Choice, Ownership and Voice through Authentic Learning

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Authors Note:

We have written this COVA eBook to help you to create significant learning environments (CSLE) that will enable you to give your learners choice, ownership, and voice through authentic (COVA) learning opportunities. This eBook is for you and in order to serve you more effectively, we are seeking your input. We need to know what is working, what we need to improve or change, and what we may need to take away or add. Our goal is to take your input and revise the COVA eBook by the fall of 2018 when we plan to release a revised version of the eBook. Therefore, we encourage you to either respond to our email messages pointing to online surveys or visit either of our websites to provide your input and to learn more about the COVA approach.

http://www.harapnuik.org

http://tilisathibodeaux.com/

You will also find a wide assortment of posts, videos, and additional resources on our sites that will help you get the most out of COVA.

Thanks!

I want to thank my wife Marilyn, my sons Levi and Caleb, and my students and colleagues from all across North America for helping me to learn so much about learning. — Dwayne Harapnuik

I want to thank all of my students that I have taught and learned with over the past 15 years from Indiana, Florida, and Texas. Learning alongside you has enabled me to follow my passion to become a lifelong educator and inspire others to develop their passions too. — Tilisa Thibodeaux

Chapter 1 Not Suited for School but Suited for Learning

> A possibility of continuing progress is opened up by the fact that in learning one act, methods are developed good for use in other situations. Still more important is the fact that the human being acquires a habit of learning. He learns to learn. (Dewey, 1916. p. 43-44)

Not Suited for School

The following is an updated transcript from a digital story of my (Harapnuik) experiences with school (2011):

> He just isn't able to pay attention. He's not suited for school. He'll never learn. These are some of the more pleasant things that were said about me when I was a child. My experience in elementary school bordered on child abuse. Growing up with a ADHD in the 1960's was not a pleasant experience. My elementary school teachers were not able to handle a student like me. I spent most of my class time either isolated in a corner, outside the classroom door, in the principal's office or detained in the school library. Fortunately, our librarian was a man who liked to stay close to his desk. Later I realized that wasn't mouthwash I smelled on his breath. As a result, he gave me total access to the school's educational technologies. In a very short time there wasn't a book, filmstrip, film, record or recording that I hadn't read, watched, or listened to. I was hooked. Those technologies became a gateway to a world of learning--a world that I controlled. As I fast forward from my childhood in the 1960's up to the 1980's I tapped into my world of learning using the BBS systems, campus mainframes and the early Internet through modems and programs like Kermit. In the 1990's my world of learning became mobile through the use of Telnet and SSH programs that I carried on floppy and later on USB drives. In the past 20 years the growth of broadband, near ubiquitous connectivity, and the use of the cloud have simply made my access to my world of learning so much more efficient. Today when I look at my mobile phone or my iPad I don't see technologies but tools that enable me to learn faster and more efficiently than ever before. It

makes me think. Maybe they were right. I wasn't suited for school, but I am suited for learning.

Suited for Learning

I have always had an insatiable curiosity and desire to know everything about the world. Fortunately, my parents, couldn't say no to the encyclopedia salesman who targeted our rural community, so we had a full encyclopedia set that started me on my learning journey. The fact that I have always been a voracious reader is the primary reason I survived my school years in the way that I did. To this day I still read a book or more a week and more recently have been supplementing this reading with journal articles, audio books, podcasts and YouTube videos. With the digital information age of ubiquitous access to the world's information, there has never been a better time to be a learner. Unfortunately, too much of our school system is still fixed in the industrial age and the standardized Thorndikian information transfer model so we aren't fully leveraging this amazing potential.

My negative experiences in primary education didn't improve as I progressed to secondary education, so I didn't see any benefit to school and I left high school with just some vocational training and a disdain for our traditional school system. If it were not for a serious physical injury that forced me to consider that I may not be able to rely on my physical capacity to make a living I may not have returned to school after a decade of exploring the world. After upgrading my high school courses to a level that allowed me entrance into a junior college I began my undergraduate studies focused on what I was interested in — reading and writing. The most interesting courses were in Philosophy, Theology, Psychology and English and since I was used to learning on my own through reading and exploration I excelled in my studies.

The same teacher-centered lecture-based recipe and regurgitation model that I despised in primary and secondary school was slightly more tolerable as an undergraduate student because some of the instructors were well read enough to engage in intelligent debate and a limited form of the dialectic so not all lectures were just the delivery of content. Unfortunately, most students didn't read the text so too many instructors primarily lectured directly out of the text. I not only read the primary text, I studied it to fully understand the main ideas and I also read all the supplemental

material. I was well versed in exploring ideas on my own, so I also supplemented the readings with materials that I found. It didn't take me long to figure out what I needed to regurgitate for tests or papers, so I would quickly cover that content that I need to give back to my instructor and then resume learning what I wanted to learn.

It was through my exploration of the philosophical branch of epistemology and exploring the nature of knowledge and how we come to know that I was first exposed to John Dewey's philosophical writings. Dewey (1916, 1938) argued that students learn best in an environment where they can work on real world problems and actively take ownership of their learning. Dewey was referred to as a progressive and an educational reformer who was pushing back against Thorndike's standardized information transfer model of education. Dewey also was pushing back on the Thorndikian sorting of students based on their fixed abilities and fit for the industrial age. He argued that we needed to help students realize their potential and use their skills to build a better society.

When I first read Dewey and realized that there was a viable alternative to the system of schooling that repeatedly told me that I wasn't suited for school I was initially angry because of all the abuse I experienced as a child, but then I realized they were right. I didn't fit into the Thorndikian model and I resisted the sorting process. More specifically, the Thorndikian model of education that we still use today didn't suit me because I was and still am a unique individual and a self-directed learner. I am not just an average industrial age cog that needed to be shaped or trained to fit into some standardized role in society. I also made a commitment to do what I could to fix or change the educational system so that people like me, self-directed learners, would have a place in our educational system. If you are reading this book, then I have a suspicion that you too may hold to a similar notion that our current system of education may not fit you very well or it may not fit your learners either. There is a better model based on well-established and researched constructivist principles and I have spent that last 25 years synthesizing and refining.

The Synthesis of a Learning Approach

There is no denying that Thorndike's standardized model of instruction has proven to be an efficient way to get large numbers of people to move from the agrarian

age and fit into a specific role within the industrial age. But we progressed well beyond the industrial age and have moved into the digital information age where the challenges and opportunities that we face will not be meet by standardizing training nor sorting people based on their fixed skills. If you really want to help people embrace an ever-changing future you need to help them learn how to learn and prepare them to be adaptable, flexible, and innovative. More specifically you need to create a significant learning environment (CSLE) in which you give your learners choice, ownership, and voice through authentic learning opportunities (COVA) that equips them to learn how to learn.

You will find throughout this book that we continually affirm that these ideas are not new, and John Dewey isn't the only advocate who points to what we now refer to as constructivist learning. Back early 1990's I started to explore how to walk that constructivist walk and adopted and applied some of the best ideas from constructivist thought leaders like John Dewey (1916, 1938), Jerome Bruner (1960, 1966), Jean Piaget (1964), Seymour Papert (1993), David Jonassen (1994), John Carroll (1990), and many more into my instruction and the first fully online course at the University of Alberta. EDIT 535: The Internet – Communicating, Accessing & Providing Information. This course, which was also referred to colloquially as the Nethowto course, was a fully online course that used authentic projects to help students learn how to use the Internet. More importantly EDIT 535 was designed to create an online learning environment in which students were given complete control over their authentic projects which they shared through their ePortfolios. This course and the related undergraduate course EDIT 435 became the research focus of my doctoral work and the subject of my web-based approach to instruction called Inquisitivism: The HHHMMM??? What does this button do approach to web-based instruction (Harapnuik, 2004)?

Since EDIT 535 was first developed and offered in a blended format in 1994 and then offered fully online in 1995 I have used the foundational constructivist principles of creating a significant learning environment in which students are given control over authentic learning opportunities in over 20 courses that I have personally designed and instructed. I have also used many of these fundamental constructivist ideas in the instructional design consultation that I have provided for 30 additional courses and for

the hundreds of courses that I have contributed to in smaller ways over the past 2.5 decades. It didn't take me long to recognize that while authentic learning has its benefits it also is more challenging for students to learn how to learn and unfortunately too many students are more interested in getting a credential than they are in learning how to learn. Furthermore, most instructors rely on the traditional information transfer based models of lectures, tests, and papers so many students don't see the need to take responsibility for their learning in my class when they don't have to do so in most other classes.

By the early 2000's I had research evidence to confirm that creating significant learning environments online that used authentic learning opportunities were even more effective than traditional face2face instruction (Harapnuik, 2004). I also recognized that I needed to extend these constructivist practices to other instructors so that my students could benefit from taking ownership of their learning through authentic learning opportunities in their other classes. I believed that authentic learning opportunities would be even more effective if they were a foundation part of a full program where learners could work on and solve more significant problems they experienced in their own work or organizational settings. I also recognized that it was crucial for me to share my ideas and collaborate with others who were willing to walk the constructivist walk so I sought opportunities to apply constructivist learning at the programmatic level.

In 2009, I joined Abilene Christian University (ACU) and in addition to collaborating on their Mobile Learning initiative I was able collaborate with a small group of constructivist-oriented faculty and staff to develop several courses that became the foundation of the Master's Certificate in Digital Leadership which was part of a larger Masters and Doctoral program. The lessons learned teaching individual online courses for several decades and my experience ACU confirmed that when you create a significant learning environment in which you give your learners choice, ownership, and voice through authentic learning opportunities you are really preparing your learners for the future.

In 2014 when my co-authors and I started collaborating on the design of the Master of Digital Learning and Leading (DLL) at Lamar University we agreed that we needed to create a significant learning environment in which we gave our learners

choice, ownership and voice through authentic learning opportunities. While we were building the DLL program we also began to formalize the COVA approach. Throughout this book and on our websites, you will see us refer to CSLE+COVA but you should note have titled this book Choice, Ownership and Voice through Authentic Learning Opportunities (COVA) and have not emphasized CSLE in the same way. Why? If you just focus on choice, ownership, and voice through authentic learning opportunities you will start to see a radical change in your learning environment and you will also see what else is needed to make that learning environment more effective. The focus on COVA is transformational and if do only one thing after reading this book then this is the one thing that you should do. Furthermore, in the past 25 years, I have learned that authentic learning opportunities can all to easily become limited thematic projects that lose their effectiveness if you don't give your learner the freedom to choose to something that is authentic, to take full ownership, and use their voice. We have confirmed through our research that in order for COVA to work you have to have all four components (Harapnuik, Thibodeaux, & Cummings, 2017; Thibodeaux, Harapnuik, & Cummings, 2017). If you aren't willing to give up control and give your learners choice, there will be no ownership and your projects will not be authentic. Similarly, if the learner isn't give the opportunity and encouraged to take ownership of their learning or if the projects aren't authentic then you simply have thematic instruction and so on.

If you really want to walk the constructivist walk and you want to help your learners to learn how to learn then you simply need to give them choice, ownership, and voice through authentic learning opportunities. The COVA approach has been in the making for the past 25 years but it has its foundation in the constructivist theories of the past century. It works, and this book will help you to apply the COVA approach and enable you to create significant learning environments where you will give your learners choice, ownership, and voice through authentic learning opportunities.

Chapter 2 Building on the Positive

> An Eskimo fisherman came to town every Saturday afternoon. He always brought his two dogs with him. One was white and the other was black. He had taught them to fight on command. Every Saturday afternoon in the town square the people would gather and these two dogs would fight and the fisherman would take bets. On one Saturday, the black dog would win; another Saturday the white dog would win - but the fisherman always won! His friends began to ask him how he did it. He said, "I starve one and feed the other. The one I feed always wins because he is stronger. (Graham, 1978, p. 92)

Building on the Positive

At a family reunion recently, my cousin, who as a concerned mother of four children and as member of her school board, asked me some very serious questions about her children's education. Since I have been teaching since the early 1990's, been teaching fully online since 1995, have a Ph.D. in instructional technology, and have worked at all levels of the education system in both Canada and the USA I will often get asked questions about current educational issues. The province where she and her family live had recently undergone a major political shift in governing parties and the current government through the Ministry of Education, had rewritten the K-12 curriculum to reflect their political priorities. This new curriculum was due to be implemented at the start of the new school year and like many concerned parents she was very anxious to see how this would impact her children. Unfortunately, the old curriculum was vilified by the new administration and the reforms they proposed promised to fix all the imputed issues attributed to the previous administration.

Rather than debate the pros and cons of the new curriculum I attempted to lessen this mother's anxiety and to assure her that her children would be fine because:

1. Anything we do for the learner will improve achievement.
2. There has never been a better time to be a learner.
3. There really are no new fundamental approaches to learning; just new ways of combining well established ideas.
4. There is no quick fix to learning, the classroom or education.

I went on to paint a positive picture about learning today and assured her that regardless of the fear mongering and hyped up promises of new educational reforms, her kids would be just fine. The battle between opposing sides of the educational

debate has been raging for over a century and if we look at the fundamental presuppositions or the philosophical foundations one could argue that this debate in some form has been going since the time of Plato, Aristotle and the Stoics.

My cousin is like most parents, who really does not want to get into political, ideological or philosophical debates, she just wants what is best for each of her kids and expects that each of them will learn how to learn and become productive members of society. That is why it is so important to remove the negative political discourse and alarmist rhetoric and stop using these reform arguments to feed the negative narrative of our educational system; when for the most part, our educational system has worked and is filled with caring and committed teachers. Of course, we can and must do better. We can always improve our educational system and align it to the advances we are seeing in, science, technology, and society but we need to do so by pointing out what is working and then look at what we can do even better.

Four Key Presuppositions

Rather than engage in taking sides on the perpetual educational reform debate we want to feed the positive narrative and build on a positive evidence based perspective that points to the many opportunities we have that enhance learning for the learner. This positive narrative that we hope to create is based on the following four key presuppositions:

1 - Anything we do for *the learner* will improve achievement.

John Hattie has spent more than 15 years researching the influences on achievement in school-aged students. In his synthesis of over 800 meta-analyses of the factors contributing to achievement he has found that short of physical and psychological abuse almost anything we do for the learner in the context of schooling or education will improve achievement (2009, 2014). The key is to focus on the things that improve achievement the most, like student expectations, feedback in a trusted relationship, and authentic learning opportunities. Hattie argues that teachers need to make learning visible and that they must become evaluators of their own teaching. To make learning and teaching visible, teachers must see learning through the eyes of the learner and help the learner become their own teachers, help them to exceed their expectations, and help their learners to learn how to learn (Hattie, 2009).

It is important to notice that we continually refer to “the learner” in order to emphasize the importance of looking at learners as unique individuals and not simply as average members of a group. The factors that Hattie has identified that contribute the most toward achievement are those that focus on the learner as individuals. This emphasis on the individual is extremely important and is supported by the new interdisciplinary field of science of the individual which rejects the average as the primary tool for understanding individuals and argues that we can only understand individuals by focusing on their individuality (Rose, 2015). As you will see in greater detail in subsequent chapters of this book Todd Rose points to research that shows that:

> Just as there is no such thing as average talent, average intelligence or average character. Nor are there average students or average employees--or average brains, for the matter. Every one of these familiar notions is a figment of a misguided scientific imagination. Our modern conception of the average person is not a mathematical truth but a human invention, create a century and a half ago by two European scientists to solve the social problems of their era. Their notion of the "Average Man" did indeed solve man other their challenges and even facilitated and shaped the Industrial Age--but we no longer live in that Industrial Age. (p. 11-12)

Unfortunately, this averagerian notion of average talent and abilities forms the foundation for our current standardized information transfer based model of education that helped us through the Industrial Age but is no longer suitable to help us through the digital information age. As you will see in section 4 below and in subsequent chapters Hattie is not the only proponent of focusing on the needs of the individual. Dewey, 1916; Bruner, 1960, 1961; Piaget, 1964; Papert, 1993 all emphasized the importance of focusing on the individual learner within the context of a social setting.

2 - There has never been a better time to be a learner.

Since the start of the World Wide Web in the early 1990’s I have been arguing that there has never been a better time to be a learner. Access to all the world’s information is getting easier and easier with each passing year and introduction of new and better technologies. It just gets better and better. We live in an age of abundance

and we now can hold all the world's information in the palm of our hands. Getting access to information is no longer a problem. Dealing with overabundance of information and discerning what is valid is our latest challenge. As we move further into the 21st century one can only imagine how much better it will be to be a learner.

3 - No new approaches to learning; just new ways of combining well established ideas

If you look at the fundamental ideas within the notion of creating significant learning environments (CSLE) by giving learners choice, ownership, and voice through authentic learning opportunities (COVA) you find that on their own these key ideas have been around for decades or centuries and have been well established by educational research. We just happen to put them together in a novel way.

CSLE+COVA is simply an active learning approach based on well-established and proven constructivist theories. Despite the evidence that active learning is more effective than the passive learning format of traditional lecturing (Freeman et al., 2014; Hake, 1998; Wieman, 2014), the literature points to the reality that the lecture continues to be the dominant form of instruction in higher education (Finkelstein, Seal, & Schuster, 1998; Goffe & Kauper, 2014; MacDonald, Manduca, Mogk, & Tewksbury, 2005; Nunn, 1996; Smith & Valentine, 2012). Why is the traditional lecture approach and the reliance on Thorndike's standardized testing methodologies still dominant? Because it works…at least from the averagerian measurement perspective. Since you can easily measure the amount of information your students can regurgitate you can satisfy the political forces that require administrators to generate politically expedient data points that rank and sort students on an averagerian scale.

This has also been going on for a very long time. Labaree (2005) has pointed out that historically, pedagogical progressives advocating Dewey's (1916) philosophy and rhetoric have been unsuccessful in achieving educational reform. Furthermore, Dewey's progressive ideology of active learning dominates the rhetoric of learning in education today, but the reality of Thorndike's averagerian standardization still dominates the process of our information transfer model of education.

If you recall Hattie's research almost anything you can do to a student can contribute to their achievement, but the key is to do what is most effective. Encouraging

learners to exceed their expectations, feedback from a trusted mentor, active learning, and a focus on authentic learning are the most effective for helping an individual learn how to learn and become self-directed learners. In this book and approach, we are moving beyond talking the constructivist talk of active learning and individualized instruction to walking the walk by actually giving learners choice, ownership, and voice through authentic learning opportunities.

4 - There is no quick fix to enhancing learning

If you focus on creating significant learning environments by giving your learners choice, ownership and voice through authentic learning opportunities you will find that you will have an enormous impact on your learning environment. Because CSLE+COVA is a synergistic approach you will need to commit to the full approach. While activities like 20%-time, Genius Hour, and Edu Boot Camps are admirable, unless they become more than just add-ons or quick fixes they are the equivalent of bolting a jet engine onto a horse cart (Papert, 1993). These types of active learning activities are a wonderful starting point but if they are great for an hour out of the week or 20% of the time then why wouldn't we do this all the time? Furthermore, research reveals that unless instructors are truly committed to and versed in all the nuances of constructivist methodologies that are essential to active learning, the application of active learning assignments or stand-alone activities will not help with learner achievement (Andrews Leonard, Colgrove, & Kalinowski, 2011). When you consider the additional effort that it takes to implement an active learning activity and if the result makes little or no significant difference to enhancing the learning, then we shouldn't be surprised by the fact the lecture and standardized testing format which we refer to as recipe and regurgitation still dominate.

Unless we move beyond the culture of the quick fix and address all the elements of the significant learning environment we will continue to lament the lack of positive impact active learning and technology have on our learning environments. Regardless of Hattie's absolution we owe our learners the effort to do what really is going to contribute the most toward their learning.

We can help you move beyond the quick fix mindset and in the next few chapters we will explain how to create significant learning environments by giving your learners

choice, ownership, and voice through authentic learning opportunities. To start this process, we need to first be clear on our terms.

Operational Definitions

One of the easiest ways to conflate ideas or to have a reader go down the wrong path on their learning journey is to allow a misunderstanding of terms. Rather than get into a debate on how terms are defined or allow for any confusion in how our key ideas are to be used we are using operational definitions to clarify what we mean and provide the necessary context for our ideas. For the purposes of this book we will use the following operational definitions:

Learning - is coming to know by making meaningful connections.

Constructivism - a learning theory that suggests that humans construct knowledge and meaning from their experiences.

CSLE+COVA - The synergy of creating significant learning environments by providing learners choice, ownership, and voice through authentic learning opportunities.

COVA - A learner-centered active learning approach that gives the learner choice (C), ownership (O), and voice (V) through authentic (A) learning opportunities.

Choice - Learners are given the freedom to choose (C) how they wish to organize, structure and present their learning experiences and evidences of learning. Choice also extends to the authentic project or learning experience.

Ownership - Learners are given control and ownership (O) over the entire learning process including the selection of projects, the ePortfolio process, and all their learning tools.

Voice - Learners are given the opportunity to use their own voice (V) to structure their work and ideas and share those insights and knowledge with their colleagues within their organizations.

Authentic learning - Learners are given the opportunity to select and engage in authentic (A) or “real world” learning opportunities that enable them to make a genuine difference in their own learning environments.

Creating Significant Learning Environments (CSLE) – an integrated approach to creating flexible, engaging, and effective digital learning environments where educators consider all aspects of the entire learning environment. Educators must take into

account environmental and situational factors to proactively design and create a learner-centered environment that will help the learner learn how to learn and grow into the people we hope they will become. The CSLE design requires that the following factors be addressed and considered in the backward design process:

- Student-centered
- Teaching roles – Presenter, Facilitator, Coach, & Mentor
- Ubiquitous Access & Social Networking
- Instructional delivery formats – face2face, technology enhanced, blended, online
- Instructional Design
- Assessment & Evaluation
- Academic Quality & Standards
- Support & Infrastructure

Please note: While breaking COVA down to its essential elements is a simpler task, the very nature of the CSLE is contrary to this type of reductionism. CSLE is an eclectic perspective in which one combines all the following elements into a cohesive perspective—we often refer to CSLE as a synergy. Therefore, any individual analysis must only be conducted within the broader context of how the instructor creates an environment in which the following components fit together.

