New Learning Models: Helping Students Learn About Learning

By Luke Mudge


A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATION
in
Educational Leadership

Vancouver Island University
NANAIMO, BRITISH COLUMBIA
August, 2015
Dedication

I dedicate this work to my wife, Karen, and my two boys, Ayden, and Quinn, who inspire me to continually learn.
Acknowledgements

I am overwhelmingly grateful for all of my family, friends, colleagues, and instructors who supported me throughout this project. Thank you for your help and encouragement. I would also like to thank God, our creator, who, I believe, is great, good, faithful, and personal—who loves us and even cares about me and my learning.
Abstract

The goal of this project is to outline a framework, and create models, that can be used by teachers to guide learners through the process of designing their own learning. This work presents a theoretical framework and practical model of learning in which “learning to learn” is intentionally and explicitly part of the learning process and outcomes. The goal is rooted in a desire to have students to learn about learning by designing their own learning. As students become involved in the learning design, they also take ownership of, and direct their own, learning. While students are active participants in the learning design in this model, this paper suggests that the role of the teacher is much more than passive facilitator and is intensified by the dual role of teaching content and teaching learning.

Keywords: cognitive, experiential, aesthetic, transformative, personal, social, ethical, learning to learn, designing learning, learning models, role of the teacher, role of the learner
Table of Contents

Dedication .......................................................................................................................................ii
Acknowledgements .......................................................................................................................iii
Abstract ...........................................................................................................................................iv
List of Figures.................................................................................................................................vii
Chapter 1: Introduction ..................................................................................................................1
  Background.................................................................................................................................3
  Justification ...............................................................................................................................6
  Definition of Terms ....................................................................................................................8
  Overview .....................................................................................................................................9
Chapter 2: Literature Review .......................................................................................................10
  Knowledge and Experience .......................................................................................................11
  Cognitive Versus Experiential .................................................................................................12
  Designing Deeper Forms of Learning......................................................................................19
  Cognitive and Experiential ......................................................................................................19
  Aesthetic .....................................................................................................................................21
  Personal .....................................................................................................................................23
  Social and Ethical .....................................................................................................................24
  Role of the Student ...................................................................................................................26
  Role of the Teacher ....................................................................................................................28
  Towards Working Models .........................................................................................................34
Chapter 3: Presentation of Learning Models ..............................................................................37
  Learning Theory Model ............................................................................................................39
List of Figures

Figure 1. Learning theory model. ................................................................. 39
Figure 2. Learning model. ........................................................................... 40
Figure 3. Curiosity to creativity. ................................................................. 41
Figure 4. Think - do - know. ........................................................................ 42
Figure 5. Think - experience - know - become. ........................................... 43
Figure 6. Inquire - take action - think - become. ........................................ 44
Figure 7. Learning as doing. ......................................................................... 45
Figure 8. Learning design. ............................................................................ 46
Figure 9. Blank sheet. .................................................................................. 47
Figure 10. Learning design process. ............................................................ 51
Figure 11. Research design. .......................................................................... 52
New Learning Models: Helping Students Learn About Learning and Design Their Own Learning

Chapter 1: Introduction

The purpose of this project is to create models that teachers and students will be able to use to learn about learning and to design their own learning in a high school setting. I will explore learning theory that supports current models of learning and provides a framework to support teachers and learners in the implementation of new models. I will examine current learning models in reference to the theoretical frame, extract key elements from those models, and propose new learning models. The theoretical framework will provide a foundation for teachers working with learning models and will prepare them to present models to students.

Using models of learning will help students learn about learning and the processes of learning. Models hold the inherent advantage of breaking these processes into carefully selected elements and presenting them in a visual format. Combining elements in practical models will give students the tools and flexibility to design their own learning in a way that works for them. As students gain a better understanding of the processes of learning, they will expand their concept of learning and increase the potential for learning in new and deeper ways.

In the Nature of Learning: using research to inspire practice, Hannah Dumont and David Istance (2010) point out the need for new sets of skills to meet the demands of our increasingly knowledge-based economy and society. Relevant learning, adaptive expertise and lifelong learning are mentioned as new priorities in the design of innovative learning environments. Papert (in Wiliam, 2013, presentation) narrows this priority even further
when he proposes that the most important skill today is: "the skill of being able to learn."
The underlying intent, however, is not to replace content with skill-driven curriculum.
Indeed, what students need are new models that help them learn how to learn and to engage
with content in deeper and more meaningful ways. This will allow them to gain knowledge
and experience effectively throughout their lives.

Following these intentions, this work is informed by experiential learning theory and
builds on the idea of students taking ownership of their learning. Learning that is student
driven provides learners with opportunities to have input into not only what is learned but
also how it is learned. The proposed framework is both related to, and contrasts with,
inquiry-based learning. Inquiry learning typically gives learners flexibility in terms of what is
learned within a specific topic but follows a highly structured process. This project differs
from this in that it proposes models that provide more flexibility to the learner, especially in
terms of how the learning occurs. Models that help students learn about learning and
provide opportunities for students to design their own learning hold the potential to open
up new possibilities for learners to engage in learning activities that are meaningful.

Contributing to the task of designing deep and meaningful learning, this work takes
some of the best elements from the areas of personal, experiential, aesthetic and ethical
learning theory and combines them within a self-directed learning model that is applicable
in a secondary school setting. The research examines current learning models, identifying
important elements and themes relevant to the proposed learning models. To enhance
usability of the end product, the following goals informed the research process: create a
model based on theory, create user-friendly models based on the theoretical model, and
simplify the model by reducing the model into the most essential elements. These goals
indicate the need for flexibility and variety in the design and the need for multiple models. Presenting students with a variety of flexible models will allow students to exercise autonomy by designing learning in a way that works for them. They will be presented with multiple learning models to either choose from or rearrange to suit their learning preferences and needs.

As students use models to design their own learning experiences they will also learn about learning. Learning about learning will expand their concept of learning and open up new possibilities for deeper learning. As the role of the learner expands, so does the role of the teacher. For students to successfully learn how to learn by designing their own learning, their teachers need to be expert learners who are confident users of a variety of learning models. Learners need to be presented with models that are flexible enough to be personalized, simple enough to understand and complex enough to open up the potential for learning in new and deeper ways.

**Background**

As I began implementing new models of learning in my classroom, I noticed that students attempting to direct their own learning were limited by their narrow concept of learning. They did not grasp the greater picture of the learning process or what it means to learn something, and they lacked the repertoire to see more than a few ways to demonstrate their learning. I wanted deeper learning, more curiosity, broader connection, and better applications of learning for my students. I did not want students to know *about* something. I wanted them to shift from knowledge as information to knowledge as wisdom where new understandings result in personal change and result in new action. This forced me to go back to the “drawing board.”
My interest in learning models began with the idea of learners building new knowledge through experiences that allow them to personally connect with course content. I started to think about the idea of learners engaging in deep meaningful learning by directing their own learning. I hypothesized that if students were engaged in the learning process by designing their own learning, their learning would be deeper and more relevant. They would also be more motivated and engaged because they were in control of their learning. The idea of students learning about learning by designing their own learning fascinated me as I thought of the known benefits of student taking ownership of their learning (Wiliam, 2011; Hattie, 2009, in Halbert & Kaser, 2013), gaining metacognitive skills (Wirth & Perkins, 2008), and building the capacity for lifelong learning (Freeman & Le Rossignol, 2010).

I continued my learning in the Certificate in Innovative Educational Leadership (CIEL) program at Vancouver Island University and combined them with my experiences in the classroom as a high school teacher and as the chair of the Curriculum Implementation Committee (CIC) in my district. In CIEL our learning was structured around the Spiral of Inquiry, which, as the name suggests, frames learning as a non-linear process. Rather than being tidy and sequential, I noticed that inquiry was more circular and less predictable. Although this uncertainty felt uncomfortable at the time, I discovered that learning is supposed to be messy. This messiness worked well with the spiral model where all stages of the inquiry simultaneously pervaded everything I thought about and did as I moved into places in my learning that were deeper than I imagined possible.

Part of my work with the CIC involved looking at BC’s education and the new provincial curriculum. The plan emphasizes personalized learning, which “involves learners
in designing learning experiences that integrate their interests and passions” and “responds to the uniqueness of every learner with flexibility in where, when and how they learn” (British Columbia Ministry of Education, 2014, p. 3). The idea of personalizing learning stuck with me, and I started to change the way I viewed my students and the way that I presented learning opportunities to them.

