

**APPRECIATIVE INQUIRY:  
DESIGNING FOR ENGAGEMENT  
IN TECHNOLOGY-MEDIATED LEARNING**

by

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In the  
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of  
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## **Abstract**

Generating and sustaining engagement should be an explicit element of technology-mediated learning (TML) design for adults. Yet, little related guidance exists for practitioners in this field.

This thesis investigates design elements that sustain engagement and describes a workshop protocol to help practitioners address engagement in their own context. The protocol and thesis are each framed as an Appreciative Inquiry (AI), a process that seeks to discover and build on what works well in existing systems.

An evaluation study of the protocol, conducted at a bank learning centre, confirmed that the protocol is viable; participant designers created several engagement strategies. However, the findings also indicate that engagement was not a priority for participants and suggest that practitioners could benefit from a deeper understanding of engagement design.

Finally, the thesis offers engagement design guidelines that advocate using: cognitive conflict, challenge, relevance, goals, experiential learning, interactivity, control, support, collaboration, uninterrupted time and fun.

**Keywords:** engagement; Appreciative Inquiry; adult learning; design; edtech

**Subject terms:** educational technology; educational psychology; design; adult education; engagement; Appreciative Inquiry; HCI

## Dedication

I dedicate this thesis to my life partner and inspiration, Randy Baker.

Without his support, patience, wisdom, wit and faith, I would not have begun, let alone finished this work. Randy's love of life, limitless curiosity and intellectual insight continually motivate me to follow my passion, seize the day and wonder at the magic of this place we call home.

I am ever grateful for his love and encouragement - and hope that this and my future endeavours support our shared vision of a vital, peaceful and sustainable world.

~~~~~

I also offer this thesis as a memorial to Taz, my faithful companion, friend and assistant, whose life was taken too early and who is dearly missed.

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# Table of Contents

|                                                               |           |
|---------------------------------------------------------------|-----------|
| Approval .....                                                | ii        |
| Abstract .....                                                | iii       |
| Dedication .....                                              | iv        |
| Acknowledgements.....                                         | v         |
| Table of Contents.....                                        | vi        |
| List of Figures .....                                         | viii      |
| List of Tables .....                                          | viii      |
| <b>1 Define: <i>Engaging Learning</i></b> .....               | <b>1</b>  |
| 1.1. <b>Research Question</b> .....                           | <b>2</b>  |
| 1.1.1 Appreciative Inquiry framework .....                    | 3         |
| 1.1.2 Scope.....                                              | 6         |
| 1.2. <b>Exploring Engagement</b> .....                        | <b>7</b>  |
| 1.2.1 Definitions.....                                        | 7         |
| 1.2.2 Interest, motivation & curiosity .....                  | 8         |
| 1.2.3 Flow .....                                              | 12        |
| 1.2.4 Adult learning.....                                     | 13        |
| 1.2.5 Technology-mediated learning.....                       | 15        |
| 1.2.6 Need to address engagement .....                        | 16        |
| <b>2 Discover: <i>Engaging Elements</i></b> .....             | <b>19</b> |
| 2.1. <b>Content Design</b> .....                              | <b>21</b> |
| 2.1.1 Relevance .....                                         | 22        |
| 2.1.2 Cognitive conflict .....                                | 23        |
| 2.1.3 Learner control .....                                   | 27        |
| 2.1.4 Social interaction .....                                | 28        |
| 2.2. <b>Technology Design</b> .....                           | <b>29</b> |
| 2.2.1 Interactivity.....                                      | 30        |
| 2.2.2 Simulations.....                                        | 32        |
| 2.2.3 Rich media .....                                        | 35        |
| 2.3. <b>The Best of <i>What is</i></b> .....                  | <b>37</b> |
| <b>3 Dream: <i>Engaging Possibilities</i></b> .....           | <b>39</b> |
| 3.1. <b>What Engaging Design <i>Could Be</i></b> .....        | <b>40</b> |
| 3.1.1 Related models .....                                    | 41        |
| 3.1.2 Engaging design guidelines .....                        | 48        |
| 3.2. <b>From Dream to Design: Engagement in Context</b> ..... | <b>52</b> |
| <b>4 Design: <i>Engaging Vision</i></b> .....                 | <b>53</b> |
| 4.1. <b>Proposition for Change</b> .....                      | <b>54</b> |
| 4.1.1 Appreciative Inquiry framework .....                    | 55        |
| 4.1.2 Previous method work.....                               | 59        |



|                         |                                                                    |            |
|-------------------------|--------------------------------------------------------------------|------------|
| 4.2.                    | <b>Pilot Protocol</b> .....                                        | 59         |
| 4.2.1                   | Protocol.....                                                      | 60         |
| 4.3.                    | <b>Appreciative Inquiry Engagement Workshop (AIEW) Study</b> ..... | 62         |
| 4.3.1                   | AIEW study overview .....                                          | 63         |
| 4.3.2                   | Research process .....                                             | 63         |
| 4.3.3                   | Role of researcher .....                                           | 66         |
| 4.3.4                   | Role of participants.....                                          | 67         |
| 4.3.5                   | Data collection procedure .....                                    | 67         |
| 4.3.6                   | Data analysis procedure.....                                       | 70         |
| 4.3.7                   | Summary.....                                                       | 78         |
| <b>5</b>                | <b>Destiny: <i>Engagement by Design</i></b> .....                  | <b>79</b>  |
| 5.1.                    | AIEW Study Overview .....                                          | 79         |
| 5.2.                    | AIEW Results .....                                                 | 80         |
| 5.2.1                   | Process findings .....                                             | 81         |
| 5.2.2                   | Outcomes findings .....                                            | 89         |
| 5.3.                    | Summary .....                                                      | 100        |
| <b>6</b>                | <b>Discussion: <i>On-going Engagement</i></b> .....                | <b>101</b> |
| 6.1.                    | Workshop Evaluation .....                                          | 101        |
| 6.1.1                   | Protocol: Findings .....                                           | 101        |
| 6.1.2                   | Protocol: Revisions.....                                           | 109        |
| 6.1.3                   | Protocol: Summary.....                                             | 113        |
| 6.2.                    | Engagement Design Guidelines .....                                 | 113        |
| 6.3.                    | Research Questions: Revisited.....                                 | 117        |
| 6.4.                    | Future Work .....                                                  | 119        |
| 6.5.                    | Contributions and Conclusion.....                                  | 120        |
| <b>Appendices</b> ..... |                                                                    | <b>121</b> |
| Appendix A.             | Elements of Engagement List .....                                  | 122        |
| Appendix B.             | Design Activity: Design Statements .....                           | 123        |
| Appendix C.             | Destiny Activity (Proposed Action Items).....                      | 124        |
| Appendix D.             | Original Workshop Protocol .....                                   | 125        |
| Appendix E.             | Sample Story from AIEW Study .....                                 | 132        |
| Appendix F.             | Telephone Interview Questions .....                                | 133        |
| Appendix G.             | Sample Telephone Interview Clip .....                              | 134        |
| Appendix H.             | Pre-Workshop Survey Questions .....                                | 135        |
| Appendix I.             | Post-Workshop Survey Questions .....                               | 138        |
| Appendix J.             | Key Survey Summary Data.....                                       | 141        |
| Appendix K.             | Group Evaluation Questions.....                                    | 144        |
| <b>References</b> ..... |                                                                    | <b>145</b> |

## List of Figures

|            |                                                             |     |
|------------|-------------------------------------------------------------|-----|
| Figure 1.  | Adapted 6D AI Framework.....                                | 5   |
| Figure 2.  | Chapter 1: Define .....                                     | 6   |
| Figure 3.  | Relationship between cognitive conflict and engagement..... | 10  |
| Figure 4.  | Chapter 2: Discover.....                                    | 19  |
| Figure 5.  | Chapter 3: Dream .....                                      | 39  |
| Figure 6.  | Chapter 4: Design .....                                     | 53  |
| Figure 7.  | AIEW Study: Research Process .....                          | 64  |
| Figure 8.  | Snyder Action Research Evaluation Model (Dick, 1997b) ..... | 71  |
| Figure 9.  | Chapter 5: Destiny .....                                    | 79  |
| Figure 10. | Chapter 6: Discussion.....                                  | 101 |

## List of Tables

|           |                                                                                            |     |
|-----------|--------------------------------------------------------------------------------------------|-----|
| Table 1.  | Key design elements in engagement-related models. ....                                     | 42  |
| Table 2.  | Engagement Design Guidelines .....                                                         | 49  |
| Table 3.  | Data Collection Process.....                                                               | 69  |
| Table 4.  | Data Analysis Process .....                                                                | 73  |
| Table 5.  | AIEW Study: Participant Job Function Breakdown.....                                        | 80  |
| Table 6.  | Participants' Engagement List .....                                                        | 90  |
| Table 7.  | New elements of engagement identified by participants .....                                | 91  |
| Table 8.  | Summary of ideas for engagement generated by participants .....                            | 92  |
| Table 9.  | Survey data: Believed technique effectiveness & actual technique use by participants. .... | 96  |
| Table 10. | Comparison of elements of engagement from design guidelines and participants..             | 114 |
| Table 11. | Revised Design for Engagement Guidelines.....                                              | 116 |

*What information we select to attend to, and how intently, is still the most important question in learning.*  
(Csikszentmihalyi and Hermanson, 1995, p. 68)

## **1 Define: *Engaging Learning***

The need to engage learners to support their learning experience is fundamental to teaching and instructional design principles (Gagne, & Briggs, 1979; Greeno, 1996). Such engagement is crucial for learning to occur; without it, we cannot build new knowledge readily (Dewey, 1916; Schiefele, 1991).

In my work directing educational television programs and broadcast documentaries for adults, I discovered early on that generating and sustaining engagement among my viewers was an essential element of success. If I failed to engage them at any point in the program, they changed channels. Their learning ended and I was out of a job.

When I expanded the scope of my practice to interactive learning design, I was surprised to discover that many of my colleagues did not share my conviction. Explicitly attempting to generate and sustain engagement was not a high priority for them, nor was it part of their regular design practice. As a result, learners often perceived their learning programs to be boring, pedantic. This very real lack of engagement can translate into a less effective learning experience, lower completion rates and less enthusiasm among learners for future activities. Lose the learner's interest and you lose the learning.

This indifference towards a critical component of learning design may stem from any number of sources. It may be that designers have a limited understanding of what engagement is and how to design for it. Or, it may relate to the paucity of existing methodologies to guide practice in this area.

Intrigued by this apparent neglect of a key aspect of learning design, I decided to try to find a way to build on my own experience of creating engagement in television and develop practical strategies to support my fellow designers in this work. In particular,

I chose to explore engagement in technology-mediated learning (TML) for adults; that has been the focus of my research for the past two years.

This thesis is the culmination of that work. In it, I describe my research, summarize my findings, offer two tools for working designers, describe an evaluation study of one tool and suggest questions for future investigation.

## 1.1. Research Question

Engagement<sup>1</sup> is an essential element of any learning activity. Highly motivated learners will invest time and energy beyond the minimum requirements to extend their learning (Gagne, & Briggs, 1979; Schiefele, 1991). By contrast, learners who remain unmotivated will not make the effort to learn (Palmer, 2005), nor will they be able to engage in the process of knowledge construction (Galarneau, 2005). Motivation to engage is needed to stimulate learner interest not only at the beginning of an activity, but also throughout (Palmer, 2005).

Yet, teaching and design strategies for learning activities frequently fail to address the need to motivate and engage the learners (Csikszentmihalyi & Hermanson, 1995; Palmer, 2005). It seems that if a learner participates in a learning activity, it is assumed that she must be engaged (Rotto, 1994).

Generating and sustaining engagement in a TML activity (rather than face-to-face), without the dynamic presence of a facilitator can be particularly challenging. Developers of interactive learning media often rely on novel technologies to do the job, with limited success (Csikszentmihalyi & Hermanson, 1995; Scardamalia & Bereiter, 1996, as cited in Stahl, 2005; Stahl, 2005).

Although a few theoretical frameworks relating to the notions of motivation and engagement have been published, there are no clear design strategies or methodologies for generating and sustaining engagement, particularly among adult learners in TML. Every learner and every learning situation is unique; the technologies

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<sup>1</sup> Note that engagement relates closely to many concepts in the learning literature: motivation, interest and curiosity are three of the most common. I differentiate among these terms later in this chapter. For now, I will use each as it appears in the literature.

in play, types of learning tasks, learning environments, corporate culture and learning objectives can be completely different. Thus, to design for engagement, designers need to understand these variables and how they interrelate. They need to understand what engagement is and how it supports learning. And they need to know how the technologies they use can enhance or impede engagement.

This thesis responds to these needs by attempting to address the following research question:

*How can designers of technology-mediated learning activities for adults generate and sustain learner engagement?*

Inherent within this query are the following sub-questions, which I also address in this thesis:

*What is engagement?*

*How does engagement relate to adult learning?*

*How is engagement design unique in technology-mediated learning?*

*What design elements can generate engagement among adults in TML?*

*How can designers control these elements to generate and sustain engagement?*

*How can designers create effective strategies to generate and sustain engagement within their own unique learning environment?*

The framework of this thesis differs slightly from a traditional academic approach in that it is presented in the form of an Appreciative Inquiry (AI). More information about this method and the structure of the thesis follow.

### **1.1.1 Appreciative Inquiry framework**

*If what we focus on is magnified by our attention, we want to be sure we are magnifying something worthy.*  
(Hammond, 1998, pg. 32)

This thesis is framed as an Appreciative Inquiry (AI). AI is a qualitative, action-research methodology that was developed in the mid-1980's by Cooperrider, Srivastva and their colleagues in the Weatherhead School of Management at Case Western Reserve University in Cleveland, Ohio. Their theory challenges traditional problem-solving approaches to management and change (Cooperrider, & Srivastva, 1987).

Instead of concentrating energy and resources on resolving problems, weaknesses, deficits or gaps, AI seeks out and builds on existing strengths and successes.

The rationale for adopting this framework here is fundamentally this; rather than focusing on *what is wrong* with current approaches to generating engagement, my research investigates *what is working well* in this field and how designers of TML can build on that knowledge to enhance engagement in their own learning activities. I present more detail on how I use AI in my research in Chapter Four.

AI is commonly described as a four-stage process: *Discover, Dream, Design, Destiny* (Cooperrider, Whitney, & Stavros, 2005; Cooperrider, & Whitney, 2000), with a fifth stage, *Define*, often added at the beginning to give shape to the inception process (Fitzgerald, Murrell, & Miller, 2003). The stages can be described as follows.

**Define.** Establish the positive focus, the affirmative topic of the Inquiry. Determine what you want *more of*.

**Discover.** Gather and analyse data of peak experiences and values. Identify common themes that relate to the source of energy in the data and represent *the best of what is*.