Chapter 3 Making CSLE+COVA Work for You

> The reason so many people are opting out of education is because it doesn't feed their spirit, it doesn't feed their energy or their passion. So, I think we have to change metaphors. We have to go from what is essentially an industrial model of education, a manufacturing model, which is based on linearity and conformity and batching people. We have to move to a model that is based more on principles of agriculture. We have to recognize that human flourishing is not a mechanical process; it's an organic process. And you cannot predict the outcome of human development. All you can do, like a farmer, is create the conditions under which they will begin to flourish (Robinson, 2010).

Power of Authentic Learning

I (Harapnuik) have come to realize our perceived lack of time and how we attempt to control all the variables to deal with this lack of time are one of the main enemies or main reasons why we fail to implement authentic learning opportunities. Our lives are hectic enough without unexpected intrusions on our time. I have been reflecting on how I react to interruptions or unexpected situations that have the potential to make me switch from taking the time to give my learners ownership through authentic learning opportunities or to fall back into the comfort of command and control and simply tell my learners what they need to do.

Earlier this year the utility company had scheduled the replacement of a power transformer in our neighborhood and I had to arrange to work away from my home office because no power means no internet. I was reminded of how unproductive I am when I work at coffee shops and libraries. You just can’t get up and go to washroom, get a drink of water, or leave your space without making sure that you secure your laptop, phone, and iPad in some way. The distractions in these public spaces are overwhelming for people like me who have a history of ADHD. I also do a lot of web-based video conferencing and other bandwidth intensive work so when my Zoom conference crashed when the morning coffee break rush came into the coffee shop, I was reminded that the WIFI networks in these public spaces are not robust enough to handle these types of demands.

Moving to the local library wasn’t a good option because not only is the library network as slow as the coffee shop there is the added concern of making too much noise. Whispering in a Zoom conference doesn’t work that well. Fortunately, the power

company had the power back on according to their proposed schedule, but I still lost the day.

Losing a full day's worth of work meant that I really didn't have any wiggle room left in my week, so I knew I had to buckle down and be productive the next day. My hopes of productivity were dashed when I received the late evening text message from my older son, Levi, "the brakes are locking up on my truck." The next morning, I woke the boys up very early and we discussed our options for fixing the truck. For professional Downhill mountain bike racers, a truck is an indispensable piece of equipment that they rely on each day. We were a few weeks into the Enduro and Downhill race season which means there is a race every weekend for the next six months. The truck is not only used to pull the race trailer to races on the weekends, we use it to shuttle up and down mountain park and forestry maintenance roads during the daily training my boys do during the week. Losing a day of training to mechanical failure is not an option so we had to fix the truck quickly.

After reviewing a few YouTube videos, the boys came up with a plan of action and started to diagnose the problem, narrowing things down to determine on which wheel or wheels the brakes were freezing and the specific culprit: the caliper, brake hose, or other potential issues. In less than 30 minutes the boys had determined that the caliper on the rear driver's side wheel was more than likely the problem. Levi made a quick phone call to a mechanic friend who confirmed that due to short cuts in the manufacturing process the pistons on calipers fail often and without any warning on this particular truck, so he confirmed my boy's diagnosis. Another quick phone call to the local parts store confirmed that a replacement caliper was available and since Levi was scheduled to work that day my younger son, Caleb, agreed to replace the caliper on his own. I had to head out for a meeting and wouldn't be available to help.

Fortunately, both my boys have grown up having to solve authentic problems like these on a regular basis. In addition to being professional athletes they both are highly skilled bike mechanics so they both understood that caliper on the truck worked on the same principle as the calipers on their race bikes; the main differences was the size and the way it was connected. Being able to transfer their knowledge from one problem to the next is the result of years of having to solve authentic problems.

This is where I finally get to the issue of how time and control can be the primary deterrents to using authentic learning.

Because the power outage put me behind a full day, we had a shuttle training session scheduled, and race preparations for the next race when the issue with the brakes on the truck came up, my first reaction was to call the local repair shop and pay extra for them to rush the repair that same day. Fortunately, I have been using authentic learning opportunities with my boys ever since they have able to walk so I also recognized the power of this learning opportunity. If we didn't need to have the truck ready to go in less than 24 hours I would have left the brake problem to the boys and they could have taken their time to work out the problem completely on their own. When you add a sense of genuine urgency or crisis to any situation the stress that inevitably results gets in the way of clear thinking. Add in the other dynamic of two brothers in their late teens/early twenties the potential for tempers to soar and arguments to erupt could further add to the time stress and time delay.

I really didn't have the time to spare to help my boys through this latest issue but I also realized that learning opportunities like these must be exploited, so I simply helped coordinate the planning stage of the repair. I didn't take control of the diagnosis and repair but put myself into the situation just enough to help dissipate the frustration and anxiety that I could see both my boys were feeling. As I was doing this I was careful to still make sure that my boys were running the situation and had full ownership. Once again, I could have saved myself a few minutes and everyone else a few hours and just issued orders and since my boys are very respectful they would have complied. I also recognized that this would not do them or our relationship much good so I fought the urge to be the task master and simply observed and coached where they needed coaching.

The brake caliper was replaced with only some minor delays due to the parts shop giving Caleb the wrong caliper. Another lesson learned—never leave the parts shop without checking that they gave you the right part.

When I look back at the situation all that I really did was act as a buffer between my two sons and became a sounding board that they could use to bounce off their ideas as they worked through the problem. My presence in this situation simply put them into

a position where they knew they had to treat each other with respect and not let their frustrations and emotions get in the way—we were all feeling the stress of running out of time.

I now recognize that this was a turning point in my boy's relationship and a pivotal moment in their year of racing. Levi's respect for his younger brother Caleb grew because Caleb stepped up and fixed Levi's truck. As most younger brothers will confirm having the respect and trust of an older brother is extremely important so when Levi thanked Caleb for what he did, it was clear to me that this was more than just a repair job.

The training runs, and the shuttle experience were different the next day—the boys were having more fun and laughing more with each other and they had an ease with each other that I had seen before, but only intermittently. This ease continued into their preparation day before leaving for the weekend race. In the past, preparing their equipment and packing the race trailer often resulted in some stressful exchanges because the boys would lament that neither were respecting each other's space or there would be a senseless argument over a seemingly small or insignificant issue. This race preparation day was different. There was a lot more laughter, joking and teasing and the collaboration between the boys was on a better level. The whole race weekend had a different feel because the boys took charge of everything. While some may argue that I may be reading much more into this than I should, I believe that this weekend was a key turning point where my boys really came together as a team and became responsible and independent young men who took full ownership of their racing.

For the rest of the race season the boys were fully in control over all aspects of their racing—they did everything on their own. Rather than go along with the boys to the races my wife and I would drive up the night before or the morning of the race depending on its location and there were couple very distant races that we didn't even attend. Giving up this control and even stepping back far enough to get out of the way was extremely important to the character development of my boys and their racing careers.

I am still very involved in Levi and Caleb's lives but in a different way. I don't get the text messages about "the brakes are locking up on the truck" any more but do get

invites to come out and see the latest fix or modification that my boys have made on their vehicles, bikes, equipment or shop. When my boys are exploring major endeavors, they do ask me for my advice and input, but I am one of many sources they use to make their decisions. My role has shifted significantly from being a facilitator and coach to now being one of their mentors, but I still get to have an influence on their lives. One of the benefits and challenges in being a parent is that you remember when your children were fully dependent on you for everything. It is a benefit because you can see how much they have grown, and you can also see how they are embracing their potential. It is also a challenge because you still remember them needing you to do everything for them and you fight the temptation to be needed in that way by trying to continue to do everything for them. Most parents would agree that giving up control and allowing your children to grow into adults and take full ownership of their lives is an ongoing challenge.

Giving Up Control

This is like the challenge that we face as teachers. We need to help our students take ownership of their learning and grow into people expressing their full potential. But the demands of meeting state standards, standardized testing, college preparation, ACT preparation, credentialing exams, program requirements and so many other assessment forces put us in a position where we tend to simply cover the content. We know how to prepare our learners to meet the standards and since our teaching is all too often judged by test scores or how our students meet those standards we tend to take the least lane of resistance and that will make everyone look good. By staying in full control over the transfer of content, or even if we use some form of active learning, we can manage everyone's time and control our students well enough to meet or exceed the standards. But, if we stay in control of their learning are they really learning? There is better way.

Most people will acknowledge that learning by doing, more formally called authentic learning, is very effective in helping learners to gain real world skills and abilities. Piaget spent several decades researching the development of learners and his research confirmed that concrete experiences were not only fundamental to the learner’s development these authentic opportunities are the prerequisites to effective

learning (Ginsberg & Obber, 1969). We also know that if we fully embrace projects and authentic learning opportunities then we can really prepare our learners for the future because they will learn how to learn and transfer or apply what they have learned to many other aspects of their lives. But this takes more time and it also means that we must give up some of our control; perhaps much of our control. Giving up control doesn't mean that we stop being involved in the learning process it just means our roles change from being the presenter of information, to being a learning facilitator, a coach, and then a mentor. Ironically, the more control we are willing to give up the more time we will have to really influence our learners as mentors.

We can easily find ourselves mired in the role of presenter because shifting from being a presenter of information to a facilitator takes more time. But as soon as we start to move from being a facilitator to a coach we will find that this takes less time because the learner is taking more responsibility for their learning. When we get to the point of mentoring our learners we will have freed up enough time to help guide our learners to go much deeper into their own learning.

We finally come full circle on the key issue that when we are pressed for time we take control of the learning environment and tell the learner what they need to do or know—it seems to be easier or more efficient for us to do it this way. If we look back at the brake repair example, if I would have given into the stress of the situation and told the boys what they needed to do fix the problem or simply had the repair shop solve the problem my boys would not have had the opportunity to work through a key problem that impacted the development of their lives in a significant way.

At the time that this was happening I didn't have the luxury of hindsight and the ability to look back as I am now and see the significance of this authentic learning opportunity. I do recall struggling with the time pressures and almost gave into the struggle but fortunately, I had built up a habit of continually looking for authentic learning opportunities to help my boys grow into the young men that I wanted them to become. At the time that this was happening I didn't see the full significance that I now see, but I did know that if I took the extra time and added another authentic learning opportunity to the stack of authentic learning opportunities that I had built up over their lives that it would be better for them in the long run. It just so happened that this authentic learning

opportunity was a tipping point that set off a chain reaction that I now see has made a huge difference in their lives.

When I look back at this situation and calculate the time I could have saved by having Levi take his truck into the shop and compare that to the time I spent coaching my boys through the repair I realize now the authentic learning opportunity only took about 45-60 minutes of my time. The whole scenario from the initial diagnosis to the final repair was completed in less than three quarters of a day. My boys spent more time on the project than I did, and Caleb spent most of the time because he did the actual repair.

If We Take the Time

As teachers, if we knew that spending an extra 45-60 minutes on a project could make a life changing difference in the development of our learners, wouldn't we spend that extra time? We don't know which authentic learning opportunity will be the one that makes the difference in a learner's life or the one that could be the tipping point that will move them forward in their path of lifelong learning. But we can be certain that by not taking that extra time to engage our learners in authentic learning opportunities we won't be adding to their stack of authentic learning opportunities and we won't be seeing any type of a tipping point or transformative aspect in their learning. We will have simply prepared our learners for the test and ignored preparing them for life.

How do you make CSLE+COVA work in your situation?

You need to create a significant learning environment (CSLE) in which you give your learners, choice, ownership, and voice through authentic learning (COVA) opportunities. We will be continually repeating this statement and our core proposition of choice, ownership, and voice through authentic learning throughout this book and will spend significant time explaining the CSLE+COVA synergy in greater detail in subsequent chapters. This section is intended to provide an overview and context for how to make CSLE+COVA work for you as a resource you can use to help you work through these simple but profound ideas that we will expand on.

We will be using the acronym CSLE+COVA to represent this synergy. It is extremely important that you recognize that CSLE is a synergy and you need to consider and work on all the parts of the significant learning environment

simultaneously. It is also extremely important that you recognize that COVA also is a synergy and the authentic learning opportunity is what you use to give your learners choice, ownership and voice in their learning. We recognize that there does have to be some sort of a starting point and a minimal process that one can follow to create that significant learning environment where you will give your learners, choice, ownership, and voice through authentic learning opportunities, so we are offering the following:

1 - Start with the Bigger Picture

CSLE – Step back far enough to look at and consider how to incorporate all factors that make up the whole learning environment:

- Student centered
- Teaching roles – Presenter, Facilitator, Coach, Mentor
- Ubiquitous Access & Social Networking
- Instructional delivery formats – face2face, technology enhanced, blended, online
- Instructional Design
- Assessment & Evaluation
- Academic Quality & Standards
- Support & Infrastructure

Key resources to consider:

Chapters 3, 4, 6 & 7 in this book

CSLE+COVA - http://www.harapnuik.org/?page_id=6988

Harapnuik, D. K., Thibodeaux, T. N., & Cummings, C. D. (2017). Using the COVA learning approach to create active and significant learning environments. In Keengwe, J. S. (Eds.), Handbook of research on digital content, mobile learning, and technology integration models in teacher education. Hershey, PA: IGI Global.

Thibodeaux, T. N., Harapnuik, D. K., Cummings, C. D., & Wooten, R. (2017). Learning all the time and everywhere: Moving beyond the hype of the mobile learning quick fix. In Keengwe, J. S. (Eds.). *Handbook of research on mobile technology, constructivism, and meaningful learning.* Hershey, PA: IGI Global.

2 - Shift into a Learner's Mindset

This type of change begins with you and must be lived and modeled:

- Adopt a learner-centered perspective with a primary focus on learning how to learn.
- Explore and adopt a wide set of constructivist principles and create a philosophy of learning.
- Create the learning environment which will help them to learn how to learn and to make meaningful connections.
- Adopt and model the growth mindset.

Key resources to consider:

Chapters 2, 3, 7, 8, 9 10 & 11 in this book

Dewey, J. (1916). *Democracy and education: An introduction to philosophy of education*. New York, NY: Macmillan.

Dweck, C. S. (2006). *Mindset: The new psychology of success*. Penguin Random House.

Jonassen, D. H. (1999). Designing constructivist learning environments. In C. Reigulth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (Vol. 2, pp. 215–240). New York, NY: Routledge.

Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer*. New York, NY: Basic books.

Piaget, J. (2002). *The psychology of intelligence* (Vol. 92). New York, NY: Routledge.

Piaget, J. (1964). Development and learning. In R.E. Ripple & V.N. Rockcastle (Eds.), Piaget Rediscovered: A Report on the Conference of Cognitive Studies and Curriculum Development (pp. 7–20). Ithaca, NY: Cornell University.

Ginsburg, H., & Opper, S. (1969). Piaget's theology of intellectual development: An introduction. Englewood Cliffs, NJ: Prentice-Hall.

3 - Shift your role from Presenter-> Facilitator-> Coach-> Mentor

You must be willing to go beyond the rhetoric or talking the talk of being learner centered and give back control of the learning to the learner by shifting your roles so that you can walk the walk and become learner-centered.

- Shift our roles as teachers from being presenters of information and work toward becoming facilitators of learning, learning coaches and life mentors.
- Shift the focus from teaching to coaching and mentoring learner in learning how to learn
- We are actively involved in all these stages but our roles and responsibilities shift and the more ownership of the learning we give back to the learner the more transformative it will be for the learner.

Key resources to consider:

Chapters 7 & 8 in this book

Priest, S. (2016). Learning & teaching [Web log post]. Retrieved from http://simonpriest.altervista.org/LT.html#ES

4 - What's Your Why

Simon Sinek argues that people don't buy what you do they buy why you do it.

- Acknowledge that the head won't go where the heart hasn't been.
- Start from the inside and work out to focus on your own why.
- Model and promote the why in everything that you do.
- Accept that authentic learning opportunities prepare our learners for life and equip them to pass the test in education systems or in life — it doesn't work the other way.
- If we focus first on the why, the how and the what fall into line, and so will the tests.

Key resources to consider:

Chapters 5, 8 9, 10 & 11 in this book

Sinek, S. (2009, September 28). Start with why -- how great leaders inspire action [Video file]. Retrieved from https://youtu.be/u4ZoJKF_VuA

Sinek, S. (2011). Start with why: How great leaders inspire everyone to take action. Chicago, IL: Penguin UK.

5 - Design the Significant Learning Environment

To create a significant learning environment, you must first design it.

- Backward design principles drive the instructional design process.

- Starting with the end in mind - the establishment of a big hairy audacious goal (BHAG) for your learners is the first step in identifying the future in which you are preparing your learners.
- Authentic learning opportunities provide the context for learning outcomes.
- Align outcomes, activities and assessment using Fink's taxonomy and the 3-column table.

Key resources to consider:

Chapters 4, 5 & 6 in this book

Harapnuik, D. (2017) CSLE. Retrieved from http://www.harapnuik.org/?page_id=849

6- Start Stacking Authentic Learning Opportunities

The notion of stacking authentic learning opportunities may be best understood by examining how we stacked the following authentic learning opportunities/projects in the DLL program. We point out to our DLL students that by the end of the program they will have created or built the following for their organization:

- Innovation plan & implementation strategy
- Organizational change strategy
- Learning environment
- Instructional design/backward design course map
- Measurement strategy
- Digital literacy strategy
- Online/blended course
- Paper/Article/Conference presentation
- Professional development/learning strategy
- ePortfolio
- Personal learning networks (PLNs)

Because the above authentic components have been created within the learner's own learning organization all these individual authentic learning opportunities have been built or stacked upon the other.

Key resources to consider:

Chapters 7, 8, 9, 10 & 11 in this book

Harapnuik, D. (2017) CSLE+COVA. Retrieved from http://www.harapnuik.org/?page_id=6988

7 - Giving your learners Choice-> Ownership-> Voice

COVA - Giving your learner choice, ownership, and voice through authentic learning. You can't have one without the others.

- Authentic learning opportunities are required as the starting point for COVA.
- Research confirms that each component must be present and equally important.
- Genuine choice requires authentic learning opportunities that are important to the learner.
- Genuine choice can still happen within the context of guided discovery.
- Ownership requires that the learner have choice over all aspects of the learning – within the context of guided discovery.
- Ownership requires that the teacher give control over/back to the learner.
- The more uncomfortable the learner is with learning the more guidance may be required.
- Voice is realized and is authentic when the learner is creating, writing, presenting and sharing with their audience and not for their instructor.
- Voice is a part of the metacognitive process where learners think about their thinking and reflect on their learning.
- Voice is realized through the ePortfolio and a wide assortment of authentic plans, strategies and related documents, resources and presentations share with their audience.
- More experienced and high achieving students are proficient at doing traditional school and will resist being asked to choose, take ownership, and share their voice.

Key resources to consider:

Chapters 7, 8, 9, 10, & 11in this book

Harapnuik, D. (2017) CSLE+COVA. Retrieved from http://www.harapnuik.org/?page_id=6988

Harapnuik, D. K., Thibodeaux, T. N., & Cummings, C. D. (2017, March). *Student perceptions of the impact of the COVA approach on the ePortfolios and authentic projects in the digital learning and leading program.* Paper presented at the Society for Information Technology in Teacher Education (SITE), Austin, TX. Retrieved from https://www.learntechlib.org/p/177440/

Thibodeaux, T. N., Harapnuik, D. K., & Cummings, C. D. (2017, May). Learners as critical thinkers for the workplace of the future: Introducing the COVA learning approach. *Texas Computer Education Association TCEA Techedge, 2*(2), 13. Retrieved from http://www.tcea.org/about/publications/

Thibodeaux, T. N., Harapnuik, D. K, & Cummings, C. D. (2017). Factors that contribute to ePortfolio persistence. *International Journal of ePortfolio*, *7*(1), p. 1-12. Retrieved from http://www.theijep.com/pdf/IJEP257.pdf

Modeling CSLE+COVA

While we have outlined seven steps or things you need to do to make CSLE+COVA your own we must remind you that the CSLE+COVA is a synergy and doesn't really fit into a linear process. We encourage you to review all seven steps and see how they fit together. We also encourage to make CSLE+COVA your own so if you have already adopted a learner's mindset and are well versed in constructivist learning approaches and have been developing your growth mindset you can obviously move onto the other parts of CSLE+COVA.

Making CSLE+COVA your own means that you should live and model this full approach rather than simply apply parts of it. Students in the DLL program who achieved success with the CSLE+COVA quickly were the ones who trusted the process and took ownership of their learning. In the DLL Capstone course reflections, one of the most common student laments was that they did not fully embrace CSLE+COVA and take ownership of their learning sooner.

We also encourage you to connect with others as you begin to work toward creating significant learning environments by giving your learners choice, ownership, and voice through authentic learning opportunities. If this approach is going to change your learning environment and change your student's lives then you will want your students to have a similar experience when they leave your classroom, online course or

other learning environment. Working with others will give you the opportunity to share and model what you are doing, and in the process you will not only find your voice, you will also clarify your thinking and transform your own learning and transform your learning environment.

Remember WHY you are doing this. By creating a significant learning environment in which you give your learners, choice, ownership, and voice through authentic learning opportunities you can improve the world one learner at a time.

Chapter 4 Mapping Your Learners Journey

> If someone needs directions, don't give them a globe. It'll merely waste their time. But if someone needs to understand the way things are, don't give them a map. They don't need directions; they need to see the big picture (Seth Godin para. 1).

The Map to CSLE+COVA

We believe that most teachers, instructors or professors want to create significant learning environments but the day to day whirlwind of teaching, planning, meetings and life in general leave little time to pour through the overwhelming amount of teaching and learning literature to see what really is effective. As a result, there is a tendency to simply pick up on the trend or quick fix of the day and try to at least implement some activity that is highlighted in the popular press and social media. We have been pouring over the teaching and learning literature for several decades and have spent several years developing and refining what we now call the CSLE+COVA approach in K-12, undergraduate and graduate learning environments. Most recently we have used the CSLE+COVA approach in the Master of Digital Learning and the Honors College at Lamar University. Over the past two decades we have been using the fundamental ideas in the CSLE+COVA approach in dozens of courses with thousands of students. We are finally pulling together all our ideas in one place under the unified name of CSLE+COVA.