When I asked students about their learning, I noticed that they had a limited idea of what learning is. When I asked students how they learn, the most common response was that they learned best by reading and writing, and the activities they designed were often text based, which sounded like the “right” answer, but ironically information was gathered and presentations were assembled with little reading, writing or thinking taking place. Their engagement with the content was shallow and in some cases was comparable to copy work. The content was being “covered,” but there was little depth and very limited impact on the learner.

I wanted students to start thinking about how they learn and where they were at in their learning. I began to see that they needed more personalized, and deeper forms of, learning, and I started developing and refining learning models that allowed students to design their own learning. My first model was a learning sheet (see Appendix A: Learning Sheet) that guided students through the planning of individualized learning activities. Students chose the outcomes they wanted to work on, agreed on criteria with the instructor, decided how they would present evidence of their learning, and how the quality of their learning would be assessed. Students commented that they really liked being able to choose what, and how, to learn.
I compared my model to a similar one I found in the Innovative Learning Environments (ILE) case studies from the Organisation for Economic Co-operation and Development (OECD). In my readings, I discovered the Beatenberg Institute of Switzerland is an entire school structured around personalized learning. There, students become active participants in the planning of weekly learning tasks that suit their individual interests and needs. They use a planning sheet called a “SMARTY,” (see Appendix B). It is based on setting learning goals and outlines a process of learning likened to the process of carving which progresses through stages of refinement as it takes shape.

I continued to be intrigued by the idea of students taking ownership of their learning. I hypothesized that learners could experience deeper forms of learning when they were active participants in designing their own learning and that to do so they would need even better models of learning, models that would help them learn about learning and help them design their own learning. I wondered what such a model would look like, what the most important elements would be, and how would they be arranged. From there, I started my current project of developing new models that students and teachers could use in the classroom.

**Justification**

The initial inspiration for this project comes from one of the key assessment for learning strategies from the Network of Performance Based Schools: “Doing everything you can think of to make sure that learners are the owners of their own learning. This means that learners are genuinely engaged in learning and confident that they can learn and think about their own learning” (Network of Performance Based Schools, 2007 in Kaser & Halbert, in Halbert & Kaser, 2013, p. 20). I want students to be curious and have the
opportunity to act on their curiosity. I want them to take ownership of their learning and to learn how to learn. I could not think of a better way for students to take ownership of their learning, and develop a greater understanding of the learning process, than by having students design their own learning activities.

I also want students to learn in deeper ways. To accomplish this, I realized that I needed to expand my own conception of what it means to learn in deeper ways. I began looking at experiential and aesthetic learning as a starting point in my search for deeper modes of learning. I explored current learning models and started creating new learning models. I looked at the debate between cognitive and experiential learning theory and argue that new models of learning should include both cognitive and experiential forms of learning. I looked at Kolb’s experiential learning model and wondered if I could incorporate elements from this theoretical model into more practical models that students could use to design their own learning experiences. Then I explored as many models as I could and used them to create new models for teaching, learning, and designing learning. The models I created were intended to be used inside or outside of the classroom for experiential inquiry, project work, or as expanded models to guide research.

I believe that we are all curious learners, and I want to live in a world, and work in a school, “where curiosity – for everyone – is a way of life” (Kaser, Halbert & Timperly, 2014, p.22). I am committed to living out the idea that all students can learn, grow, change, succeed, and that I am a learner as much as a teacher. I believe that my classroom can be a place to advance genuine curiosity, to nurture the thrill of learning and to open up new ways of thinking and seeing the world. Therefore, one of my goals for this project is to streamline the learning process. I intend to create learning models that make the learning process more
“user friendly” and flexible for students, while simultaneously expanding the breadth and depth of the learning. This will help students open up to new perspectives on what is possible in a learning experience.

**Definition of Terms**

*Knowledge* is gained through the senses and involves both cognitive and experiential processes. Knowledge can be both theoretical, involving thinking as the primary activity, and experiential, developing as one makes sense of one’s experience. For example, knowledge may include information or concepts that are received in the form of language that is orally (speech) or visually (text) transmitted. Knowledge can also be gained through experience including practical experience, life experience, and problem solving. Both cognitive and experiential forms of knowledge require critical thinking and reflection, and both need to be supported by evidence and reason. While cognitive knowledge can be a strictly mental/theoretical and rational process, experiential knowledge combines the processes of thinking, acting, and interacting in the world.

*Learning* is experiential in that it is primarily about the human experience in all of its diversity and complexity. While it is deeply personal, it is also social; it is about caring, sharing, and participating in community. It is about knowing, doing and making meaning out of knowledge and experience. It is a process of building personal meaning through experience.

*Personalized learning* starts with the learner and is learner-centred. Students drive their own learning, which is tailored to their individual interests, strengths, needs, goals, potential, skill, prior knowledge etc. It is learning customized for the learner in a holistic way.
Overview

This project considers theoretical work on experiential learning design and uses it to inform practical models that can be used in the classroom to help students learn about learning and design their own learning. Chapter 2 is an exploration and comparison of cognitive learning with experiential learning theory. The chapter will outline a framework of learning that identifies important elements that have the potential to result in deeper forms of learning when incorporated into models. This framework will inform the exploration of current models and the creation of the proposed models in Chapter 3. The proposed models are presented in final form in Chapter 4. The project will conclude in Chapter 5 by considering the limitations of the project and suggesting possibilities for future research and action.
Chapter 2: Literature Review

The purpose of this chapter is to explore and discuss key elements of learning theory that will serve as a framework for new learning models that will help teachers and students design deeper forms of learning. It seems to make sense that designing learning should be preceded with making some decisions about what learning is. That understanding, then, becomes a framework for building models of learning that can be used with students in the classroom. This process is complicated by the ongoing debate between those who place emphasis on the cognitive processes of learning and those who favour the idea of building knowledge through experience. However, there appears to be some overlap between the two perspectives, and this paper argues that they need to work together. Having a theoretical framework of learning will help the teacher develop and implement models of learning that students can use to design their own learning. When students design their own learning, they will experience the benefit of learning to learn, which is a practical skill and foundation for lifelong learning. By taking ownership of their learning, they will also personalize their learning and hopefully engage in deeper forms of learning. As experiential learning theory suggests, learning is a process of building personal meaning through experience. This type of learning includes cognitive processing and the acquisition of information, but it is greater than merely knowing about something. To know also means to experience something. The potential for learning is, therefore, as great as the potential of human experience, and the possibilities for designing learning are almost limitless.

In this chapter, I propose that cognitive learning works together with experiential learning to produce deeper learning. I argue that both cognitive learning and experiential learning are important in the learning process and that cognitive learning is already
embedded in the experiential learning model. Deeper learning also includes other elements that can further enhance the experience of learners including aesthetic, transformative, personal, social, and ethical elements. These new aspects of learning impose new responsibilities on teachers and learners. In order to exercise autonomy, learners need to understand enough about learning theory and learning processes that they are able to use new models for learning and designing learning. Opportunity to design learning needs to be intentionally built into the learning through flexible models that give learners input, not only into what is learned, but also how it is learned.

**Knowledge and Experience**

To inform the discussion, it is helpful to look back at Aristotle's ancient theory of knowledge acquisition. Starting with the point of view that the soul and the body are interdependent, it is not surprising that Aristotle sees knowledge and experience as closely connected (Saugstad, 2013). What at first appears problematic, however, is the way Aristotle struggles with the seeming independence of thought and reason when he says that theoretical knowledge is “farthest from the senses and thus hard to know” (Aristotle, 1941, in Saugstad, 2013, p. 6). However, unlike Plato who explains thought more as a recollection of ideas, Aristotle links theoretical knowledge to experience through imagination. In addition, Aristotle prefers practical knowledge since it is acquired through the senses in real-life contexts. This opposes some traditional pedagogy, which emphasizes content over experience where students passively receive head knowledge while gaining little in the way of experience. And, this could be why some popular models of experiential learning require an authentic context, which is often outside the classroom. Some scholars even question the effectiveness of regular classroom instruction (Papert, 1991, 1993; Pea, 1993; Mishra & Girod,
2006). Yet, as Saugstad points out, we should not place limits on the potential of learning in schools, which are places of freedom of thought, curriculum, creativity, and freedom from work (p. 22).