**Dream.** Create a vision of the desired future. Set stretch goals. Imagine *what could be*.

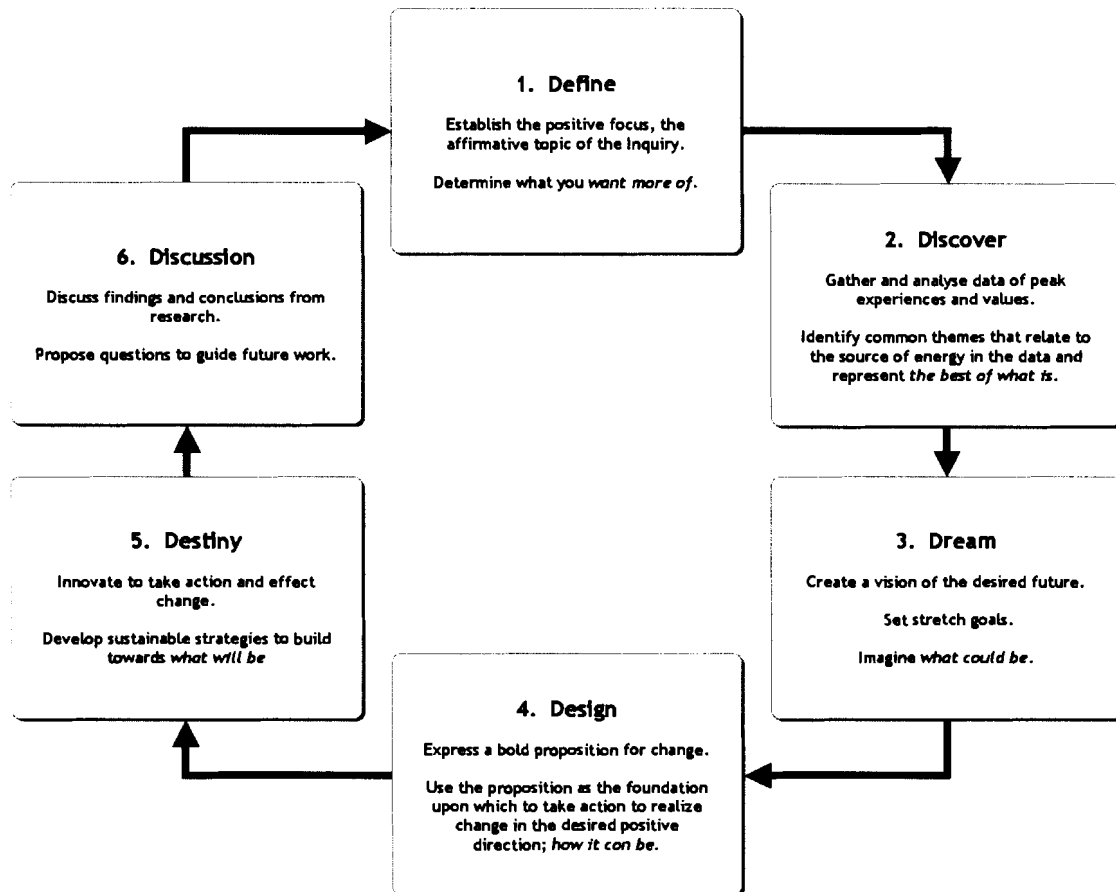
**Design.** Express a bold proposition for change. Use the proposition as the foundation upon which to take action to realize change in the desired positive direction; *how it can be*.

**Destiny.** Innovate to take action and effect change. Develop sustainable strategies to build towards *what will be* (Cooperrider et al., 2005).

Despite many calls for the use of AI in learning, I was unable to find any documented cases of its application and evaluation in educational media design, instructional design, nor any other design field. In many respects, AI is the anti-thesis of traditional design approaches, which commence with “problem definition” (Davis, 1994). As such, I believe there is tremendous potential for growth and discovery in the application of an AI framework to this topic.

The chapters of this thesis map roughly onto the 5D structure discussed above, with a sixth D (Discussion) added at the end: (see Figure 1).

**Figure 1. Adapted 6D AI Framework**



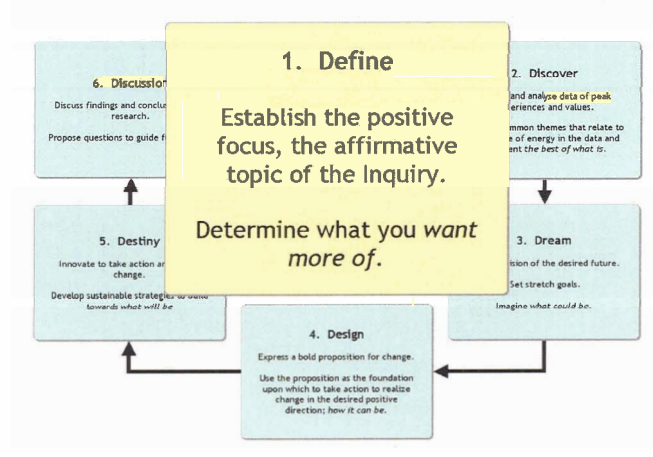
*Adapted from Cooperrider et al. (Cooperrider et al., 2005)*

In Chapter One, I define the focus of the thesis and articulate the research questions that guide my investigation. I also address several sub-questions through an exploration of definitions of engagement, its relationship to adult learning theory and the differences between engagement in face-to-face and TML environments. Chapter Two presents a review of the literature on factors affecting engagement in TML, in an attempt to discover the best-known design strategies and techniques available. Based on the findings of the literature review, Chapter Three describes a dream state for engagement design: what practitioners ideally could offer learners. This dream is then translated into a set of engagement design guidelines to support designers in

their efforts to apply the findings from Chapter Two in their practices. In Chapter Four, I design a strategy for bringing the dream to life by developing a pilot protocol for a process to support designers in addressing engagement in their own, unique context. I also describe the methodology for a study I did with six learning design practitioners to evaluate the viability of the pilot protocol. Chapter Five includes my findings from the study, with respect to the effectiveness of both the protocol itself and outcomes from the session. In the final Chapter, I discuss my findings, offer revisions to both the guidelines and protocol based on the study and suggest opportunities for future work.

With this framework established, I continue with Chapter One: *Define*.

Figure 2. Chapter 1: *Define*



### 1.1.2 Scope

The subject of learner engagement is broad and can be applied to formal and informal learning, for all people, of all ages, learning with or without technology. This thesis concentrates on adults in structured, TML learning activities. However, in pursuing this avenue, I discovered that most of the research in this field has been done on children only. With this in mind, where adult research was available, I included it; otherwise, I was forced to rely on other related materials.

In my evaluation study of the pilot protocol, I limited the scope further to include learning designers working in a corporate environment. As such, my findings with respect to this research are most applicable to that specific context.



## 1.2. Exploring Engagement

It is common to see marketers of educational media tout the engagement value of their products. They promise learner engagement without offering information about what that is, why it is important, nor how their products support it (Elearning Guild, 2006). Without a clear understanding of what engagement is with respect to learning, it is impossible to determine if it has been achieved.

### 1.2.1 Definitions

At the most basic level of a computer-based learning environment, Jones (1998, p. 205) describes engagement as “the notion that the program makes the learner want to be there”. This simple description is perhaps the most effective, in that it reflects the significance of engagement for learning. Learners who “want to be there” are more likely to be successful at building new knowledge during the activity (Galarneau, 2005).

In a broader sense, Bangert-Drowns and Pyke (2001) suggest that for most scholars, engagement relates to some kind of mindfulness, cognitive effort and deep processing of new information. In the foreword to a recent publication of papers on engaged learning, Stahl (2005) offers his own view, which includes the affective and social domains:

Engagement is neither a purely intellectual, affective nor social phenomenon. Engagement may involve cognitive tasks and the manipulation of conceptual materials. But it is also a feeling that people have that they are participating in something that is important and interesting. Further, it is a social undertaking, done with, for or because of other people and groups ... what is learned, the motivation to learn it and its socially accepted value are intimately intertwined in ways specific to each case (Stahl, 2005, p.ix).

Given the discussion above, I offer the following working definition of engagement for the purposes of this thesis: “the pleasurable sensation of being engrossed and interested in an activity that one wishes to continue”.

In the literature, engagement is often used interchangeably with the terms interest and motivation, and linked to the concept of curiosity. It also relates on many levels to Csikszentmihalyi's concept of Flow (1990), as described later in this Chapter. An exploration of the relationships between these concepts follows.

### **1.2.2 Interest, motivation & curiosity**

In the literature, the concepts of interest and curiosity appear to be closely related. Both seem to function as a direct stimulus or source of stimulation for engagement. Motivation differs slightly, in that it can be thought of as the effect or result of interest and curiosity.

#### ***Interest***

Interest is described as a psychological state "characterized by focussed attention, increased cognitive and affective functioning, and persistent effort" (Ainley, Hidi, & Berndorff 2002 as cited in Palmer, 2005). With respect to learning, the literature generally refers to two types of interest: *individual* or personal interest and *situational* interest (Hidi 1990 as cited in Palmer, 2005).

Individual interest is an enduring affinity for a topic, subject or activity (Dewey, 1913; Csikszentmihalyi & Hermanson, 1995; Hidi 1990 as cited in Palmer, 2005). It can be effective for engagement if the subject of the learner's interest matches that of the learning activity. Activities that relate to an individual's interest result in increased knowledge, positive emotions, enhanced use of learning strategies and an intrinsic desire to learn more, since such interests tend to have high personal meaning for students (Krapp, Hidi & Renninger 1992 as cited in Csikszentmihalyi and Hermanson, 1995; Schiefele, 1991).

Situational interest is not enduring; it is a short-term state caused by specific stimuli, such as an explosive chemistry experiment (Hidi, 1990, as cited in Palmer, 2005). Even if a learner has no interest in chemistry, such a novel stimulus may trigger her transient engagement in the event (Chen et al., 2001; Hidi & Harackiewicz, 2000, as cited in Palmer, 2005). Novelty like this can be important to gain students' initial attention (Anderman, Noar, Zimmermann, and Donohew 2004, as cited in Palmer,

2005). However, Csikszentmihalyi and Hermanson (1995) dismiss such stimuli as “bells and whistles”, arguing that they do not have an enduring or profound effect on learning outcomes; nor can they sustain a learner’s engagement in the way that individual interest can.

I discuss the role of both individual and situational interest and their respective relationships to the concepts of relevance and novelty as factors supporting engagement design in Chapter Two.

### ***Curiosity***

Berlyne (1968) explores the concept of curiosity and learning in depth. As part of his inquiry, he seeks an understanding of what triggers thinking, or a “quest for knowledge” and determines how long this state will last. His “quest for knowledge” fits with what we have termed engagement.

According to Berlyne, stimuli trigger thinking; this causes epistemic curiosity, which launches the quest for knowledge. The quest is completed and epistemic curiosity sated when the appropriate knowledge is procured (Berlyne, 1968). Dewey (1910, as cited in Berlyne, 1968) describes thinking in a similar fashion, such that a “felt difficulty” (curiosity) evolves into a “conflict between conditions at hand and a desired and intended result, between an end and the means for reaching it” (ibid, p.281). The result is an attempt to resolve this conflict through thinking. In this case, thinking may be thought of as engaging in problem solving.

In both cases, engaging in thinking is caused by a “conceptual conflict”: what Berlyne (1968) likens to a “gap” in Gestalt psychology. According to him, in Gestalt theory, thinking occurs as a reaction to a gap in an attempt to find out what is needed to close the gap. Thinking, then, is an iterative cycle of identifying the gap, analysing the situation, attempting to resolve it, then analysing it again until a solution is found and the gap is closed. Berlyne relates this conflict between what is known and what is needed to close the gap - his epistemic curiosity - with Piaget's notion of disequilibrium or cognitive conflict (Berlyne, 1968; Rotto, 1994).

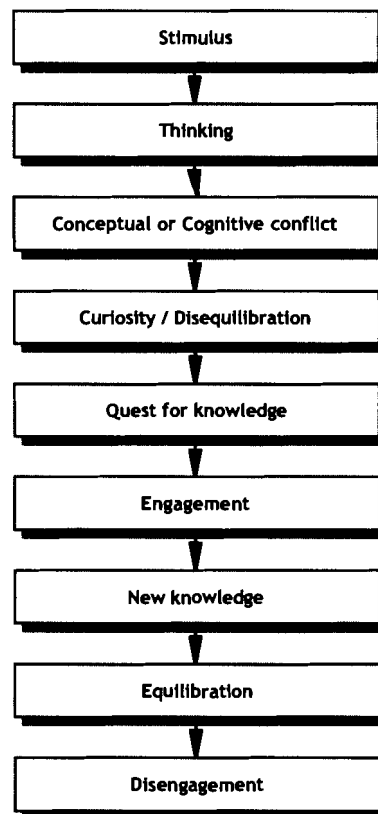
In Piaget’s theory of learning (1977), equilibration describes an intrinsic human need to find balance between our cognitive structures and our environment. It must be

present for cognitive development to occur (Moessinger, 1978). "Disequilibrium" then, is when our cognitive structures and our environment are out of balance and there is a gap. Seeking or building new knowledge is a response to disequilibrium: an attempt to restore balance or close the gap.

Whatever the stimuli for the conflict, gap or imbalance, once the conflict is resolved through learning and the construction of new knowledge, thinking (and therefore curiosity or engagement) ends.

The Figure below illustrates this concept and the relationships between terms, as I understand them. The concept of cognitive conflict and its role in supporting engagement are discussed further in Chapter Two.

**Figure 3. Relationship between cognitive conflict and engagement**



Curiosity as a source of motivation for engaging in learning is a fundamental element of many learning theorists' work, including Arnone, Cordova, Csikszentmihalyi, Keller, Lepper, Malone, Rieber, Schiefele and Suzuki (Rotto, 1994).

One of the most oft-cited studies of curiosity is Lepper and Cordova (1992). In their research to attempt to manipulate the effectiveness of Malone and Lepper's proposed sources of intrinsic motivation - challenge, curiosity, control, and fantasy - they demonstrated the importance of curiosity in generating and sustaining engagement among children. However, they caution that this finding may only be true in situations where the learning activity was designed explicitly to enhance curiosity (Rotto, 1994). Their work may not apply to adults.

Instructional design researcher Arnone (2003) also connects the success of interactive learning media to the presence of several types of curiosity, including what she terms "conceptual conflict".

### ***Motivation***

Conceptually, motivation can be thought of as the result of interest or curiosity, an impetus to action. It appears to be the trigger that causes the learner to engage with an activity. However, the presence of motivation does not ensure that engagement will occur. For example, a hockey player who wishes to improve his skills may be motivated to attend hockey school. But if the skills being taught at the school are too simple for him, or the on-ice session is too crowded, he may not become engaged in the learning activity.

Definitions of motivation tend to blur the distinction between the two states. Green (2002, as cited in Palmer, 2005) describes motivation as an "internal state that activates, guides, and maintains behaviour". Keller (1987) has identified four major conditions that he asserts must be met for people to become and stay motivated. These are Attention, Relevance, Confidence and Satisfaction (ARCS). I explore Keller's ARCS motivational framework in more detail in Chapter Three.

Two types of motivation are discussed in the literature, extrinsic and intrinsic. Ryan and Deci (2000, p. 55, as cited in Palmer, 2005) define both types as follows. "Intrinsic motivation ... refers to doing something because it is inherently interesting or

enjoyable, and extrinsic motivation ... refers to doing something because it has a separable outcome". Opinions vary about the effectiveness of each type in supporting learning and engagement.

Intrinsic motivation is often thought to be pleasurable and satisfying, which supports engagement by reinforcing the value of participating in the learning activity (White 1959, as cited in Palmer, 2005). It is satisfying for its own sake.

Extrinsic motivation often takes the form of external rewards, such as a prize or job promotion. It has been associated with behaviourism, in that it is thought to support a stimulus-reward method of learning (Greeno, 1996). According to this view, learners may consciously or subconsciously choose to engage in an activity based on its value to them. Skinner provided much of the research in this area, demonstrating the value of positive reinforcement for learners (ibid).

Extrinsic motivation is often used in formal learning situations such as classrooms and corporate environments, but its effectiveness has been questioned by many. Several researchers have shown that it may actually hamper engagement and learning (Deci, Koestner, and Ryan 2001, as cited in Palmer, 2005; Rotto, 1994). These authors believe that intrinsic motivation is more effective in promoting learning and achievement.

### **1.2.3 Flow**

Many elements present in the descriptions of interest, curiosity, motivation and engagement are encapsulated within Csikszentmihalyi's Flow theory (1990). At its most basic, Flow is simply a state of immersion in and deep enjoyment at a task.

Flow theory evolved from Csikszentmihalyi's work in the last three decades of the twentieth century. During that time, he used the ESM (Experience Sampling Method) to collect cognitive and affective data from more than 8000 subjects around the globe (Csikszentmihalyi, 1997). From this, he extracted what he has defined as the conditions of Flow, as listed on the next page.

1. Goals are clear.
2. Feedback is immediate.
3. Skills match challenges.
4. Concentration is deep.
5. Problems are forgotten.
6. Control is possible.
7. Self-consciousness disappears.
8. The sense of time is altered.
9. The experience becomes autotelic (Csikszentmihalyi, 1997, p. 8).

Csikszentmihalyi theorizes that Flow activities lead to personal growth and learning because both skills and challenges must increase proportionately to sustain the Flow state. If the participant masters the task and the challenge does not increase, Flow will be broken. Success in completing challenges is what makes the Flow experience autotelic, or self-rewarding. In turn, this intrinsic motivation should facilitate engagement with the activity (Keller & Suzuki, 1988; Kinzie, 1990; Lepper & Malone, 1987, all as cited in Rotto, 1994; Rotto, 1994).