As constructivist educators, we believe that it is our responsibility to not only create a significant learning environment where the learner has choice, ownership, voice, and through authentic learning, it is also our responsibility to guide learners through their personal development journey and help them take ownership of their learning. Therefore, our goal with this resource is to provide you a map that continually points to how you can implement CSLE+COVA. While our priority is to make it as easy possible to implement CSLE+COVA we wish to emphasize that, in our mapping analogy and in real life, the people who have the most success or least stressful experiences in getting to their destination are the ones take ownership of their journey, keep the final destination in mind, and look to key landmarks as they go along. In contrast those who simply rely on Google or Apple Maps step by step instructions and those who are looking for step by step instructions on all aspects of the CSLE can quickly run into

difficulty when the situations on the ground change. The following mapping analogy that expands on this notion is an adaptation of a blog post on a co-author's website (Harapnuik, 2015).

When I (Harapnuik) think about going on any sort of trip I turn to Google Maps. Unless I have been to a destination several times, I will enter the destination name or address and then Google will show me what they believe is the best path to my destination. I often preview my trip on my laptop so that I can manipulate my options from a bigger perspective and once I have the best route laid out I identify the key stages of the journey and transfer the map to my iPhone.

Experience has revealed that identifying the key landmarks and stages is a very important part of the process. Because I live in Vancouver, one of the most traffic congested cities in North America, it is not uncommon to have a traffic accident, construction, or an event force me to change my route without warning so having previewed the key stages and landmarks enables me to adjust my course with a lot less stress and anxiety then if I simply relied on Google's step by step navigation. My younger son, Caleb, and I like to look at the big picture to identify the key stages and we are able to make adjustments to our travel much easier. In contrast my wife and older son, Levi, prefer to rely on Google's step by step instructions and not have to think about the trip.

Guidance vs Step by Step Instructions

While the convenience of Google's step by step instructions cannot be denied it does come at a cost. When you depend on Google to tell you where to go at every turn you aren't learning the route. For example, Levi tends to rely on Google's step by step instructions so when he isn't using Google he will often ask his brother or I for directions. He wouldn't need to do this if he would take ownership of the learning process by looking at the route, identifying the key stages, and fully engaging in learning where he was going. In contrast, it is not uncommon for Caleb to be able take a variety of alternatives to a destination without even having to refer to the map because he has learned how to navigate the city rather than just rely on Google to tell him where to go.

This dependence on step by step instructions or having someone or something tell us exactly what we need to do is paralleled in the educational setting. If our learners

are not fully engaged and aware of where they are going and why they are going there, they will not be engaged in recognizing the stages or landmarks along the way and will simply rely on step by step instruction to satisfy the assignment requirements without having to really think about the process. If they aren't thinking about the learning process, we must ask if they are really learning? I am in good company with people like John Dewey and Jean Piaget when I say that they may not be learning. In Democracy and Education, Dewey (1916) argued learning or growth was the result of quality of mental process not the production of right answers. Piaget's research confirms that those mental processes must first be preceded with concrete experiences if we really expect learners to learn and develop (Ginsberg & Obbers, 1969).

Guided Discovery with Finks Taxonomy

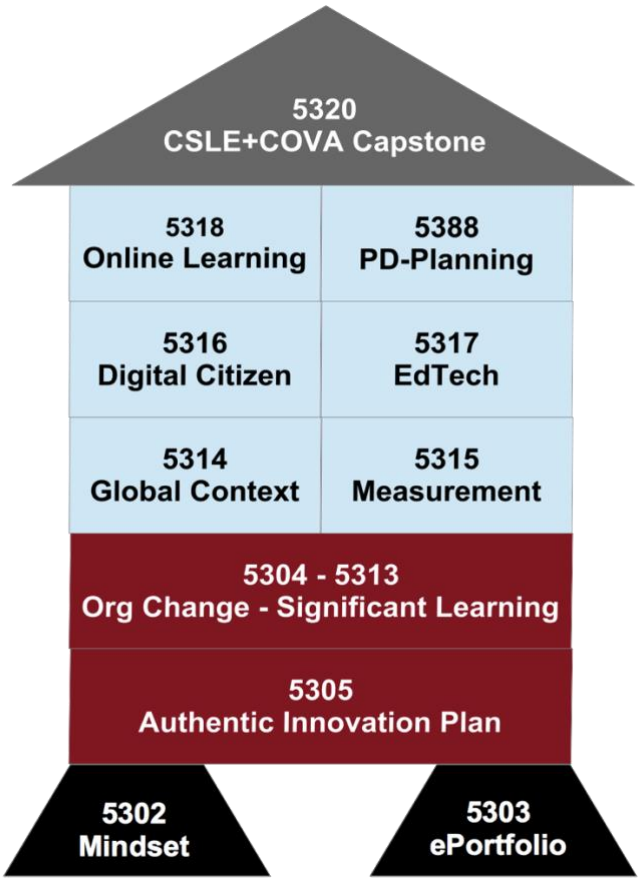
So how do we ensure that our learners are learning and growing and not simply regurgitating the right answers? We must go back to the starting point in this synthesis and focus on creating significant learning environments where the learner is given choice, ownership, and voice through authentic learning opportunities.

In the DLL program, we use a program map (see Figure 1) to help our learners understand where they are in the program and keep on reminding them that by at the end of their learning journey they will become digital leaders who can lead organizational change using technology innovations as a catalyst for enhancing learning. Following the mapping analogy, the program map points to the major stages on their journey and the individual course maps point to the more specific or localized parts of their learning journey. For the course maps, we use the backward design principles from Dee Fink's Taxonomy of Significant Learning (Figure 2) and create a 3-column table (Figure 3).

When you add the notion of Collin's (1994) Big Hairy Audacious Goal (BHAG) to Finks table you provide your learner their destination in this stage of their learning journey. Fink's ideas also align with the mapping analogy because he encourages us to think in terms of who the learner will be or where the learner will be at the end of the course. This type of thinking is analogous to the final destination in our map/travel discussion above but the BHAG perspective adds the affective factors that address why the learner will want to go there. Similarly, the learning outcomes are the stages or

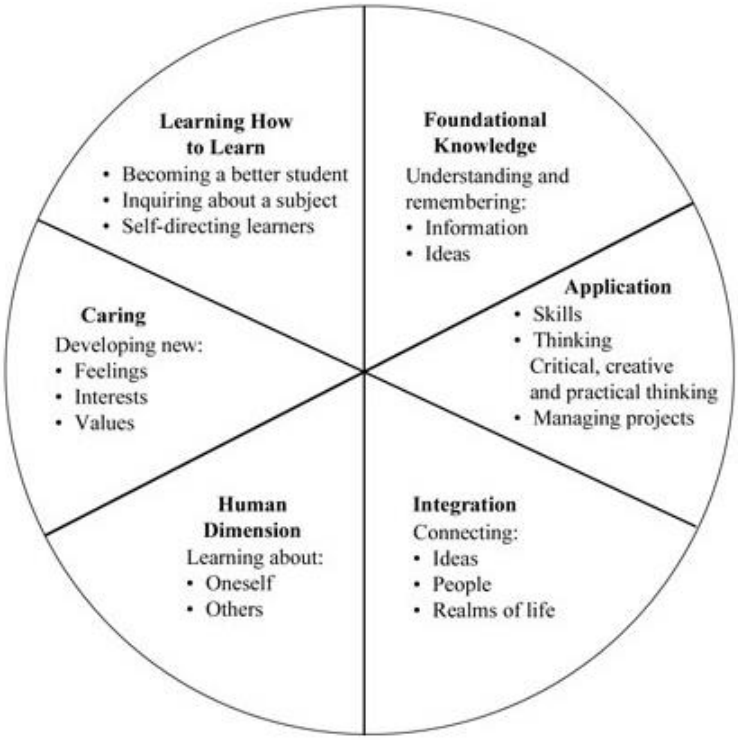
landmarks along the way. The activities section of the Finks model is where some of the more detailed instructions are that are necessary for the journey.

Figure 1: DLL Program Map



At this point, some of you may be thinking that I am totally opposed to step by step instructions. I am not; there are times when the I am on the freeway in heavy traffic and I turn on the Google step by step instructions so that I don't miss my exit or other times when I just can't see the context of where I am going, and it just makes more sense to follow Google's direction. The key is that I don't rely on the step by step but rather use it when it is most beneficial, and I also use it within the context of knowing the bigger picture and to help me recognize where the map is helping me to go. The map is one of several resources that help me on my journey.

Figure 2. Fink's Taxonomy of Significant Learning (Fink, 2003 p. 30)



The assessment part of Fink's 3 Column table is also important to the learning journey and to our analogy because to a certain extent assessment can be compared to the speedometer, and other gauges in the car and the road signs that confirm that I am on the right track and that my car will get me to my destination safely. Unfortunately, this is where the analogy really breaks down because the notion of standardized testing really doesn't fit into the map and journey example. Then again, I would argue that standardized testing really doesn't fit into our learning environments either…but this is a whole other discussion.

The 3 Column table is part of that bigger picture or map that I use to guide the learner to a particular stage in their learning destination. The learning outcomes are those landmarks that I give the learner and encourage them to seek out as they go along in their learning journey. Well-designed activities should focus on active learning, authentic projects and other learning processes that still address the bigger picture and encourage ownership of the learning. There are times when some step by step instructions/activities are necessary to scaffold a learner and to get them to the point in the journey where they take back the control of the learning process. The key is to

remember that it is the learner's journey and if you adhere to any form of constructivist thinking then we must acknowledge that we are only the guides on the side.

Figure 3. Fink's 3 Column Table (Fink, 2003)

Course Goal:
Learners will identify and incorporate constructivist theories to create and implement significant digital learning environments.

Learning Outcomes:
Aligning learning outcomes/goals with activities and assessment:

Learning Goals	Assessment Activities	Learning Activities
Foundational Learners will analyze how a shift to a more holistic view of learning can bring about a change in our learning environments.	Reflection on New Culture of Learning Discussion	Review & discuss the Creating Significant Learning Environment Resources. Read New Culture of Learning
Application Learners will analyze and evaluate student-centered digital learning environments. Learners will create personal learning philosophy.	Annotated Bibliography Learning Philosophy Discussion	Review, articles, videos and other resources on student-centered and digital learning. We can add additional videos and articles to the resources site.
Integration Stage 1 Learners will analyze their learning environments and determine situational factors that will impact learning. Learners will create effective learning goals/outcomes and effectively align their learning goals/outcome, assessment and activities.	Learning environment and situational factors outline Learning goals outline Discussion	Read Fink's, Self-Directed Guide to Designing Courses for Significant Learning and complete the related planning documents.
Integration Stage 2 Learners will develop a plan for a student-centered significant digital learning environment.	Course/program plan Discussion	Develop a plan for creating a student-centered significant digital learning environment. This can be a course/program plan, a term plan or other authentic project.
Human Dimensions/Caring Learners will analyze the role a growth mindset has on creating effective learning	Reflective application of Dweck's mindset theory to significant learning environments.	Read Carol Dweck's, Mindset: The New Psychology of Success

The best guides are the ones who continually point you to most effective way to use the map and encourage you to take ownership of the journey. Our goal with this book is to provide you a map that continually points to how you can take ownership of your learning journey, how you can implement CSLE+COVA and how you can recognize those key stages and landmarks that you need to use to get you to your destination.

The final destination that we are guiding you toward in this book is your creating a significant learning environment in which you give your learners choice ownership and voice through authentic learning opportunities.

Chapter 5 CSLE+COVA Synergy

> A group of blind men heard that a strange animal, called an elephant, had been brought to the town, but none of them were aware of its shape and form. Out of curiosity, they said: "We must inspect and know it by touch, of which we are capable." So, they sought it out, and when they found it they groped about it. In the case of the first person, whose hand landed on the trunk, said "This being is like a thick snake." For another one whose hand reached its ear, it seemed like a kind of fan. As for another person, whose hand was upon its leg, said, the elephant is a pillar like a tree-trunk. The blind man who placed his hand upon its side said, "elephant is a wall." Another who felt its tail, described it as a rope. The last felt its tusk, stating the elephant is that which is hard, smooth and like a spear (Indian Parable).

Power of Significant Learning Environments

While I (Harapnuik) am not a blind man I had all too often been approaching learning as if I could only see one piece of the learning puzzle at a time. Several years ago, a visit to the Whistler Air Dome, commonly referred to as the foam pit, reaffirmed my belief in the importance and power of learning environments and has caused me to take a more significant stand on the role that the environment and a broader set of circumstances play in learning. Consider the following:

My boys Levi and Caleb decided that they needed to add backflips, tailspins, and host of other tricks to their mountain biking skillsets and they knew a visit to the foam pit would give them the safest and most pain free way of mastering these stunts. For those who aren't familiar with downhill mountain biking and racing, dirt jumping, slopestyle and other forms of extreme biking there is one unfortunate reality that a rider constantly faces. It is not a matter of, if one will get hurt, but when and how badly will the rider be injured. So, when a rider can work on dangerous stunts like back and front flips, tail whips, x-overs and more and potentially eliminate or lessen the chance of getting hurt they will jump at the chance (pardon my pun).

You also need to understand how the Air Dome works. Outside of a few short (4-5 day) bike camps there are no formal instructors or instruction. Even in the bike camps the instruction that happens in the Air Dome is less formal and really should just be viewed as informal learning, peer-based instruction, or coaching. In this environment, more experienced riders readily offer advice and direction directly or while reviewing video. Most riders will comment, encourage and cheer on other riders. Success is

shared by the whole group through cheers and other accolades when a rider finally makes a stunt. Failure is also shared by the group as riders groan with their peers who have blown a stunt and are suffering the consequences. Peer instruction and support happens on its own with no formal process. The social dynamic is a very significant part of the learning environment.

Unfortunately, pictures (Figure 4) do not fully reveal the scale and intensity of the stunts and the space. The main starting point for the foam pit is a very narrow platform 25 feet above the ground. The ramp that the riders hit goes from flat to near vertical in just over 6 feet. The acrobatics are taking place approximately 8-12 feet above the foam pit and when you add the 6-foot height of the foam pit it is not uncommon for a rider to be performing a stunt 14-18 feet above the ground. This is a high risk and high reward environment. I trust that this lead in has provided you enough of a perspective to appreciate what my boys were doing.

After making progress on tail whips, 360s and a few other stunts my boys started working on the backflip. This was also a point where they started running into problems and after about an hour of failed attempts they started to look for answers. I had been observing and recording their attempts and after reviewing their videos we all agreed that they were not getting enough rotation. All my coaching and instruction wasn’t working—we all knew what needed to happen, but it just wasn't coming together. This is where the power of the learning environment and peer-based collaboration really kicked in.

While my younger son Caleb was waiting to drop in at the top of the ramp I noticed that he was engaged in a discussion with an older rider, a young man either in his late 20's or early 30’s. As I observed the discussion from afar I could see that the older rider was showing Caleb what he should be doing to get better rotation. I also saw Caleb imitate the actions of the older rider. My older son Levi was also listening to the discussion while waiting off to the side on the ramp. After a few short minutes, Caleb dropped in and got the full rotation that he needed to do the backflip. Levi followed him and was successful. All the other riders hooted and hollered to acknowledge my boy’s successful stunts. This is the power of a significant learning environment.

Figure 4: Whistler Air Dome ramp and foam pit

Creating the Environment for Learning

I have been arguing since the mid 90's that learning is dependent upon the creation of a significant learning environment and the immersion of the learner in that environment. A learning environment can be the Whistler Air Dome, a classroom, an online course or anywhere for that matter where learning can take place. I have also argued that learning is the responsibility of the learner and that teachers are not able to make a student learn. The best that teachers can do is create or establish the environment (Bruner, 1960; Dewey, 1916; Jonassen, 1999; Piaget, 1964;) immerse the student in that environment and then motivate and inspire the learner to take ownership of their learning. When learning takes place, a teacher is just the facilitator, coach, or mentor who helps the learner navigate the learning environment and the learning process.

This leads us to the importance of looking at the whole environment or in another term the bigger picture.

Why a Synergy

CSLE+COVA is the synergy of creating significant learning environments by providing learners choice, ownership, and voice through authentic learning opportunities. All these components come together to form a significant learning environment. Unlike many other factors in education that teachers cannot control like demographics or budgets, we do have control over the design of our learning environments. The key is that we take the whole learning environment into account and not just our classroom, lab, campus, or our online course. We must consider the learner’s world and circumstances as well. We just don't apply this at the course level; we need to purposefully design the learning environment for entire programs for this significant learning environment to be most effective.

There are several reasons why it is crucial to apply this to more than just one course and ideally to an entire program. First, if this approach is as effective as our research is showing (Thibodeaux, Harapnuik, & Cummings, 2018a, 2018b) and the research on individual components of the approach has confirmed, then it would only seem fair to the learner to extend the approach beyond a single course and to an entire program or course of study. Second, the notion of a significant learning environment

requires that we look beyond an individual course and see how that course fits into a bigger or broader context. Finally, and along similar lines, we know that making meaningful connections requires that we look at a big enough picture to see how all those connections work collectively. An individual course is seldom, if ever, a stand-alone entity and almost always fits into a bigger and broader curriculum view. Unfortunately, this broader view is all too often relegated to the curriculum specialists or administrators who either mistakenly believe that most instructors have no need to see the bigger picture, or due to a lack of experience or knowledge, would not be able to understand the bigger picture.

Looking at the bigger picture and considering the whole learning environment is an important aspect address if we wish to significantly improve our educational systems. We have a long history of calling for radical educational reforms and the complete rethinking of our approach to teaching and learning (Bruner, 1960, 1961; Dewey, 1916; Papert, 1993; Piaget, 1964; Watson & Reigeluth, 2008; Zhao, Zhang, Lei, Qiu, 2016). We have also seen that most of these reform proposals have not made a significant impact on our learning environments. Renowned thinkers like Papert (1997) have recognized that the actual redesign of our educational systems has not worked and it more than likely will not work in the future, so Papert suggests that it may be more prudent to concentrate on creating the necessary conditions for a Darwinian evolution of our educational systems. Since evolutionary educational change is going to take some time, we must point to the factors that need to be addressed to contribute to this evolution.

Perhaps all the pieces to the educational puzzle have been in front of us all along and all we need to do is step back far enough to see the whole picture. If we step back far enough to see how all the pieces (Figure 5) fit and how creating significant learning environments by giving learners, choice, ownership and voice through authentic learning opportunities work together (Figure 6), we may not need the politically motivated reforms that are all too often called for. We can also break the cycle of moving from one hot topic or trend of the day. Finally, we will then be able to eliminate the pendulum swings as we move from approach to approach when old ideas and theories get repackaged with new terminology.

Figure 5. CSLE Pieces

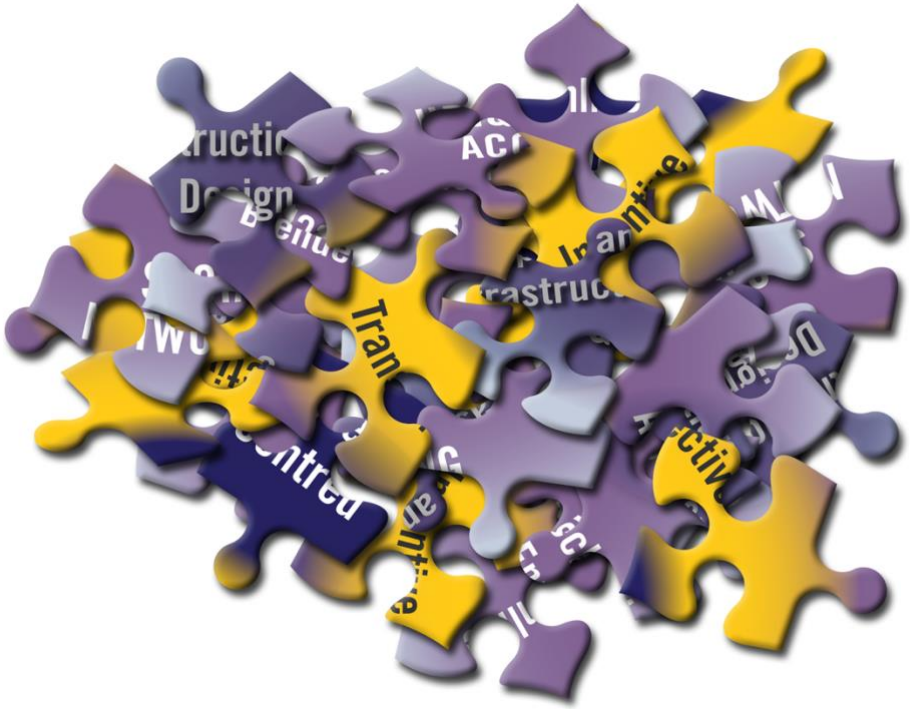


Figure 6: CSLE + COVA

Chapter 6 Passion Begins with Why

Finding your why is a process of discovery, not invention (Sinek, 2009, p. 214).

If We Don't Know Why

Think about the last time you did something you were passionate about. What was your inspiration? What determined whether you completed the project? I (Thibodeaux) remember a when I was a youngster and my mother asked me to pull weeds and mow the grass in our yard. I believed she was simply to trying to keep me busy. I never once considered that she was trying to fulfill something she loved - gardening. Her purpose was to have a beautifully landscaped rock garden with rocks and plants that represented every state we travelled through on our family trips. To do this, she had to love gardening and collecting rocks, or the project would be fruitless. I did not share her love for gardening and landscaping and as a matter of fact, I still do not enjoy it today. When my mother instructed me on what to do, I did not perceive the value she had in gardening, nor did I have an opportunity to express my opinion. I could not see beyond my lack of desire for gardening when she just simply ordered me to pull weeds. It was simply a command and I followed her directions. In no way did she share why she loved gardening and what this did for her. If she had, I might have been more inclined to share in that love as well. I still despise gardening because of the memories I had of pulling weeds for hours on end. This simple experience had negatively shaped my attitude toward a common activity that many people find great joy in. It also adversely impacted my relationship with my mother; but it didn't have to.