It follows then, for Aristotle, that both doing and thinking are important and powerfully linked since “practice has cognitive powers” (Burnyeat, 1980, p. 73). In this way, experiential knowledge requires action as well as cognition. Saugstad quotes Aristotle who states that, "[s]ensations are organized by perception and are stored up as memories and many memories develop into an experience" (as cited in Saugstad, p. 11). This is similar to Dewey’s view that learning requires experience as well as the cognitive act of reflection. Where Aristotle’s model of learning would emphasize training, role modelling, instruction, repetition, rehearsal, practice and imitation, Dewey’s favours problem-based learning. Both would agree, however, that learning requires practice. For example, learning to be a doctor is not a purely cognitive exercise that is learned from a textbook. Learning to be a doctor requires the experience of a practicum in a real-life context. Additionally, Aristotle’s view of learning includes character formation, which requires both cognition and action: “to know what virtue is is not enough; we must endeavour to possess and to practice it, or in some other manner actually ourselves to become good” (as cited in Saugstad, p.13).

**Cognitive Versus Experiential**

While Aristotle actually prefers practical learning, Clark and Mayer (2008) critique the commonly accepted view that experiential methods of instruction automatically result in better results for learners. They argue that “physical activity does not equate to mental activity, and it is mental, not behavioral, activity that leads to learning” (p. 5). They state that an effective learning design considers that people learn through working memory and long-
term memory in conjunction with three psychological principles of learning including the dual coding principle, limited capacity principle, and active learning principle and the learning processes of selecting, organizing, and integrating (p. 5).

Clark and Mayer refer to John Sweller’s (2005) cognitive load theory and Mayer’s (2005) three types of cognitive processing that contribute to cognitive load. They argue for instructional methods that “minimize extraneous load and manage essential load, freeing working memory capacity for generative load (p. 5). They do not completely dismiss active learning environments and recommend that professionals focus on using “evidence-based methods that support appropriate cognitive activity in behaviourally passive and active learning environments” (p. 1). One of their main concerns with active learning is that it can actually overload working memory and, thereby, limit cognitive learning. From this position it is not surprising that Clark and Mayer emphasize cognitive learning with direct instruction over experiential learning with indirect instruction.

While there is important research and evidence concerning cognitive learning, it would be difficult to argue that cognitive learning is the only learning that we should consider. Noddings (2006) states that “well-educated teachers should help students in understanding that knowledge cannot be adequately described as a set of easily retrievable answers to unambiguously stated questions” (as cited in Semetsky, 2012, p. 57). Thomas (1975) agrees that for experiential learning to have academic legitimacy, it should lead to intellectual growth. He supports a learning model that includes solving problems, setting objectives, and making decisions. “It should be a blending of the cognitive with the [a]ffective” (p. 175).
Research of experiential ways of knowing is growing and includes emerging genres of inquiry. Phillip Payne (2005) compares scientific and artistic ways of knowing in his study of a student who first experiences a shore by scientifically observing, measuring and recording data concerning the dunes, waves and winds. Then at another time, the student explored, felt, and represented the characteristics and qualities of the shore in sketches. Both ways of knowing and doing are important and neither is limited to cognition. The study compares some of the most important aspects of learning which have to do with being and becoming, “in particular how the scientific and artistic ways of doing respectively shaped her changing perspectives and sensibilities in, about, and toward the beach place” (p. 109). The following is an excerpt from a student’s description, comparing her artistic experience with her scientific experience:

... as an artist, I gained a wider perspective of the beach and appreciated it in greater detail unlike the extended essay. I didn’t need to concentrate on one particular area like beach gradient. I was able to feel all aspects of the beach—the changing colours of the water, the moods created by the beach through the silkiness of water and the flexibility of the seaweed. The experience was an aesthetic one that is hard to describe in words, or numbers like I did in the extended essay .... Artists tend to use a variety of senses to creatively respond to and interpret situations in an aesthetic way ... There were several strengths in being a beach scientist that were very different to the way I perceived it as an artist .... I sought factual knowledge about different parts of it ... used reason, following well known procedures ... to explain findings, and systematically building up knowledge according to conventional standards of other researchers .... A scientist’s perception could never depend on intuition (because) intuition could lead to inaccurate or error prone results ....

Perception is, therefore, used in different ways; but either artistic or scientific ways allow an individual to interpret a situation or object of interest in his or her own unique way.

Pedro Hernández-Ramos and Susan De La Paz (2009) provide evidence contrary to the idea that project-based learning (PBL) is not a useful teaching method when the goal is fact acquisition in preparation for high-stakes testing. High-stakes testing generally tests
lower order knowledge and skills rather than higher order thinking processes such as analysis, synthesis, and evaluation. This was a comparison study of two grade 8 classes in two different schools. Both schools studied the same history content over the same time period of six weeks. One school used PBL with a “single culminating group project... [where] group learning served as the primary means for constructing knowledge of the entire unit... [and] students used technology to create multimedia projects” (p. 157), while the other did not. The data collected was based on pre- and post-testing results. They found that students who followed this PBL model learned more. There are some apparent weaknesses in this study, as the PBL class seems to have had more teacher and student support from the researchers. However, both had curriculum support. An additional aspect of the study that could have affected the results is the sophisticated proprietary software that the PBL students used to create interactive multimedia presentations.

Not only did students learn more, but they also demonstrated higher order thinking by interpreting and providing evidence for their opinions rather than just presenting facts. These students also reported enjoying the content and subject area and were generally positive about their own learning and about learning from others. Some of the theory supported by this study includes constructivism and the idea of learning being “complex and fundamentally nonlinear in nature” (Fosnot & Perry, 2005, p.11). The study also supports the social construction of knowledge through collaboration and interaction around meaningful tasks (Jonassen, Howland, Moore, & Marra, 2003), and the relevance of school-acquired knowledge when applied in real-world situations (Brown, Collins, & Duguid, 1989).

While learning can be purely cognitive (for example, in Aristotle’s theoretical learning), it more commonly involves action in conjunction with cognition, and the results
of the learning are affective, often resulting in personal growth. This includes personal movement or transformation towards ethical understandings and actions in the world. In her research, Luigina Mortari (2004) discusses an ethic of care and explains that it is “not sufficient to practice care; students have to be engaged in pondering and interpreting their experience of caring for [italics added] in order to construct for themselves the meaning of their lived experience” (p. 109). Her work involved students in an environmental project where they learned to care for plants by doing things and thinking about their experiences.

Ronald Barnett (2011) also highlights the importance of learning as becoming, where “the more one learns, the more one is aware of counter positions and perspectives” (p. 5). He describes the type of learning in this situation as “incessant but self-doubting enquiry” where the only outcome that matters is “the continuing formation – largely a self-formation – of the student’s being” (p. 5). He argues that students need to become comfortable with living and being in a state of uncertainty and identifies six dispositions that learners need to effectively engage with the world today: a will to learn; a will to encounter strangeness; a will to engage; a preparedness to listen; a willingness to be changed as a result of one’s learning; and a determination to keep going.

Experiential learning, including learning that involves personal change, is still closely connected to cognitive learning. Sutinen (2008) describes the Deweyan perspective that experiential learning is necessarily a cognitive exercise when he states that “experience teaches things, but learning from experience requires that the individual is capable of keeping his/her experiences in the memory in such a way that past experiences direct the individual’s action targeted towards the future” (p. 6). In this way, “learning means a situation in which 1) the results of an individual’s action can be identified and it can be seen
that a new result of action has emerged as a result of cognitive activity. Learning also means that 2) the new model or way of action arising as a result of the action is a combination of different ways of action” (Sutinen, 2008, p. 6).

Hickcox (2002) acknowledges that experiential learning processes such as reflection and discussion take time, often slowing the pace of learning and displacing time that is typically used for content delivery. Nevertheless, she argues that the benefits of learning through experience take precedence over content coverage. While learning through experiential processes, students are still able to acquire “broad principles and major facts” (p. 124), while gaining important skills and attributes. Students are even reported to become self-initiating and self-directing. They also gain critical thinking skills and problem solving skills, and take social responsibility. Semetsky (2012) agrees when he iterates that “[i]t is the singularity of an informal experiential situation, rather than a mode of direct instruction, that contributes to our learning and the construction of new knowledge” (p. 48).