For the purposes of this investigation, Csikszentmihalyi's Flow theory is important because it identifies several elements of a learning activity that may be manipulated or explicitly enhanced through design to generate engagement. We discuss these more fully in Chapters Two and Three.

#### **1.2.4 Adult learning**

Learning as a concept is complex and difficult to characterize. Specific descriptions often refer to specific types of learning tasks or expected outcomes. Learning may occur in a broad variety of ways, some of which may require the construction of spatial knowledge, the acquisition of new motor skills, or a change in conceptual understanding of a specific topic, to cite just a few examples. Goodyear, Njoo and Hijne offer a succinct definition that will suffice for this paper: "[A learning process can be defined as] cognitive transactions of the learner that are meant to transform information into knowledge" (1991, as cited in Williams, 2003). Thus, we can think of learning as a process - not an outcome - as it is commonly perceived. Information forms the input and new knowledge becomes an output.

Piaget believed that we begin to learn from the day we are born (Inhelder, & Piaget, 1958). Csikszentmihalyi (1997) also believes that children are born with a desire for knowledge. However, he points out that this innate desire and the pleasure children get from learning are often spoiled by repeated exposure to abstract, externally imposed tasks in classroom learning. Such poor learning design can “undermine the motivation to learn for many, often for the rest of life” (Csikszentmihalyi & Hermanson, 1995 p.67).

Our desire to learn does not have to disappear as we become adults: indeed, Tough believes that “learning is a universal, natural, and normal activity on the part of adults” (as cited in Whelan, 1988). But repeated forced participation in learning activities that are abstract, rather than applied and meaningful, can subdue this desire (Csikszentmihalyi & Hermanson, 1995). Such activities are common in adult learning. This may be due, in part, to a widespread subscription by designers to Knowles’ theory of andragogy (1984).

Although he was criticized on many fronts, Knowles’ efforts to delineate a radically new approach to developing learning theories for adults are still considered seminal work in the field of education (Collins, 1991). A core principle of his theory is that “an adult’s concept of self creates the desire to be self-directing” (Knowles, 1984; Lange, 2004). However, I found no clear definition of what Knowles meant by “self-directed”. In my experience, many designers understand the phrase to mean “self-motivated” and assume that there is no need to attempt explicitly to motivate adults to engage with their learning activities. I disagree with this interpretation and contend that there may be two distinct components to Knowles’ term “self-directed”: adults want to control *how* they learn; and they want to control *what* they learn.

What this may mean for engagement design is that, if the topic of the learning activity is not something that the adult already wants to learn - something in which he already has an individual interest - then the designers of that activity must find some way to make him interested in the topic, make him want to learn it.

Designers cannot assume that adults will naturally engage in a learning activity because they are innately inclined to do so; an explicit effort must be made to invite and sustain their engagement. Successful teachers and facilitators have a repertoire



of strategies they use in face-to-face environments to do this. But supporting learning in a technology-mediated learning environment poses new and additional challenges that may not be met with existing face-to-face strategies.

### **1.2.5 Technology-mediated learning**

There are several aspects of technology-mediated learning that may serve to weaken or inhibit an adult's ability to engage with an activity.

One major factor is the usability of the technology itself. Good usability is recognized as a critical element in the successful implementation of any computer program. It is particularly important for e-learning applications, since good usability can have a significant impact on the learner's affective experience, thus enhancing the value of the learning process (Mantovani & Castelnuovo, 2003; Winn, Windschitl, Fruland, & Lee, 2002). Poor usability may either distract the learner from the learning activity or increase her cognitive load such that she cannot interact successfully with the technology (Milne, 2003; Reigeluth and Schwartz, 1989 as cited in Choi, 1997).

Another challenge unique to TML is that there is no human face on the activity; there is often no facilitator or teacher present. This person plays a number of roles integral to supporting the learner, roles that are not easily replicated with technology. These include:

- Managing the activity to provide intelligent monitoring of the learner's abilities, knowledge, interest and progress;
- Providing timely and meaningful support and scaffolding of the learning process;
- Adapting the challenge level of the activity to match the learner's ability as she progresses;
- Generating dynamic feedback to the learner on her actions and queries;
- Facilitating social interaction and collaboration in the activity, and;
- Offering cognitive interaction and discourse to support reflection and concept exploration by the learner.

Some of these functions can be managed to a degree by programming them into the technology; others are simply too expensive or difficult to address with current capabilities and budgets.

Removing the facilitator from the learning activity also eliminates a valuable source of feedback and research to inform learner-centred design. In a classroom, teachers get feedback from students and can often tell whether their learning activities engage the students. But, unless developers of TML activities carry out in-depth feedback and evaluation research with the learners, they have no way of knowing what is effective in the activity and what is not.

However, the most significant issue with respect to this investigation is that few TML activities are explicitly designed to gain and sustain the learner's attention and interest (Rotto, 1994; Stoney & Oliver, 1998). The activity may start with a novel approach, some "situational" bells and whistles, as described earlier by Csikszentmihalyi and Hermanson (1995). But when the novelty of this approach wears off, the learner can be left to work through a tedious experience. Much of today's computer-based learning material is simply text or text with photos through which the learner clicks (Stoney & Oliver, 1998). Such designs do not support auditory or kinaesthetic learners. Older adults can find reading large amounts of text on the screen difficult and tiring. In addition, many TML activities apply a predominantly linear structure, forcing the learner to work through components that s/he may not need or want to experience. This may explain why organizations often complain of low retention and program completion rates among their learners (Quinn, 2005).

### ***1.2.6 Need to address engagement***

Having discussed the nature of engagement and its relationship to adult TML, we begin to understand why it is important to understand how to design for engagement. To demonstrate this need more clearly, I cite the work of Csikszentmihalyi (1997). As part of his extensive research into the state of Flow, he demonstrated that engagement can be difficult to attain and sustain, even for "very good, respected" teachers. In an experiment using pagers to randomly sample the thoughts of teachers and students during a history class, one study of 27 high school students showed that, while their teacher was talking, 100% of them were not thinking about the topic of the

lecture at all. They were thinking about lunch, dates, clothes and after school activities. The experienced teacher, who believed that he had their attention, was shocked. Thus, engagement cannot be assumed, even with a captive audience.

Generating learner engagement is also a key element of Learner or User-Centred Design (UCD) principles. In UCD, the goal of the design process is to ensure that the user or learner has an effective, engaging and satisfying experience (Garrett, 2002). In any learning environment, like a workplace, science centre or website, such an experience would benefit both the learner and the learning provider.

Satisfaction and engagement do not happen automatically in learner-centred design; like everything the learner experiences, they should be the result of conscious and explicit design decisions that are informed by learner research (UPA, 2006; Zazelenchuk & Boling, 2003). Thus, creating engaging learning should be a systematic part of the design process.

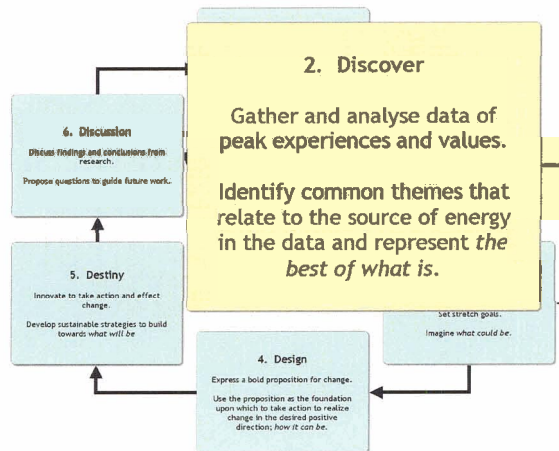
Recent research provides a strong rationale for adopting UCD principles in TML for adults. UCD can result in designs that: are easier to understand and use, thus reducing support costs; improve the quality of life of users by reducing stress and improving satisfaction; and significantly improve the productivity and operational efficiency of individual users and consequently the organization (NASA, 2006). In addition, supporting learner satisfaction through designing for engagement can enhance: the learners' trust in the activity; efficiency in the design process; the designer and learning provider's reputations; competitive advantage in an open market situation; and profit (Kuniavsky, 2003).

Given the benefits outlined above, the widespread and enduring interest among learning theorists in the role of engagement, as well as the effects of interest, curiosity and motivation in supporting learning, it seems fair to say that generating and sustaining engagement should be an explicit element of technology-mediated learning design for adults. Not only will engaging activities support learning, but they may also increase satisfaction among learners and motivate them to continue with their learning pursuits.

Having developed a definition of engagement, explored its connections to adult learning and TML, and identified a need for engagement design in this Chapter, I advance this inquiry in the next Chapter by attempting to identify design elements in learning experiences that practitioners can control during development to generate and sustain engagement.

## 2 Discover: Engaging Elements

Figure 4. Chapter 2: Discover



*All human beings by nature desire knowledge.*  
Aristotle, *Metaphysics* (980a)

*The world puzzles us and arouses our sense of wonder, and so prompts us to look for explanations.*  
Introduction to Aristotle's *Poetics* (Heath, 1996)

This chapter explores design elements that can generate engagement in technology-mediated learning - what works well. True to the philosophy of Appreciative Inquiry, I focus on discovering strengths in engagement design, rather than identifying and trying to improve on weaknesses and deficiencies.

In the literature review that follows, I do not attempt to constrain my findings to one particular epistemological view; rather, I attempt to discover all relevant methods of generating and supporting engagement. In general, most sections discuss cognitive

approaches. There is also a section that deals with situated learning, as well as several references to technologies that are effective from a behaviourist perspective.

For the purposes of this review, I have separated engagement design factors into two categories: those that employ a content-based approach to generating engagement and those that rely on technology. The rationale for this segregation is that the factors I consign to the content category can theoretically be applied in any environment or to any activity; they are not technology-dependent.

Clark (1994) approaches the use of media to support learning in a similar fashion. What I call *content* correlates to what he calls *instructional strategies*; my *technology* category is similar to *media* in his work. His argument is that media alone do not influence learning; it is the instructional strategy behind the media tools that accomplishes this.

Clark is just one of many theorists active in the debate concerning the power of technology alone to sustain engagement. Several authors contend that novel technologies may be effective at gaining a learner's attention in the initial stages of an activity, but that effect soon wears off. This means that such an approach cannot sustain the initial engagement it creates (Csikszentmihalyi & Hermanson, 1995). However, many also believe that technologically based engagement created through cognitive and affective strategies, supported by engaging content design, can be sustained (Galarneau, 2005; Schiefele, 1991).

This tension, between content and technology, traces back at least as far as Aristotle (1447a). In his discussion in the *Poetics* of the need for poets (today's playwrights) to be able to create not only verses but also event-based, action-oriented plots to engage their audiences, he noted that plot or content alone should be enough to affect an audience in the desired emotional and cognitive way, even if they do not see the play mounted. For example, anyone who simply hears the plot of Oedipus should "shudder and feel pity" (ibid). The same effect cannot be gained through spectacle or technology alone.

A more modern theatrical presentation also supports the contention that technology alone cannot sustain engagement. In their studies of presence in the context of their Aladdin Virtual Reality (VR) ride, Pausch et al. (Pausch, Snoddy, Taylor, Watson, &

Haseltine, 1996) found in a survey of 45,000 visitors that VR novices were unimpressed with the technology for its own sake; they cared about what there was to do in the virtual world. When guests were invited to fly around on their virtual magic carpet and explore the virtual environment (VE) on their own, without an explicit goal, they became bored. However, when they were given a concrete goal to achieve in the VE (such as to find a specific place), they experienced significantly higher levels of presence. Presence, loosely defined as the sensation of being there (Sas & O'Hare, 2003), is thought to correlate strongly to engagement (Winn, Windschitl, Fruland, & Lee, 2002) and researchers suspect that presence may play a central role in supporting learning in computer-generated environments (Dalgarno, Hedberg, & Harper, 2002; Mantovani & Castelnuovo, 2003; Winn & Jackson, 1999; Winn, Windschitl, Fruland, & Lee, 2002; Zayas, 2001).

This is not to say that technological strategies for generating engagement are not without merit; however, they should be combined with an engaging content or instructional design strategy to be effective. I explore the best of both approaches below.

## **2.1. Content Design**

The design elements described in this section that can support engagement tend to operate at both cognitive and affective levels. Galarneau (2005), in her work on play and learning, offers a concise overview of what she believes the best types of engagement should be like.

So while part of the motivation may stem from novelty effects, competitive enjoyment, or the stimulation younger generations have grown accustomed to, the best types of engagement stem from the learner's enjoyment of a more effective learning experience, one that puts them in control and encourages active participation, exploration, reflection, and the individual construction of meaning. It might be described as fun, as Prensky says, or it might be the phenomenon that Seymour Papert refers to as 'hard fun', enjoyment derived from a challenging but meaningful learning experience, or as Gee says, an experience that 'is or should be both frustrating and life-enhancing' (Galarneau, 2005 p.2)

The learning experience Galarneau describes reflects many engaging design elements that are not reliant on technology: control, participation, exploration, reflection, fun, challenge and meaningful learning. For the most part, these strategies could work equally well in a paper-based activity or in virtual reality. As such, they are timeless, flexible and accessible to designers on small budgets.

### **2.1.1 Relevance**

A key criterion of an engaging content strategy is relevance. The content must be meaningful to the learner; it must have value for her. If we want learners to engage with our content, it must be content that they care about (Stahl, 2005).

Csikszentmihalyi (1990) notes that Flow only occurs in the attempt to accomplish something worthwhile. Seely-Brown and Duguid concur (2000), adding that the learner must have a need to drive the learning.

People learn in response to need. When people cannot see the need for what's being taught, they ignore it, reject it, or fail to assimilate it in any meaningful way. Conversely, when they have a need, then, if the resources for learning are available, people learn effectively and quickly ... [This] suggests how important it is not to force-feed learning, but to encourage it (Brown and Duguid, 2000, p. 136).

The need for learning to be relevant connects directly to the concept of intrinsic or individual interest as described in Chapter One. We seek constantly to make meaning from our experiences with the world (Aristotle, 1447a; Berlyne, 1968; Bruner, 1990; Csikszentmihalyi, 1997; Dewey, 1916; Heidigger, as cited in Stahl, 2005; Mandler, 1984; McKee, 1997; Piaget, 1977; Schank, 1997; Stahl, 2005; West, Farmer, & Wolff, 1991). Anything that helps the learner do this will have engagement value for her (Mitchell 1997 as cited in Palmer, 2005; Schank, Berman, & Macpherson, 1999).



This may be easy to achieve if the learner already has an individual interest in the subject matter. However, if she does not, then the designer of the learning activity must find a way to make the content meaningful to her. Keller (1987) offers six strategies to help designers to do this in his ARCS framework for motivational design. Several of these correlate to others I discuss later in this Chapter.

1. Relate the activity to the learner's personal experience.
2. State the present worth of the learning activity.
3. Connect it explicitly to learners' future activities and goals.
4. Match the activity to learners' needs. These can include responsibility, interaction and control.
5. Find ways to model the learning content through peers, guests and tutors.
6. Provide choice to give the learner alternative methods for completing the work (ibid).

An alternate approach to making the learner care about the activity is to generate meaning through cognitive conflict.

### **2.1.2 Cognitive conflict**

As defined earlier in Chapter One, cognitive conflict can be described simply as the gap between what the learner knows and an unfamiliar situation she is currently experiencing: what she does not know. If it is human nature to want to make sense of our experiences, it would be logical for a learner facing something "unknown" to want to understand it, make it "known". This speaks to the nature of engagement as it relates to cognitive conflict.

As a simple example, if your car will not start and you do not know why, you will experience a cognitive conflict. You know that you have turned the key; that the car has gas; that the car is in the correct gear; that you did not leave the lights on; and that it worked properly the last time you used it. So you cannot understand why, given all the correct operating parameters, it will not start. You will naturally want to find the answer. Therefore, you will engage with the problem, seeking knowledge, until you learn what you need to resolve it.