Because I did not have a reason other than my mother ordering me to follow through on her demands, it negatively shaped my perspective toward the activity and toward my mother. I was clearly missing her why, leaving no chance for me to build my own why. However, if I had experienced even a tiny drop of my mother's passion for creating a yard that reflected our travels, or understood why it was important to her, I may have appreciated why this was important and perhaps even may have developed a passion for gardening. None of this is to say that my mother did anything wrong. She simply acted on how she was taught and never tried to change her methods to

personally connect with me about her passion. She did what was done to her which is what most people are inclined to do.

Doing School VS Learning to Learn

We can draw parallels from my childhood experience to the factory model of education where students are told what to do, when to do it, without really knowing why they are doing it or why it is even useful. Traditional school becomes a place where students enter a continual process of recipe and regurgitation; where they spit back the information that they have received to confirm that information was successfully transferred and learned. This traditional model of education that ignores the fundamental aspect of connecting the learner with why they need to do what they are asked to do also ignores that research of Piaget (1964, 2002), Papert (1993), and Bandura (1977) who all have shown that a learner's development and self-efficacy is connected directly to authentic activities that are meaningful to the learner. Knowing why something is meaningful is essential to learning.

Why You Do What You Do

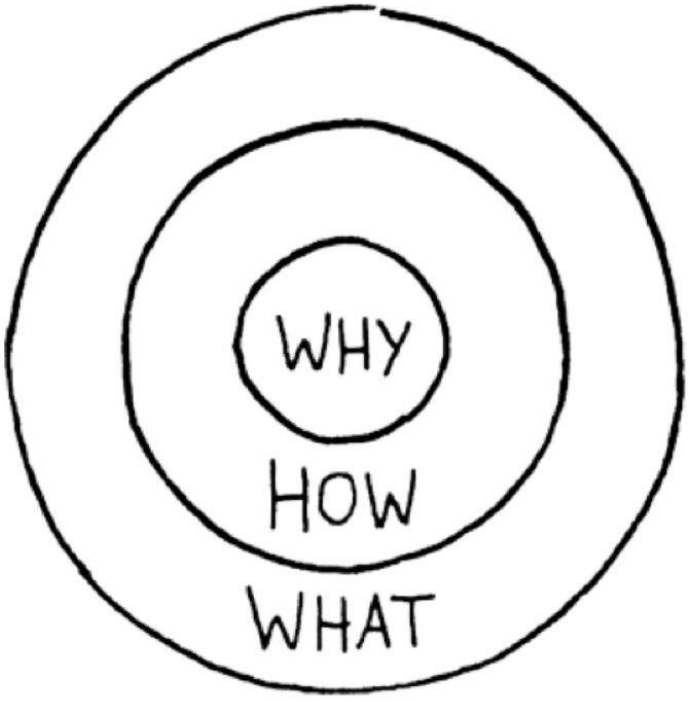
Sinek's (2009) argues that everything we do must start with why and that people don't buy what you do, they buy why you do it. He suggests that everyone on the planet knows what they do, some people know how they do it, but very few people know WHY they do what they do. If we want to be successful in sharing our ideas, influencing others, and leading change then we must start with why and lead from the inside out. He asserts that we are so inclined to think about the what and the how that we ignore the why which ignores the fundamental way that we make decisions. While Sinek does not point to or make a connection to Daniel Kahneman's argument that when we make decisions we most often make quick intuitive judgments that are based on automatic assumptions or heuristics, Sinek's argument can be explained by Kahneman's research.

Kahneman (2011) posits that we have two systems in our brains: one that thinks fast, System 1, and one that thinks slow, System 2. System 1 operates on heuristics that may not be completely accurate but still enables us to respond automatically, intuitively, and effortlessness to the world around us. System 2 requires effort evaluating those heuristics and requires that we slow down, focus, deliberate, concentrate, as we reason through data and solve new problems. System 1 enables us to use what we

already know to deal with the familiar or common daily interactions based on well-established assumptions/heuristics. We don't have enough time to, nor do we need to, slow down to look at everything from a System 2 perspective. Much of our daily activity and routine tasks involve System 1 and Kahneman (2011) argues that since laziness is built deep into our nature," (p. 35) we are prone to let System 1 take over intuitively and impulsively. This is where we run into to trouble. We often do not exercise the self-control to slow down and use System 2 to think through a problem. When you factor in the typical hectic stress filled North American lifestyle we often run into even greater difficulty using System 2 because self-control shrinks when we are tired, hungry, or mentally exhausted. We need both systems. Perhaps more importantly we need to recognize when we need to slow down enough to move from System 1 to System 2. We also need to acknowledge both systems when we create significant learning environments.

Using Sinek's golden circle (Figure 7) and working from the inside the out is an easy way to address the System 1 and System 2 thinking that are important in making decisions.

Figure 7: Sinek's Golden Circle



A well-crafted Why statement can be very useful because it addresses Kahneman's (2011) heuristics of our System 1 thinking by priming or exposing us to ideas that help us to associate our new ideas with existing ideas or stories. Since we tend to respond first with System 1 thinking an effective why can add to our cognitive ease, prime our affective responses and help influence our emotional judgment. Since Kahneman (2011) warns that “people let their likes and dislikes determine their beliefs about the world,” (p.103) we should address those likes and dislikes before we move onto the more rational aspects of our thinking. We like to use the notion that the head won’t go where the heart hasn’t been (Harapnuik, 2015).

This is not a new idea. Schank (2011) argues that we make decisions based on what we are passionate about, therefore every action we take should articulate our vision as to why we are doing what we are doing and the purpose it serves. Benjamin Bloom (1969) argued that to create effective instruction your educational objectives need to address the affective, psychomotor and cognitive domains. Bloom and his research colleagues recognized that all three domains needed to be addressed to fully respond to the needs of the learner. Unfortunately, Schank recognized that academia has over emphasized the cognitive domain and today most educators are familiar with only the cognitive domain that is emphasized in Krathwohl’s (2002) update of Bloom’s taxonomy. We are living the consequences of over emphasizing the cognitive domain in education that has its roots in the factory model of averagerian education established by Thorndike and Taylor (Labaree, 2005; Rose, 2016) over a hundred years ago.

Fortunately, some of the most significant orators, thought leaders, and cultural icons have ignored the over emphasis of the cognitive domain. Dr. Martin Luther King’s, "I have a dream speech," appealed to the passions of over 250k people who came to Washington D. C. to listen to him speak. King never wavered even in the face of immense adversity as he appealed to a vision of a better future that ignited the passions of the nation. If King would have focused on “I have a plan” we would have a very different world. Therefore, it is important to recognize that if we wish to effectively influence others then we must start sharing our passions and purpose and let people know why we do what we do (Grenny, Patterson, Maxfield, McMillan, & Switzler, 2013).

Getting to Your Why

Since most students have learned to read a recipe and follow a model; they have not quite learned to think on their own, process from the inside out, and identify their purpose. Schank (2011) reminds us that “It is not possible to teach or train students to do things that are not in line with who they are as people” (p. 37). Authentic learning opportunities and the “why” is what students in classrooms today are lacking. Before you can help your learners start with their why you must first start with your own.

When we designed the DLL program at Lamar University we recognized from the very beginning that we needed to do more than just use the learner-centered rhetoric of progressives like Dewey, Piaget, Bruner, Papert and the like. We needed to walk the talk and create a significant learning environment in which we give our learners choice, ownership and voice through authentic learning opportunities. Since we are advocates of starting with why we used Sinek’s Golden Circle to help us establish our own cause:

Why:

We believe that we must inspire and prepare our learners to lead organizational change using technology innovations as a catalyst for enhancing learning.

How:

To do this, we create a significant learning environment (CSLE) that gives our learners choice, ownership and voice through authentic (COVA) learning opportunities.

What:

We prepare leaders who can lead organizational change and drive innovation in a digitally connected world.

Developing a clear purpose or why also helped us to define our core proposition. Chamandy and Aber (2015) suggest that an organization’s core proposition defines who you are at your core, aligns everything you do, and provides a singular operational focus on the one thing that makes you uniquely remarkable. The core purpose is a seven word or less statement that guides everything that you say and do. Our core purpose is:

Choice, Ownership, and Voice through Authentic Learning Opportunities

Without our why and core principles to keep us focused, all our actions could be misconceived. We use CSLE+COVA to help our learners navigate their own learning experience and to inspire and prepare them to lead organizational change by using technology innovations as catalysts for enhancing learning. We have created a significant learning environment in which we model how learners can be given choice ownership and voice through authentic learning opportunities. We genuinely believe that we can help improve the world one learner at a time.

We are not alone in this optimism about improving the world. Consider the following two ideas:

> The primary ingredient for progress is optimism. The unwavering belief that something can be better drives the human race forward (Sinek, 2011).
>
> A reasonable man adapts himself to the conditions that surround him. The unreasonable man adapts conditions to himself…therefore all progress depends on the unreasonable man (Shaw, 1903).

Some people would suggest that this unabashed optimism may fall under the category of delusional optimism (Harapnuik, 2014). Regardless, progress does require that we push the boundaries of reality so being unrealistic or overly optimistic is necessary if we want to help our learners strive to implement innovations in their learning environments that will have the potential to transform learning. Unfortunately, most of our students are well conditioned by the recipe and regurgitation model of the traditional school system so they are not comfortable with embracing purposeful and meaningful learning nor are they comfortable with identifying their own purpose or vision for learning. Therefore, we not only have to clearly display and promote our why, we need to embed this type of thinking in all aspects of the course.

DLL students are required to create their own Why, How, and What statements and are reminded to return to these guiding statements when they create their own significant learning environments and the related courses that they design for their learners. We continue to support and promote our DLL program Why through the carefully constructed big hairy audacious goals (BHAG), and a variation of Finks (2003) three column tables that align outcomes, activities and assessments in each of the courses. The three-column table with their BHAGs are also referred to as course maps

that guide and direct students are they work through the program. The idea of a BHAG was first developed by James Collins (1994) and was meant to be a long-term goal aimed to navigate the direction of an organization. We have adapted and use the BHAG as the overarching learning goals that set the direction for the entire course. We repeat the BHAG before we state the module outcome or goals in the course syllabi and online course management system and remind students of these goals in weekly meetings and in all assignment instructions.

Since we are modeling the type of learning environment that we want our students to create we also require our students to use the Fink's three-column table and BHAG to create course maps for their own learning environments. We continually remind our students that they have a choice and voice in all aspects of their learning as they continue pursuing their authentic innovation projects. We not only have created a significant learning environment that gives our learners choice, ownership, and voice through authentic learning opportunities we repeatedly remind our learners of why this type of learning can be transformative. It is vital that we model the learning environment that we hope our learners will then adopt and share with their learners. It is also vital that we share our passions for learning and our why as we help our learners to develop or re-ignite their passions and establish their own why.

Our why and core principle of giving our learners choice, ownership, and voice through authentic learning opportunities are the foundation for all our work in the DLL program. The essence of our why, how, and what we do have remained the same but over the past several years that we have continued to develop and refine the DLL program we have also refined and strengthened our statement's terminology. The clearer we can convey why we do what we do and the more effectively we can align and model our why and our core principle, the more inclined our learners will be to find their own purpose and passion and create their own significant learning environment in which give their learners choice ownership and voice through authentic learning opportunities. Through the ongoing analysis of mid-term diagnostics, end of course student evaluations of instruction, and research into the effectiveness of CSLE+COVA we have more closely aligned our walk with our talk and will continue to improve and refine the DLL program. Since innovation and preparing our learners to lead others into an

exciting future is at the core of our “why we do what we do” we must also continue to innovate and improve on how we do this.

Keys to developing your passion & why:

- Start with your passion, “WHY” - investigate your cause
- Determine the process - HOW you will get there
- Determine the result - WHAT will be the outcome
- Follow these keys in this particular order
- Adjust and modify as needed, until your WHY is very clear
- Model your WHY in everything you do

Chapter 7 Creating Significant Learning Environments - CSLE

> I smiled to myself, because my father had already taught me that [the name] doesn't tell me anything about the bird. He taught me "See that bird? It's a brown-throated thrush, but in Germany it's called a halsenflugel, and in Chinese they call it a chung ling and even if you know all those names for it, you still know nothing about the bird--you only know something about people; what they call that bird. Now that thrush sings, and teaches its young to fly, and flies so many miles away during the summer across the country, and nobody knows how it finds its way," and so forth. There is a difference between the name of the thing and what goes on. - Richard Feynman

Taking Ownership of Your Learning Environment

The most valuable lessons I (Harapnuik) learned as a young man during my infantryman training in “Battle School” were not about battle but about people. Being in my early 20’s I was a slightly older than most of the other recruits in my training company and as a result I found myself often being asked for my opinion or for advice. I had figured out how the system of inspections, parades, and general training worked and despite the harshness of the environment I was able to move forward with relative success and limited anxiety. This wasn’t the case for many of the other recruits in my rifle company. One recruit who was nicknamed “Rico” had a particularly hard time managing and maintaining his kit (his uniform, boots, combat harness, pack and his rifle) and repeatedly failed morning inspection. As a result, Rico was continually restricted to barracks and given the worst duties. Rico was tired of his situation and asked me to help him set up his kit and his locker so that he could finally pass a morning inspection and get off the treadmill of military punishment. While I really liked Rico, I also knew he didn’t really take ownership or responsibility of his training so helping him with his kit was going to be a challenge. The evening before a major platoon inspection, I asked Rico to get his kit ready for the next morning and I offered to run a quick inspection. Getting your kit ready really wasn’t a difficult task—we didn’t have a lot of kit and the military had explicit procedures for everything. Since we were in an infantry platoon we essentially wore and carried everything we had into battle. When we were in barracks we were required to fold our two undershirts, three pairs of boxer shorts, four pairs of socks and so on… and position all our kit in our lockers according to a very strict plan. For example, our undershirts had to be folded 6” X 9” with the “V” of

the shirt being centered, with one shirt stacked on the other and positioned in a specific location in our lockers. Everything had to be presented in a very specific way—there were no options. Since battle school was the first posting after Boot Camp everyone should have been accustomed to using their handy ruler to make sure that presentation and placement of their kit fit the requirements. This was not rocket science, you just had to follow through and do what you were supposed to do.

When, I inspected Rico's kit I was shocked at how disorganized it was. In addition to not having his kit lined up to match the overview picture in his locker, nothing was folded in the way that it was supposed to be. When I pulled out my trusty ruler to show Rico just how far off his shirts were from the requirements he became annoyed with me and growled that his shirts weren't that bad. He stuffed one of the stray corners under a fold and roughly reshaped the stack and said that this would be good enough. He also lamented that knowing how to properly fold his shirts wouldn't make him a better soldier or any difference in the field. Rico continued to growl at all my recommendations and it didn't take long for me to stop trying to help him. He failed the inspection the next morning, spent the remainder of battle school confined to barracks, and was assigned to every disgusting duty that his platoon commander could come up with.

Despite all his challenges with his kit and following basic commands, Rico managed to get through battle school and we were stationed together in our first battalion posting. It was on our first exercise together that I really started to appreciate the importance of taking ownership of your own training and to moving beyond just knowing the names of things you need to do and doing those things. Rico's failure to take ownership and do what he was really supposed to do resulted in him causing a training accident that injured several people in his rifle section—unfortunately, I was one of the injured. As I lay in the hospital bed recuperating I knew I could never really trust Rico. He knew what he needed to do but wasn't willing to put in the effort to work through the processes and make things his own. Fortunately, I wasn't that seriously injured. I came out of the experience with some interesting scars and even more interesting war stories, but the most important lesson I learned is that you must go

beyond just knowing the name of something or knowing what the procedure calls for to fully taking ownership and doing what that process calls for. You must make it your own.

You must make the CSLE+COVA process your own. You must move beyond knowing the names of things like “student-centered” or “authentic learning” to doing the things that it takes to be student-centered and to facilitate authentic learning opportunities. Knowing the name of something or knowing the name of what you are being asked to do is very different than actually doing that something. The CSLE+COVA approach isn’t as rigid as my battle school training requirements, but you do need to know how all the pieces fit together and more importantly you need to be able to map the CSLE+COVA approach to your unique circumstances. This starts the process of making it your own.

CSLE+ COVA Essential Elements

CAUTION: We remind and caution the reader that while we are presenting CSLE+COVA broken down into the essential elements, the very nature of the CSLE is contrary to this type of reductionism.

CSLE is an eclectic perspective in which one combines all the elements into a cohesive perspective. Therefore, any individual analysis must only be conducted within the broader context of how one can create significant learning environments by giving the learner choice, ownership, and voice through authentic learning opportunities. While we will show you how the individual pieces of CSLE+COVA fit we continually remind you to consider the whole picture and you MUST create your own picture. In addition to the using visual representation of the CSLE (Figure 8) to provide a holistic perspective the following table that compares the CSLE to the traditional teacher entered approach should provide another perspective on how using the CSLE provides an authentic and more effective learning environment.

Figure 8: CSLE

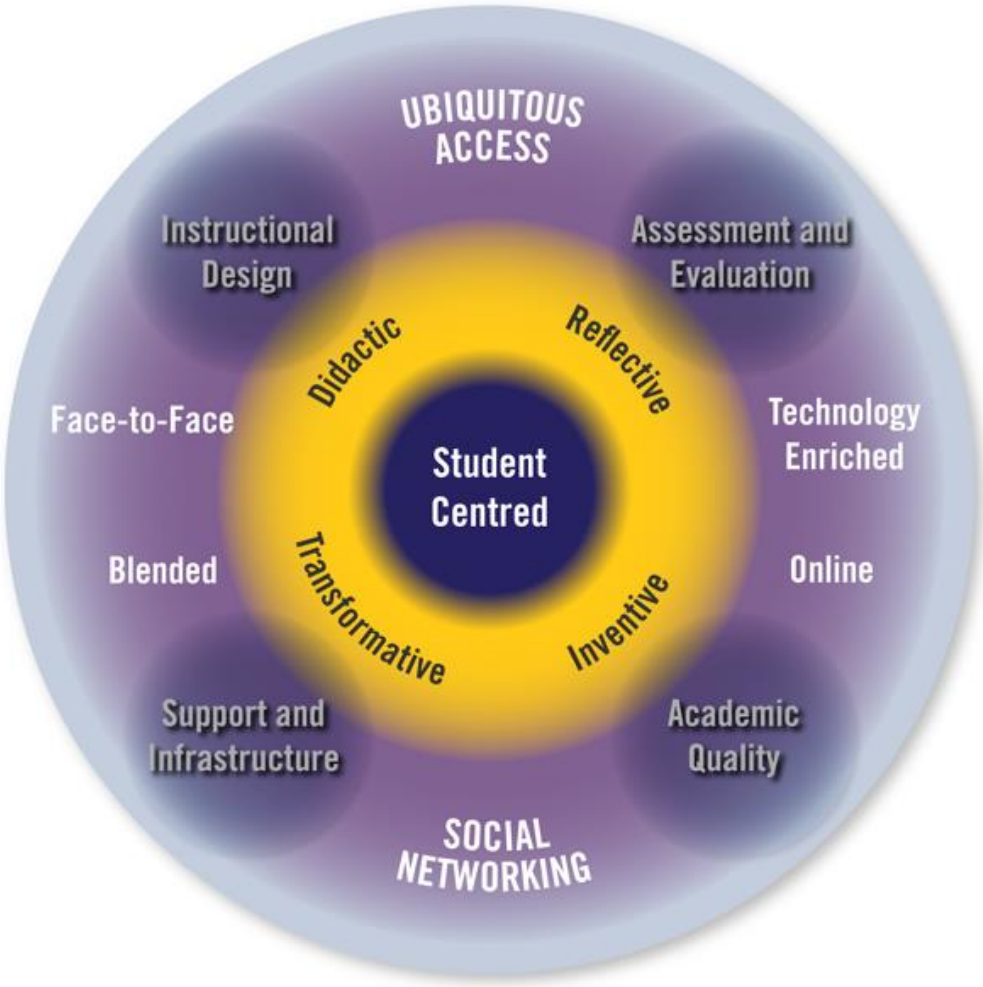


Table 1

A Comparison of the CSLE and the Traditional Teacher Centered Approach

Components	CSLE	Traditional Approach
Student's role	The learner's needs are the starting point. The learner is not only an active participant in the learning process; they are required to take control and ownership of their learning and work toward making meaningful connections.	Teachers start with the curriculum and determine what content that the student will be required to demonstrate that they have covered. The student's responsibility is to regurgitate information and show that they are able replicate assignment examples and processes.
Instructor's role	The instructor functions as a presenter, facilitator, coach, and mentor and is responsibility for creating the significant learning environment that promotes learning. They are required to provide the guided discovery, scaffolding, and conceptual framework mapping to facilitate learning.	The teacher is the presenter of curriculum and content. The teacher will also demonstrate required procedures, process and standards and confirm that students can replicate those requirements. The teacher also functions as the gatekeeper of advancement through the use of standardized testing.
Social Networking	Humans are social beings and being part of, contributing to, and interacting with community and culture is a central part of the learning process. Social networking is leveraged to promote communication and collaboration.	Teachers and schools system restrict students from using social networking in class and some settings require that phones and other connective and collaborative tools are turned off or are even confiscated.