Emphasizing the acquisition of informational knowledge over experiential knowledge is problematic in a number of ways. High-stakes testing results in a curricular focus on fact recall and comprehension. Some teachers end up “teaching to the test” by focusing mainly on examinable content, which results in a narrowing of the curriculum as teachers prepare students to recall specific information for a specific exam (Abrams & Madaus, 2003; Darling-Hammond, 2004; Marchant, 2004; Pennington, 2004, as cited in Ives & Obenchain, 2006, p. 63). Ives and Obenchain also point out that this narrowing of curriculum leads to a limited use of instructional strategies: Some teachers employ “time-efficient” modes of instruction such as lecture, memorization and drill rather than experiential modes that promote “critical thinking, problem solving and inquiry” (p. 63).
NEW LEARNING MODELS: HELPING STUDENTS LEARN...

Others report that this is because those teachers believe this is the most effective way to prepare students for these tests even though they do not believe that it is the best for student learning (Hillocks, 2002; Marchant, 2004; McNeil, 1990; Pennington, 2004, as cited in Ives & Obenchain 2006, p. 63).

Others note that experiential activities actually result in greater cognitive gains. In a study of six high school classrooms over one semester comparing a more traditional model of instruction with an experiential model, Ives & Obenchain (2006) found that students engaged in the experiential model, which included student-directedness and complex problem solving, showed significant gains in higher-order thinking skills with no loss in lower-order thinking skills. They are among others arguing in favour of learning models that are “experiential, higher order, thoughtful, connected to the community, and student-driven” (p. 64).

Kolb’s original learning model contains both cognitive and experiential elements. In fact it has been criticized as a model because of redundancy as it attempts to distinguish its abstract conceptualization-thinking mode from the other modes, which Bergsteiner, Avery, and Neumann (2010) argue, are not likely to be productive without thinking. Arguably, it would be difficult to separate cognitive activity from any conscious activity including concrete experience. This is perhaps why A. Kolb, D. Kolb, Passarelli and Sharma’s (2014) model now includes the central element of “balancing” to show that there is a range of learning between abstract cognition and concrete experience.

Although the debate continues, scholars have pointed out the strong connection between cognitive knowledge and experiential knowledge and the need for educators to incorporate both in learning design (DiConti, 2004). Theory informs experience and
experience informs theory. For example, “the student can use...experience to provide examples of theory validity or to argue exceptions to a theory” (p. 176). The evidence suggests that there is room for innovative practices, that experiential forms of learning support and enhance cognitive forms of learning, and that the two forms no longer need to be considered as opposed to one another.

**Designing Deeper Forms of Learning**

In support of the idea that learning is both cognitive and experiential, DiConti (2004) states that the challenge for educators “is to design curricula where theory and practice combine to fulfill both the academic and experiential needs of the student” (p. 180). Sutinen (2008) also supports the idea when he says that learning involves thinking when “ways of action are created and constructed in a situation that involves a problem” (p. 5). A progressive approach on the same theme by Payne (2005) suggests “it is important to invite” students into different ways of doing/knowing” (p. 122, italics added). But, what are the academic and experiential needs of students? And, what could models that support a thinking and doing curriculum look like? Are there new possibilities and opportunities for students to learn in deeper and more personally meaningful ways?

**Cognitive and Experiential**

Although the education systems seems to have prioritized theoretical and technical knowledge, John Dewey actually argued for authentic and relevant learning a century ago. In Experience & Education (1963), Dewey brought the learner experience to the fore of importance when he described the “organic connection between education and personal experience” (p. 25). Not only did he propose learning as a personal experience, he also wanted more. Dewey wanted deeper learning: learning that speaks to values and touches the
very core of the individual. He asked, “[w]hat avail is it too win prescribed amounts of information about geography and history, to win ability to read and write, if in the process the individual loses his own soul: loses his appreciation of things worthwhile, of the values to which these things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur?” (p. 49). Further, Dewey argued that the experience of learning should be one of continued growth for the individual, especially in “the formation of attitudes, attitudes that are emotional and intellectual” (p. 35). To Dewey, worthwhile educative experience is democratic, free, social, locally situated, adapted, and connected.

More recently, others have begun to extend the scope of learning to include transferable skills as well as social skills and responsibilities. Parrish (2009) argues that knowledge needs to be readily applicable: “Simply starting with subject matter is not enough. The premise of a course should be something students can currently understand. The theme should describe how they can get from where they are, through activities, to a higher level of knowledge and ability to use the subject matter, not simply to recall it” (p. 522). DiConti (2004) agrees that “simply acquiring or storing knowledge is no longer enough: students must take what is learned and carefully carry that new knowledge into acts of application, generalization, and experimentation” (p. 172-173). Semetsky (2012) emphasizes the social relevance for learning when he states that “real knowledge consists of being able to develop capacities to figure things out, to be unafraid to inquire, to experiment in practice and connect with others, confirming the best in our actual and potential relationships” (p. 57). All of these scholars are pointing towards deeper and more personally meaningful forms of learning.
Aesthetic

Some of the most progressive work towards the design of deeper forms of learning comes from the area of aesthetic learning. Aesthetic forms of learning describe more intimate learning through a greater range of experiences and interpretation of experiences, opening up new potential for deep learning through instructional design. Patrick E. Parrish (2009) describes aesthetic experiences as “immersive, infused with meaning, and felt as coherent and complete” (p. 511). Like Dewey’s experiential learning, aesthetic learning values knowledge that is gained through personal experience. Parrish also suggests that the learning experience “includes the way that the learner feels about, engages with, responds to, influences, and draws from the instructional situation” (p. 512). Wilson (2005, as cited in Parrish, 2009) concurs that in addition to cognitive qualities, learning experiences also have “emotional, social, cultural, political, and aesthetic qualities” (p. 513). An excellent learning experience engages the whole learner in a heightened sensory and intellectual experience just as excellent art compels the observer to fully engage with the art in interpretation and meaning making.

From the same point of view, João Pedro Fróis and Boyd White (2013) address the topic of meaning making and investigate the meaning-making process, specifically related to “how meaning making is achieved in relation to aesthetic experiences” (p. 110). In their research, they investigate meaning-making strategies and seek to find commonality across linguistic groups. The researchers use both qualitative and quantitative data with a phenomenological methodology as they conduct a trial run with a small sample (four) of homogenous participants. Their procedure followed four steps: (1) encounter with artwork, (2) note writing, (3) aesthetigram design, (4) comparison to Jones’s model, and (5) text
writing. In their article, Fróis and White present one case study as they feel this will give the reader the greatest detail in describing what they refer to as a “personalized meaning-making process” (p. 111). Their investigation showed that the meaning-making process “is really an investigation into the self, and most people tend to be intrigued by their own meaning-making patterns” (p. 122). Participants wanted to spend more time and were able to “delve more deeply into their interactions with the chosen artworks than they were in the habit of doing” (p. 122), and the study highlighted the metacognitive “self-teaching capacities of the… process” (p. 122). Fróis and White found the process equally useful for students with and without art backgrounds and hope that the routines will be adapted for the classroom.

An example of aesthetic learning in the classroom is found in design-based learning where students are allowed to create artifacts that are personally meaningful and that communicate ideas to others. This allows them to “tap into the aesthetic aspects of learning ideas” (Mishra & Girod, 2006, p. 49). For example, Mishra and Girod explain that science is too often viewed as primarily a cognitive activity and separate from artistic activity. They argue that both artistic and scientific activity are expressive and that design activities “give students opportunities to bring their own unique interpretations to subject matter ideas” (p. 49). In their study of education in museums, Van Moer, Mette, and Elias (2008) make note of the problems that occur when learning goals are driven by informational outcomes. While a knowledge-based approach may result in the effective transmission of factual knowledge, understanding and engagement are lessened. They found that learning experiences characterized as the ongoing and intense transmission of information actually prevent the having of “spontaneous, rich and memorable experiences” (p. 47). The learning
they studied includes a broader range of modes that learners can activate in shaping their learning including perception, thoughts, feelings and actions. The model they suggest starts with genuine experience that leads to inquiry. Alexander (2003) summarizes: “Artistic inquiry in education, then, is not a supplement to other forms of investigation and assessment, it lies at the very heart of pedagogic research. Through artistic educational inquiry we reeducate ourselves, reassessing pedagogies that speak to our highest priorities, redefining our most fundamental commitments, and reclaiming what we cherish most” (p. 15).