Cognitive conflict can be introduced or controlled by designers in a number of ways. To do so, practitioners need to understand the learner's existing level of domain-related knowledge: then introduce a conflict that exceeds that understanding and creates a cognitive imbalance.

#### **2.1.2.1 Novelty**

One type of cognitive conflict that is used often is novelty: what might be called "situational interest" (Hidi, 1990, as cited in Palmer, 2005) or "perceptual curiosity" (Berlyne, 1968). This occurs when a learner encounters novel, unusual or challenging tasks or surroundings. The novelty created stimulates her attention, causing her to react with wonder: "What is that?"

These contextual stimuli provide a hook to capture a learner's attention. However, from a cognitive perspective, the stimulating effect is usually short term and has only a marginal influence on the learner's knowledge-building activities (Csikszentmihalyi & Hermanson, 1995). The reason for this is that, once the learner figures out or makes sense of the "gap" created by the novel stimulus, its engaging effect fades. The cognitive conflict has been resolved and the "gap" no longer exists. So, the reason to engage with the content is gone.

Thus, the use of novelty to generate engagement among learners can be effective, but it is not sustainable. Once the gap is closed, another novelty effect must be created to engage the learner once again. This cycle must be repeated during the entire learning activity.

One long-standing and proven way to do this is with dramatic conflict in story.

#### **2.1.2.2 Story**

Humans have used storytelling throughout history as a primary method of teaching. Story-sharing - both the telling of and listening to stories - supports learning in many ways. Chief among these are: engagement of the audience through cognitive conflict (Aristotle, 1447a; McKee, 1997); facilitation of meaning-making as stories provide effective and memorable representations for learners to use as schemata (Bruner, 1990; Schank, 1997; Swap, Leonard, Shields, & Abrams, 2001); and reflection on the

part of the storyteller as s/he processes and relates the story (Brown, Denning, Groh, & Prusak, 2004; Lauritzen, & Jaeger, 1997; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999).

In the learning domain, many educators, facilitators and designers use the terms narrative and story interchangeably. They recognize that story has a certain value in supporting learning and automatically attribute the same value to narrative. However, I contend that the two are quite different and relate to learning in different ways, especially with respect to learner engagement.

The definition of narrative varies according to the domain being considered. One modern description often used with respect to electronic media is "a chronological cause-and-effect chain of events occurring within a given duration and spatial field" (Bordwell, 1985, p. 49). Narrative connects strongly with theories on the use of schema and scripts for learning, in that students rely on narrative structure to help them accommodate and assimilate new information and experiences (Bielenberg & Carpenter-Smith, 1997; Laurillard, 1998; Mandler, 1984).

### ***Conflict and Story***

Story differs from narrative in that its structure is more than just a set of causally or temporally related events. When seeking a generic definition of story, Kenneth's Burke's definition of drama is often cited (1945). Key elements of Burke's model include an Actor, an Action, a Goal, a Scene and an Instrument, plus Trouble. Trouble is the heart of a good story, signifying an imbalance between any of the five elements. Trouble is conflict.

As these elements interact in an attempt to resolve this conflict, they create a pattern of tension and release (Bielenberg & Carpenter-Smith, 1997) known as the dramatic arc (McKee, 1997). According to McKee, a well-established Hollywood screenwriting coach:

Nothing moves forward in a story without conflict . . . the Law of Conflict is more than an aesthetic principle; it is the soul of story. Story is metaphor for life, and to be alive is to be in seemingly perpetual conflict (McKee, 1997, pp. 210-211).

In his guidelines for storytelling, McKee asserts that as long as there is unresolved conflict in a story, the audience will remain engaged. The moment the conflict ends, so too will their engagement.

These concepts of dramatic conflict and the dramatic arc in story relate directly to Piaget's theory of cognitive conflict. Both types of conflict create a "gap" that the learner or audience member innately desires to close; an imbalance between knowing and not knowing that she desires to restore to balance. For example, the protagonist needs to get somewhere and runs into increasingly difficult obstacles; this creates conflict. It is this gap or dramatic conflict that keeps the learner engaged in the activity or story (Bielenberg & Carpenter-Smith, 1997; Ippa, Weltman, & Gordon, 2004; Jenkins, 2004; Lepper & Cordova, 1992; Waraich, 2004).

### **2.1.2.3 Challenge**

The notion of challenge as it relates to cognitive conflict and learning can apply to a broad range of activities that includes games, simulations and problem solving. In his early writings, Dewey described challenge as a fundamental element of an educative experience (Dewey, 1913, p. 163).

The primary value of challenge is often perceived to be facilitating learning and knowledge construction. However, its status as a type of cognitive conflict means that the use of challenge in TML design should also generate engagement. It may be used on a one-time basis, as in a problem-solving activity; or it may be applied on an iterative basis, so that the level of difficulty evolves with the learner's knowledge and capabilities (Csikszentmihalyi, 1990; Kirriemuir & McFarlane, 2004; Norman, 1988). As the learner masters one level of challenge, a new one is presented. Each challenge should force her to seek knowledge beyond her current level of experience; yet, it should also be possible for her to complete. Providing challenges that are too difficult or impossible for the learner may weaken or end engagement.

One inherent benefit of using challenge in learning is that there is often an intrinsic reward associated with completing a challenge. This autotelic feedback may serve to enhance the learner's engagement (Csikszentmihalyi, 1990); such positive reinforcement can also motivate her to continue to pursue the activity (Hung, 2001).

This suggests that creating challenges that generate a sense of accomplishment may also be an effective engagement strategy (Csikszentmihalyi, 1990).

### **2.1.3 *Learner control***

Giving learners control over their learning is critical to engagement for adults. Feeling in control can support engagement; a lack of control leads to disengagement (Deci, 1995 as cited in Hardre, 2003). A learner's sense of control relates to her beliefs about her ability to influence outcomes (Hardre, 2003). So, a TML activity that is designed to enable the learner to explore and discover solutions to cognitive conflicts in her own way, with support, permits her to feel in control of her learning and helps her make it meaningful (de Jong et al., 1998; Facer & Williamson, 2005; Fisher, 1991; Gruber, 1977; Jonassen, 2004). Learner control is also implicit in Knowles' (1984) theory of adult learning, which describes adults as being self-directed. This is thought to imply that they want to have control over their learning. Such control may be effective because it can personalize the learner's ability to build knowledge according to her unique experience.

It appears that the demand for control is increasing as access to newer "pull" technologies, such as the Internet, mobile computing and on-demand video grows. Learners are no longer content to receive passively only the content organizations and educational institutions want to deliver (Kahan, 2004).

Despite this demand for control, research from the past decade of e-learning indicates that most adult learners cannot be completely self-directed in their pursuit of their learning objectives; they are uncomfortable in discovery-style learning environments and need support or scaffolding (Grow, as cited in Merriam and Caffarella, 1999; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999). In addition, when developers shift control to learners, there is an inherent shift of responsibility for the learning process and outcomes (de Jong et al., 1998; Fisher, 1991; 1977; Hung, 2001; Rieber, 1996). This can cause anxiety among adult learners (de Jong et al., 1998; Summers, 2004) who desire structure and guidance (de Jong et al., 1998; Rieber, 2002).

To sustain engagement, designers must balance adults' need for control with their need for structure, a challenging task (Aldrich, 2004). Too much support can quash

the meaningful learning that occurs when users discover and build knowledge in their own way and at their own pace; too little can leave the learners frustrated and cause them to quit (Aldrich, 2004; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999).

#### **2.1.4 Social interaction**

*We are fundamentally social beings ... our participation in human practices is how we become who we are.*  
Etienne Wenger (as quoted in Kahan, 2004).

Learning theories, such as situated cognition, situated learning, social constructivism, situativity, and socioculturalism view learning and engagement somewhat differently than the cognitive perspective. In general, they assert that learning takes place in social interaction and social contexts (Vygotsky, L.S., 1978; McDonald, Noakes, Stuckey, & Nyrop, 2005; Wenger, 1998). This perspective maintains that learning is fundamentally a social and cultural activity, shaped not only by what happens between individuals in interaction, but also by the cultural, historical, and social contexts in which their interaction is embedded (Becker, 2005; Hung, 2001; Lattuca, 2002; Sefton-Green, 2004; Wlodkowski, 1999).

Such learning is an integral part of our everyday lives: part of our participation in our communities and organizations. By engaging socially, we learn how to be part of a community; we discover its practices, beliefs and culture. As a result, this learning helps us become who we are (Wenger, 1998).

Vygotsky (1978) contends that social interaction does not simply facilitate learning, but that it is an essential component, triggering the “internal developmental processes” necessary for an individual to build knowledge. According to his theory, knowledge is not built in the head, but rather is constructed socially in the world (Hung, 2001). To learn, one must engage with others and with her environment, her situation. Vygotsky showed that most learning begins with interpersonal interactions and evolves from there into individual knowledge. Thus, our engagement with others is both the motivation for and source of new knowledge (Stahl, 2005).

In his work with communities of practice, Wenger (1998) calls repeatedly for opportunities for social interaction to support learning.

Learning is a matter of engagement: it depends on opportunities to contribute actively to the practices of communities that we value and that value us, to integrate their enterprises into our understanding of the world, and to make creative use of their respective repertoires (Wenger, 1998, p. 227).

Through interaction with a community of practice, learners are empowered to participate in and contribute to that community, to engage with it. It is through this engagement that they develop a sense of value and self-worth (ibid). This makes participation and membership in the community meaningful to them.

Individual engagement is often a consequence of being involved in an engaged group. One is motivated by the group effort. If a researcher looks closely at the behaviour of a group, what appears is not a clear causation in either direction between individual and group; they tend to constitute each other's engagement through subtle interactional moves (Stahl, 2005 p.ix).

Approaching learning design from a situative perspective then, would appear to support the generation of engagement through "built-in" opportunities for social interaction and collaboration. Without such interaction in TML for adults, there is significant risk that the learner will feel disconnected, isolated and even excluded (McDonald, Noakes, Stuckey, & Nyrop, 2005).

## **2.2. Technology Design**

Technology can be a powerful tool to support learning when combined with an appropriate instructional strategy and skilful application of learning theory (Mantovani, 2003; Osberg, as cited in Dalgarno et al., 2002). Innovations appear regularly in the educational technology marketplace, each one promising to engage learners and enhance their learning. Specific features of technology that have been shown to be somewhat effective at meeting these design objectives are explored in the section below.

### 2.2.1 Interactivity

Interactivity offers tremendous potential for enhancing engagement. However, the degree, type and amount of control afforded the user can vary widely, depending on the sophistication of the technology and the design strategy. As a result, the impact of the interactivity on learner engagement can also vary widely. To realize the potential of this functionality, designers need a clear understanding of what interactivity is and how it affects engagement.

In electronic media, Barker suggests a “basic principle of interactivity” that describes reciprocal actions by two dynamic systems (such as users and technology) on each other, which lead to a change in state in both (as cited in Laurillard, 2002). Several key concepts are included in this definition: the idea of two-way or reciprocal action; the requirement that the systems or interactors both be dynamic, not passive or static; and the fact that the interaction results in a change to both systems. Though Barker calls this a basic principle, it is quite a complex concept, not easily supported in full by many educational technologies and not well understood by many designers.

As discussed earlier in this Chapter, control is a key element of design that can support engagement. Dynamic interactivity as defined above can heighten a learner’s sense of control, which would also generate engagement (Mott, Callaway, Zetlemoyer, Lee, & Lester, 1999; Roussou, 2004). However, a design that simply forces a learner to click “Next” repeatedly as she pages through a text-based activity does not give her control.

Murray (1998) offers a further clarification of the difference between this, the most common type of interactivity found in educational media, (often described as “clickability”), and interactivity that offers dynamic control and true agency to the learner.

Agency is the satisfying power to take meaningful action and see the results of our decisions and choices ... Because of the vague and persuasive use of the term *interactivity*, the pleasure of agency in electronic environments is often confused with the mere ability to move a joystick or click on a mouse. But activity alone is not agency (Murray, 1998, pp. 126-128).



Several researchers support the use of interactivity that offers true agency to enhance engagement and learning (Arnone, 2003; Bangert-Drowns & Pyke, 2001; Cavalier & Weber, 2002; Laurillard, 1998; Mallon & Webb, 2000; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999).

However, there is a potential drawback to this design approach. By definition, there is an inherent conflict between engagement and interactivity: the simple act of thinking and taking action (interacting) automatically disrupts engagement. The learner must disengage with the material cognitively, to reflect on and decide what action to take. This is an area of much research with no clear solution.

#### **2.2.1.1 Feedback**

Feedback relates to both behaviourist and cognitive views of engagement. From the behaviourist perspective, feedback is part of the act of physically interacting with technology. It supports engagement by providing a response to the learner's actions, so that she is always aware of her status within the learning activity, as well as the status of the technology. This can be an issue for adults who are already uncomfortable in a TML environment. Video games generally handle the provision of feedback quite well; the player always knows his status and the consequences of his actions (Becker, 2005; Hawkey, 2004; Jones, 1998; Kirriemuir & McFarlane, 2004; Paras, & Bizzocchi, 2005; Rieber, 1996). Many of the newer simulation authoring tools also support this capability, providing functionality for real-time feedback and coaching. Some have even adopted techniques from the game industry and include status bars and dynamic scorecards that are always visible to the learner.

Cognitive feedback is part of the action-reaction-reflection cycle inherent in thinking and learning as described in Chapter One. As the learner engages with her "quest for knowledge", the feedback she receives supports her in the process of building knowledge and resolving the imbalance caused by her cognitive conflict (Berlyne, 1968; Csikszentmihalyi, 1990; Csikszentmihalyi, 1997). Feedback is particularly important at stimulating learner response and action in interactive learning (Becker, 2005), which should also stimulate engagement. Positive feedback may have the additional benefit of sustaining a learner's engagement with the activity, perhaps encouraging her to attempt to work at a higher or more complex level (Hung, 2001).

### **2.2.2 Simulations**

Simulations are considered to be powerful technology-mediated learning tools (Aldrich, 2004; Chapman, 2004; Lindheim & Swartout, 2001; Rieber, 2002). Their non-linear, interactive design correlates to many of the engagement concepts discussed already. In addition, they have the potential to support experiential learning.

#### **2.2.2.1 Defining and differentiating educational simulations**

Although marketing and academic literature often fail to distinguish between simulations, games, models and microworlds, there are distinct differences in these genres of activities that are important to understand in designing for both engagement and learning.

##### ***Simulation***

The one element that most clearly defines a simulation is that it is dynamic; it represents a real or imaginary system in action (Banks, 1999; Rieber, 1996; Williams, 2003). The represented system may be technical, physical, social, theoretical or human. The purpose of the simulation is to enable users to explore interactions between the system elements; observe system operation over time; and ask “what if” questions about the effects of changes to any of the system elements or attributes (Banks, 1998; Banks, 1999; Sauvé et al., 2005). As such, a simulation is also interactive.

##### ***Model***

A model is also a representation of a system. However, models are generally static, not dynamic (Banks, 1998; Banks, 1999). Since they lack the dynamic and interactive nature of a simulation, one would expect models to be less engaging to a learner.

##### ***Game***

Games currently have great appeal to educators and instructional designers who are keen to discover how to apply their apparent motivational power to learning. Certain games have the ability to hold players’ attention, unbroken, for hours. Yet, the complexities of how and why this is so remain unclear. Although the terms “game”

and "simulation" are often used interchangeably in learning, the literature reveals one distinct difference between the two: games generally include some level of competition. This may be structured as competition against others, the system or one's self; but the object of the game is to win (Rieber, & Noah, 1997). This notion of competition is echoed by Salen and Zimmerman (2003), who define a game as, "a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (p.80). Note that these authors raise the issue of conflict as a key characteristic of a game; this suggests that games may form another type of cognitive conflict that could generate engagement. Salen and Zimmerman also add another qualifying characteristic to their definition: that games function according to a set of pre-defined rules, whereas simulations may not (Rieber, & Noah, 1997; Sauve, Renaud, & Kaufman, 2005).

Ben Sawyer, founder of the Serious Games organization, writes extensively on games for learning. His definition, included below, does not include competition; however, it does introduce other important qualities not yet mentioned.