Instructional delivery formats	To take advantage of our ubiquitous access and social networking and to respond to the learner's needs, our learning delivery can be mobile, online, blended, and even when face2face, must be digitally enhanced.	Teachers primarily use the lecture to deliver content. The move toward the flipped classroom is generally a move to putting the lecture online and use the internet for content delivery. The delivery of content is the primary focus of instruction.
Instructional Design	Starts with the end in mind and focuses on how a course or program will change learners lives, how it makes them a better member of society, and contribute to solving a particular problem or "real world" need. Rather than be bound to a single theory or approach, learning theories and approaches can be interchanged. The key is that we design an environment that is learner-centered, engaging, motivational, contextual, experiential, and authentic.	Standardized tests, state standards, and district curriculum determine the instructional design. The priority is being able to demonstrate that content has been successfully delivered and that students are able to satisfactory complete standardized tests. Instructional design approaches that promote the decimation and regurgitation of information are used. The results are a teacher centered, passive, demotivating environment that lacks context and connection with the "real world"
Assessment & Evaluation	The focus is on feedback, mastery of knowledge, authentic learning, critical analysis and creative thinking which help the learner make meaningful connections	Summative assessments including tests, quizzes, standardized writing, and testing are used to show that the learner is able to replicate information and meet standards
Academic quality	Future focus of preparing our learner to learn how to learn and how to adapt to opportunities and challenges that don't even exist.	State standards, standardized testing, and college entrance requirements are the primary measure of quality and standards.

Technology & support	The focus is on using technology to help you do want you want and need to do. Learning technologies are just tools that we use to enhance and empower learning. The best technology empowers creation and ultimately disappears.	Technology is used for management and control of the delivery of content. Successful technology implementation means that the students has the technology and it is generally used to replace or enhance traditional information delivery and retrieval strategies.

We need to remind you that all the pieces of CSLE+COVA are in front of you and have been accessible to you all along. The key is to step back far enough from your teacher and control centric perspective to see how everything fits. Furthermore, creating significant learning environments is not new concept. We purposely design things like information systems, smart buildings, ecological friendly communities, and so many aspect of our society but, unfortunately, and all too often we do not apply this holistic approach when we build our learning environments. Unfortunately, we all too often simply do what has always been done or do what was done to us which is making a choice to maintain and promote our behaviorist system of content delivery and information transfer.

Rather than allow the learning environment to come together inadvertently and respond reactively to the learning dynamics that arise or look to the latest teaching trend or hottest activity of the day to spice up student's experience, I suggest that we purposeful build our courses and programs as significant learning environments that inspire, foster and facilitate deeper learning.

Student-centered

It must start with the learner. The needs of learner become the measuring stick. We must ask questions like - how will this LMS/process/software support the learner, how will this curriculum support the needs of our learner, how will this pedagogy enhance learning, will our formative and summative assessment help the learner and so on. Perhaps even more important is to consider why we are doing what we are doing and consider who you hope your learner will grow into and become. We can prepare our learners for an amazing future or mire them in our past. The choice is yours. You

can either focus on your learner and how they can best learn how to learn, or you can simply focus on yourself and consider what you will teach and how you will deliver the content. We also should keep in mind that our learners start out differently today and a diversity of learners requires a diversity of communication.

Instructor's Role

As we have mentioned earlier what happens in the classroom, physical space, and the learning environment in general are some of the few things that the instructor has control over. In addition to the overall designs of the learning environment an instructor also chooses how they will function and what role they will take on in the learning process. You can either focus on yourself as gatekeepers of the standards and present or deliver content by demonstrating how students are expected to replicate those procedures, process and standards on standardized tests. Or you can choose to be learning facilitators, coaches, and mentors who are responsibility for creating the significant learning environment that promotes learning through guided discovery, scaffolding, and conceptual framework mapping. This choice is yours.

Communication, Collaboration & Social Networking

Steven Johnson (2010) argues that chance favors the connected mind and points to the fact that people and ideas thrive in a connected, collaborative and media rich environment. Most people expect to learn all the time and everywhere and with the help of social media and various forms of crowdsourcing we are seeing some of the most complex science problems being solved like the Foldit gamers solving the riddle of the HIV enzyme in 3 weeks (Coren, 2011). Learners are socially networked and connected and look to their peers and crowdsourcing for information and solutions to problems. Flexibility is a driving force in their lives but unfortunately not in the traditional classroom. Rather than restrict access to YouTube and social media or confiscate our learner's mobile devices you must use these powerful communication and collaboration tools to expand the walls of the traditional classroom and access the whole world of learning that is currently available.

Instructional Delivery Formats

We live in a digitally connected world with ubiquitous access…we are connected all the time and everywhere. This means learning is now mobile, on-line, blended, and even when face2face learning must be digitally enhanced. The classroom is no longer the locus of control - the network is. We live in an age where we can access all the world's information from the palms of our hands. There has never been a better time to be a learner because the problem of content delivery has been solved. The challenge today is cutting through the information overload and discerning what information is useful. If you are using a lecture to delivery content or flipping your classroom to deliver your lecture online you need consider, if you are actually helping your learner or if by adding yet more information you are contributing to the problem of information overload. Teachers are needed more than ever before to help the learner deal with the problem of too much information. You have the choice to be part of the problem or part of the solution.

Instructional/Learning Design

Our instructional design must be proactive and purposeful. We must go back to our Why and to create Big Hairy Audacious Goals (BHAG) that start with the end in mind. We must look at how a course/program will change our learners' lives. How will it make them a better member of society, contribute to solving a particular problem and so on? We must use learning theories and approaches that can be interchanged and use the right theory or approach to support specific needs of the learner and the environmental requirement of specific disciplines. Project-based, problem-based, or concept-based learning can be used for the humanities and the sciences, case based and story centered curriculum for business, cognitive apprenticeship and experiential learning for skill development and so on. The key is that we design an environment that is learner-centered, engaging, motivational, contextual, experiential, and authentic.

While it is true that we live in a world of standardized tests, state standards, and district mandated curriculum that emphasize the student's ability to demonstrate that content has been successfully delivered and regurgitated, we don't need to design all our learning to address this situation. Research is quite clear, we can help our learners pass the credentialing exams by giving them practice exams and helping them to

develop test taking methodologies (Dunlosky et al., 2013a & 2013b). We don't need to continually teach to the test and promote the decimation and regurgitation of information because this perpetuates a teacher-centered, passive, demotivating environment that lacks context and connection with the “real world.”

Assessment & Evaluation

Unfortunately, when we mention assessment and evaluation most people think about summative assessments including tests, quizzes, standardized writing, and other forms of testing used to show that the learner can replicate or regurgitate information and meet standards. This form of assessment just shows how well the teacher delivered the content and how much the student can regurgitate. While we acknowledge that standardized testing is a reality for most students we must remind the reader that focused testing practice will be the most effective format for helping the learner do well on the test but this only needs to happen for short periods prior to the actual testing. Genuine assessment is about aligning outcomes with activities and ultimately focusing on the making of meaningful connections, mastery of knowledge, authentic integration, critical analysis and creative thinking. When your learner creates a solution to a real-world problem or creates something that is used by others in an authentic setting then the real test of the solutions effectiveness is the impact on the real world.

Academic Quality

While state standards, standardized testing, and the wide assortment of college entrance testing are the common measures of quality and standards, we need to consider if this is all that we want for our learners. Do just want them to pass the test to get into college or should we have a future focus of preparing our learners to learn how to learn and how to adapt to opportunities and challenges that don’t even exist. We agree we must continue to maintain the highest standards of academic quality but preparing our students to learn how to learn and prepare for jobs and careers that don’t even exist must be our true measure of academic quality.

Technology & Support

We have a long history of using technology for management and control of the delivery of content. In this context, successful technology implementation means that

the students have acquired or being given the technology and it is generally used to replace or enhance traditional information delivery and retrieval strategies. We also have a long history of failing to show that just using technology for delivery of content is any better than the traditional face2face content delivery method. We end up with $1000 pencils (November, 2013) when we foolishly use a laptop or tablet to substitute a paper-based worksheet with a digital equivalent. Even if we add some augmentation to worksheet the emphasis is still on measuring the regurgitation of information and insuring that the content is successfully delivered. Rather than limit the potential of technology or simply try to bolt a jet engine onto a horse cart (Papert, 1993) we need to use technology to help our learners to create, build, innovate and do the things that need to be done as the learner strives to solve real world problems. Learning technologies are just tools that we use to enhance and empower learning. The best technology empowers creation and ultimately disappears. Effective support for useful technology happens just in time through YouTube and social media and happens within context of finding a solution to a real-world problem.

Factors We Control

All these pieces come together to form a significant learning environment. Unlike many other factors in education that teachers can't control like demographics or budgets we do have control over the design of our learning environments. The key is that we take the whole learning environment into account not just our classroom, lab or campus but our learners and their circumstances as well. We must apply this at the program level and extend our purposeful design to the learning environment for every course.

Today's learners who live in a world of ubiquitous access, who use Youtube as their primary search engine and who have grown up using technology to enhance their learning and solve problems will be coming into your learning environment. What have you created for them? Are you trying to control them or are you giving them the control that they need to take ownership of their learning? Are you teaching today's students as you taught yesterdays? Are you robbing them of tomorrow (Dewey, 1916)?

Chapter 8 Choice, Ownership, & Voice through Authentic Learning (COVA)

> Spoon feeding in the long run teaches us nothing but the shape of the spoon.
> — E.M. Forster

Creativity and Innovation Through Authentic Learning Opportunities

So much of our educational system is based on recipe and regurgitation. So many in academia hold critical and analytical thinking as the “gold standard” but so much of what we do doesn’t go much beyond the repetition of information. Should we be encouraging our learners to learn how to learn? Shouldn’t they be given the opportunity to solve real world problems? What if we gave our learners the choice to take ownership of their own learning?

With this context in mind, I (Harapnuik) think back to a recent Saturday morning when I walked into our living room and I couldn’t help noticing the large sheet of black ABS plastic that Caleb, my 19-year-old son, had acquired for his latest project. Ever since Caleb was a toddler he has enjoyed creating things that would change and enhance his world. For the most part, he was just like every other young kid who loved playing with Lego and other toys, but Caleb and his older brother Levi would often migrate away from typical play and look for ways to improve their toys and their environment. Both my boys would use Lego and Knex and other constructables (what I like to call toys that you can build things with) to make things that they could use for other purposes. Their desires quickly moved beyond using Lego and Knex to using authentic resources to change their environment. For example, when my Levi was three he wanted to be able to pull his wagon with his bike and rather than just use a rope he wanted my help to rig up a hitch system which we created together, and he used and then passed onto his younger brother. Caleb was equally industrious. I have so many fond memories of heading down to the hardware store with my boys to hunt for and gather the items they needed for their latest projects.

So, when I saw the big piece of plastic (Figure 9) I reminisced about Caleb’s passion for making things. I also thought about how my wife and I carefully nurtured and helped him and his brother develop their interests and created the environment in which they could fully develop their creative abilities and learn how to learn. If there was just

one thing that I can point to that really made the difference in my boy's development it would have to be the use of authentic learning opportunities. My boys were always choosing to work on something that was real and that would make an authentic difference in their world.

Figure 9: Sheet of ABS plastic

The bike hitch, bike ramps, countless other smaller projects, and the major fort project were just the starting point for exposing my boys to authentic learning. When I purchased and renovated a rental property the boys who were just 8 and 10 worked alongside me at every stage from cleaning up the junk in the yard to demolishing the basement rooms, to building new rooms and doing all the work that was necessary to bring the house into a state where it could be rented and then sold. Later that spring when the boys were still just 8 and 10 they planned all the details of our month-long summer bike trip which included everything from getting the maps from the AMA, planning the route, to identifying what we could do along the trip to, where we would stay, and what we could do when we got to the interior of British Columbia. They put

together a detailed binder that had all the information we would need. That first major biking holiday is still one of the most talked about trips that my boys will reminisce about. As professional Downhill mountain bike racers and extreme athletes Levi and Caleb travel continuously so this early experience has served them well. They have spent most their young lives working on authentic projects that not only enhance their lives but lives around them.

Authentic Learning Fosters Choice, Ownership, and Voice

Authentic projects work because they not only give the learner choice and ownership over the world that they live in, but they also give the learner the ability to find and use their voice and show the world what they have created. Caleb's projects are getting very sophisticated and while the air splitter (Figure 10) he created for his high-end sports car is not a project you would ask a novice to undertake, Caleb can create a professional quality enhancement and add significant value to his car because he has lived a life filled with authentic projects.

Figure 10. ABS Air Splitter

If we genuinely hold critical and analytical thinking as a “gold standard” in teaching and learning and we want to truly prepare our learners for the future, then we need to move from the passive educational environment of main lecture points, rubrics, individual competition and standardized testing to an active educational environment of interactive collaboration, innovative and creative thinking, and meaningful authentic learning opportunities. We need to create an environment where creativity, innovation and exploration flourish. We believe that we can create this significant learning environment by giving our learners choice ownership and voice through authentic learning opportunities.

COVA Approach Components

COVA— is a learner centered active learning approach that gives the learner choice (C), ownership (O), and voice (V) through authentic (A) learning opportunities. While the acronym COVA is somewhat authentic, the elements of the COVA approach to learning which include choice, ownership and voice through authentic activities or assignments are based on well-established constructivist theories and widely accepted active learning principles develop by learning theorist that include but are not limited to Dewey (1916) Bruner (1960), Piaget (1964), Jonassen (1999) Papert (1997), and Vygotsky (1998). Similarly, the elements within Creating Significant Learning Environments (CSLE) are not new and neither is the idea of looking at learning from a holistic or broader learning environmental or ecosystem perspective. So, when the COVA approach is combined with CSLE, you get a significant learning environment which factors in all the key elements essential to effective active learning. Most importantly, the learner is given the opportunity to choose and take ownership of their own authentic learning experiences. All the variables are in place to help your learner make the meaningful connections which are so fundamental to learning. When you factor in a genuine digital learning portfolio, which we prefer to call an ePortfolio, you also give your learner the opportunity to find their voice, reflect on their experiences, express their insights, connect, and collaborate with a broader learning community. Research has shown that the assembly of existing or well-established ideas into new combinations is the foundation of most innovative work and knowledge advancement (Duhigg, 2016; Wuchty, Jones, & Uzzi, 2007).

The following overview of the COVA approach components is intended to provide a context for the subsequent chapters where we will expand how best to use choice, ownership, voice and authentic learning to enhance your learning environment.

Choice

Learners are given the freedom to choose how they wish to organize, structure and present their learning experiences and share those experiences with the world. Choice also extends to the authentic project or learning opportunity. Choice promotes personalized learning (Bolliger & Sheperd, 2010) which includes adapting or developing learning goals and choosing learning tools that support the learning process (Buchem, Tur, & Hölterhof, 2014). It is crucial to acknowledge that the learner's choice is guided by the context of the learning opportunity and by the instructor who aides the learner in making effective choices.

It is extremely important that this learning process is understood as guided discovery and not confused with pure discovery learning (Bruner, 1961, 1960). The research over the past 40 years confirms guided discovery provides learners the appropriate freedom to engage in authentic learning opportunities while at the same time providing the necessary guidance, modelling and direction to lessen the cognitive overload (Mayer, 2004). In addition to instructor guidance, the creation of a significant learning environment will also provide guidance and structure to help direct the learner. The academic literature is rich with examples of choice which can often be referred to as learner agency, autonomy, empowerment, self-efficacy. Choice has a very long history as we can see from Dewey's (1916) perspective from Democracy and Education:

> The essence of the demand for freedom is the need of conditions which will enable an individual to make his own special contribution to a group interest, and to partake of its activities in such ways that social guidance shall be a matter of his own mental attitude, and not a mere authoritative dictation of his acts. (p.352)

Ownership

Learners are given control and ownership over the entire learning process including the selection of projects, the ePortfolio process, and all their learning tools. Once again, we must reiterate that this ownership process is within the context of

instructor guidance. The same benefits of guided discovery discussed above apply to this context as well. Constructivists, like Jonassen (1999), argue that ownership of the problem is key to learning because it increases learner engagement and motivation to seek out solutions. Piaget research points to the fact that without ownership of concrete learning experiences the learner's personal development and growth in knowledge is hindered (Ginsburg, & Oppers, 1969). Ownership of learning is also directly tied to agency when learners make choices and "impose those choices on the world" (Buchem et al., 2014, p. 20; Buchem, Attwell, & Torres, 2011). Clark (2001) points to a learner's own personal agency and ownership of belief systems as a major factor contributing to the willingness and persistence in sharing their learning. This willingness to share what they have created or developed comes from the learners' pride of ownership and plays a major factor in the learner finding their voice.

Voice

Learners are given the opportunity to use their own voice to structure their work and ideas and share those insights, knowledge and their creations with their colleagues within their organizations. The opportunity to share this new knowledge publicly with people other than the instructors helps the learner to deepen their understanding, demonstrate flexibility of knowledge, find their unique voice, establish a sense of purpose, and develop a greater sense of personal significance (Bass, 2014).

Authentic learning

Learners are given the opportunity to select and engage in authentic learning opportunities that enable them to make a genuine difference in their own learning environments. The selection and engagement in real-world problems that are relevant to the learner furthers their ability to make meaningful connections (Donovan, Bransford, & Pellegrino, 2000) and provide them with career preparedness not available in more traditional didactic forms of education (Windham, 2007). Research confirms that authenticity is only developed through engagement with these sorts of real-world tasks and that this type of authentic learning can deepen knowledge creation and ultimately help the learner transfer this knowledge beyond the classroom (Driscoll, 2005; Ginsberg, & Obbers, 1969; Nikitina, 2011). It is also important to recognize that authenticity is not an independent or isolated feature of the learning environment, but it

is the result of the continual interaction between the learner, the real-world activity, and the learning environment (Barab, Squire, & Dueber, 2000). This is also why we stress that in the COVA model choice, ownership, and voice are realized through authentic learning and without this dynamic and interactive authenticity, there would be no genuine choice, ownership, and voice.

We must repeat an earlier caution regarding CSLE+COVA. While we have broken down the components of COVA to help guide you in your learning journey, our experience and research confirm that all the components of COVA are interrelated, interdependent, and must be present. If you are missing one of the components then you are not genuinely giving your learner choice, ownership, and voice through authentic learning opportunities.

Keys to COVA:

- Authentic learning opportunities are required as the starting point for COVA.
- Research confirms that each component must be present and equally important; you can't have one without the others.
- Genuine choice requires authentic learning opportunities that are important to the learner.
- Genuine choice can still happen within the context of guided discovery.
- Ownership requires that the learner have choice over all aspects of the learning (within the context of guided discovery)
- Ownership requires that the teacher give control over/back to the learner.
- The more uncomfortable the learner is with learning; the more guidance may be required.
- Voice is realized and is authentic when the learner is creating, writing, presenting and sharing with their audience and not for their instructor.
- Voice is a part of the metacognitive process where learners think about their thinking and reflect on their learning.
- Voice is realized through the ePortfolio and a wide assortment of authentic plans, strategies and related documents, resources and presentations share with their audience.

- More experienced and high achieving students are proficient at doing traditional school and will resist being asked to choose, take ownership, and share their voice.

Chapter 9 Choice

> We are the creative force of our life, and through our own decisions rather than our conditions, if we carefully learn to do certain things, we can accomplish those goals. —Stephen Covey
>
> The more decisions that you are forced to make alone, the more you are aware of your freedom to choose. —Thornton Wilder

Choosing Meaningful Work

Whenever I (Harapnuik) think about choice and power that comes from being able to choose to work on something meaningful all I need to do is look to the very long history of the projects that my boys have chosen to work on and all the authentic projects that my many students have developed. I also think back to many conversations I have had with my boys and other learners I guided. While the following conversation was over 11 years ago it still rings true and I remember like it happened yesterday:

While riding up the chairlift on a Downhill mountain biking trip I was discussing potential areas of special interest that my boys would like to explore in the upcoming fall. Since we are very active Downhill mountain bikers we need to constantly repair and maintain our bikes. My younger son Caleb (he was 10 years old then) is an inquisitive mechanic and simply enjoys maintaining and repairing his bike. After I observed him replacing his entire drive-train (derailleur, shifter, cables etc.) by himself, I realized that he may be ready to move onto some formal mechanical training and suggested that we take a bike mechanic course together. My goals were twofold. First, I wanted to use one of his authentic interests and use bike mechanics as an avenue to explore the fascinating aspects of science like physics, chemistry and engineering. I also wanted another opportunity to expose Caleb to the traditional learning system or courses, classes, tests and the like. Even though we homeschooled our boys I regularly put my boys into our traditional system for a variety of classes to ensure that they were able and prepared to take instruction from others and could deal with how the rest of the world is taught and tested. We also had our boys take the year end standardized tests to ensure that they were comfortable with the whole testing process.

Unfortunately, as my boys got older and moved into higher grades getting them to agree to this process and justifying the reason for doing so was getting harder, so I was looking to use this bike mechanics course as another way to expose Caleb to traditional instruction. Caleb's response to taking a formal bike mechanic course was not surprising but he was being very reasonable, and his logic was difficult to ignore:

> Dad do we have to—why can't we just learn by working on the bikes. Taking a course takes so much time and you really don't get to do very much… and you just don't learn anything that you really need to and…. Why can't I just take my whole bike apart and put it back together–this is what we have done so far and I know a lot….

In my attempt to justify traditional formal instruction, I explained that in a well-designed course the content will be well laid out and course would follow a good text book or similar course material in a logical fashion. I also tried to justify that we would have access to an expert who could help us work through problems that we may not be able to resolve ourselves. My son challenged these assumptions in the following way:

> I've worked on bikes long enough to know that there isn't anything that we couldn't figure out on our own–it may just take us a while. We could look things up on the Internet and find the answer if we got stuck—that's what we did when we were figuring out how to fix and solder our guitar…
>
> Dad you also know that you can't predict when problems are going to happen, so it is better to work on things as they break and need to be fixed. If we need the help of an expert, we can either go online or just go to one of the bike shops where we have lots of friends who can help us.

My next attempt at trying to justify a formal course included the typical "you get out of a course what you put into it" and I also tried to include the justification that he needed to get more experience in our traditional learning system.