**Personal**

As we look beyond the limits of the traditional model of education, we are looking towards new possibilities for learning in deeper and more personal ways. Some scholars argue that “learning should empower a student to become a free, mature, and authentic self” (Savin-Baden & Major, 2004, p. 14, as cited in Loyens, Magda & Reemy, 2008, p. 414). Camilla Greene (2005) also argues for personal freedom when she encourages educators to view their practice as a “practice of freedom” (p. 50). She sees learning as a process that leads to personal change. It is the job of the educator to “teach to transform the students, not just cover curriculum” (p. 53). It goes beyond the typical mode of domination and control by adults to a vision that includes the realization and belief in the “humanity and dignity of each student” (p. 51). Her learning model is based on the idea of the learning community where teachers and students bring their strengths and weaknesses and learn from each other. It is an emotionally safe and nurturing environment. She explains that it was her students who taught her “how to challenge the genius within each of them” (p. 52). She and her students formulate high-order thinking questions, engage in text-based discussions, conceive and construct projects, talk a lot about metacognition, debrief and evaluate
learning performances, explore the world of possibilities, and develop action plans for learning and expanding their horizons.

In his writing, Hart (2012) rejects the idea of learning as merely the acquisition of a set of skills and argues that learning from experience is more importantly about the process of identity formation and personal change, of becoming and “coming to be different in ourselves” (p. 672). Some of these changes happen at a volitional level as our wants are “deepened and changed” and as we “come to want different and better things” (p. 672). Mixson-Brookshire (2012) concurs in her work on the transformative nature of experiential learning. She recognizes the learning that occurs on her ropes course that transcends her typical focus on the skills of teamwork, leadership, communication and goal setting. She reflects on the way students opened her eyes to the importance of the human spirit. By facing and successfully overcoming challenges, students acquire new qualities including confidence and satisfaction. This type of personal growth occurs through opportunities to develop compassion and understanding, and to exercise selflessness and self-sacrifice, maturity and generosity.

**Social and Ethical**

If deeper learning is intensely personal, it is also social and ethical. DiConti (2004) notes that “an important goal of an experiential learning program is to learn how to transform experience into knowledge, and then use this knowledge for individual and collective development” (p. 175). Alexander (2003) even argues that ethics should precede scientific and aesthetic inquiry. Ethical practice begins with a discussion around why we design learning experiences in a certain way. It starts with caring about the experiences and
real outcomes for students including a love of learning, care for people, care for the natural world and care for ethics.

Designing experiences for students requires consideration of the impact on the individual and also the impact on others. Luigina Mortari (1993) stresses the importance of teaching students an ethic of care. Students learn about caring by caring for others and being cared for. Mortari argues that learning to care starts with caring for oneself and equates caring as our primary ontological state. She says that caring is a quality of being that needs to be learned where an ethical disposition such as an ethic of care is not learned just intellectually, but through practice. When students learn to care for themselves and to see themselves as caring beings, they can expand their sphere of care to include “other living beings too” (p. 112). She says that it is essential that we involve students in acts of caring, and from her year-long environmental project, she concludes that “[w]hat modified the students’ attitudes towards plants was the concrete experience of care in connection with the task of reflecting and writing about their lived experience” (p. 121).

Semetsky’s (2012) ethic of integration expands on the ethic of care by combining it with the idea of becoming. We become something other than what we already are through a process of “continuous experimentation on ourselves” (p. 51). Rather than acting as individuals who are separate from the ideas we learn about, we can ask questions about how we are connected to others and the natural world. The ethic of care and ethic of integration includes a focus on connection with, and relationship to, others. Here the idea of becoming broadens to include the idea of becoming-other “by means of entering into another person’s frame of reference and taking upon oneself the other perspective” (p. 54). Immersive classroom experiences such as role play and re-enactments are examples of activities that
can help students imagine what it might have been like for others and what it might have been like for them. As Grauerholz and Copenhaver (1994) point out, these types of experiential methods are effective means of helping students understand “that the distinctions between ‘us’ and ‘them’ are often quite blurred” (p. 320).

In this way, the personal, social, and ethical are strongly linked. Soffe, Marquardt, and Hale (2011) call for an increasing concern for ethical education in learning environments that recognize “self-development as interdependent on social development” (p. 214). They emphasize the need for critical reflection of thinking and action in learning because of the impact that those activities have. Reynolds (1998), for example, notes the important nature of ethical learning in business education because of the “impact that managing exerts on social relationships, on wider society and on the environment” (p. 197, as cited in Soffe, Marquardt, & Hale, p. 214). Secondary-school teaching and learning holds a similar potential for impact on our world and, therefore, carries the same weight of responsibility for students and teachers.

**Role of the Student**

When learning is viewed as a personal, social, and ethical act, new responsibilities are shifted to both students and teachers. With learning as an increasingly personalized practice of freedom and change, it follows that students need to have more ownership of the learning process. Carl Rogers (1982) concurs when he states that “[t]he only learning which significantly influences behavior is self-discovered, self-appropriated learning” (p. 223, as cited in Hubbs & Brand, 2005, p. 62). The concept of learners taking ownership of their learning is also supported by the indigenous idea of Celhcelh, which includes a personal openness and willingness to learn. It involves the individual pursuit of opportunities to learn
and extends to the social act of sharing learning with the community. With Celhcelh, individual learning ultimately benefits the community (Halbert & Kaser, 2013, p.14).

To take ownership of learning, it makes sense that students need to learn how to learn. Some scholars suggest that helping students learn how to learn should be the focus of education today (Barron & Darling-Hammond, 2008). Others agree when they say that the ability to learn is the most important attribute to have (Jacobson & O'Keeffe, 2014, p. 33). One of the best ways to take ownership of one’s learning is by being directly involved in the learning design. In addition to transferable competencies such as critical thinking and collaboration, many expert scholars also include the ability of learners to direct their own learning (SCANS, 1991; Bailey & Cotlar, 1994; NSF, 1996; and Association of American Colleges and Universities, 2007, as cited in Conway-Gomez, Williams, Atkinson-Palombo, Ahlqvist, Kim, & Morgan, 2011, p. 410).

Parrish (2009) describes the learner as the protagonist of his/her own learning narrative. The learner brings her/his character (individuality, concepts and beliefs) to the learning situation. Others note that learner-centered approaches, which include opportunities for students to set goals, choose the way they will approach their learning, set their own pacing for learning activities, and share personal experiences, supports deeper forms of learning and supports knowledge construction (Jonassen, 1999, as cited in Parrish 2009, p. 521). “[T]o be fully aesthetic, the learner should share responsibility for authoring the experience and the instructor’s role must take on other dimensions” (Parrish 2009, p. 524).

Working with learning models has the potential to involve students in taking control of the learning process. Maniotes and Kuhlthau (2014) have found that students who engage
in learning that is guided by an inquiry model “come to recognize the process as their own way of learning” (p. 14). Students who work with models will become familiar with the parts and processes of learning. In this way they are learning to learn, learning about learning, directing their own learning, and ultimately, gaining the ability to use, manipulate and even design their own learning.

**Role of the Teacher**

Involving students in the design of their own learning requires a dramatic shift in the way teachers teach. Saugstad (2013) notes that self-directed learning requires “an individualization of the learning process, a transformation of the teacher into a coach and a syllabus based on the learner’s needs and desire instead of a didactical organised curriculum” (p. 22). Others recognize that the teaching role is complicated, as students require significant amounts of guidance and intervention throughout the self-directed learning process (Maniotes & Kuhlthau, 2014; Lambusta, Graham, & Letteri-Walker, 2014). Abilock and Williams (2014) have experienced similar results and specify that “without the benefit of careful instructional scaffolding, they are unable to narrow the scope and uncover a topic that is both interesting and doable” (p. 48). Lambusta, Graham, and Letteri-Walker noticed that students struggled with many of the stages of the inquiry process including developing questions, planning their search, and synthesizing information. They have also found that as classroom teachers become experts of learning, including being able to identify the stage of inquiry that the student is in, helps teachers guide students more effectively through the process.