1. The player must be able to tangibly affect the outcome of the game.
2. There must be an overriding goal/challenge as well as sub-goals and challenges to the player with positive and negative outcomes based on their actions.
3. It must require mental or physical skill.
4. The outcome must be uncertain at the outset.
5. It must require the player to develop strategies in order to win or succeed. Those strategies needn't be apparent at the outset; in fact the discovery element of gaming is one of its most important strengths.
6. It must offer multiple paths to success. Linear games tend to take the form of puzzles, which, while useful and entertaining, are primarily about figuring out a specific question and not necessarily about formulating strategies.
7. Players must be able to ultimately overcome most obstacles in the game. Only under certain circumstances does it make sense to provide a game that is not at some point "winnable."
8. It must be interesting and fun (relevant to its audience) to inspire repeated play (Sawyer, 2005).

Sawyer's list correlates well to many of the elements of engagement already discussed in this thesis, including the need for learner agency or control, challenges and feedback, and cognitive conflict.

### ***Microworld***

Microworlds can appear similar to simulations as defined above. Much of what we know or think about them links back to work by Papert (1980) who conceptualized microworlds as exploratory learning environments that facilitate discovery. Where they can differ from simulations is in the way they appear to the learner. Rieber (1996) describes microworlds as providing the simplest possible representation of the system being simulated to the learner, whereas simulations can be quite complex. He asserts that microworlds need no instructions to operate; the way to proceed and interact with the program is intuitive. They may be re-shaped as the learner progresses to offer increasingly complex and sophisticated representations of the system.

#### **2.2.2.2 *Learning and engagement with simulations***

Simulations offer a TML environment that is unique in many ways. One of their fundamental benefits is that they can offer the learner an opportunity to learn by doing, versus collecting and processing information. Such hands-on experiences have been shown to enhance learning (de Jong et al., 1998; Greeno, 1996; Gruber, 1977; Kirriemuir & McFarlane, 2004; Mantovani, 2003; Ponder et al., 2003). They enable the learner to test new knowledge, strategies, skills and techniques in a virtual, risk-free environment.

In terms of their potential to engage, simulations can:

- Offer the learner control, by allowing her to choose her path through simulation and try out new ideas and perspectives (Hung, 2001; Kirriemuir & McFarlane, 2004);
- Make the experience relevant by simulating the learner's own environment;
- Support social interaction and collaboration (Duncan, 1995; Hung, 2001);
- Offer truly dynamic interactivity, and;
- Employ rich media, the value of which is discussed below.

However, none of these elements of engagement is automatically present in a simulation; each must be addressed explicitly in the learning activity design.

### **2.2.3 Rich media**

Rich media, originally coined as an advertising term, refers to a broad range of interactive digital media such as video, audio and animation that exhibit dynamic motion. In TML, rich media may be part of a pedagogical strategy that often includes giving the learner some control over the various elements (Coleman, Smith, Buchel, & Mayer, 2001). As argued by Clark (1994), such media are primarily tools to deliver learning content; their engagement value correlates solely to their unique physical properties. These might include interesting visuals or the sound of a human voice.

#### **2.2.3.1 Video and audio**

The use of audio and video in TML may support learner engagement because these are sensory stimuli that would generate attention in the category of situational interest. If used for dynamic interaction, such as in a video or audio conference that includes learner participation and input, they should invite engagement. However, if used passively, alone, in a non-interactive manner, they would likely not sustain engagement; as discussed earlier, they are technological novelties (Kwinn, 1997). They would need to be combined with some form of engaging content approach, such as the use of dramatic conflict.

To maximize their engagement value, these media should be applied according to their relevant strengths. The use of video should be reserved for learning tasks that are primarily visual in nature. Audio can be used to support video; as a standalone approach for mobile learners; or in real-time voice over IP (VoIP)-type applications in which bandwidth is limited.

#### **2.2.3.2 Animation and graphics**

Animation is becoming increasingly popular in TML as it becomes more affordable and accessible. It can be useful to visualize concepts that may be too difficult or expensive to reproduce using video. Again, the content should be primarily visual in

nature, since the novelty generated by watching an animated avatar talk cannot sustain engagement on its own.

One graphical element that has gained significant popularity in instructional design is the agent, coach or tutor. An agent is an object (often animated) that represents an entity (which may or may not be human) that has the ability to determine its own behaviour. These objects are often key elements of an activity's interface, speaking to the learner and facilitating interaction with the program. One important feature of autonomous agents is that their behaviour is not strictly structured according to a pre-determined architecture or outcome; they are governed by artificial intelligence (Summers, 2004).

Agents are particularly common in simulations designed to support soft skill development (Chapman, 2004). As coaches, they offer varying levels of interaction, social learning and support or scaffolding for the learner, as described by Vygotsky's (1978) Zone of Proximal Development. All of these features can support learner engagement.

### **2.2.3.3 Fidelity and dimensionality**

Visual fidelity can refer to a number of different attributes of graphic design, such as image resolution, dimensionality, shading and structure from motion. Research in the field of visualization strategies and applications is relatively new; as such, little empirical data is available to inform the design of TML.

In general, designers tend to believe that the more realistic they make an image or environment (high-fidelity), the more it will engage the learner. Despite many years of research into this field, there is no clear evidence to support this assumption. Results from a variety of studies are mixed, suggesting a more complicated, often counter-intuitive relationship between fidelity and learning (Alessi, 1988; Caird, 1996; de Jong, 2005; Hays, & Singer, 1989; Howell, 2003). High fidelity environments are visually more complex and present more information to the learner than low fidelity environments. This, in turn, increases the learner's cognitive load. This is a critical concept in learning activity design, as too much complexity can tax the learner and create cognitive overload, discouraging her and decreasing her engagement (Reigeluth

& Schwartz, 1989, as cited in Choi, 1997). Too little complexity can also decrease engagement, through lack of cognitive stimulation.

One aspect of visual complexity that has emerged as a design consideration for engagement is dimensionality. Access to 3D, stereo and immersive technologies for virtual environments (VE) has become commonplace, yet little is known about how to apply these technologies effectively to support learning and engagement. While they may be able to generate initial situational interest among learners, there is no clear evidence that these technologies can sustain engagement unless they are combined with engaging content (Caird, 1996; Kwinn, 1997; Pausch, Snoddy, Taylor, Watson, & Haseltine, 1996). Some features of virtual environments, such as rotational interactive and first person navigational capabilities may engage learners by virtue of their interactive qualities. However, these features are not de facto components of a VE: as such, they must be explicitly included in the design methodology.

In addition, designers considering the use of such advanced rich media to generate engagement need to consider the usability of the technology. Stereo and VE environments tend to suffer from poor usability, which can interrupt engagement and may undermine learning (Caird, 1996; Thomas, & Schnurr, 1998).

If used appropriately, immersive technologies such as virtual reality may generate high levels of presence among learners. Little is known about presence as it is a relatively new concept, but researchers suspect that it may also play a central role in supporting learning in computer-generated environments (Dalgarno, Hedberg, & Harper, 2002; Fowler & Mayes, 1997; Mantovani & Castelnuovo, 2003; Winn, Windschitl, Fruland, & Lee, 2002; Winn & Jackson, 1999; Zayas, 2001). Presence has also been correlated with enhanced engagement (Winn, Windschitl, Fruland, & Lee, 2002).

### **2.3. The Best of *What is*.**

In Chapter One, I posed a sub-question that addressed the need to discover the design elements that can generate and sustain engagement among learners. The findings of this Chapter address that query and provide the foundation for Chapter Three.

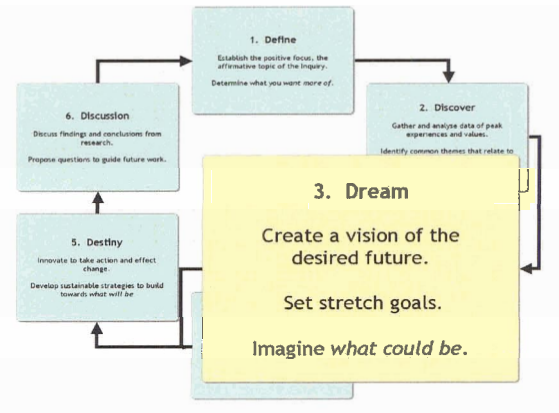
With respect to content-based strategies, I found that relevance, cognitive conflict (including story, challenge and novelty), learner control and social interaction can all contribute to a learner's engagement. Although there is still debate about the potential for technology to create engagement on its own, there are certain available technological features that may support engagement, if paired with an appropriate learning design strategy. These include interactivity, simulations and rich media.

In the next Chapter, I begin to build on these findings, to envision what engaging design could be like.



### 3 Dream: *Engaging Possibilities*

Figure 5. Chapter 3: Dream



Chapter Two described two categories of design elements (content and technology) that can generate engagement among learners. We have seen that, while each has its own merits, many of the elements discussed are best used in combination.

Building on this work, the next phase in this Appreciative Inquiry is to begin to imagine what the design of engaging TML activities for adults could be like. This is known as the Dream phase; an exercise to create “a clear results-oriented vision in relation to discovered potential [the Discover data]” (Cooperrider and Whitney, 2000, p. 16). Simply put, it is necessary to know where one wants to go or what one wants to achieve before creating strategies to make it happen.

In this Chapter, I attempt to define and describe a broad range of possibilities to support design for engagement. My goal is to look beyond existing practice and perceived constraints to explore *what could be*.

Although the emphasis here is to reach beyond the status quo, it is essential that the outcome of this stage of the inquiry be grounded in the reality of the findings of the

first two Chapters; it should not be completely fantastic. By continuing to build on what is already known and exploring the possibilities that exist outside current practice, the Dream should emerge as a blend of experienced success, (what is already working well), and what is desired, (engaging technology-mediated learning for adults). It should also maintain a sense of logical connectivity in this inquiry, so that each step in the AI process builds on the last.

### **3.1. What Engaging Design *Could Be*.**

To start to develop the Dream, I referred back to the original research question framed in Chapter One:

*How can designers of technology-mediated learning activities for adults generate and sustain learner engagement?*

By using this question as a foundation, I developed the high level description of the Dream that follows.

In my ideal or Dream situation, designers of TML for adults would have a clear understanding of what engagement is; they would know how different design elements can affect it; and they would know how to control these elements to generate and sustain it. The result of such design would be a TML activity so engaging that it would be transformed into something learners would desire and choose to do, as opposed to something they may do reluctantly.

I addressed the first part of this Dream, the need to understand engagement, in Chapter One, where I reviewed current definitions of engagement. Chapter Two offered a summary of key design elements affecting engagement, as described in the second part of the Dream. Thus, I now need to explore the last part of the Dream, which is also one of the sub-questions from Chapter One:

*How can designers control these key elements to generate and sustain engagement?*

To inform this work, I reviewed my findings from Chapters One and Two to begin to develop a sense of how I could build on the theories discussed there to provide guidance for designers. I also reviewed existing prescriptive design models and

frameworks for concepts related to engagement: specifically motivation, Flow and learning. I present these in the next section.

After analysing both groups of literature, I drafted a description of what designing for engagement in TML for adults could be like. This description offers a series of generic guidelines: what designers would know and do in an ideal situation to create engaging learning.

### **3.1.1 *Related models***

Several authors have published frameworks or models describing different aspects of the effects of motivation and engagement on learning. Most address the topic at a broad level; none focus specifically on generating engagement in TML activities for adults.

In Table 1 on the next page, I attempt to organize the key features of the six models I consider most relevant according to key elements. I discuss each of these in more detail below.

**Table 1. Key design elements in engagement-related models.**

| <b>MODEL / DESIGN FACTOR</b> | <b>FLOW - CSIKSZENTMIHALYI</b> | <b>ARCS MOTIVATION - KELLER</b>                                | <b>CLASSROOM MOTIVATION - PALMER</b>                                                                                                             | <b>ENGAGED LEARNING - HUNG, TAN &amp; KOH</b> | <b>CYBERGOGY - WANG &amp; KANG</b>                                                                    | <b>LEARNING ENVIRONMENT - NORMAN</b>                                                                                       |
|------------------------------|--------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Curiosity</b>             |                                | Attention: arouse and sustain curiosity and attention.         | Use novel or discrepant experiences to arouse curiosity<br>Use fantasy.                                                                          |                                               | Create a sense of surprise & mystery.                                                                 |                                                                                                                            |
| <b>Goals</b>                 | Goals are clear.               |                                                                |                                                                                                                                                  | Create problem (evolving).                    |                                                                                                       | Have specific goals and established procedures.                                                                            |
| <b>Challenge</b>             | Skills match challenges.       |                                                                | Challenge students by setting tasks at a moderate level of difficulty so they can regularly experience success.                                  |                                               |                                                                                                       | Provide a continual feeling of challenge - not too difficult (hopelessness and frustration) - nor too easy (boredom).      |
| <b>Relevance</b>             |                                | Relevance: connect instruction to important needs and motives. | Increase the meaningfulness of content and tasks by relating them to the students' lives.                                                        | Ownership by learner.                         |                                                                                                       | Provide a sense of direct engagement - the feeling of directly experiencing the environment, directly working on the task. |
| <b>Interaction</b>           |                                |                                                                |                                                                                                                                                  |                                               | Make activities interactive, collaborative or solo & competitive.                                     | Provide a high intensity of interaction and feedback.                                                                      |
| <b>Feedback</b>              | Feedback is immediate.         |                                                                | Provide assessment feedback; use praise that rewards effort & improvement.                                                                       |                                               | Facilitate communication                                                                              |                                                                                                                            |
| <b>Control</b>               | Control is possible.           |                                                                | Allow students a realistic level of choice in work partners, activities and task formats.                                                        | Facilitate monitoring (self)                  |                                                                                                       |                                                                                                                            |
| <b>Social interaction</b>    |                                |                                                                | Allow students to be active participants in the lesson.<br>Allow students to work individually or collaboratively in non-competitive situations. | Collaboration                                 | Build online community.<br><br>Use social software to deepen sharing of personal concerns & emotions. |                                                                                                                            |

## ***Flow***

As discussed in Chapter One, Csikszentmihalyi (1997) describes Flow as immersion in and deep enjoyment at a task. The conditions of Flow are that:

1. Goals are clear.
2. Feedback is immediate.
3. Skills match challenges.
4. Concentration is deep.
5. Problems are forgotten.
6. Control is possible.
7. Self-consciousness disappears.
8. The sense of time is altered.
9. The experience becomes autotelic (ibid, p. 8).

These conditions reflect many key design factors that can affect engagement that were discussed in Chapter Two. Specifically, these are the need for feedback, challenges and control. However, from a design perspective, these conditions as presented do not offer any guidance on how to achieve Flow; rather, they describe the desired end state of a Flow condition. Also, although this end condition is similar to a state of engagement, Csikszentmihalyi did not focus specifically on engagement when he developed his theory. Thus, the framework does not appear to address the need for learner support during the activity; nor does it reference any kind of process that matches the thinking and knowledge building activities described by Berlyne (1968) and others in Chapter One.

## ***ARCS***

Keller's ARCS motivational design framework (1987), referenced in Chapter Two, is often considered a seminal work in motivation. (ARCS: Attention, Relevance, Confidence, and Satisfaction). It stands out as one of the few existing systematic approaches in this domain.

As discussed in Chapter One, motivation can be considered the stimulus to engagement; however, the two are fundamentally different from a design perspective. Of particular interest for this investigation into engagement are Keller's guidelines for

getting and sustaining Attention; the need he describes to make learning activities Relevant and meaningful to the learner; and his approach to generating Confidence.

In discussing Attention, he recognizes that the true challenge is not getting the learner's initial attention but sustaining her interest. He offers six groups of strategies for doing so. These are the use of: incongruity or conflict, concreteness, variability, humour, inquiry and participation (Keller, 1987). His strategies for Relevance, originally presented in Chapter Two, are designed to help teachers relate the activity to the learner's past, present or possible future experiences. In his Confidence strategies, Keller includes the need for evolving challenges and clear goals.

Keller's framework offers a comprehensive approach to creating motivation. However, it is limited in that it was created to support classroom teachers of children working in a face-to-face environment. Thus, it provides a rich reference for this work, but cannot be considered as a comprehensive strategy for TML design for adults.