At this point my older son, Levi, piped in on the conversation and affirmed the notion that courses often take too much time and can interfere with learning. He complained that it normally took 10-15 minutes for the teacher to get everyone settled down to the point where they started to do some work and then 10 minutes later they moved to a new location or different subject and had to go through the whole settling

down process once again. These are courses like creative writing, physical education, science workshops and field trips and other opportunities where most kids are motivated to be engaged–I shudder to think of what my sons would have thought of learning math, language arts, or social in a traditional setting. The following questions from Levi have motivated me to action:

> Why do they waste so much of our time? Why don't they just help us to learn? Will it get any better when we get to University? Why can't you fix it? Aren't you an expert when it comes to learning and building courses? Why don't you get the teachers to make the courses useful and get them to help us to learn?

These were challenging words. Recognizing that we all too often waste our children's time prevented me from saying much more than:

> Your right Levi… this doesn't get any better once you get to University and it is something that I promise you I will work on.

Caleb jumped back into the conversation and stated:

> Dad, I don't want to waste any time learning how to fix my bike so instead of taking a mechanic course I think I will just take my bike completely apart, all the way down to the frame, and rebuild it over the winter and then work on it as things break each day Downhill mountain biking is so hard on my bike that there is something to fix or repair every time you ride…or maybe we could buy a new frame and I could build up a new bike right from the frame…this would be a much better way for me to learn.

I not only honored Caleb's choice in what he wanted to learn but more importantly how he wanted to learn.

Caleb has not only worked on his own bikes over the years he has become a certified bike technician and has built and serviced hundreds (perhaps even thousands) of bikes in his work at a major sporting goods shop but has also built maintained his own bikes as a professional Downhill mountain bike racer. He and his brother have become recognized biking experts in their biking community who are not only some of the fastest guys to ride with but are the go-to-guys who regularly help others solve difficult or urgent mechanical problems. At races, many other racers will stop by the

boys' pit tent and trailer to see if Caleb or Levi can help them with a problem, get a spare part, or borrow a specialized tool.

The Power of Choice

Over the years both of my boys have taken ownership of their learning and with support and guidance chosen a very wide assortment of authentic projects that have not only given them a great deal of experience analyzing and solving problems but have also helped them develop the purpose, confidence, and motivation they now possess to tackle almost any situation. They have grown into young professional athletes and entrepreneurs who are finding their way through the world of extreme sports, performance, and business.

While I can point to the positive effects of giving learners real choice and purpose through authentic learning opportunities from my personal experience with my own children and from my experience teaching hundreds of students over the past two decades I can't take credit for this idea.

Freedom to Choose

John Dewey held that in order for the learning process to be effective we must give learners choice, meaning, and purpose (1916, 1938). Dewey argued that choice is closely aligned to freedom and he also acknowledged the social responsibility of contributing to a group interest as we can see from his (1916) perspective from Democracy and Education:

> The essence of the demand for freedom is the need of conditions which will enable an individual to make his own special contribution to a group interest, and to partake of its activities in such ways that social guidance shall be a matter of his own mental attitude, and not a mere authoritative dictation of his acts. (p.352)

Other major learning theorists who advocated a student-centered approach to giving the learner choice include Bruner (1960 & 1961), Piaget (1964), Papert (1993), Rogers (1983). Recent research confirms that choice not only promotes personalized learning (Bolliger & Sheperd, 2010) it also reveals the importance of the learner adapting or developing learning goals and actively choosing the learning tools that support the learning process (Buchem, Tur, & Hölterhof, 2014). We also see the importance of choice and meaning in Pink's (2011) summary of autonomy, mastery and purpose as

the key drivers of motivation. Whether we refer to choice as learner agency, autonomy, empowerment, self-efficacy the literature and research clearly point to the powerful role that choice plays in the learning process.

We should be careful that we do not mistake choice with pure discovery learning because it is crucial to acknowledge that the learner's choice is guided by the context of the learning opportunity and by the instructor who aides the learner in making effective choices. The research over the past 40 years confirms guided discovery provides the appropriate freedom to engage in authentic learning opportunities while at the same time providing the necessary guidance, modeling and direction to lessen the cognitive overload (Mayer, 2004). In addition to instructor guidance, we have argued the creation of a significant learning environment will also provide guidance and structure to help direct the learner (Thibodeax, Harapnuik, & Cummings, 2017). There is very little doubt that giving the learner choice is crucial to their learning process, but the challenge is to give them this choice.

How Do We Give Learners Choice?

We can give our learners choice over all aspects of the learning process when we do so through authentic learning opportunities. It may seem very straight forward but it can be challenging to realize if we don't go about this the right way. Giving our learners choice is not a matter of allowing them to select from predetermined list of options or to allowing them to select from a list of topics. Genuine choice means that you as the teacher acknowledge that the learning process is not about you, but it is about the learner—you give your learner real choice. The educators and philosophers, Adler and Van Doren (1972) suggest that:

> teaching is a very special art, sharing with only two other arts — agriculture and medicine — an exceptionally important characteristic. A doctor may do many things for his patient, but in the final analysis it is the patient himself who must get well — grow in health. The farmer does many things for his plants or animals, but in the final analysis it is they that must grow in size and excellence. Similarly, although the teacher may help his student in many ways, it is the student himself who must do the learning. Knowledge must grow in his mind if learning is to take place. (p. 11)

Since the learning is the responsibility of the learner giving the learner choice means that we as teachers must give up control or give back the control of the learning process to the learner. If we acknowledge the Adler and Van Doren example above, then we must recognize that we cannot make the learner learn in the same way the farmer cannot make his plants and animals grow. Like the farmer, we must create significant learning environments that will help to support and nurture the learner as they take responsibility for their own learning. We can create the context for learning and guide and direct our learners to make the choices that will help them achieve their learning goals but the choice in their focus and how they learn must be up to them.

Therefore, authentic projects are integral to the CSLE+COVA approach. Solving a real-world problem or creating a real-world product or process not only provides the context for learning, it also enables the learner to contribute socially and be part of something that has meaning and purpose beyond the course or program of study.

Authentic projects provide the parameters, constraints, and address the mistaken notion that inquiry or discovery-based learning will not work because the learner doesn't have enough knowledge to know where to begin. Authentic learning opportunities not only provide the starting point, but the learner has immediate feedback as they work through the trial and error or prototyping process that is so important to authentic projects. The choice or selection of the authentic learning opportunity is a crucial part of the learning process. Learners are forced to explore, ask questions and research what they may or may not be able to accomplish. The teacher's role is even more important in authentic learning opportunities because a learner will have an incomplete conceptual framework of the problem at hand. A teacher may need to scaffold the learner in a variety of ways as the learner builds and expands their conceptual framework (Harapnuik, 2015).

If authentic learning opportunities or projects are not possible then using Roger Schank's (2015) Story Centered Curriculum approach can be a useful alternative because it is intended to teach a student how to do something. SCC provides the context or story where students play one or more roles in solving a problem or creating a product or process. The more closely aligned the story is to what a student may be

expected to do in real life the better. While SCC may provide a useful simulation, the authentic learning opportunities should be the first choice.

Keys to Choice:

- CSLE is required to provide the context and environment for authentic learning opportunities.
- Give control to learner
- Let the learner choose the authentic learning opportunity —this includes all related aspects of the project.
- Let the authentic learning opportunity dictate the context, parameters and constraints.
- Give the learner the responsibility for the project and hold them accountable to their choices.

Chapter 10 Ownership

> We take other men's knowledge and opinions upon trust; which is an idle and superficial learning. We must make them our own. We are just like a man who, needing fire, went to a neighbor's house to fetch it, and finding a very good one there, sat down to warm himself without remembering to carry any back home. What good does it do us to have our belly full of meat if it is not digested, if it is not transformed into us, if it does not nourish and support us? — Montaigne in The Complete Essays ("Of Pedantry").

Caring Enough to Let Your Learners Take Ownership of Their Learning

A neighborhood friend asked if either our boys would be willing to house sit for them and take care of their two full-size dogs when they went on vacation for a month. Levi, my older son who was 20 at this time, jumped at the opportunity to house sit and have his own space for a full month. We live in one of the most expensive cities in North America to live in so to deal with the high cost of living my boys are like many young adults who still live at home or share housing with several other people. I (Harapnuik) didn't comment at all on his decision even though I was thinking to myself, I hope Levi realizes just how much work and time walking, exercising and caring for those dogs and that large house is going to take. These people live in a large house at the base of Mount Fromm near the end of a trail that Levi often trains on, so I can image that the proximity to his training was additional factor that swayed his decision.

About a week into Levi's house and dog sitting experience when he stopped by to work on his bike, I simply asked him how it was going, and he lamented:

> …This is taking way more time than I expected…those dogs just won't leave me alone… I like them, but they take so much work… I walk them in the morning before I train… then I come over here to work on my bike… and then I have to go into work and then after work I have to walk them again…

Once again, I resisted the urge to comment but I did ask if there was anything I could do to help. Levi simply said,

> No Dad…I got this.

I knew before Levi had taken on this responsibility that the small freedom that this great house would offer would come at a significant expense of time which Levi just didn't have. Our garage is equipped as a bike repair workshop, so I knew Levi would still

come home daily after his training rides to clean and maintain his bike. As a professional athlete, Levi controls his diet very closely and is a creature of habit, so I also knew he would be coming home daily to prepare his meals and eat. I knew he would want to use and have access to the Vitamix, the pantry, the freezer and all the food prep resources he was accustomed to. I also knew that his responsibility as the head mechanic and mountain bike instructor at his sponsor Endless Biking would be increasing that same month because Endless was starting to receive their shipments of new bikes for the upcoming season.

So, as the days progressed Levi kept coming over earlier and earlier in the morning to make his pre-workout shake and breakfast and then head to the gym which is only a block away. Levi would pop in and out throughout the day between training, working, exercising the dogs and then we wouldn't see him until the next morning. After our friends came back and on the first night Levi was back at home I told Levi I was proud of how well he handled the responsibility and commended him for going above and beyond what was expected in exercising the dogs and maintaining the house. When he said—I am glad this is over… I am never going to do that again… I couldn't contain myself any longer and started the following short exchange. I had learned over the years that the best way to start this type of conversation was to provide a brief context and then ask a question. So, I simply stated:

> Levi, when I was younger I too house sat and took care of other people's pets like you have so I knew before you took on this responsibility just how much work this was going to be. I am sorry for not warning you about this before you took on this commitment. Can you tell me how I might have talked to you or warned you about what you were really taking on?

Without hesitation Levi stated:

> Dad, I wouldn't have listened… I had to learn this myself.

Levi then gave me a big strong hug and we continued our conversation. I am glad I cared enough to let Levi learn everything he learned completely on his own. Fortunately, this type of life lesson can and does happen in a more formal learning setting.

Giving Over Control

Over the years, for the most part, I have created significant learning environments (CSLE) where I have given my learners choice, ownership and voice through authentic opportunities (COVA). The reason I say “for the most part” is that giving over control and giving the learner genuine ownership is one of the hardest things a parent or teacher can do. We don’t want our learners to get hurt, or to struggle, or fail or get annoyed with us so we have the tendency to shield them in advance from the struggles of learning or the consequences of their actions and yet this is where the most significant learning can happen. We sometimes hide behind the notion that we are only scaffolding our learners to help them through the difficult parts of the process but at some point, the scaffolds should come off either partially or completely and the learner must take ownership and responsibility of their learning. Giving my boys and my students control over their own learning has been one of the biggest challenges of my personal and professional life.

Benefits of Ownership of Learning

The life lessons learned through taking full ownership of a learning opportunity cannot be matched by any form of direct instruction or teacher-controlled experience. If we care enough for our learners we need to let go of the control and be willing to see them struggle or fail or even get annoyed with us if we expect them to learn the life lessons that come about through taking full ownership of authentic learning opportunities. Both my boys have learned the value of failing forward through authentic learning and while they still do occasionally get annoyed with me it doesn’t happen much anymore because they have grown to appreciate the value in the struggles of taking ownership of their own learning.

Unfortunately, since many of my students are accustomed to a more traditional form of education which includes giving the teacher or professor what they want and regurgitating information in a simulated project, paper or exam, it is not uncommon to have some of my students annoyed or even angry with me because they feel that I may not be doing my job by not telling them exactly what to do and think. I am willing to have them be annoyed with me because I care enough about their learning to know that if they take ownership and learn by working on something that is authentic then their

learning will be transformative. I don't just let my learners flounder or fail without any guidance, I do scaffold their learning by giving them guidance and direction through the learning environment that I create and through timely feedback that we prefer to call feedforward. In our coaching and mentoring feedback, we help our learners deal with the frustration of failure by pointing them to the research on grit (Duckworth, 2016), growth mindset (Dweck, 2006), intentional practice (Ericsson, & Pool, 2016) and other research literature that confirms the benefits of working through authentic opportunities. The following quote from a recent graduate of the Digital Learning and Leading program where we use the COVA+CSLE approach sums up her experience and the value of this type of learning:

> The DLL program shows you where to look, but does not tell you what to see – Brandi Collins

When we let our learners take control of their learning the experiences they can embrace, the meaningful connections they create, and the knowledge that they gain will be life changing. Isn't this really our primary responsibility as parents and educators?

How Do We Give Our Learners Ownership?

Ironically giving our learners ownership of their learning must start with us. We must not only recognize that learning is not something that we cannot force upon anyone, it is something that the learner must personally embrace and then we should commit to doing everything we can to help the learner take responsibility for that ownership. This includes creating significant learning environments that will promote and foster authentic learning. As we have been repeating throughout this book this is a holistic process that includes giving the learner choice, ownership and voice through authentic learning opportunities.

Once we move away from the traditional teacher-centered focus and onto a learner-centered focus we then need to look to the needs of the learner and consider what character, ability, or skill they need to develop to meet the challenge of the authentic learning opportunity. It is imperative that you focus on who the learner needs to become, or what they need to develop to face and meet the challenge of the authentic project. We need to look beyond content delivery, curriculum standards, and other forms of standardization and consider how this authentic learning opportunity with

help the learner grow into the person they need to become to meet the authentic challenge and then apply this further in the real world. Ownership of learning is all about building the adaptability, confidence, character, grit, and a growth and learners mindset that is required for our learners to address the problems and challenges of the complex world in which we live.

COVA vs Traditional Approach

Ownership is also best realized within the context of the full CSLE+COVA approach. Table 2 reveals the COVA context and the stark contrast between the student-centered COVA approach and the traditional teacher centered approaches. Our recent research into the COVA approach has confirmed that all components of the approach must be present and equally represented for the approach to be properly implemented (Thibodeaux, Harapnuik, & Cummings, 2017). Each of the parts are dependent upon the other. For example, a teacher cannot give the learner ownership of their learning without giving up control. Subsequently, when you relinquish control you also must give the learner the ability to use their own voice.

The ePortfolio has been included in the COVA table because it is a fundamental authentic learning tool that is used to give the learner control, ownership, and voice over the representation of their learning experiences. The ePortfolio is also an example of collaborative technology tool that fades into the background as the learners use it to share their voice and collaborate and communicate with their peers in and out of their classrooms.

Table 2

A Comparison of the COVA and the Traditional Teacher Centered Approach

Components	COVA	Traditional Approach
Choice	Learners are given the freedom to choose how they wish to organize, structure, and present their knowledge and learning experiences. The choice extends to the authentic project or learning experience.	Teachers dictate how students are to perform, organize, structure and present information and learning experiences. When teachers do provide a choice, it is often a selection from a predetermined list of options.

Ownership	Learners are given control and ownership over the entire learning process including the selection of projects, the ePortfolio process, and all their learning tools and resources.	Teachers have full control over the learning process, the selection of assignments, the tools, and resources.
Voice	Learners are given the opportunity to use their own voice to structure their work and ideas and share those insights and knowledge with their colleagues within their organizations.	Teachers require students to emulate and replicate predetermined structures and examples and expect that students will only share their work with them and on occasion allow them to share with classmates.
Authentic Learning	Learners are given the opportunity to select and engage in authentic or “real world” learning experiences that enable them to make a genuine difference in their own learning environments and their communities.	Teachers focus on the delivery of the curriculum and strive to cover the required material that students will be tested on. When projects are used, they are most often closely controlled by the teacher and seldom have an authentic or “real world” impact.
ePortfolio	The ePortfolio is a learning portfolio that the learner fully owns and controls and uses to share their new knowledge publicly with people other than the instructor. The ePortfolio is used to organize, manage, and share all aspects of the learner’s authentic learning experiences.	If ePortfolios are used, they are most often assessment focused and students are required to use tools assigned by the teacher to deposit student’s artifacts. The ePortfolio is used to store content and enable administrators to confirm that required content has been covered.

Keys to Ownership

- Accept that you have control over the learning environment and prepare yourself to let go.
- Give control over or back to the learner.
- Accept that ownership is part of a the full CSLE+COVA approach.
- Use authentic learning opportunities and give the learner choice over the authentic opportunity.

- Look to the needs of the learner and consider what character, ability, or skill they need to develop to meet the challenge of the authentic learning opportunity.
- Provide timely feedback/feedforward as you coach and mentor the learner through their authentic project.

Chapter 11 Voice

> The remarkable feature of the evidence is that the biggest effects on student learning occur when teachers become learners of their own teaching, and when students become their own teachers. When students become their own teachers, they exhibit the self-regulatory attributes that seem most desirable for learners (self-monitoring, self-evaluation, self-assessment, self-teaching). (Hattie, 2009, p. 22)

Getting Comfortable with Your Voice

Since we believe that we must give our learners not only the opportunity to use their own voice but to share their learning insights and knowledge with their colleagues and peers, then this section must reflect their voice. Consider the following reflection from a recent DLL graduate student Malika Humphries (2018):

After completing my very first assignment in the DLL program, I realized the experience was going to be very different. I remember working around the clock on the ePortfolio and truly reflecting on where I have been professionally and how that tied to my passion. When following up with the professors on progress they constantly reminded me that it is about me and what I believe. Though it sounded simple, it was pretty difficult for me to grasp at that moment. I spent so much time working hard to complete goals for others that I left myself behind. This program helped me reconnect back to who I am and what I believe.

As I began to progress through the course I was again faced with another challenge, creating an authentic video of myself. Let's slow down, I just started the journey on getting to know me and now you want me to face someone I barely know? Truly those were my thoughts and as strange as it may sound, it was the most difficult assignment I had to do. See, I spent majority of my life living by the results of other people's thinking. Dogma was basically my only friend, so I thought. I contribute this to traumatic childhood experiences that I tried to get away from through pleasing others. Hopefully that would take the attention off my imperfections. I had nothing to do with social media or anything reflective requiring me to share my thoughts. Then here comes COVA, forcing me to stop running and face it.

Finally, I finished my first video. I watched it over and over again. I spent countless nights crying and didn't really know why. I was afraid to have it posted online

for anyone to see because I didn't think it was good enough. From my perspective, it couldn't be good enough because it was from me. I shared the video with some of my family and their comments confirmed my thoughts, it wasn't good enough. Though I turned it in for a grade, I felt empty.

Behold, a rejuvenating moment. The feedback from my professor and peers stirred a desire to want to face my fears again. They commended the very thing I condemned, my authenticity, voice and heartfelt expression. Something worthy can come from me? Their words stirred a confidence and hunger in me to keep going. It was at that moment that I made up my mind that I am not going back to that place of darkness, but I am staying the course in finding myself. Surely, my contributions had to be valuable if it inspired them. Yes, I lost some friends. I distanced myself from people who didn't understand my journey and I released myself from obligation, regret and shame. My motto became, "what you think about me is none of my business." I became comfortable with my voice and I wanted to contribute more, hear more and see more! Funny, in having choice of assignment format, I began to select the one that highlighted my voice the most and gave me a new experience.

Voice makes Learning Visible

This learner's experience and desire to choose assignments and format that will highlight their voice aligns with what we have seen in most of the DLL learners and it also confirms our research on choice, ownership and voice through authentic learning opportunities as being synergistic processes that cannot be separated. It is through the voice aspect of this process that makes the COVA learning experience visible.

Voice Transforms Learning

The importance of learner voice is not a new idea. Dewey (1938) pointed to the power of finding one's own voice and insisted that personal reflection must be shared with others so that the discourse in community would expose one's own strength or weaknesses of one's ideas. Similarly, Mezirow (1997 & 1998) and Rogers (2006) confirm the importance of students finding their voice because they argue that in addition to finding the holes in one's thinking the process of formulating and relating one's thinking to others either orally or through writing transforms one's thinking and learning. This process of reflection and finding one's voice and then sharing that voice

through written discourse is referred to as authentic voice and is a key principle in Mezirow's (1997) Transformative Learning Theory.

More recent researchers have confirmed that sharing new knowledge publicly with people other than the instructors helps the learner to deepen their understanding, demonstrate flexibility of knowledge, find their unique voice, establish a sense of purpose, and develop a greater sense of personal significance (Bass, 2014). This growth of personal significance that comes from relaying one's mastery of one's own learning experience is one of the most effective ways to develop a strong sense of self-efficacy (Bandura, 1977). The dialogue and feedback that comes from sharing one's experiences with others addresses the social aspect of self-efficacy and bolsters the collective efficacy (Fullan & Quinn, 2015). Sharing one's success orally or through writing provides a source of self-efficacy for others in the community because they see the success of one individual and will be encouraged to follow that model and have similar success. Bandura (2000) has argued the self is socially constituted and by exercising self-influence human agency operates generatively and proactively on social systems. The mastery gained through working on an authentic learning opportunity contributes to both the individual's self-efficacy and the self-efficacy of others who they share their experiences with.

Finding one's voice through authentic learning opportunities enables learners to transform their own learning by deepening their understanding, grounding their thinking, developing a sense of purpose and personal significance. This all contributes to the self-efficacy of the individual which can also influence the collective-efficacy. We have seen in our research (Thibodeaux, Harapnuik, & Cummings, 2017) voice is a co-dependent part of the COVA approach and without genuine choice and ownership of the authentic learning opportunity voice would not exist nor qualify as being authentic.