It is apparent that new models of learning require new behaviours of teachers and that the role of the teacher is an involved process. Callison and Baker (2014) have a list of
ways that educators can help students take ownership of their learning, which demonstrates the complexity of helping students through an inquiry process:

- Make sure tasks involved in teaching inquiry are complex enough to merit trained, collaborative teaching teams.
- Immense the students in thinking about what they already know and what would be worth learning; guide the students but support individual effort when of value.
- Encourage students to scan and explore a wide variety of sources, including broad subjects and works at various reading levels.
- Guide students to concentrate question development on issues of importance.
- Expect learners to maintain a record of the research experience and reflect on it regularly.
- Model actions such as visualizing and charting patterns to show growth in understanding and emersion of new knowledge.
- Advocate going broad, beyond the norm, in early exploration, but deep in quality and credibility when a focus has been established.
- Recognize that simple fact finding does not merit the students’ or the teacher’s time but reaching for new knowledge does.
- Encourage learners to make presentations as interesting for the audience as they are for the inquirers, as knowledge does not become rich and worthwhile until shared.
- Convince learners that self-assessment drives true reflection and recording reflection establishes the foundation needed to mature as an effective inquirer. (Callison & Baker, 2014, p. 22)

Although questioning, for example, can occur naturally as it grows out of innate curiosity, it is also identified as a skill that needs to be taught. Callison and Baker (2014) suggest that the ability to question is refined throughout the inquiry process and that the inquiry process, as well as the skill of asking better questions that are focused, relevant, and insightful, requires the scaffolding of an expert. Maniotes and Kuhlthau (2014) agree that the inquiry process requires expert guidance throughout, and Judi Moreillon (2014) points out the need for teachers to explicitly and simultaneously teach reading and inquiry strategies.
In addition to questions of process, there are also social-emotional concerns when personal growth becomes part of the pedagogy and when social interaction between the educator and the growing person is required (Sutinen 2008). In her study of several universities, Hickcox (2002) concurs, noting how important it is for instructors to engage with students on a personalized level as active listeners, being willing to listen and give advice. In her interviews, one instructor commented that “[s]tudents are no longer just faces occupying seats in a classroom. They are individuals with ideas, concerns, feelings, and interests that I cannot easily ignore” (p. 127).

Some proponents of direct instruction criticize what they refer to as a “minimally guided approach” used in problem-based learning, inquiry learning, and experiential learning, which they say leaves novice learners to discover concepts and procedures on their own (Kirschner, Sweller & Clark, 2006, p. 75). To put it bluntly, Kirschner, Sweller, and Clark claim that minimal guidance is less effective than “guidance specifically designed to support the cognitive processing necessary for learning” (p. 76), and they point out that a half-century of empirical research supports their view. It is important, however, to note the difference between the two definitions of learning that each perspective starts with. The constructivist view of learning holds that knowledge is acquired through experience and builds on prior knowledge and experience. Kirschner, Sweller, and Clark prefer a more narrow definition of learning as knowledge acquisition, emphasizing cognition over experience. Learning, to them, is defined as a “change in long-term memory” (p. 75) as a result of effective cognitive activities. However, both perspectives state that knowledge is built and stored in long-memory. They merely differ regarding how knowledge is acquired.
One limits learning to cognitive processes while the other is open to more fluid and holistic means of learning through experience.

The criticism of what is referred to as minimal guidance purports that this approach fails to support cognitive learning and inhibits the processing of new knowledge. One of the main problems that Kirschner, Sweller, and Clark (2006) note is the limited capacity of working memory to deal with new information in converting it to long-term memory. This, coupled with evidence that problem solving heavily taxes working memory (Sweller, 1998, as cited in Kirschner, Sweller & Clark 2006, p. 77), shows that approaches that involve problem solving, such as inquiry-based learning, leave little room for the cognitive processing required for the long-term storage of content in memory. The evidence is clear that guided instruction not only results in better recall and long term transfer, it also produces better problem-solving skills (Mayer, 2001 as cited in Kirschner, Sweller, & Clark 2006, p. 80).

While this makes sense when comparing minimally guided experiential learning with guided instruction, proponents of experiential learning actually agree and favour heavily guided instruction in experiential environments. Aulls (2002, as cited in Kirschner, Sweller, & Clark, 2006) reports that successful instruction in constructivist environments requires intensive scaffolding and instructional intervention by “simultaneously teaching content and scaffolding-relevant procedures ... by (a) modeling procedures for identifying and self-checking important information ... (b) showing students how to reduce that information to paraphrases ... (c) having students use notes to construct collaborations and routines, and (d) promoting collaborative dialogue within problems” (p. 533). Similarly, Roblyer, Edwards, and Havriluk (1997) report that minimally guided instruction is successful only when students have a strong knowledge base and have prior structured experiences.
A. Kolb, D. Kolb, Passarelli and Sharma (2014) speak to the debate between direct and indirect instruction, and acknowledge the criticism of the role of the experiential educator as passive facilitator:

Experiential learning is often posed as a sharply contrasting approach to traditional education where a teacher is a subject matter expert who transmits information and knowledge to the student. This “outside-in” approach is contrasted with the “inside-out” approach of experiential learning that seeks to tap the internal interest and intrinsic motivation of learners and building on their prior knowledge and experience. The educator’s role is to facilitate this process of “drawing out” (the root meaning of the word educate) by creating a hospitable safe space for learners to reflect on and make meaning from their experiences. Facilitators believe that learners can learn on their own and that their role is to remove obstacles and create conditions where learners can do so. Their role is not to instruct, provide answers and personal advice, or tell people what they should learn. (p. 207)

However, they argue that the role of the experiential educator as “a nondirective facilitator who eschews lectures, evaluation, and advice” is actually more complex, pointing to the deep intellectual roots of the process of facilitation in the literature including the role of the trainer in Lewins’ group dynamics (D. A. Kolb, 1984, as cited in A. Kolb, D. Kolb, Passarelli & Sharmaet, 2014, p. 207), Carl Rogers’ (1951, as cited in A. Kolb, D. Kolb, Passarelli & Sharmaet, 2014, p. 207) non-directive approach to counselling, inductive approaches to teaching based on Piaget’s constructivism (Prince & Felder, 2006, as cited in A. Kolb, D. Kolb, Passarelli & Sharmaet, 2014, p. 207), and Heim’s (2012, as cited in A. Kolb, D. Kolb, Passarelli & Sharmaet, 2014, p. 207) principles drawn from Rogers’ approach applied to small group facilitation.

A. Kolb, D. Kolb, Passarelli and Sharmaet (2014) criticize Kirschner, Sweller, and Clark (2006) for applying their research to Kolb’s experiential learning theory (ELT) since it is based purely on cognitive aspects of long- and short-term memory. They point out that the argument that “guided learning is the most efficient way to enter information into long-
term memory while minimal guidance techniques present a heavy working memory
cognitive load that is detrimental to learning” (p. 208) is not particularly persuasive, citing
examples from contemporary neuroscience research that supports the effectiveness of an
alternate role of the teacher in active learning including Zull (2002, 2011), Knapp and
Benton (2006), and Tulving (1972, 1983). Kolb’s ELT suggests a multi-faceted approach to
teaching that involves the educator as subject expert, standard-setter and evaluator, coach,
and facilitator (p. 220).

Some scholars show that when generating opportunities for deep learning there is a
need to balance the provision of supportive structure with freedom for the learning to
flourish (Conway-Gomez, Williams, Atkinson-Palombo, Ahlqvist, Kim, & Morgan, 2011). In
their action learning model, Soffe, Marquardt, and Hale (2011) recommend having a coach
who models critical thinking, guides discussions, and makes appropriate interventions that
do not discourage the group: “The proposed new action learning model requires the coach
to intervene in set discussions through questions that lead set members to think more
critically about the accuracy of their statements, openness to the opinions of others,
underlying assumptions and biases. This approach has the potential to shut down the free
flow of conversation if members believe they are being personally criticized or intimidated
by an authority figure. A more active role of the coach also could limit the creative thinking
of the group if those interventions appear as ‘expert opinion’ in contradiction to the
direction of conversation” (p. 226).

A. Kolb, D. Kolb, Passarelli and Sharmaet (2014) view the definition of the
experiential educator as non-directive facilitator as inadequate. They refer to experiential
learning, rather, as a “complex relational process” (p. 204) where the teacher needs to
balance attention between the learner and the subject matter and between reflection on and application of ideas: “The techniques of facilitation such as debriefing learning experiences, drawing out and building on the prior knowledge of learners, and facilitating a climate of trust and open communication are, but one facet of a holistic process of learning from experience that also includes expert knowledge input, evaluation, and coaching on learning strategies” (p. 208). Just as the learner requires flexibility to respond to the content and context, the teacher needs to understand where the learners are at and then activate a variety of suitable learning modes in the learners. In other words, as opposed to being a non-directive facilitator, the teacher is actively engaged in adapting their role by moving from facilitator to expert to evaluator to coach. Understanding the learner also entails understanding the diverse needs of learners as they excel or struggle with different stages of the learning cycle.