### ***Classroom Motivation***

Palmer (2005) conducts a literature review of motivational strategies for constructivist-informed classroom teaching. His interest in motivation is its role in constructivism, specifically the construction of knowledge and process of conceptual change. He suggests that learning is an active process requiring effort, so learners must be motivated to make that effort. Although his review appears to be quite in-depth, it does not reference Keller's (1987) work in this field.

Palmer offers the following summary of classroom motivation strategies.

1. Challenge students by setting tasks at a moderate level of difficulty so they can regularly experience success.
2. Use novel or discrepant experiences to arouse curiosity.
3. Use fantasy.
4. Increase the meaningfulness of content and tasks by relating them to the students' lives.
5. Use a variety of different types of activities and tasks.
6. Allow students to be active participants in the lesson.

7. Allow students a realistic level of choice in work partners, activities and task formats.
8. Allow students to work individually or collaboratively in situations that do not encourage competition.
9. Provide assessment feedback, and use praise that rewards effort and improvement (these should be given privately, to avoid social comparison).
10. Model enthusiasm, thinking, dealing with errors, and dealing with challenge.
11. Be supportive, reassuring, and attentive to the students (Palmer, 2005).

Palmer's framework includes several engagement factors that designers can control, as discussed in Chapter Two. Most noteworthy are the need to create challenges, arouse curiosity, make the activity meaningful, and offer opportunities for collaboration. With respect to curiosity however, he refers only to the use of it as a novelty, not a more enduring strategy.

As with some other frameworks discussed here, these guidelines are intended for face-to-face classroom learning activities, not TML. They also target motivational strategies for children. In addition, Palmer notes that his list represents a theoretical approach only: not all his recommendations have been "field tested", nor are they supported with conclusive research.

### ***Engaged Learning Framework***

Hung, Tan and Koh (2005) build on the work of Jones, Valdez, Nowakowski and Rasmussen (1995, as cited in Hung et al., 2005), which presents a set of 26 indicators of engaged learning, grouped into eight categories. These are: Vision of Learning; Tasks; Assessment; Instructional Model; Learning Context; Grouping; Teacher Roles; and, Student Roles.

In particular, Hung et al. are interested alternative pedagogical approaches to creating what they refer to as authentic learning environments: those that reflect the real world. They maintain that authentic environments are engaging. Self-regulated and problem-based learning are key aspects of such environments (Hung, Tan, & Koh, 2005).

Based on their analysis of the literature, the authors derive their Proposed Engaged Learning Framework - the five tenets of Authentic Learning Environments. These tenets are Problem, Ownership, Collaboration, Monitoring, Experts, and Tools, as described below:

- The design of a *Problem* task which needs to evolve based on the learners' learning goals and need to understand;
- *Ownership* of learning towards the problem at hand and an engaged responsibility towards the ideas and concepts being explored;
- *Collaboration* with others as a central means of problem solving;
- *Monitoring* and regulatory processes which lead to closure of experimentation and ideas' discourse;
- The role of *Experts* and facilitators in the learning process; and
- The role of supporting *Tools* in the generation of ideas and problem solving (Hung et al., 2005, p. 40).

Like Csikszentmihalyi (1997), these authors recognize the importance of evolving challenges or problems that match the advancing abilities of the learners. They also introduce the notion of including experts in the process to provide scaffolding and support for learners during the experience.

For the purposes of this research, the framework offered is of limited value, in that it is not specific to adults. It is also designed for application primarily in face-to-face learning situations that use technology for support only, rather than integrating it into the entire activity.

### ***Cybergogy for Engaged Learning***

In their work, Wang and Kang (2005) also build on the work of Jones et al (1995, as cited in Hung et al., 2005). They develop a taxonomy of engaged learning, which categorizes forms of engagement and assessment strategies in three domains: cognitive, social and emotive.

They build on this work to develop a Cybergogy for Engaged Learning, which is designed to increase the level of cognitive, emotive and social presence in the learner. (Note that they do not explain why they use the term presence instead of



engagement). To create activities that match this second model, the authors describe more than a dozen approaches to generating learner engagement; however, many of these focus on enhancing communication and the affective relationship between the facilitator and student, something that is nearly impossible to replicate in standalone TML. With respect to this thesis, their most relevant suggestions are to create a sense of surprise or mystery in teaching and to consider designing interactive and collaborative activities.

The weakness of this Cybergogy is that the authors' theoretical approach does not relate clearly to their model. It is also is deeply descriptive, rather than prescriptive. To extract practical design suggestions, one would need to conduct a detailed analysis of these descriptions. In addition, the authors seem to imply that an instructor or facilitator would be present during learning to follow and adjust activities to the model. This is another design element that could be difficult to include in some TML for adults.

### ***Requirements of a Learning Environment***

Norman (1993) has written extensively on design and usability. Although he may not be recognized as an expert in the learning field, his work deals with the challenges of designing items to support our cognitive actions. He is also an advocate of designs created to fit humans, as opposed to the reverse. Thus, in many respects, his work can be extrapolated to learning.

Norman explored the way in which cognitive artefacts or technological tools could support and enhance human capacity to think, learn, remember and know. He argued for the development of machines that fit our minds, rather than assuming that minds would conform to the machines. Within the framework of this discussion, based on his previous work, he listed what he believed to be a common sense set of requirements for an effective learning environment.

## Requirements Of A Learning Environment

1. Provide a high intensity of interaction and feedback.
2. Have specific goals and established procedures.
3. Motivate.
4. Provide a continual feeling of challenge that is neither so difficult as to create a sense of hopelessness and frustration, nor so easy as to produce boredom.
5. Provide a sense of direct engagement, producing the feeling of directly experiencing the environment, directly working on the task.
6. Provide appropriate tools that fit the user and task so well that they aid and do not distract.
7. Avoid distractions and disruptions that intervene and destroy the subjective experience. (Norman, 1993)

Although this list is not specific to engagement and describes the requirements at a high level, it does share several common elements with the other models and the findings in Chapter Two. These are the need for interaction and feedback, goals and challenge. He also includes the need to avoid distractions, which was mentioned in Csikszentmihalyi's conditions of Flow (1997).

### ***Summary***

A comparison of these six frameworks reveals that they share several common elements: the need for curiosity, goals, feedback, challenge, interactivity, social interaction, control and relevance. As discussed in Chapter Two, these design elements may all support learner engagement, which makes them exceptional candidates for inclusion in a Dream statement that describes engaging TML design.

### ***3.1.2 Engaging design guidelines***

After exploring the models above, I analysed the design factors presented in Chapter Two in an attempt to identify those most relevant to this inquiry. In this process, I tried to differentiate between those that primarily support learning in general and those that specifically support engagement. From these, I drew out what I deemed to be the essential elements: those that are critical to both creating and sustaining

engagement, as well as those that may be manipulated, controlled or enhanced through design.

I compared these with the key elements in the framework matrix in Table 1 and created the list that follows (Table 2). This represents the expanded Dream: a draft set of guidelines for designing for engagement among adults in TML. Each item is described in more detail below.

**Table 2. Engagement Design Guidelines**

**DESIGNERS SHOULD CREATE ACTIVITIES THAT OFFER LEARNERS ...**

---

**Cognitive Conflict.** A gap between what they know and desire to know.

**Challenge.** Evolving challenges that match and stretch their skills.

**Relevance.** Activities and information that are relevant and meaningful to them.

**Goals.** Clear and achievable goals.

**Interactivity.** Dynamic interactivity that delivers feedback and offers them agency.

**Control.** Significant control over the delivery and execution of the learning experience.

**Social Interaction.** Activities that naturally foster social interaction and collaboration.

***Cognitive conflict***

Creating an imbalance between what the learner knows and what she is experiencing addresses the core issues of engagement, curiosity, interest and motivation (Berlyne, 1968; Piaget, 1977). The use of dramatic conflict can be particularly effective here. Other forms of conflict may include problem-based learning, puzzles or any other type of cognitive challenge (Berlyne, 1968; Dewey, 1916; Moessinger, 1978). Cognitive conflict may also be generated by the introduction of a novelty designed to stimulate the learner's senses temporarily.

What is important to note here is that the learner's engagement is only sustained while the cognitive conflict remains unresolved. Once the learner resolves the imbalance or closes the gap between what she knows and needs to know, her

engagement will end (Berlyne, 1968; McKee, 1997). The only way to re-generate engagement then would be to create a new gap or conflict. Repeating this cycle, therefore, is essential to sustaining engagement.

### ***Challenge***

Challenge is a key piece of the cognitive conflict theory, and central to the frameworks of Palmer, Norman and Csikszentmihalyi presented above. However, the type of challenge best suited for generating and sustaining engagement is one that evolves to match the learner's evolving skills (Csikszentmihalyi & Hermanson, 1995). As she gains expertise, the learning activity must offer her progressively greater and/or more complex challenges. It is also essential that the challenge be achievable; otherwise, persistent failure on the part of the learner could discourage her from further engagement (Dewey, 1916; Hung, 2001; Lepper & Cordova, 1992).

### ***Relevance***

Making the activity meaningful for the learner can be difficult. This is especially true when designing activities that deal with new or abstract concepts or in formal or structured learning environments. In the latter instance, learners are often forced to participate in a class or activity against their will; it may be a requirement of their job or of a particular certification. It can be difficult to engage these unwilling participants. Finding a way to make the learning meaningful to them may help. The most effective way to do this is through learner research; designers need to know what learners find meaningful in order to relate the learning to it. Anything that helps the learner relate to the activity will have engagement value for her.

### ***Goals***

While some people are content to learn for learning's sake, most adults are goal-oriented (Knowles, 1984; Wlodkowski, 1999). They may not always know what their goals are at a conscious level. But it is important for the designer to know what the learners' goals are, since these will guide the learner's choices throughout the activity, at both a conscious and sub-conscious level. This will include her choice to engage or disengage from the activity.

The presence of clear goals is also important to foster the learner's sense of success (Csikszentmihalyi, 1997; Norman, 1988). Unless she knows what she is trying to achieve, she will not know when she has succeeded. A lack of such positive reinforcement may impede her engagement.

### ***Interactivity***

Interactivity can support active engagement with a learning activity. However, it is important that the interactivity be more than just clickability as described earlier. It must trigger cognitive reflection and response by the learner and provide her with the appropriate feedback to trigger a new reflection and response. In addition, the level and type of interactivity provided should offer the learner control and agency over the learning activity, as described below.

### ***Control***

Having some measure of control over their learning is essential to generating and sustaining engagement among learners, especially adults. Such control may take the form of choice: in the delivery format of the learning activity (video, audio, face-to-face, blended, synchronous or asynchronous); in the level of expertise required (high level, detailed, expert or novice); or in the path followed through the content. Control may address the learner's desire to customize, quit or seek more information about an activity.

While giving some control of the learning over to the learners is recommended, the activity should still provide enough structure and guidance to ensure that learners achieve their goals, as well as the learning objectives (Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999).

### ***Social interaction***

We are social beings. While many adults may prefer to learn alone, there will usually come a time during the learning activity when they will desire or need to interact with others (Wenger, 1998). It may be to ask a question or test out what they have learned; or it may stem from an authentic desire to collaborate.

Thus, providing opportunities to invite and encourage interaction and collaboration should also foster engagement.

### 3.2. From Dream to Design: Engagement in Context

The draft guidelines above offer generic recommendations for designing for engagement in TML for adults. However, such a generalized, prescriptive approach is of limited use to practitioners; thus, it only partially addresses the main research question. Designers do not work in generic situations; every design context and every set of learners is unique, with specialized needs and challenges. Therefore, to be able to engage learners, designers must be able to adapt the information in the guidelines and their knowledge of engagement to their specific context for their specific audience. This speaks to one of the last research sub-questions posed in Chapter One:

*How can designers create effective strategies to generate engagement within their own unique learning environment?*

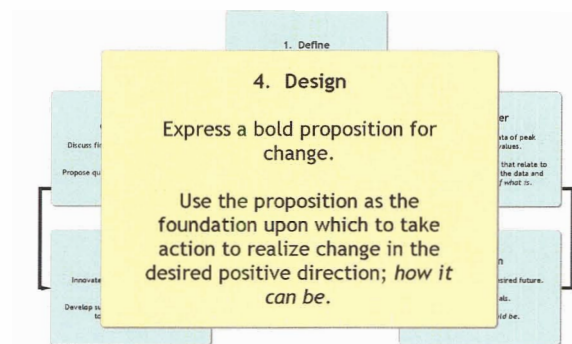
One approach to meeting this challenge could be to break down the guidelines further, to identify the specific strengths of each one. I could then attempt to map these onto a matrix of learning tasks, learner types and learning conditions such that I would create a prescriptive model of which strategy to employ for each specific combination of conditions.

However, learning tasks, learners, their context and the design environment can be so complex and dynamic that I do not believe this would be a practical or useful approach. At best, such a matrix would only serve designers at a relatively high, theoretical level. At worst, it could discourage meaningful research to inform learner-centred design in individual practices.

As an alternative approach, I propose that it would be more effective to create a flexible, learnable method - a research and design process - that would enable designers of TML for adults to explore the guidelines further and build an understanding of what engages learners in their own specific context so that they can create truly engaging learning experiences: *what should be*. Developing such a process is the focus of the next Chapter.

## 4 Design: *Engaging Vision*

Figure 6. Chapter 4: Design



At this stage in the inquiry, I have defined the research question, which is essentially to find a way to help designers of TML for adults generate and sustain engagement among learners. Through a review of the literature, I have discovered and discussed elements of design that can do this. In the previous chapter, I presented guidelines to support the design of engaging learning activities, based on existing frameworks and my findings in Chapters One and Two. I also proposed that such guidelines alone are not sufficient to enable designers to create engagement; these practitioners need a *process* through which they can research engagement among learners in their own specific context and apply their findings to their own design practice. Thus, to realize the Dream and support designers in their efforts to generate engagement, there is a need to develop a process that meets this requirement.

In this Chapter, I draft a vision statement that describes this process as if it already exists. This vision statement provides the foundation for the rest of the work in this thesis. Using it as a springboard, I develop a pilot protocol for the process. I also describe an evaluation study in which I assess the viability of the protocol. Within this description are methodologies for data collection and analysis for the study.

## 4.1. Proposition for Change

The Design stage of an Appreciative Inquiry focuses on the development of a provocative proposition: a bold vision or design statement that describes the Dream as if it already exists. It should present stretch goals that represent a situation or system that is better than the status quo. It should build on the Dream, but also take into account the reality of the context in which it will be applied. Thus, in writing the design statement for this thesis, I attempted to consider factors that can affect the design process and environment in TML. Briefly, these included:

- The need for a process that could be owned and altered by designers to suit their unique contexts and requirements;
- The strengths of a strategy that could be incorporated into existing design processes;
- The appeal of an action-oriented approach that could generate tangible results;
- The benefits of an appreciative approach over a problem-solving method, and;
- The value of a learner-centred design perspective.

The design statement that follows is the result.

**Design Statement:** Designers of TML for adults explicitly address the need to engage their learners by drawing on their existing knowledge of engagement and applying contemporary design guidelines. To ensure that their engagement strategies are effective within their specific context, with their specific learners, they also participate in a flexible, learnable and co-operative learner-centred research and design process. Working together and with learners, they discover what engagement techniques work well with their audience: then create action plans and strategies to build on these strengths in their design practice.

In addition to references to the design guidelines generated in Chapter Three, this statement calls for a simple, yet powerful, learner-centred, action-oriented research process to enhance designers' abilities to generate engagement in their specific learning environment. This process must be effective not only in a controlled, laboratory environment, but also in complex, applied settings, such as workplaces, colleges, museums or the Internet. It must be flexible enough to allow them to adapt



it to different situations and existing design processes. It should also build on recognized engagement successes: strategies that have already been proven effective with learners.

#### **4.1.1 Appreciative Inquiry framework**

Given the requirements for an effective, practical, action-oriented process to support the design statement, I suggest that an Appreciative Inquiry framework represents a valid approach. As noted in Chapter One, AI is a flexible and participatory method for inquiry and change that focuses on discovering and building upon existing expertise and capabilities. Seminal writings on AI theory outline five core principles of the theory behind the method that support its use for this purpose.

