-based activities that are collaboratively-authored. They found that although learners' methods to construct or deconstruct video narratives seemed to operate independently of any specific professional or pedagogical interest, they nevertheless provided a rich context to inform the design of media and artifacts through collaborative learning. For programs where digital and media literacy are prioritized, what can we learn from this kind of open-ended research? How should we prioritize use of video in online courses? Which tools will be able to support those priorities? As we increase dependence on instructional videos, we also need to focus on issues of accessibility and inclusivity for students with a range of needs.

mLearning

The growing functionalities of mobile technologies combined with the increasing need of interaction - not only between students but also between learners and information - are leading to significant growth of mobile technology usage in education. Pachler et al. (2009) argue the need for “a purposeful engagement with mobile learning in all sectors of education, among other things in order to avoid a potential disconnection between the ways young people operate in their daily lives and the ways educational institutions interact with them” (p.3) . Mobile learning (or mLearning) represents exciting new frontiers in education and pedagogy and offers new benefits to instructors and learners. Online learning communities can more easily motivate online students, and accommodate students from different backgrounds with vastly diverse learning habits, by integrating mLearning activities into course design. Ally (2009) offers a collection of practical examples with reference to some theoretical considerations.

Shih & Mills (2007) believe that learning how to effectively facilitate mobile learning is essential for developing successful online learning communities. Learning using mobile devices is “informal, spontaneous, situated, and ubiquitous” (p. 9). When they compared mobile learning to online learning using desktop computers, Shih and Mills found that mobile learning comes

with many advantages and some drawbacks but “the ability for more immediate interaction with teachers and fellow students, and the portability and affordability of smaller, handheld wireless devices, coupled with their capacity to accomodate learners from different backgrounds, make mobile devices a logical choice for educators.” Shih developed an innovative ‘mobile learning model’ that enables instructional designers to “motivate and engage online learners and instructors, which in turn enhances their online teaching and learning experiences” (Shih & Mills, 2007, p. 9).

Trends in mLearning, based on research (Ascione, L. 2018) at the most innovative community colleges, include:

1. 34% have a strategy in place for the use of mobile devices
2. 51% are piloting the use of mobile devices in classrooms but lack a formal strategy
3. 44% offer professional development for teachers on how to use mobile apps for instruction
4. 20% offer professional development for instructors or provide specific policies regarding how to protect student privacy when using apps

The most common uses of mLearning today are: audio and video podcasts, subject matter study, institutional and course notifications, learning assessment, collecting and analysing data in or out of the learning environment, and augmented reality (AR). Developing trends for mLearning include: new forms of interaction between learners, learning personalization, simulations and serious games, and support for learners seeking to apply academic knowledge and skills in new settings (e.g., professional).

EdTech at the Outer Edges of the Learning Universe

The most commonly referenced ‘hot’ experimental technologies for learning are virtual reality (VR) and artificial intelligence (AI). VR is very challenging, in part because it is moving fast, but also because it crosses conceptual boundaries. Is it like watching a movie? Is it like playing a game? Is it like wandering an online landscape without constraint or direction? It has all of these components, which makes it harder to integrate into an educational experience. Interesting examples:

The Mandarin Project, a collaboration between Rensselaer Polytechnic Institute and IBM, places students in a virtual world where they can practice their Mandarin language skills in a series of simulated scenarios, such as ordering lunch in a restaurant or taking a tai chi class. In a high-tech ‘cognitive immersive room,’ a classroom with a 360-degree floor-to-ceiling screen, students can practice their Mandarin with animated characters (including a floating panda head) powered by artificial intelligence (AI). “When students practice speaking with native speakers, nobody tells them how they did,” said Zhou. With the AI technology, students get immediate feedback and are coached on correct pronunciation and sentence structure.

Talking Points for the Design and Delivery of Courses and Programs at CUSPS

We offer the following as a series of general reflections that can ground further conversation about course design.

1. How is “training students to self-regulate their learning” achieved? What kinds of behaviors indicate self-regulation on the part of a student?
2. Professional development considerations for teaching faculty. We need to participate in determining the competencies we feel online teaching faculty should have: based on research surrounding the effective design and delivery of learning environments; based

on a strategic plan and associated goals for attaining them and becoming a respected online “player.”