Whether the teacher is referred to as a coach or facilitator, and whether the role is described as non-direct instruction, it is clear that the role is complex, requiring new behaviours, strategies and models of learning.

**Towards Working Models**

Both knowledge and experience need to be prioritized as essential elements in new learning models. Indeed, as A. Kolb, D. Kolb, Passarelli and Sharma et al. (2014) conclude, “the duality between the mind and the physical world is resolved because both are experienced” (p. 213). When learning experiences of students are valued as acts of freedom, ownership of the learning process is required, and when education becomes personal, social, and ethical new models for learning and new roles for teachers and learners are required.
People intuitively know how to learn. We are born ready to learn, and we grow up full of questions and curiosity. At the same time, we are dependent learners who typically undergo an extensive 18-year apprenticeship under the guidance of our caregivers at home and educators in school. How much are learners responsible for and in charge of their own learning, and how much are learners dependent on the guidance of others? Traditionally, caregivers have not held a high valuation of children and their contributions to society. Similarly, educators have withheld all of the responsibility for the learning process from the learner. Pedagogy became something that was done to students rather than with students, and people question whether it is precisely this approach that has resulted in diminished curiosity, lack of creativity, and lack of self-regulation.

More recently, there has been an interest in the idea of students taking ownership of learning by directing their learning. However, there appears to be a small amount of theory on the subject and even a smaller amount of empirical data, and there is a lot of work that needs to be done. Nevertheless, the idea is compelling. It makes sense from the ethical view of individual autonomy and freedom, and it fits with the evidence of gains from assessment for learning (Wiliam, 2011) and the sizeable effect of students taking ownership (Hattie, 2009, as cited in Halbert & Kaser, 2013).

My study attempts to take this further by exploring the idea of students taking ownership of the learning process by designing their own learning. I hypothesize that in order to accomplish this, students will need significant amounts of teacher input concerning what learning and what the learning process looks like. This is especially evident in settings where students are accustomed to more traditional forms of learning and assessment. The way we frame learning communicates what we value, and if we want students to become
expert learners, we need to start teaching students about the learning process. It is at this point that learning models have the greatest potential for contribution. Learning models outline the learning process and reveal the most important aspects of learning by highlighting key elements of learning. This results in a transparent process that is intentionally articulated and part of the learning design. Then, as students become more confident with new ways of learning, attention can shift from the process to the content.

We are moving away from the century-old learning model of teacher and textbook as the main sources of knowledge with students as passive recipients of knowledge as factual information that is transferred through lecture, note taking, and reading. In the wake of a rapidly changing economy, new systems of knowledge acquisition, and the need for specialized knowledge and skills, scholars have agreed that it is “no longer enough to simply transmit information that students memorize and store for future use” (Barron & Darling-Hammond, 2008, p. 17). We need to move towards models of learning that will help learners learn about learning.
Chapter 3: Presentation of Learning Models

The new models that I present here are based on my previous work with models in the classroom, the discussion in Chapter 2, and elements from the current learning models in this chapter. These elements, theory, and experience are then combined in models that are intended for use by students and teachers in a high-school environment. The models I have created could also be used or adapted for other levels.

This project has challenged me to wrestle with some of the most fundamental questions concerning learning and what learning is. One of the reasons I am interested in students learning about learning is because I am interested in what learning is. I think it is both simple and complex; it is both a natural process and something that needs to be articulated. I think that if I can bring a better understanding of what learning is to the classroom, it will really help my students. This is also part of my rationale for creating learning models. If I can design learning models, I can also help students learn how to learn and design their own learning.

The models presented here are intended to hold the potential to open up new possibilities for learners to direct their own learning and to experience deeper forms of learning. I started with the assumption that for students to expand their concept of learning, they need new models and frameworks that help them learn about learning. Identifying key elements from current learning models and combining them in new ways will increase that capacity and provide the flexibility that students need to take ownership of their learning. When students work with flexible models to design their own learning, they will learn about learning and personalize their learning. The best models will include or leave room for the some of the most important learning that occurs when students engage
in actively caring about themselves, their community, and their world. As I have argued in Chapter 2, the best models will be ethical models that emphasize individual autonomy and social responsibility.

My work with models here is also an extension of my work with models I referred to in Chapter 1, including the Beatenberg Institute’s SMARTY sheet and my Learning Sheet. Through my previous work, I started looking at Kolb’s Experiential Learning Theory and wondered if I could move from a such a theoretical model to a more practical model that students could use to design their own learning experiences. I set out to create flexible models that could be used in the classroom or outside of the classroom, for experiential inquiry, for project work, and as a model of research etc.

Part of the reason for working with models has to do with the strengths that models have: “Models are analogs or metaphors that are purposefully constructed in physical, mathematical, computer or graphic form, to achieve, as nearly as possible, correspondence between a reality and the model so that causal or associational relations between the two are replicated and replicable to the greatest extent possible” (Bergsteiner, Avery, & Neumann, 2010, p. 32). In their criticism of Kolb’s ELT, Bergsteiner, Avery, and Neumann point out conventional means of evaluating models such as simplification, sufficiency, categorization, graphic modelling conventions, graphic syntax and parsimony, and logic. The method of my research fits with these goals in addition to the overall purpose of the project, which is to create models that open up new possibilities for students to learn about learning and direct their own learning in deeper and more valuable ways. The models I explored in my research are presented in Appendix C: Examination of Models.
Learning Theory Model

![Diagram of the Learning Theory Model]

*Figure 1.* Learning theory model.

The first learning model I created is called the *Learning Theory Model*. The model includes cognition and experience as I have argued that both important for learning. It is also important to recognize the personal nature of learning. The model begins with the learner who brings prior knowledge and experience to the learning and engages in learning as an autonomous and free being, engaging with new content at a cognitive level through curiosity and inquiry. In experiential learning, the learner also needs to do something, which could include making something or engaging in an activity related to the content. The idea of creating includes taking new learning and making it relevant by using it or applying it in some way. An experience could also include grappling with a problem, or engaging with content in an authentic context. Cognition includes questioning, critical thinking, reasoning, and supporting beliefs with evidence. The cycle of *curiosity - cognition - creativity - experience* is not necessarily sequential. For example, a learner will often engage in cognitive and experiential activities simultaneously. An obvious scenario is a scientific experiment, which requires the learner to do something, such as conduct an experiment, while observing, thinking about, and recording what is happening.
The Learning Theory Model begins with the personal and progresses into the social and ethical. These elements expand the definition of what learning entails into consideration of what is good — what is worth learning or doing. The social and ethical dimensions of learning are often overlooked. We do not often question how something that we are learning will help others. Learners are at the centre of their learning, but the learning is not learner-centric. Social and ethical learning is as simple as caring for others and for our world and sharing what we have learned.

Learning Model

Figure 2. Learning model.

While the Learning Theory Model is intended for teachers, the Learning Model is intended for teachers to use with their students to help them learn about learning. The Learning Model is based on the Learning Theory Model, and together they hold the following principles:

- We need to learn about learning (whole model)
- Learning starts with the individual (personal)
- Learning starts with interest and exploration (curiosity and cognition)
- Learning requires that we take action and do something (creativity and experience)
- We learn together and share our learning in community (social)
- Learning benefits the community (ethical)
Curiosity to Creativity

Figure 3. Curiosity to creativity.

This simplified Curiosity to Creativity model is a way to present a learning model that is “user friendly” because it is easy to understand. It is still deeply rooted in the Learning Theory Model since learning from a place of curiosity starts with the learner. Curiosity is also closely connected with inquiry and other cognitive activities. Creativity means that you have done something to make your learning relevant to self and to others in what is intended to be an ethical manner. Together, curiosity and creativity result in cognitive and experiential learning. They have the potential of resulting in new possibilities for learning in deeper and more meaningful ways.
Think - Do - Know

The Think - Do - Know model is another simplified model that relates specifically to the cognition (think) and experience (do) elements in the Learning Theory Model. It relates to the discussion regarding what knowledge and learning and is intended for teachers to use with students to highlight the idea that we can learn by thinking or by doing and that by thinking and doing, we increase learning potential beyond just head knowledge or merely doing without thinking about what we are doing.