Finding One's Voice

As we have learned from the recent DLL graduate's story, it can take time to become comfortable with one's own voice. Once the learner's self-efficacy grows they recognize that their voice is not only valid it is important part of the collective experience of their learning community. We have also seen they will then seek out opportunities to contribute more and look for ways to share their voice. Once learners gain confidence in

being able to share their authentic voice they see it as an extremely valuable aspect of the DLL learning environment. In each course that we run we perform a mid-term diagnosis survey in which we ask DLL students to answer the two questions:

What is working?

What can we do better?

Participation in this mid-term diagnosis consistently hovers around 65-75% and in each course that runs one or more students will point to the ability to openly share what they are working on with other students and then receiving feedback from their peers and instructors as one of the things are working well in the DLL program. Ironically, one thing that many students see that we can do better with the DLL program is to encourage all learners to share and collaborate at the authentic level. This leads to one of the most important questions regarding learner voice. How do you encourage learners to find their voice?

Encouraging Learners Voice

The key to the COVA approach and finding one's voice are authentic learning opportunities because without the ability for the learner to choose to do an authentic project that they can implement in their organization there is no ownership and subsequently no voice. Giving learners this freedom to choose and asking them to take ownership of their learning and then share that ownership through their voice is not the norm in our traditional educational system. Most of our learners have had 12-13 years of the traditional command and control-based learning experience in K-12 and an additional 4-5 years of undergraduate experience where giving their teacher or professor what they wanted was standard part of their schooling process. As we have learned from the DLL graduate's experience listed above and many others it can take some time for a learner to find and express their voice. This is where the CSLE+COVA is so important. We must reiterate that unless you create a significant learning environment that gives the learner choice and ownership, through authentic learning the learner is not able to begin the process of finding their voice.

While many students are initially intrigued by the opportunity that the DLL program offers to learn through a constructivist based, active learning environment that utilizes authentic learning opportunities they very quickly realize that their previous

schooling experiences have not really prepared them to have choice, ownership and voice through authentic learning opportunities. As a result, we have structured the first two courses in a way to ease the learner into this mindset. In the first course of the program learners are exposed to the growth mindset, active learning, failing forward, feed forward and are gently introduced to choice, ownership, and voice through authentic learning opportunities. In this introductory course, DLL learners are simply required to choose the format in which they share what they have learned and are encouraged to try different writing and presentation formats to share their weekly work.

In the second course of the DLL program learners are asked to choose an ePortfolio platform and start building their ePortfolio by incorporating their work from the first course. The DLL learners are given significant guidance in the ePortfolio creation process but all the choices including the platform, templates, structure and implementation are theirs and perhaps equally important is that the learners are given time to experiment, explore, and begin to find their voice. Student feedback on this second course reveals that guided discovery works well because we give the learners enough time for genuine exploration and experimentation. When students get into the third course of the program which is the first of the three core courses they are better prepared to identify an innovation opportunity that they would like to implement in their environment. In the first core course, they develop an innovation proposal, literature review, implementation strategy, a call to action video and present their whole innovation plan to their intended audience through their ePortfolio. The revision and implementation of this innovation plan is the authentic learning opportunity that they continue to revisit and build upon in all the DLL courses. Their ePortfolio is the other unifying authentic learning tool that they use to reflect on their experiences and find their voice as they share with their peers and their authentic audience.

While all learners are given the opportunity to choose and take ownership of their own authentic project in this core course some students do not fully embrace this opportunity and hesitate to take full ownership. In the following two additional core courses, learners are given the opportunity to explore and apply the modeled constructivist approaches to their own learning environment and develop an organizational change strategy that will help them to move their innovation ideas

forward. By the third core course and the fifth course in the program most students take full ownership of their authentic learning experiences and begin to see how they can be successful in implementing their innovation strategies. This is also the point where most learners really begin to use their voice. Some students struggle with not only finding their voice but with the responsibility that comes with choosing an authentic project.

Challenges in finding one's voice

The students who struggle the most with finding their voice in using the ePortfolio and in sharing their innovation plans with their audience are the ones who are not fully committed to the authentic project. Even though an admission requirement for the DLL program is current employment or involvement in a learning environment in which the learner can work on an authentic project there are some students who persist in working on a simulation or mocking up their innovation projects. These students often have difficulty in finding their voice but when they finally take ownership of their innovation project their motivation, commitment, and work changes and they then find their authentic voice.

Another group of students who struggle with finding their voice are high achievers who understand how the educational system works and know that if they give the professor what the professor wants then they will continue to get the "A" that is their primary motivator. These are savvy and pragmatic students who have learned how the system of information transfer, standardized testing, and ranking works who look to assignment rubrics rather than instructions to see just what they are going to be required to give back to the instructor. These students have many years of experience which confirm that the cherished "A" will be given if they simply satisfy all the assignment criteria by checking each item off the rubric checklist. Most of these students initially do not want choice, ownership, and voice through authentic learning opportunities because this isn't the educational system that they are used to and have mastered so they often do not feel safe because this isn't the system that they know so well. They simply want to be told what to do or to give the instructor. These students are not concerned about finding their voice because the system of education that they have mastered has not previously required them to find their or even use their voice.

Fortunately, these students are very quick learners and can quickly adapt to the COVA approach—when they are assured that an “A” can be achieved by following through on the approach. When these students recognize that committing to the authentic innovation plan and writing to their unique audience will also give them their cherished “A” they embrace the choice and ownership that authentic learning opportunities provide, and they not only find their voice they become advocates for change and innovation. These students not only find their authentic voice they tend to become highly critical of our current system of education because they see the hypocrisy of using the progressive student-centered rhetoric of Dewey while having to implement the information transfer and standardized testing of Thorndike (Labaree, 2005). These students also are more inclined to become very critical of professors who are not consistent in applying the COVA approach and become very possessive and defensive of their choice and voice.

When learners make choices and commit to taking full ownership of their authentic learning opportunities their voice reflects the learning transformation that they experience. When learners own their learning they also find and express their authentic voice which not only helps build their self-efficacy but the self-efficacy of those whom they influence in their learning communities. Perhaps even more importantly is these learners can create significant learning environments where they give their learners choice, ownership and voice through authentic learning opportunities. This not only has the potential to change their classrooms but can change the world one learner at a time.

Keys to Voice:

- Voice is the oral or written manifestation of a learner’s choice and ownership of their authentic learning opportunity.
- CSLE is required to provide the context and environment for authentic learning opportunities.
- Without choice and ownership there will be no authentic voice.
- Learners are not accustomed to being asked to find and use their own voice so a safe environment must be created to assure them that they voice is valid and needs to be heard.

- Formative feedback/feedforward and encouragement are essential in helping learners find and develop their voice.

Chapter 12 Authentic Learning Opportunities

> Opportunities for learning require that the learning environment “fit the individual and not the average” (Rose, 2016, p.8).

When Normal or Average Apply to No One

From the age of 18 months to 3 years, I (Thibodeaux) recognized that my daughter Sadie was having some issues with expressive language and sensory integration. We could tell that she was listening and paying attention, but she could not articulate her needs on a simple level or answer basic questions such as yes and no. In her frustration, she would cry out and become upset rather quickly. We set up an evaluative screening through early childhood intervention services who worked with her developmental delays in speech and sensory-related issues. My daughter was unable to focus on anything for 30 seconds at a time. Based on the average, “age-appropriate” skills, she was found to be at least 9 months behind in language and overall development. We took her to see an audiologist who confirmed that her hearing was superb. We had early childhood intervention services visit our home regularly until she was 3 years old working with her on nationally normed developmental milestones and language therapy. At age 3, we took her to see a pediatric neurologist and a developmental behavior physician, who both claimed that Sadie was pre-academically above her “average” age group and they saw no cognitive deficits. I shared the following tables with the doctors:

Table 3. 18 Month Milestones & Concerns

Language	Social/Emotional	Speech	Physical
Says “hi” sometimes… Calls brother “Guh” Says “baby” a lot Says “bye” sometimes..	Interacts well with kids she knows	Articulates many sounds: /b/ /d/ /g/ /k/ /m/ /w/ /v/ and vowels	Runs Walks Climbs
Yells “dada” when she sees dad Yells “daddy” a lot	Shuts down and cries when too many people are around	Tongue appears divided at the end	Jumps Claps Gives high fives
Says “yaya” for yea	Recognizes self	Makes ‘dih’ sound for counting with mama	Plays peek-a-boo

			Crawls on the couch

Concerns
1. Does not imitate often 2. Does not point at all 3. Very independent & very hyperactive 4. Does not want to be comforted when gets hurt 5. Does not say “baba” or “mama” anymore 6. Rarely says “bye” or “hi” with waving motion 7. Show her many times how to say/do things; she doesn’t try to attend to task 8. Screams instead of speaks 9. Little interest in other kids 10. Does not notice when parents leave 11. Shakes hands and fingers near head, sometimes hand flaps to show excitement 12. Puts hands to chin or forehead and swipes away for “no” 13. Grabs herself in her female area frequently

At the time I constructed these tables, I thought I was doing the best I could by documenting her milestones. In fact, I have several more of these tables that I continued to develop as I watched her progress through the standard baby development milestones as identified by the American Academy of Pediatrics. I began comparing my daughter to the average, “age appropriate” children that the books and websites identified as having “normal” developmental milestones. I sincerely failed to see that comparing my child to the average was comparing her to no one as I will share later in this chapter. I continued to worry and put myself through the heart ache of questioning why my kid was just NOT acting like other kids her age. As I was explaining my situation to her pre-school teachers and another professor, they would make comments to me that she’s on her own time and she’s a “math genius” and asked me if I read a book called, “Understanding My Gifted Child.” What?! This was not something that I have ever considered even with my years of teaching gifted and talented students. I started to question my very belief systems about my daughter realizing that what I have always believed about “normal” just didn’t fit. After several years of independent evaluation and private services, my daughter is now starting to speak and ask questions. She was tested on her adaptive behavior skills, full scale IQ, and on social language pragmatics. Her scores came out very low and it took me an entire night to process and craft my

response to this finding. After receiving test scores that in no way defined who my daughter really is, I sent the following email to the diagnostician at the school:

> Pertaining to educational diagnostic tests, I do understand that these tests are simply one data point and are ultimately, one-dimensional in nature. Norm-referenced tests such as these are meant to measure kids according to what is considered average, "age appropriate" skills. This is accepted norm by our educational system but in actuality, it is flawed. If you consider the history of Taylorism/Thorndikian (scientific management and standardization), the averages these people used were based on a mid 19th century notion of average. More recent 20th and 21st research has revealed that the averages that we so commonly use fit NO ONE on enough dimensions to be accurate. For example, when the army was building cockpits for pilots in the 1940's, they believed they designed the cockpits for the average man. What they found was that of thousands of men measured to get the "average," not ONE man fit that actual average. They learned that the only time you can truly measure average was when you measured identical groups of men; that would be difficult to do. The average was truly designed for no one when you consider multi-dimensional aspects (arm length, neck length, waits, weigh and so on). Averagerian science and the industrial way of thinking about education and our schools still dominates our school system. Unfortunately, we were not designed to follow a perfect and pre-determined blueprint for learning OR testing, which causes me to question the systemic issue of learning the standards "in sequence" to meet the identified state learning standards. Tests and state learning standards were designed for the system and not for the individual. Therefore, IQ scores and other standardized testing mean very little to me other than one data point.

While I did not necessarily agree, or disagree with the scores, I could call this incidence just about anything but helpful; certainly, not the best way to discover that my child needed help. It is after this revelation that I finally reconciled and accepted the idea that no one is average, not even my daughter, and to measure her against the average of her peers alludes to disguising her true talents and abilities. What a normative test score shows my daughter is on paper is nothing compared to who she is as a person. I

became hyper aware that achievement metrics were meant to compare my daughter to the average, and I am convinced that no one human being is average. It was at this point that I also realized that our schools operating in averagerian science mode cannot see the forest for the trees; more specifically see our children's potential from the standards. The same diagnostician that assessed my daughter, shared with me that she does not believe in averagerian science herself and she doesn't believe these numbers should be the official marker to label our children. Fortunately, we are not alone in thinking this way. In his book The End of Average, Todd Rose (2016) decomposes the very notion of the modern conception of average and warns us that the idea of average "disguises what is most important about an individual" (p. 11).

The Error of Averagerian Science

According to Rose (2011), averagerian science is traced back to the early 1800s when Adolphe Quetelet, a mathematician and astronomer, declared that we could minimize individualism and improve the way the military was managed by using astronomy's method of averages and applying it to people. By averaging the physical measures of thousands of male bodies Quetelet founded the notion of the "Average Man" and as a result the average became normal and the individual became error. By the mid 1800s the English statistician, polymath, and eugenicist Francis Galton fully embraced Quetelet's notion that the average was normal, and the individual was error and extended this thinking beyond the physical to mental capacities. Galton introduced the notion of people being either superior (above average), mediocre (around average), or imbecile (below average) and proposed that people would be the same in all things. As the founder of psychometrics and the eugenics movement, Galton explored ways to use this science of measuring mental faculties to identify and differentiate those who were superior from those who were mediocre or imbeciles so that resources and opportunities could be allocated to the superior individuals in society and not wasted on the mediocre or imbeciles.

This averagerian thinking and the subsequent emphasis on measured differentiation and allocation of resources was adopted by Frederick Winslow Taylor who established principles of scientific management. Taylor changed the way the world worked by applying engineering principles and efficiency techniques to standardize the

work done in the factory. Taylor placed the system above the individual and assigned all planning, control and decision making to the manager. Edward Thorndike also applied this averagerian thinking and scientific management principles to standardize the education process and allocate all planning, decision making and control to administrators. Like Galton, Thorndike was an advocate of eugenics and his main goal was to sort young people so that they could be efficiently assigned to their proper station in life and educational resources could be allocated appropriately to those with superior intellect and not wasted on those without this intrinsic trait. It is sobering to think that Thorndike's eugenics-based standards and rankings are still at the core of today's education system and we continue to sort students from their earliest ages according to how they perform on standardized curriculum and tests. It may be even more sobering and ironic to recognize that one of educations most influential founders built our system of education to have little regard for the growth and potential of the individual and intended to primarily identify and reward the elite. While we no longer use the terms mediocre or imbecile, we are still perpetuating an education system that rewards those who are superior and penalizes those who lag behind the average.

Fortunately, over the past several decades a few inquisitive scientists were willing to look beyond the fatal flaw of averagerians--the assumption that you can understand individuals by ignoring their individuality. Rose (2016) points to several instances where the unjust and dangerous use of average was averted and as a result the lives of many individuals were improved or even saved. For example, shortly after the end of WWII the quality and reliability of airplanes progressed but still too many planes were crashing in training and it appeared that too many pilots were not able to effectively control their aircraft. The Air Force assumed that the average man must have grown since the 1920s and they asked researchers to calculate a new average. One of the researchers, Gilbert Daniels a recent graduate of Harvard, determined that none of the pilots he measured was average on all ten dimensions. When Daniels looked at just three dimensions, less than five percent were average so he realized that by designing something for the "Average Man" it was literally designed to fit nobody. After the Air Force required the design of new equipment, including adjustable foot pedals, helmet straps, flight suits, seats, pilot performance soared and less pilots crashed and died.

A similar lifesaving revelation was made in neuroscience. After measuring thousands of brains to map and establish the average brain, a researcher decided to go back to through the brain scans and compare the individual scans to the average brain scan and he found that not a single brain looked like the average brain. Doing research or brain surgery based on the average brain was not only flawed it was life threatening. Rose (2016) revealed many other examples of averagerian errors like the variance in the delay of the walking reflex compared to an "average" infant being attributed to the neurological problem when the actual variance was related to the chubbiness of the babies' thighs which naturally differs from child to child. Similarly, companies like Google, Deloitte and Microsoft missed out on great talent when their hiring practices failed to look at the unique potential of the individual and multiple factors. To not miss out on stellar talent these companies no longer base their hiring decisions on a single scale like an employee's diploma or credentials.

If all these cases were not enough evidence to confirm that no one is actually average, the recent research of Peter Molenaar should be considered definitive. Molenaar and Campbell (2009) affirmed that the standard practice in psychological research of statistical analysis of inter-individual variation is only valid if the psychological processes concerned are ergodic but most psychological processes are non-ergodic. The ergodic theory is a physics theory that states you are allowed to make predictions about individual particles if 1) every member of the group is identical and 2) will remain the same in the future. This theory obviously does not apply to individual people because no two individuals are identical, nor do we remain the same--individuals are non-ergodic. Yet, for over a century we have been using results obtained at the population level and generalizing to the level of the individual when we should have been doing the opposite by first analyzing individual cases and then aggregating in order to draw conclusions at the individual level. Molenaar (2014) refers to this error as the ergodic switch and Rose (2016) simply calls this the averagerian error and summarizes:

> "This is how we ended up with an average body that matches no man's body, brain models that match no person's brain, standardized medical therapies that target no bodies physiology, financial credit policies that penalize credit worthy

> individuals, college admission strategies that filter out promising students, and hiring policies that overlook exceptional talents." (p.65)

Rose also points out that we should not suggest that our system of education is broken; it is working just as it was designed by Thorndike and there is no denying that is has served us well in the industrial age. But, we have moved from the industrial age to the information age, so we no longer need to sort people for fit into standardized industrial roles like we needed over past several decades. Yet our schools, colleges and universities are still sorting students for positions they are suited for in the industrial age. We no longer need to prepare our students for a standardized future we need to prepare our students to adapt to a constantly changing future with all the exciting opportunities that it will bring. We obviously need to change our system of education to reflect the fact that averagerian methods are holding our educational systems back and that we need to address the needs of the individual learner. Rose suggests that to advance the principles of individuality we need to recognize that we cannot apply one-dimensional thinking to understand something that is complex or jagged, fixed traits are myths and should always be seen in context, and there is not a single, normal pathway for any type of human development. Rose argues that we need to rethink and redesign our education system and move away from the fixed-paced standardized system of education that sorts for the "average or superior man" to a flexible-paced adaptable system that aims to develop the individual to become valuable contributors to society. We suggest that the best way to do this is to create a significant learning environment in which learners are given choice, ownership, and voice through authentic learning opportunities.

Authentic Learning Opportunities

In the DLL M.Ed. program, we do not use averages as a yardstick to assess or classify our learners nor do we adhere to Thorndike's notion that we must control and manage our learners to get them to conform to an averagerian standard. Instead, we have created a significant learning environment where learners take control of their learning pathways by developing their own authentic innovation plans which are implemented in the context of their own organizational settings. DLL learners build innovation plans starting from an authentic basis of what they hope to achieve and who

they hope to impact. They build out implementation outlines and strategies that they then implement in their organizations and observe how their innovation plans are impacting their organizational settings. DLL instructors come along side learners and support them as facilitators, coaches and mentors. Many of our learners have difficulty initially accepting the idea that the instructor truly works alongside them because most students are so accustomed to instructors as presenters and controllers of content that just ask for the regurgitation of required content. Once they experience this type of individual mentoring and support they recognize just how important it is to their development and they look for ways to ensure they do the same for their learners.

DLL learners also recognize just how important collaboration is for their development as they learn conceptual, analytical, and social processes that help them communicate and engage each other as they build out and implement their ideas from a grassroots perspective. The authentic learning opportunities that DLL learners embrace help them examine their work from many different perspectives as it applies to their lives, and then share their experiences as they collaborate with each other. DLL learners are given opportunities to apply their thinking within the context of their classrooms or other local settings and then explore how to expand their thinking to a broader perspective like their schools, school districts or other organization settings. They ultimately have control and ownership over the learning process where they experience the benefits and challenges of their decisions. They also learn exactly what it means to model a growth mindset in tough situations because failure is part of the learning process that we see in the real-world and in authentic learning opportunities. We know from the literature on development and productivity and from the experience of successful entrepreneurs that you really do not experience success until you have gone through success, failure, and success again.

Once we give back control to DLL students to learn, experience, fail, plan, predict, evaluate, and innovate on their own terms in their own organizational setting, they are not willing to go back to their old ways of thinking. Regardless of the overt success or lack of success in the implementation of their innovation plans the lessons learned from these experiences and the impact that they have managed to make on their organizations are the true measures of success for DLL learners. The impact of the

authentic project on the learner and their audience is the most effective way to measure progress with authentic learning because it is the same way that we measure success in the real-world. Graduates of the DLL program continue to work on their innovation projects beyond the program of study and regularly communicate with DLL instructors regarding how their projects are progressing or how they are taking on new initiatives and applying the lessons they have learned to these new projects. This is perhaps one of the best measures of success.

Why Authentic Learning Works

Constructivists, or those who believe that we learn by making meaningful connections, believe that new knowledge is constructed when we combine or relate it to what we already know. Authentic learning is a key component of the CSLE+COVA approach and DLL learners are given the opportunity to select and engage in real-world or authentic learning opportunities that enable them to make a genuine difference in their own learning environments. The selection and engagement in these real-world problems are relevant to the learner and further their ability to make meaningful connections (Donovan, et al., 2000), providing them with career preparedness not available in more traditional didactic forms of education (Windham, 2007). Research confirms that authenticity is developed through engagement with real-world tasks. Authentic learning can deepen knowledge creation and ultimately help the learner transfer this knowledge beyond the classroom (Driscoll, 2005; Nikitina, 2011). It is also important to recognize that authenticity is not an independent or isolated feature of the learning environment, but it is the result of the continual interaction between the learner, the real-world activity, and the learning environment (Barab, Squire, & Dueber, 2000). This is also why we stress that in the CSLE+COVA model, choice, ownership, and voice are realized through authentic learning. Without this dynamic and interactive authenticity, there would be no genuine choice, ownership, and voice (Thibodeaux, Harapnuik, & Cummings, 2017).

The authentic learning aspect of the CSLE+COVA approach maps closely to Newmann and Wehlage's (1993) five standards of authentic learning:

1. Higher-order thinking - learners move beyond the regurgitation of facts to making meaningful connections that transform information and ideas through analysis, synthesis, design, and creation.
2. Depth of knowledge - learners are able to solve complex problems and systematically synthesizing large amounts of fragmented information into cohesive arguments and explanations that lead to a deeper understanding.
3. Connectedness to the world beyond the classroom - learners address authentic or real-world projects and use these personal experiences to apply their gained knowledge and experience.
4. Substantive conversation - learners collaborate with peers and experts to use higher order thinking to enter into dialogue that can collectively improve the understanding of the authentic problems or projects.
5. Social support for student achievement - learner use collaboration rather than competition as the path to developing an environment that promotes, diversity, respect, and inclusion.