##### **The constructionist principle.**

*The way we know is fateful.*  
(Cooperrider, & Whitney, 2000).

The constructionist principle asserts that organizations and their systems are essentially living, human constructions. We build them according to our beliefs and mental models. Since we construct these systems, the way in which we read, understand and analyse them affects the way in which they evolve. So too do the questions we ask in the pursuit of change: these become the seeds of development, the foundation upon which the future is built (Cooperrider et al., 2005).

Thus, if we only know a system in one way, we cannot imagine it differently. If we only ask questions in one way, we will only discover one path forward. To tap the power of our collective imaginations and envision a system in new and innovative ways, we must be able to understand and conceptualize it from multiple perspectives. Embracing such a communal understanding strengthens the generative and future potential of the system (ibid).

##### **The principle of simultaneity.**

Stemming from action research theory, this principle recognizes that the moment we start to ask questions is the same moment in which change begins; the act of inquiry cannot be separated from change (ibid). Recognizing this, any researcher applying AI

accepts that it is impossible to separate the outcomes of the experiment from the method itself. This principle is also true of any other research that solicits feedback from the participants. The act of asking for feedback, whether through a survey, interview or any other instrument, heightens the participant's awareness of the subject of the inquiry and may affect his answer.

#### **The poetic principle.**

Every system, process or organization can be understood and interpreted in multiple ways, much like a poem (Cooperrider, & Whitney, 2000). Its past, present and future can be endless sources of learning and inspiration, depending on the perspective or lens used for interpretation. Since change is constant and human systems are perpetually dynamic, the possibilities for interpretation are also innumerable.

#### **The anticipatory principle.**

*Our positive images of the future lead our positive actions.*  
(ibid).

This principle describes the power of projection. Our expectations affect the way in which we approach a situation and our attitude toward it, thus influencing the outcome (Cooperrider et al., 2005). For example, we approach a positive experience with positive energy and openness, as opposed to fear and uncertainty; this supports the generation of positive results.

#### **The positive principle.**

This last construct addresses the power of positive thinking, often thought of as the placebo effect. In Appreciative Inquiry, evidence shows that framing questions using positive language and an appreciative perspective leads to longer-lasting and more successful change than does a non-positive approach (Cooperrider, & Whitney, 2000).

#### **4.1.1.1 Additional strengths of Appreciative Inquiry**

In addition to the rationale and principles detailed above, several other factors support the choice of AI as a framework for the development of a process to realize the design statement.

One of the main strengths of AI is that it is participatory by nature. As a narrative, inclusive, collaborative, inquiry-based process, it engages all participants and eliminates hierarchical power imbalances that can impede change.

AI is an invitation to a positive revolution, to meeting others who might otherwise be considered “them”, and to learn and co-create a world that works for all. AI participants are often surprised by how much they learn about themselves as well as others in the process (Cooperrider and Whitney, 2000, p. 48).

Since AI is founded on simple and often intuitive principles, the process is easy to learn. The 4D or 5D cycle is iterative and self-sustaining; emergent rather than prescriptive; flexible and scalable.

AI presents a radically different approach to design, in that most design processes are essentially gap or problem-oriented; the first step in systems analysis and design is problem definition (Davis, 1994). As highlighted in the five principles above, such a negative focus, on fixing what is wrong, will affect both the approach and outcomes of the process.

Several educational systems have already applied AI successfully to facilitate change within the educational system (Adamson, Samuels, & Willoughby, 2002; Filleul & Rowland, 2006; Stetson & Miller, 2003). The method’s potential for application in this domain is high (Norum, 2001); however, to my knowledge, no one has yet applied it specifically to learning activity design.

AI also has a documented history of success in an organizational change setting. In one case study, the stock of a company that implemented wide-scale AI rose from \$14 to \$40 per share within two years of the AI launch. Additionally, the company found statistically significant improvements in operating ratios, overtime reductions, measures of morale, levels of trust, clarity in focus and priorities, commitment levels, and confidence in the future. Two years later, after continued application of AI, their revenues were up over 25%, not including an additional \$17 million in revenue realized through employee-driven improvements (Cooperrider, & Whitney, 2000).

Finally, AI has its roots in action-research; as a method, it is inherently structured to generate tangible outcomes and change. The significance of this theoretical connection for this work is discussed below.

#### **4.1.1.2 Action research**

AI includes many traits common to action research. At a high level, both methods aim to build knowledge and inspire change among the research participants as part of their on-going practice. This focus matches the goals described in my design statement, which are to build and implement an enhanced understanding of how to design for engagement through inquiry into the participants' existing TML design practice.

Both methods also operate in a cyclic fashion. In action research, the approach to and facilitation of the inquiry is changed and refined continually through an iterative process of action and critical reflection by both the facilitator and participants. Knowledge built during each stage of the process informs future cycles (Dick, & Swepson, 1997a). At a high level, AI shares this cyclic approach, through its 4D or 5D structure. Participants in an Appreciative Inquiry review their findings and progress at the end of each phase of the process and use these to guide their approach to the next phase. In an ideal application, the AI cycle becomes embedded within the participants' on-going practice.

Finally, the role of the participants is active in both methods; they act as co-researchers along with the investigator or facilitator. Their involvement in the reflection process and their ability to effect change help to ensure rigour, since they can systematically challenge, critique and control the method and resulting plans for action (ibid).

With these commonalities in mind, I draw on action research principles and methods for the rest of this work to inform and guide the development of a viable protocol to investigate learner engagement in TML design practice, as well as a process for an evaluation study of this protocol. Specifically, the influences of action-research theory on my data collection and analysis methods for the evaluation study are discussed later in this Chapter.

#### **4.1.2 Previous method work**

In considering how AI might be applied to create a process to realize the design statement, I drew on my earlier work with the *Sustainable Stories for Usability Design Analysis* project (Withers, McCracken, & Bratt, 2005). In that project, we adapted AI to serve as a framework for an iterative usability testing process, which we designed specifically to address the issue of satisfaction. Users of the *BCCampus* online educational portal worked through the Discover and Dream processes to identify and describe their own particular definition of satisfaction, as it related to online customer service and learning. They then completed a series of online tasks in the portal, which we recorded and analysed according to standard usability heuristics. Immediately after these tests, the users came together to evaluate their experience, applying their earlier definition of satisfaction as the metric. Based on their experience with the portal, they went on to describe their visions of and suggestions for future versions of the site: feedback that developers could use to inform their work.

We compared the findings of this group's qualitative usability evaluation with our usability analysis of the online data recordings of their test sessions. The results of both were quite similar, which suggests that the Appreciative Inquiry process can offer an accurate and reliable qualitative data collection methodology outside its traditional application in organizational development.

Given the apparent strengths of AI as demonstrated in this work and outlined above, I chose it as the foundation for a protocol that would fulfill the vision described in the design statement.

## **4.2. Pilot Protocol**

In the design statement, I describe a research process to inform designers' work to generate and sustain engagement. As detailed in the section above, I chose to use an Appreciative Inquiry framework to develop this process. This work introduces the following research sub-question into this thesis:

*How can an Appreciative Inquiry framework support practitioners in their efforts to design engaging TML activities for adults in their own, unique design context?*

As noted earlier, I could not find any case studies or models for implementing an Appreciative Inquiry in a learning design context, nor in any other design domain. To guide the development of my pilot process therefore, I drew on the work of Cooperrider, Whitney and Stavros (Cooperrider et al., 2005), as well as my earlier work on the *BCCampus* project (Withers, et al., 2005).

The result is a protocol for a one-day, facilitated AI workshop that focuses on the question of how to generate and sustain engagement in a specific TML context. In working through the process, the participants would Discover what engaged learning is, Dream about what their ideal engaged learning experiences could be, Design a vision of what these experiences should be, and create achievable action plans or Destiny to support how they will be. This protocol is described in detail below.

#### **4.2.1 Protocol**

The process protocol describes a one-day Appreciative Inquiry workshop for designers to research engagement among adult learners in technology-mediated activities. It operates in a face-to-face session and is facilitated as a Circle to support the creation of an open, safe, inviting and participatory space (Baldwin, 1998). There are six to twelve participants, which include both designers of TML for adults and members of their learner audience.

The workshop runs from six to eight hours and includes four main activities, which follow the basic 4D structure of AI. Every activity focuses on discovering and building on the positive: what works well in the participants' experience with engagement. This focus is also reflected in the language used, questions asked and feedback given.

In accordance with the tenets of action-research, the facilitator manages the session so that the participants are invited and empowered to take ownership of both the process and the outcomes. The facilitator also ensures that they understand that such a process is generative and emergent, meaning that the results cannot be predicted and depend entirely on the participants' actions and choices.

The four phases of the workshop are as follows.

**Discover.** Collect stories of outstanding engaging learning.

At the beginning of the session, the facilitator outlines the basic AI process and introduces the topic of the inquiry, which in this case is learner engagement. She then invites the participants to share their stories of the most engaging learning experiences they have ever had. These could be events that occurred at any time in their lives during which they were learning. Stories could include learning activities they designed, as well as learning experiences they went through themselves. After each story, the facilitator leads a discussion to attempt to discover what made the experience engaging and memorable and why the participants felt it was effective. During this first activity, the group shares stories that draw progressively closer to their design environment: moving from personal experiences, to those with technology, to those within their specific organization.

**Dream.** Generate a list of effective elements of engagement. Create and describe Dreams for engaging design.

In the second activity, the group reviews the list of stories told and works together in a brainstorm session to identify and list elements of engagement they see within the stories. The facilitator then invites them to pick one or more of these elements to use as the foundation for a visioning exercise. Working alone, they are free to proceed wherever and in whatever manner they choose to try to imagine what a highly engaging technology-mediated learning activity in their organization would be like five years from now. The goal of the exercise is to look beyond the status quo to dream about *what could be* and describe that in as much detail as possible. They then share their Dreams in pairs and bring highlights of each Dream back to discuss with the group.

**Design.** Create and record individual and group design statements.

At this stage, the participants revisit their list of elements of engagement and summarize them into approximately 15 that they feel are most appropriate to their design environment. Using this short list and the highlights of their Dreams, they work in small groups to draft vision or design statements. These are bold declarations of

what they want in the future, stated in the present tense as if they already exist. Design statements like these are meant to be statements of possibility for the future, grounded in the realities of the Discover stories. Their function is to bridge the Dreams of the participants' real world context and design environment, to describe the way engaging learning *should be*.

**Destiny.** Generate and record detailed action plans and strategies.

Destiny is an invitation to action. It goes beyond the workshop and supports a change in perspective. In the final AI activity of this workshop, the group comes together to consider the design statements and create a plan of achievable actions they can take to begin to make the statements a reality: *what will be*. Given that this protocol could be applied to a broad range of design contexts and environments, the possibilities for action in this phase are almost infinite; they could range from something as simple as sending an email, to a commitment to learner research, to the development of new instructional design process. Whatever actions the participants propose, it is essential that they be willing to commit to them, either individually or as a group. At the end of the workshop, the participants take this action plan with them, to guide their future work.

In theory, this protocol should meet the needs of designers to generate engagement, as described in my design statement at the beginning of the Chapter. To test it in practice, I developed and implemented the evaluation study that follows.

### **4.3. Appreciative Inquiry Engagement Workshop (AIEW) Study**

I ran the AIEW study in an attempt to address the following thesis sub-question:

*How can a one-day Appreciative Inquiry workshop on learner engagement support designers of technology-mediated activities for adults in their efforts to address the need for engagement?*

One of my goals for this thesis is that it have practical value for working designers. Therefore, I chose to test the protocol in a functional workplace setting, with practising designers. Although this decision limited my control over the choice of subjects, I felt that what I would learn from this applied study would be more valuable than potential findings from a controlled laboratory setting.



To support this choice, the research process for the study combines key features of action-research with more general qualitative data collection and analysis methods.

For the purposes of this research, it is important to note that the context in which the protocol is used will affect the outcomes. Every situation in which designers might choose to apply it could be different, with different results. This means that any context-specific theories or findings related to the actions taken or outcomes of the AI workshop will not be generalisable. However, findings related to the suitability of the process or protocol itself to support designers in their work, as described in the design statement, should be more universally applicable.

#### **4.3.1 *AIEW study overview***

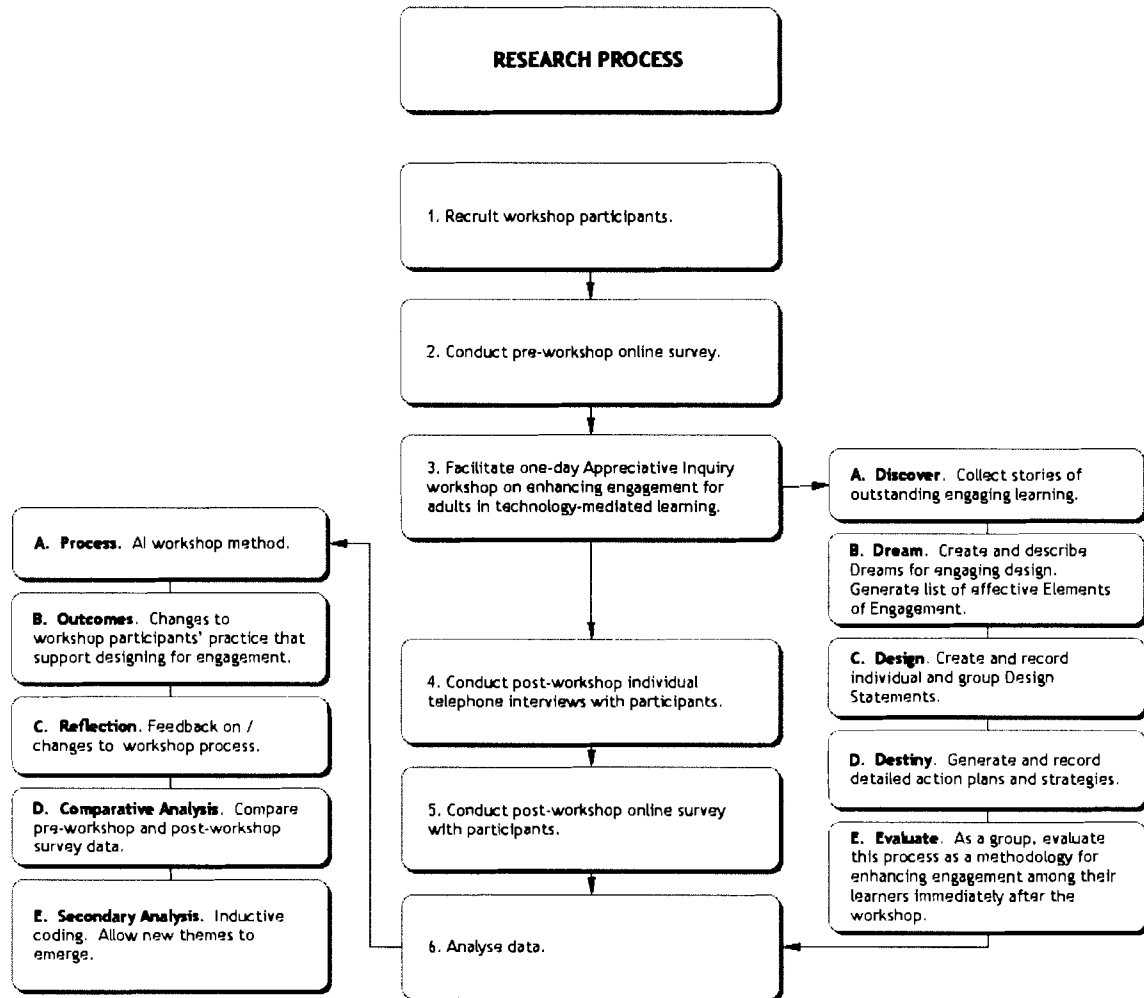
I carried out the AIEW study on March 2, 2006 with a group of six employees from a national bank. At the time, all of the participants were involved in the design, delivery or management of technology-mediated learning activities for the organization. The full protocol for the AIEW session can be found in Appendix D.

I used the research process presented in the next section to guide my data collection and analysis. Findings from this study are presented in Chapter Five.