Figure 4. Think - do - know.
Think - Experience - Know - Become

The Think - Experience - Know - Become model is similar to the previous model and is expanded to include the idea of becoming. The idea is that when we think and experience we gain deep knowledge. Deep knowledge results in personal growth or change as we become an ethical learner who shares learning that ultimately benefits others and our world.
Inquire - Take Action - Think - Become

![Figure 6. Inquire - take action - think - become.](image)

Although this model does not strictly follow the Learning Theory Model, since inquiry is not the only way to acquire knowledge, the Inquire - Take Action - Think - Become model challenges learners and teachers to design learning in ways that require action to be taken. The model also emphasizes the idea that it is important to think about the action you have taken, learning from successes and failures and, in this way, gaining wisdom. Inquiry, action, and thinking together result in the acquisition of knowledge, experience, and wisdom. All of the elements together lead to growth or change as an individual becomes a social and ethical learner.
Learning as Doing

Figure 7. Learning as doing.

I made the Learning as Doing model to help students start to think about learning in broader ways. It is a framework that supports the idea of active learning or learning through experience. In my work with students, I found that their concept of learning is generally limited to traditional activities such as reading and writing. While reading and writing are excellent learning activities, they are certainly not the only activities that we can learn from. Combining this framework with the Think - Experience - Know - Become model could result in powerful learning as students combine creative activity with thinking and as they see that learning is part of living - part of everything we do.
Learning Design

I developed the *Learning Design* model as a framework for teachers and students to use when designing learning experiences. It relates to the *Learning Theory Model* by starting with the learner who has learning potential and prior knowledge/experience and progressing through the acquisition of new knowledge and experience to transform that knowledge and experience toward personal growth or change and contributing to the community as a definition of success among other possible outcomes. Learner potential is tied to the quality of the learning design. It is within the learning design phase that the role of the teacher is shared with the learner as both have input into the design. The teacher contributes as an
expert learner and learning designer, helping to inform and enhance the cognitive and experiential processes and to clarify and evaluate learning outcomes. The student co-designs the learning and engages in the learning activities as planned.

**Blank Sheet**

![Blank Sheet Image]

*Figure 9. Blank sheet.*

The idea with the *Blank Sheet* as a starting point for learning and learning design is not that learning should be unstructured or unguided. As discussed previously, the literature supports a high level of teacher intervention especially in environments where learners have more input in the learning design process. The idea is that the learner has the opportunity to design learning in a way that works for them. In order to design learning, the learner will
need foundational knowledge regarding what learning is and will need to be familiar with the learning process including the use of learning models and their elements. The learner will need to access the expert guidance of the teacher and other sources of information to begin to design their own learning. While the learner designs their learning, they are taking ownership of learning, learning about learning, personalizing learning, and making decisions about how they learn best. Ultimately, learners will become experts of learning and will learn to learn in deeper and more meaningful ways.
Chapter 4: Conclusion

Summary

In this study, I questioned what learning is and looked to Aristotle to inform the conversation comparing theoretical knowledge with experiential knowledge. While it is difficult to completely separate the two, it is Aristotle’s view that there is a small distinction between theoretical knowledge as a purely cognitive process suitable for the classroom and experiential knowledge that is gained through the senses in authentic contexts. This distinction is useful when comparing cognitive learning theory with experiential learning theory. However, I argued that both cognition and experience are important for deep meaningful learning.

I also explored what deep meaningful learning looks like in current areas of aesthetic, personal, social, and ethical learning theory. These perspectives increase the potential for including learners in designing learning experiences that make a positive difference in the lives of students and in the world.

From my own experience working with models, I was interested in creating learning models that incorporate the theory and perspectives outlined in this study. I also felt that it was important to address the changing roles of learner and teacher, where learners are taking a more active role in learning design, and thought that it would be helpful to look at current learning models and principles and use them to inform my models. I have created models that I would find useful to frame teaching and learning in a classroom setting. The models incorporate cognitive and experiential modes and are intended to help students learn about learning and to direct their own learning. I have purposefully created complex
models that incorporate essential elements from my research as well as simple models that still hold the potential for learning in deep meaningful ways.

Because my work and models represent a “big picture” perspective, there is potential to expand the work into many areas including spirituality, self-regulation, and evaluation. One area that this work does not address is the limitations that student age and ability places as students are given a greater part in designing their own learning. This consideration needs to be made at the classroom level and could be informed by further action research. My design is primarily focused on the individual student, but could be expanded to include group learning. Many experts have found significant learning gains in student performance in addition to social and behavioural benefits with learning that takes place in groups including Johnson and Johnson (1981, 1989), Quin, Johnson, and Johnson (1995), Cohen et al. (1982), Cook et al. (1985), Hartley (1977), Ginsburg-Block, Rohrbeck, and Fantuzzo (2006) (in Barron & Darling-Hammond, 2008).

**Action Plan**

I have developed an action plan for implementing my design that includes using the models I have created, applying them in the classroom, and refining them as I reflect on what I did, what worked, and where to next. I am planning a self-study, which includes recording my thoughts and observations in a journal as well as pre- and post-activity reflections. The goal of these reflections is to be reflexive - to imagine possibility and create potential for learning and learning about learning. They will be used to examine my role as teacher and include general observations of the role of the student. The reflections will examine the theoretical learning model and inform the development and refinement of working models. I will appreciate and critique the current models, and ask how this informs
the refinement of the model. For this purpose, I developed The Learning Design Process, which is presented in Figure 10 below: design the learning model, experience the learning based on the design, refine the learning model, and repeat.

![Learning Design Process](image)

*Figure 10. Learning design process.*

I also developed a more detailed research design model in Figure 11 below, which shows the examination of my learning models in the context of practice. The learning model lives within the dual roles of teacher and student. Experiential and cognitive learning theory informs learning model as action is taken and reflections are made. Finally, the results of the research are analyzed resulting in learning that is used to refine the current or new models.
Figure II. Research design.

My approach to this next stage of the research is auto-ethnographical. I plan to use a researcher’s journal to examine my experience as I help students design personalized experiential learning activities for themselves. As I take action I will record what I did, what worked and what I plan to do next. One of the purposes of my research is to apply a model and refine that model over time. I am drawing on the work of Hanan A. Alexander (2003) who is a proponent of qualitative and phenomenological study, which “offers an account of how students and teachers experience schooling in consciousness” and ethnography, which “articulates unspoken public norms operating in classrooms” (p. 11). Alexander draws on the work of Elliot Eisner who states that “[n]o one is interested in the facts by themselves, but rather in the facts interpreted” (1994 pp. 229-30 as cited in Alexander, 2003, p. 14). Much of my work will be deeply reflective using writing through which themes will develop. I will
strive for truthful, authentic and meaningful interpretations as I synthesize and evaluate my findings.

The purpose of this study would be to examine the role of the classroom teacher within a personalized experiential learning framework. The work is action oriented and auto-ethnographic in approach with the aim to serve as an example of the action research process and as a guide for continual development and application of a learning framework within secondary school classrooms. It would be a practical study in the sense that the framework is applied and feedback is received in a classroom setting as I, the teacher, help students design their own learning experiences. The goal would be to use my experience to refine a framework that can be used by teachers to guide learners through the process of designing their own learning experiences. I am interested in designing and implementing a personalized experiential learning framework with my students as we learn and learn to learn together. Ultimately, I want students to be curious and have the opportunity to act on their curiosity. I want them to take ownership of their learning and to learn how to learn.
References


Dylan_Wiliams_website/Presentations.html
### Appendix A: Learning Sheet

<table>
<thead>
<tr>
<th>Co-create Criteria</th>
<th>Self-regulate</th>
<th>Self-assess</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work from the Learning Outcomes to co-create criteria with your instructor that define high-quality work.</td>
<td>What is your plan? What steps will you take to meet or exceed the criteria? Ask a coach (peer or instructor) for input on your plan and for feedback on your progress.</td>
<td>What evidence can you show to demonstrate that you have met the criteria?</td>
<td>How well did you do?</td>
</tr>
<tr>
<td>1. List Learning Outcomes:</td>
<td>3. Make a plan:</td>
<td>5. List evidence:</td>
<td>Circle: Exceeding, Fully Meeting, Minimally Meeting, Not Meeting</td>
</tr>
</tbody>
</table>