3. Cosco (2015) analyzed the “virtual classroom” with regard to student perceptions of the effectiveness of communication tools. Seven themes emerged from the data: (a) tools helped, (b) feedback, (c) ease of use/convenience, (d) multiple tools, (e) video, (f) discussion, and (g) learning styles. Her recommendations: 1. Provide multiple tools for students to use as they prefer to learn through different communication tools; 2. Students’ varying learning styles may affect which tool they perceive as aiding their learning; and 3. Allow students to choose which tool they use to communicate or submit an assignment.
4. What can social learning analytics tells us about how a multi-cultural and diverse cohort of adult students learns? How could it inform activity design? Informed by social and cultural perspectives of learning, social learning analytics as a subdomain of learning analytics devises analytic affordances for sociocultural aspects of learning. SLA shares learning analytics' focus on turning educational data into actionable insights in order to close the feedback loop in learning (Gašević, Dawson, & Siemens, 2015)
5. Given that student readiness is a key factor in student satisfaction with their online learning experience, how will we evaluate our prospective students’ readiness for asynchronous learning? Ohio State University and Penn State World Campus have developed an ‘Online Readiness Tool’ that they use to introduce students of all ages to online learning, helping them navigate the differences from traditional on-the-ground courses, such as technology use, time management, and self-motivation. It helps students gauge their readiness to learn online, manage their expectations of the learning experience, and provides information and data to those administering courses.

6. What is the impact of lowering admission standards for international students (and adult learners in general?) on student readiness to learn online? On the learning experience for a cohort? On the one hand it's our strategy for boosting enrollment numbers.
7. What kind of an ecampus do our students need or expect? How will we assess student needs and requirements? Service unit needs and requirements? What can we create to prototype and test the concept at CUSPS for our online learners? What are the communication needs of students in asynchronous learning environments? What role do mobile technologies play? How could mobile technologies influence the communication design of our courses, or that of a virtual campus?
8. mLearning is moving into the educational mainstream. What kind of instructional design models can leverage this technology? Which teaching or facilitation strategies?
9. How should the findings of NGDLE research inform the design of the future digital learning environment at CUSPS to ensure positive student outcomes (satisfaction, relevance, portability, and professional success)?

Conclusion

Adults have particular and special needs as learners, and tend to want to arrange their learning around their everyday lives, without being constrained by time and place. Serving these adult students—partnering with them fully so that they have the greatest opportunity for success—takes more than a casual commitment. To truly succeed, we will need to consider all of our operations - from course delivery formats and scheduling, to the curriculum, support resources, student services, and more - taking into account what our CUSPS adult online learners need, their career goals, cultural backgrounds, readiness, and more. We will need to ensure that the instruction we develop in collaboration with faculty, is relevant and portable for them. We will need to think more holistically about the student learning experience, from enrollment through graduation. As L. Lee Knefelkamp (Donelly-Smith, 2011) reminds us, “we haven’t yet realized all the different ways we can use scheduling, technology, and communication to be responsive to adult learning.” We can safely add ‘design’ to that list, considered from the multiple perspectives on the OCI team: instructional, media, technology, and support. And finally, we will need to work closely with those responsible for faculty development to make sure our online teaching faculty develop the competencies required.

Strategic agility has been the hallmark of strong continuing and adult professional education programs. Successful institutions seem to be those that embrace change to drive growth. Their ability to handle market uncertainty, unforeseen changes, and programmatic challenges well suggests an entrepreneurial spirit and skills adept at engaging institutional stakeholders and student communities with effective services and initiatives.

It is our hope that this white paper can inform the development of a CUSPS strategy for online learning, driven by an agile and entrepreneurial spirit, towards the goal of creating best-in-class online learning in professional studies. In the meantime, we hope it will serve to

inspire and support the OCI team in our daily work - by creating opportunities for generative discussion, cross-functional collaboration, and our own adult (professional) learner research.

For sources referenced in this literature review: please see the Adult Learning Bibliography.

For research curated by the QM community to support the Quality Matters Rubric Standards, filtered for our adult learning higher education context: see the Appendix attached to the Adult Learning Bibliography**.**