These five standards and much more are fully realized in the DLL program and made visible through the ePortfolio where learners construct a meaningful, digital representation of their learning journey. The ePortfolio is one of many authentic learning opportunities in the program because it incorporates elements of reflection, details learner innovation, and reveals the pathway of the learners individual learning experience. DLL learners own and control all aspects of their ePortfolio and take it with them as they venture into other learning experiences, career positions, academic paths, or new business opportunities.

Keys to Authentic Learning Opportunities

Throughout this chapter and book, we have been pointing to examples of authentic learning opportunities that we have utilized in the DLL program or that out students have implemented in their organizations. Rather than just continue to add more examples it may be best to identify the key characteristics or factors that can help you to determine if something is an authentic learning opportunity. These factors include but are not limited to:

- Real-world application that serves a purpose, solves a problem or addresses an actual need.
- Involves analysis, synthesis, design, and creation and is something that can be done or implemented.
- Is chosen and owned by the individual but still offers an impact to a broader audience.
- Is intended for an audience other than the individual or the instructors.
- Has social or collaborative component and extends beyond the classroom.
- Has an aspect of permanence or form of extended duration.
- Requires instructors come along side learners and help them guide their projects as facilitators, coaches or mentors.

It is important that you recognize authentic learning opportunities are the foundational part of a the full CSLE+COVA approach and choice, ownership, and voice are realized through authentic learning opportunities. The range of authentic learning opportunities is only limited by the imagination of the learner and the constraints of their context. The opportunities to embrace authentic learning is continually present. We know what is real and what isn't and because authentic learning isn't as neat and tidy as standardized curriculum and testing there is a tendency to look to the tried and true. You can bring authentic learning into everything that you do—if you choose to give your learners choice, ownership and voice and if you are willing to explore those amazing learning moments that present themselves if we are simply willing to look for them.

Since there is a tendency to codify and standardize most things or to go for the quick fix we are not going to give you a list of authentic learning projects. All one needs to do is look to the wonderful potential of project-based learning to see how quickly authentic projects can shift into thematic problem-based endeavors where students simply replicate a variation of tried and true activities. Authentic learning opportunities are authentic when they are chosen and owned by and are unique to the individual learner. Remember we need to move away from the fixed-paced standardized system of education that sorts for the "average or superior man" to a flexible-paced adaptable system that aims to develop the individual.

Chapter 13 ePortfolio and Our Research

> People are happiest when they have control over everything that's important to them. -- Todd Rose

Breaking from Tradition

In the DLL program, we ask our learners to build their own ePortfolio. Many learners begin thinking that we are going to show them exactly how to build an ePortfolio by us telling them which buttons to press to make things happen. However, we help them recognize that they can "learn by doing" (Hattie, 2009; Schank, 2011). Questions we ask include: who their audience is, what do they wish to convey to the world, what are they passionate about, and how to embrace the "If I do this, how does this affect that?" mentality. Harapnuik (2004) refers to this inquiry or exploration as Inquisitivism. We are careful to create a learning environment where students are given freedom to explore and learn, experiment with innovative ideas, and share those ideas globally. Many students experience discomfort in doing this because they have never been given this freedom in traditional school settings. They will ask: How will I be graded if I have some control and you are not telling me exactly what to do or how to do it? Since we ask students to do something that is real, develop and implement an authentic project in a way that will impact their organizations, many initially do not trust the process. They are scared, leery, cautious, and uncomfortable because they are being asked to dig deep, to experiment, design, discover, innovate, and impact change. Because we ask our learners to break from the traditional standardized factory model we use in schools today we must provide an effective alternative environment where our leaners have control that comes from choice and ownership and we must also come along side and guide them through this process. By creating a significant learning environment that addresses all the factors for our learner's success and then by giving our learners choice ownership and voice through authentic learning opportunities we are able to cultivate or learner's growth and development. This is similar to how organisms are grown in a petri dish where they grow on their own terms and thrive because of a rich environment (Thomas & Brown, 2011). In doing this, we hope that students will harness their resources, take ownership, and find a way to move their ideas forward and put them to good use for their own students. However, I (Thibodeaux)

haven't always viewed learning in this way and like many of our students I was initially uncomfortable, so it took me a while to make a shift in my thinking.

In my early years of teaching, I was like most students in our educational system who learn to do what the teachers tell them to do, to not ask too many questions, to not think very much, and simply give information back to the teacher on the test or other forms. Throughout my years as a classroom teacher I simply did what was done to me. It was so easy for me to tell my students exactly what they needed to do, especially since I assumed that they would not learn anything if it did not come from me. I thought that if I took control of *how* learners learned, then I could control *what* students learned. Even when I was teaching in the way that I had been taught I had a nagging suspicion that my students weren't really learning and that there was a better way. I was noticing that my students were not personally nor affectively engaged in the content but were simply working with the content just because the content needed to be studied, regurgitated and measured on a test. Because I was seeing that my students did not really care about the content and there was very little passion in their learning, I started to question if they were really learning. I worked harder to plan and deliver the perfect interesting lesson and assumed that just because I was teaching an interesting lesson, students cared (Schank, 2011). It didn't seem to matter how well I delivered content that I found interesting, so I started to look for ways to bring a purpose back to the learning with the hope of restoring some of the passion for learning that we see in our very young students.

It troubled me to recognize that if I continued to utilize recipe and regurgitation models of teaching and learning, I was essentially treading on our students' passion and their futures. This was extremely sobering because I believed it was my responsibility to prepare my learners for the future—but I began to realize that the traditional system I was using wasn't allowing me to do this. A change was needed but making a shift to a better way not going to be easy. It is easier to plan our instruction on standardized activities that we develop for our students and ask them to either replicate or regurgitate the content. While this method of instruction is more efficient and easy to measure, it ignores the needs of the students, the pace that they may need to effectively learn, and all too often ignores the student's motivation. When I returned to University as a

graduate student I wanted to find alternatives to the system of education that I had realized was not working well for the people who we say that we serve—the learner.

Except for a few seminar style classes and the research that I conducted, most of my compulsory courses in graduate school followed the tried and true recipe and regurgitation model. I confirmed that I had received the required information in lectures or read in required texts and articles and regurgitated that information in a variety of ways. I began to long for more freedom to explore ideas and to take ownership of my learning but even in my research I had to structure my work to fit very specific accepted standards. Fortunately, I was somewhat rebellious and explored ideas that I wanted to explore and I learned that for more than a century highly acclaimed researchers and theorist like Dewey (1916) Bruner (1960), Piaget (1964), Jonassen (1999) Papert (1997), Sizer (2004) Sarason (2003), and Vygotsky (1998) and many more lessor known researchers have provided the evidence for the merits of constructivist learning environments that give learners that freedom and ownership over learning that I longed for. Yet we see only limited examples of this in our educational system. Why? Perhaps it is because we regurgitate our own recipes and resort to “we do this because this is how we have done it before.” Or perhaps it is because we do what was done to us – we teach in the way that we were taught. Regardless which statement we wish to hold onto we must acknowledge that our educational systems is slow to change. I recognized that if I wanted to see the changes in my learning environment that change needed to start with me.

I have learned more about learning how to learn in the years that I have broken away from our traditional standards-based recipe and regurgitation model than the decades I spent in it. I will be first to admit that creating a significant learning environment in which we give learners choice, ownership, and voice through authentic learning opportunities does require significant time, purposeful planning, and a willingness to let go and give some control back to the learner, but ever since I have gone down this path I can never go back to the traditional model. I believe that it is vitally important to walk the constructivist learner-centered talk and to reflect on and implement ways help our leaners learn how to learn and to engage through authentic

learning opportunities that will ignite their passions for learning. Remember—if you start with the heart, the mind will follow.

ePortfolio and the Learning Journey

Throughout this book, we have discussed how choice, ownership, and voice can be realized through authentic learning opportunities. One such authentic learning opportunity built into the DLL Master's degree program is the ePortfolio. The student owned and created ePortfolios are just one of the many authentic learning opportunities that our students embrace. But the ePortfolio is especially significant because it is first authentic learning opportunity where DLL learners are fully immersed in the very nature of authentic learning that can transform their lives.

Learners have complete control over the ePortfolio process including choosing the platform, template, and design elements they wish to employ. They choose how to organize all their information and their work to be included on their ePortfolio while instructors help guide and assist them in their discovery process. Initially, learners will ask us what they need to put on their ePortfolio and who is this for? We turn this around ask them the very same question. We let them know that they own the learning and the content they wish to add to their ePortfolio. As a result, learners set up posts, pages, blogs, learning networks, and build out and share all their coursework that is applied in their organizational settings. These bits and pieces that they develop and accumulate over the duration of the DLL grow into the significant ePortfolio that not only reflects their learning journey but reveals how they have been transformed into digital leaders.

DLL students continually reflect in their course discussions, their posts, and in the capstone summary how accustomed to the traditional system they are and how challenging it can be to be given genuine choice over the learning process. Once learners eventually accept this freedom to choose they learn to let go of their initial resistance and begin to break down the procedural barriers they have built up over the many years spent in our traditional system. When learners discover that they can trust themselves and their intuition, they being to learn how to recover when they fail and make key decisions that will enable them to become influencers in their own organizations. Much of their learning becomes visible and real to DLL learner as they reflect upon their learning experiences through the choices they make in their ePortfolio.

These choices enable DLL learners to develop ownership and agency because they are not told specifically how to learn. Through this process, learners actually learn how to learn and what it means to take ownership and responsibility for their growth and development. Initially, learners do not always appreciate or understand the power of this freedom because they have learned how the traditional system works and often prefer to be told exactly what they need to do and how they need to do it. However, with careful guidance, students begin to embrace the ownership of their learning and they learn to control their own learning experiences. We continually remind and encourage DLL learners to embrace this opportunity through statements like:

> We ask you to build your own learning pathway; you are not doing this for me, you are doing this for you and for your organization. Your learning is authentic to you; therefore, you are responsible for effecting change within your organization. What you put into this experience and your ePortfolio will, in turn, be what you get out of it.

We know from the research and from our experience that self-regulated, genuinely interested learners that control their learning are one of the hallmarks of learning in learner-centered instruction. When you no longer need to ask a student to elaborate or add additional ideas to their posts, pages, and projects in the ePortfolio, but they do it on their own terms, students have become self-directed learners. When students begin asking questions such as, “Can I discuss what I am passionate about and use this as a roadmap for what I hope to learn and achieve?” Then you know that a student has embraced the ownership of their learning and are beginning to find and develop their voice.

Through voice in the ePortfolio, learners reflect on what they share with others, how they collaborate on projects, and how their learning experience changed them over time. DLL ePortfolios provide learners an opportunity to find their voice, learn how to learn and share what they have learned with each other. Because DLL learners engage in using the ePortfolio from the start of the program and continually build out their thinking as they go along the extended iterative process is instrumental helping learner transform their thinking about learning. This continually reflective process and the sharing of their ideas with others helps learners to establish a sense of purpose and

develop a greater sense of personal significance which contribute to their developing a strong sense of self-efficacy in themselves and collective-efficacy (Fullan & Quinn, 2015) in those who they share with.

Finding one's voice through authentic learning opportunities enables learners to transform their own learning by deepening their understanding, grounding their thinking, developing a sense of purpose and personal significance. We have seen in our research (Thibodeaux, Harapnuik, & Cummings, 2017) voice is a co-dependent part of the COVA approach and without genuine choice and ownership of the authentic learning opportunity, voice would not exist nor qualify as being authentic.

ePortfolios Research

We cannot address authentic learning opportunities without acknowledging the research that we have conducted to confirm our fundamental assumptions. In 2017, we published several peer-reviewed chapters and articles, several other publications and this e-book as an open educational resource. We are not intending to rehash or revisit these chapters or articles which we encourage you read in their entirety but are pointing to key insights that have confirmed the importance of choice, ownership and voice through authentic learning opportunities.

The first study we conducted aimed to determine whether former students of an M. Ed. program continued to use their ePortfolios beyond their program of study. We also wanted to identify what factors contributed to or did not contribute to the continuing or discontinued use of a student's ePortfolio beyond their program of study. In the published findings in the article *Factors that contribute to ePortfolio persistence* we confirmed that authentic projects, assessment of own learning, and feedback during the learning process had a significant influence on the continued development of the ePortfolio (Thibodeaux, Harapnuik, & Cummings, 2017). Without these elements, we learned that only 18% of students continued to use the ePortfolio after the program of study. We also confirmed that students prefer to create ePortfolios that allow them control and ownership over their learning. It is not surprising that students will stop using an ePortfolio if they do not fully control or own it. We are currently replicating this research in a broader perspective to confirm that if students are given the appropriate learning conditions in which they have choice over the ePortfolio process and the choice

of which ePortfolio to use, then ePortfolios can be an invaluable tool for promoting ownership of learning.

Since the ePortfolio is a key authentic learning opportunity that we use in the DLL program we are continuing to explore the impact of the ePortfolio as well as looking more specifically at the role that choice, ownership and voice have in learning within the program. Therefore, in our second study we wanted to explore our student perceptions of COVA and examine to what extent our learners believed that the program enabled them to develop control and agency over their learning process. This study revealed that DLL students rated choice, ownership, voice, and authentic learning as almost equally important with the highest level of importance giving to authentic learning opportunities. An analysis of the unsolicited narrative in DLL discussion boards and analysis of capstone student reflections on COVA their experience confirmed our students not only experienced choice, ownership and voice through authentic learning opportunities, but that this experience changed them and prepared them to be digital leaders who believed that they could create and an environment where they could do the same for their learners. This analysis also revealed that our learners believed that if we removed even one element of the COVA learning approach, the learning experience would not have been as impactful. Perhaps the most exciting but troubling finding is that DLL students are begging for more opportunities to allow their learners to experience this change in learning for their own organizations. It is exciting because they see the benefits of giving learners choice, ownership, and voice through authentic learning opportunities, but it is troubling because most DLL students are not given the opportunity to do this for their learners because of their school's reliance on the traditional recipe and regurgitation model and the preparation for standardized testing.

Fortunately, most of our DLL graduates are not willing to go back the traditional model of instruction and since we are committed to supporting DLL learners and all educators who are looking to prepare their learners for the exciting future we are committed to expanding the DLL program and promoting CSLE+COVA approach. To do so we will continue to pursue new research to confirm and improve on the CSLE+COVA approach

CSLE+COVA Research

The following peer-reviewed journal articles and book chapters point to research that supports the COVA+CSLE approach:

Thibodeaux, T. N., Harapnuik, D. K., & Cummings, C. D. (2018). *Perceptions of the influence of learner choice, ownership in learning, and voice in learning and the learning environment.* Manuscript submitted for publication.

Thibodeaux, T. N., Harapnuik, D. K, & Cummings, C. D. (2017). *Graduate student perceptions of the impact of the COVA learning approach on authentic projects and ePortfolios*. Manuscript submitted for publication.

Thibodeaux, T. N., Harapnuik, D. K., & Cummings, C. D. (2017, May). Learners as critical thinkers for the workplace of the future: Introducing the COVA learning approach. *Texas Computer Education Association TCEA Techedge, 2*(2), 13. Retrieved from http://www.tcea.org/about/publications/

Thibodeaux, T. N., Harapnuik, D. K., Cummings, C. D., & Wooten, R. (2017). Learning all the time and everywhere: Moving beyond the hype of the mobile learning quick fix. In Keengwe, J. S. (Eds.). *Handbook of research on mobile technology, constructivism, and meaningful learning.* Hershey, PA: IGI Global.

Harapnuik, D. K., Thibodeaux, T. N., & Cummings, C. D. (2017, March). *Student perceptions of the impact of the COVA approach on the ePortfolios and authentic projects in the digital learning and leading program.* Paper presented at the Society for Information Technology in Teacher Education (SITE), Austin, TX.

Harapnuik, D. K., Thibodeaux, T. N., & Cummings, C. D. (2017). Using the COVA learning approach to create active and significant learning environments. In Keengwe, J. S. (Eds.), *Handbook of research on digital content, mobile learning, and technology integration models in teacher education*. Hershey, PA: IGI Global.

Thibodeaux, T. N., Harapnuik, D. K, & Cummings, C. D. (2017). Factors that contribute to ePortfolio persistence. *International Journal of ePortfolio*, *7*(1), p. 1-12. Retrieved from http://www.theijep.com/pdf/IJEP257.pdf

Thibodeaux, T. N., Thomas, A., & Harapnuik, D. K. (2017, November). Communicating success through ePortfolios. [Featured Article]. *Texas Computer Education*

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Harapnuik, D., Thibodeaux, T. & Poda, I. (2017) New Technologies. In Martin, G.E., Danzig, A.B., Wright, W.F., Flanary, R.A. and Orr, M.T. *School leader internship: Developing, monitoring, and evaluating your leadership experience* (4th Ed.). New York: Routledge, pp. 91-94.

Research that Informs the CSLE+COVA

The CSLE+COVA approach is based on a considerable amount of research that has been explored over the past two decades by the authors about what works and does not work when it comes to creating significant learning environments where learners are given choice, ownership, and voice through authentic learning opportunities. This research is also based on well-established theories going back to the turn of the 20th century. The following is a list of key research ideas informing the CSLE+COVA approach:

Constructivism – With roots stemming from progressive education, the combination of Labaree (2005) and Hattie's (2009) definition of constructivism builds upon student-centered learning, guided discovery learning, and visible learning where students construct new knowledge and show others how they learn (Donovan et al., 2000; Ginsberg & Oppers, 1969, Papert, 1993, 1997; Piaget, 1964). Jonassen and Reeves (1996) assert that learning with technology or using technology tools to support the learning process, should be the focus in the learning environment rather learning from technology. This line of thinking allows authentic projects to become the "object of activity" as opposed to technology functioning as the primary focus of instruction.

Student/learner-centered – It all has to start with the learner. Mayer (2009) characterized learner-centered approaches where instructional technology was used as an enhancement to human cognition. Essentially, student-centered learning is when students "own" their own learning (Dewey, 1916; Lee & Hannafin, 2016).

Teaching roles – An instructor has many different roles which at minimum include presenter, facilitator, coach, and mentor (Harapnuik, 2015a; Priest, 2016). We need to shift to more coaching and mentoring because formative evaluation and

feedback given within a trusted relationship yields the highest levels of student achievement (Hattie 2009, 2011).

Ubiquitous Access & Social Networking – We live in an age where we can access all the world's information and almost anyone from the palms of our hands. Because we are socially networked and connected learners look to their peers and crowd-sourcing for information and solutions to problems (Edelman, 2017).

Instructional Design — If we start with the end in mind or a purposeful backward design, we can look at how a course or program will change learners' lives, how it can make them a better member of society, and how they can contribute to solving particular problems (Fink, 2003; Harapnuik, 2004, 2015a).

Assessment & Evaluation — We should be incorporating formative tools like feed forward (Goldsmith, 2009) or educative assessments that help the learner to align outcomes with activities and assessment (Fink, 2003).

Support & Infrastructure — When people talk about learning technology, they think of tablets and laptops being used in the classroom or learning management systems. But this is the wrong focus; we should not focus on the technology itself but it should be viewed simply as a tool that provides information and supports teaching and learning (Amory, 2014; November, 2013).

Choice – Learners are given the freedom to choose how they wish to organize, structure and present their learning experiences (Dewey, 1916, Ginsberg & Opper, 1969). Choice also extends to the authentic project or learning experience promotes personalized learning (Bolliger & Sheperd, 2010) which includes adapting or developing learning goals and choosing learning tools that support the learning process (Buchem, Tur, & Hölterhof, 2014).

Guided discovery – It is crucial to acknowledge that the learner's choice is guided by the context of the learning opportunity and by the instructor who aides the learner in making effective choices. The research over the past 40 years confirms guided discovery provides the appropriate freedom to engage in authentic learning opportunities while at the same time providing the necessary guidance, modeling, and direction to lessen the cognitive overload (Bruner, 1961, 1960; Ginsberg & Opper, 1969: Mayer, 2004).

Ownership – Constructivists, like Jonassen (1999), argue that ownership of the problem is key to learning because it increases learner engagement and motivation to seek out solutions. Ownership of learning is also directly tied to agency when learners make choices and "impose those choices on the world" (Buchem et al., 2014, p. 20; Buchem, Attwell, & Torres, 2011). Clark (2001) points to a learner's own personal agency and ownership of belief systems as one major factor contributing to the willingness and persistence in sharing their learning.

Voice – Learners are given the opportunity to use their own voice to structure their work and ideas and share those insights and knowledge with their colleagues within their organizations. The opportunity to share this new knowledge publicly with people other than the instructors helps the learner to deepen their understanding, demonstrate flexibility of knowledge, find their unique voice, establish a sense of purpose, and develop a greater sense of personal significance (Bass, 2014, Bandura, 1997 & 2000; Mezirow, 1997 & 1998).

Authentic learning – The selection and engagement in real-world problems that are relevant to the learner furthers their ability to make meaningful connections (Donovan et al., 2000) and provides them with career preparedness not available in more traditional didactic forms of education (Windham, 2007). Research confirms that authenticity is only developed through engagement with these sorts of real-world tasks and that this type of authentic learning can deepen knowledge creation and ultimately help the learner transfer this knowledge beyond the classroom (Driscoll, 2005; Nikitina, 2011). It is also important to recognize that authenticity is not an independent or isolated feature of the learning environment but it is the result of the continual interaction between the learner, the real-world activity, and the learning environment (Barab, Squire, & Dueber, 2000). This is also why we stress that in the COVA model choice, ownership, and voice are realized through authentic learning and without this dynamic and interactive authenticity, there would be no genuine choice, ownership, and voice (Harapnuik, Thibodeaux, & Cummings, 2017).

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