#### **4.3.2 *Research process***

Figure 7 offers an overview of the research activities for this study. These consist of pre and post online surveys for comparative analysis, as well as a group evaluation and semi-structured individual telephone interviews with the workshop participants. The research process also includes recording audio and analysing transcripts of the entire AI workshop.

**Figure 7. AIEW Study: Research Process**



### 1. Recruit workshop participants.

When I approached senior management at the bank with my research proposal, they agreed to make six employees available for the study for one day at their learning centre. I requested that half the participants be Instructional Designers and half be Learners, to make the process learner-centred. However, they were not able to meet this request. Instead, we agreed that all six would be members of the same learning design team. I believed that this change to the process would still enable me to address the research question. Final changes to the make-up of the group came at the

last minute when two team members had to drop out and replacements were found, albeit from a different team. In the end, the group included six participants, all of whom were involved in learning design, delivery or management at the bank. None had any previous experience with or knowledge of Appreciative Inquiry.

## **2. Conduct pre-workshop online survey.**

The participants all completed an online survey. Four did so in the week before the workshop and the two last minute additions finished it in the morning before the workshop began. The final survey questions are included in Appendix H; key summary data are in Appendix J. These cover basic demographic information and job functions. Several survey questions also attempted to make explicit the participants' understanding of and practice with respect to designing for engagement in their TML activities.

## **3. Facilitate one-day AI workshop on generating engagement among adults in technology-mediated learning.**

I facilitated the workshop at the bank's learning centre in a six-hour, face-to-face session, as described earlier in the pilot protocol. With the participants' permission, the audio of the entire session was recorded digitally; I later transcribed this in detail. A sample story from the workshop is included in Appendix E.

In addition to the four activities of Discover, Dream, Design and Destiny, the participants also completed a 20-minute, face-to-face group evaluation immediately after the workshop. The purpose of this activity was to attempt to gather immediate feedback and reactions to the process in an appreciative way. The questions used in this evaluation are included in Appendix K.

## **4. Conduct post-workshop individual telephone interviews with participants.**

Seven to ten days after the workshop, I conducted 20-30 minute unstructured telephone interviews with each participant, as a further evaluation exercise. These questions are included in Appendix F; a sample interview clip is in Appendix G. The purpose of the interviews was to discover what actions the participants took after the workshop; what actions they intended to take; what they remembered most about the

session; how the workshop had affected their understanding of and practice in designing for engagement; and how the workshop could have been more effective at supporting them in their work.

#### **5. Conduct post-workshop online survey with participants.**

Five weeks after the workshop, four of the six participants completed a final online survey. Two did not do the survey and dropped out of contact. Most of the questions in this survey were the same as in the pre-workshop survey to allow for comparison. These are found in Appendix I. Additional questions attempted to surface any new insights or knowledge the participants were aware of that may have been linked to the workshop activities.

#### **6. Analyse data.**

The analysis of the workshop, survey, interview and group evaluation data was carried out in several stages. First, as part of the reflective process inherent in action research, I continually analysed and processed data as I gathered them (Ezzy, 2003), using them to inform my decisions about how to proceed. Once all the data had been collected and transcribed, I coded them using pre-set thematic codes: (see Section 4.3.6.1 below for a description of these codes). After completing this process, I analysed the data again, this time to identify emerging themes.

As indicated, the participants and I played active roles in the AIEW study. These are described in more detail below.

#### **4.3.3 *Role of researcher***

The AIEW study was a small project, which I developed and ran myself. With respect to the process described above, I was responsible for the following tasks:

- Develop the workshop protocol;
- Develop the data collection and analysis process;
- Write and publish the online surveys;
- Collect the online data;
- Facilitate the workshop;
- Record the workshop audio;

- Conduct the workshop group evaluation;
- Conduct and record audio of the telephone interviews;
- Transcribe all the recordings;
- Develop codes for the analysis, and;
- Analyse all of the data.

During the workshop and follow-up interviews, I attempted to avoid influencing the participants. I refrained from offering knowledge I had about the nature of engagement design; nor did I try to push them to continue to engage with the process after the workshop ended. In hindsight, I realize that these efforts to remain objective as the researcher were not consistent with an action research approach. I discuss the impact of my role more fully in Chapter Six.

#### **4.3.4 *Role of participants***

When I first contacted the bank about the AIEW study, I included a description of what would be required of the participants. All six people who participated agreed to fulfill these requirements.

Before the workshop, they all completed an online survey. During the six-hour session itself, they engaged in half a dozen activities, both solo and collaborative. They also were part of the on-going reflective analysis process, to guide the workshop and suggest changes to the proposed protocol, depending on the outcomes of previous activities. After the workshop was over, all six joined in a group evaluation of the session. One week later, they each participated in telephone interviews. The final activity for them was completion of the post-workshop online survey. In the period immediately after the workshop, the participants also carried out tasks they had committed to during the workshop.

Everything the participants did was recorded as data for future analysis, as described in the next section.

#### **4.3.5 *Data collection procedure***

Although many case studies on Appreciative Inquiry have been published, few include methods for collecting and analysing data to evaluate the viability of the process;

rather, they focus on managing the story data generated during the inquiry itself. It appears that the authors of such studies rely primarily on organizational statistics and information gathering to evaluate the impact of the process. These findings tend to reflect the effects of the AI approach on matters of morale, attendance, productivity, innovation and return on investment (ROI). They do not attempt to quantify or qualify effects on individual and team practice. Even one of the leading reference books on AI offers little guidance; in the AI Handbook, Cooperrider et al. (2005) simply describe a generic process for data collection and analysis in the Discover phase of an Appreciative Inquiry:

### **Key Steps in Data Collection**

1. Identify stakeholders.
2. Craft an engaging appreciative question.
3. Develop the appreciative interview guide.
4. Collect and organize the data.
5. Conduct interviews.
6. Make sense of inquiry data (ibid, p. 87).

Most data collection methodologies described in the action-research literature are also quite general, with few specifics on how, exactly, such research is done. It was therefore necessary for me to supplement AI and action-research approaches with other qualitative methods.

To inform my approach to data collection, I turned to the research sub-question I posed in section 4.2 in this Chapter. I articulated two specific questions inherent within it: how effective is the workshop protocol itself as a method for researching engagement in a specific context; and, what do designers do or learn as a result of the workshop that changes their engagement design practice? Thus, I focused my investigation on the *process* of the workshop and on the *outcomes*.

In this way, I developed the data collection process presented in Table 3 below.

**Table 3. Data Collection Process**

| <b>DATA INSTRUMENTS</b>                                                           | <b>DATA COLLECTED</b>                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre-workshop online survey.                                                       | Demographics.<br>Job function.<br>Current design process.<br>Current understanding of and practice with respect to learner engagement and design.                                                                                                        |
| AI workshop:<br>audio recordings & transcripts.                                   | Discover stories.<br>List of Elements of engagement.<br>Dream descriptions.<br>Design Statements.<br>Destiny action list.                                                                                                                                |
| Group evaluation:<br>audio recordings & transcripts.                              | Process evaluation.                                                                                                                                                                                                                                      |
| Post-workshop individual telephone interviews:<br>audio recordings & transcripts. | Workshop method evaluation.<br>Perceived value of workshop.<br>Findings from workshop with respect to engagement and design.<br>Actions taken as a result of the workshop / outcomes.<br>Actual and planned changes to practice as a result of workshop. |
| Post-workshop online survey.                                                      | Current design process.<br>Current understanding of and practice with respect to learner engagement and design.<br>Actions taken since workshop / outcomes.<br>Actual and planned changes to practice as a result of workshop.                           |

The survey and interview questions from these data collection instruments can be found in Appendices F, H, I & K. The data were collected as described earlier in the research process section.

Most AI projects do not include data collection beyond what occurs during the 4D cycle. Since I wanted to analyse both the workshop process and outcomes, in addition

to simply facilitating change, as is the case in most Appreciative Inquiries, I introduced several other data collection instruments.

The pre and post-workshop online surveys were structured to enable me to compare participant responses. Several questions were identical in both surveys. I chose an online survey to make it easy for the participants to access and complete. The survey tool I used also collected and collated the data for me automatically.

The audio of the workshop and group evaluation were recorded digitally, and then transcribed. Recording video of the session was not an option, since I was both the facilitator and technician. In addition, I felt that a video camera would have been intrusive. I also do not believe that the use of video would have enriched the data substantially.

Telephone surveys were chosen for follow-up interviews because the participants were in a different city than me; I would have preferred a face-to-face interview. This format was also more convenient for them to schedule. The reason I conducted individual interviews in addition to the group evaluation was that I wanted to give each participant a chance to speak with me privately. By doing the interviews a week after the workshop, the participants also had time to reflect on the experience and carry out some of their action items.

All digital data were stored on SFU's secure Research server at the Surrey campus. Data analysis began with data collection in early March 2006 and continued until July 2006. They were analysed according to the procedure that follows.

#### **4.3.6 *Data analysis procedure***

As mentioned in the previous section, there are no specific or detailed methods published for analysing data collected during an Appreciative Inquiry. Cooperrider et al. (2005) suggest the use of formal narrative analysis techniques or any of a broad range of qualitative approaches for the data from the Discover phase. They stress that there is not one single correct approach: that the key is to identify and corroborate the meaning of the data as it relates to the core question.

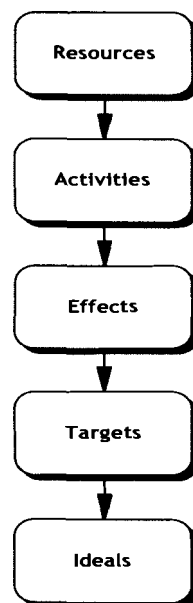


The authors suggest coding the data under key themes; they also note that these data may require re-coding under new, emerging themes. They offer positive and negative discourse categories that may be used to guide this theme development. However, these categories focus primarily on a system-wide, organizational Appreciative Inquiry and are not appropriate for this context of learning design and engagement.

To develop an appropriate procedure for this study then, I applied several standard and complementary qualitative research coding and analysis methods. More detail on this approach follows in Table 4.

I also turned to the action research literature. There, I found the Snyder model of analysis (Dick, 1997b), which I modified to fit my study needs. In essence, the Snyder model is a three-stage process of evaluation that uses a system approach. A system in this model is made up of inputs (*Resources*), transformations (*Activities*) and three levels of outputs: *Effects*, *Targets* and *Ideals*.

**Figure 8.** *Snyder Action Research Evaluation Model (Dick, 1997b)*



According to Dick's (1997b) description of the model, *Activities* use *Resources* to produce immediate *Effects*. These support system goals or *Targets*, which in turn are developed in pursuit of high-level *Ideals*. We can relate these *Ideals* to design principles described in the engagement guidelines from the Dream in Chapter Three.

There are three main phases in the Snyder analysis model, each building on the previous one.

**Process evaluation** helps project team members to understand the process and how it can support them in their pursuit of *Effects*, *Targets* and *Ideals*. In this research project, the process evaluation addresses the viability of the AI protocol in enabling the workshop participants to design for engagement in their TML activities.

**Outcomes evaluation** attempts to assess outcomes of the process through the development of performance indicators. It also provides a check or cross-reference on the Process evaluation. In my analysis, I do not have performance indicators; however, I do attempt to determine what specific effects the workshop had on the participants' ability to generate engagement.

**Short-cycle evaluation**, the third type, continually assesses indicators from the first two processes to develop effective feedback to improve the overall process continually. In the workshop, this evaluation function is addressed by on-going reflection and adjustments to the process for the day.

For my data analysis, I built on the Snyder model and the thematic suggestions of Cooperrider et al. (2005) to develop the process in Table 4 on the page that follows.

**Table 4. Data Analysis Process**

| ANALYSIS FOCUS                                                                                                 | SNYDER MODEL                 | PILOT PROTOCOL                         | PRE-SET CODES                                                                                                      | DATA ANALYSED                                                                                            |
|----------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>1. Process</b><br><b>AI workshop method.</b>                                                                | Resources<br>Activities      | Appreciative Inquiry<br>Workshop       | <b>WWW</b> - What worked well                                                                                      | Workshop transcripts<br>Group evaluation transcripts<br>Interview transcripts                            |
|                                                                                                                |                              |                                        | <b>EBI</b> - It would have been Even Better If-<br><br><b>AI</b> - Dominance of AI method over topic of engagement |                                                                                                          |
| <b>2. Outcomes</b><br><b>Changes to workshop participants' practice that support designing for engagement.</b> | Effects<br>Targets<br>Ideals | Changes in practice                    | <b>BP</b> - Change in Behaviour/Practice                                                                           |                                                                                                          |
|                                                                                                                |                              |                                        | <b>ID</b> - Proposed/actual changes to instructional design process                                                | List of Elements of engagement<br>Dreams                                                                 |
|                                                                                                                |                              | Explicit new knowledge                 | <b>K</b> - New explicit knowledge<br><br><b>EE</b> - Explicit identification of an effective element of engagement | Design Statements<br>Action List<br>Group evaluation transcripts<br>Interview transcripts<br>Survey data |
| <b>3. Reflection</b><br><b>Feedback on / changes to workshop process.</b>                                      | Short-cycle feedback         | Expression of new ideas                | <b>RIA</b> - Reflection-in-action                                                                                  | Workshop transcripts                                                                                     |
|                                                                                                                |                              | On-the-fly changes to workshop process | <b>PC</b> - Process change                                                                                         |                                                                                                          |
| <b>4. Comparative Analysis</b><br><b>Compare pre-workshop and post-workshop survey data.</b>                   |                              | Changes in practice                    | Same codes as all three phases above                                                                               | Online surveys                                                                                           |
|                                                                                                                |                              | Change in understanding of engagement  |                                                                                                                    |                                                                                                          |
| <b>5. Secondary Analysis</b><br><b>Allow new themes to emerge.</b>                                             |                              | Changes in practice                    | Inductive coding                                                                                                   | All data                                                                                                 |
|                                                                                                                |                              | Change in understanding of engagement  |                                                                                                                    |                                                                                                          |

The Process, Outcomes and Reflection analysis phases (1 - 3) in the Table above correspond loosely to those described by the Snyder model.

In addition to the three phases of Process, Outcomes and Reflection, I used a simple comparative analysis approach (#4 in Table 4) to analyse data from the online surveys to determine if the participants had changed their understanding or practice of designing for engagement.

To analyse the data from the first four phases described in the Table, I used a procedure that involved developing codes in advance of the collection of the data. This is referred to by Miles and Huberman (1994) as creating a provisional “start list” of codes, prior to fieldwork. The codes I used do not correlate to the literature, since data analysis in this specific domain is new. I chose them because I felt that they would be relevant indicators of different themes that were likely to be present in the data: specifically indicators of action and change. I discuss these codes in more detail below.

The second analysis procedure I applied (#5 in Table 4) involved an inductive coding approach, consistent with Strauss and Corbin’s grounded theory (1998). In this part of the analysis, I reviewed the themes that emerged from the Process, Outcomes, Reflection and Comparative analyses to identify interesting events, participant comments and outstanding questions that did not fit any of the existing, pre-determined codes. To explore these further, I conducted a secondary analysis of all the data - uncoded - with the purpose of identifying and exploring these emergent themes. This method is described more fully in *E - Secondary Analysis*, below.

Throughout both procedures described above, I analysed the data with a positive lens, as per the AI philosophy. That is not to say that problems and weaknesses were ignored; rather, they were re-framed with a view to determining how they could inform improvement in the protocol. For example, rather than stating that the workshop duration was too short, I observed that it would have been better if the workshop had been longer. (*It would have been even better if* = EBI in the codes above). This, along with the evaluation code of *What Worked Well* (WWW), also found in Table 4, may seem simplistic. But they are in common usage in the facilitation domain (Cockell, 2004) and can be quite effective at discovering core strengths in and potential for enhancements to the system being investigated.

Details on the codes used during the analysis and the process followed in each stage are presented below.

#### **4.3.6.1 Data analysis: Five phases**

##### **1. PROCESS ANALYSIS**

The Process analysis attempted to evaluate the Appreciative Inquiry workshop protocol itself, to determine how well the method supported the research sub-question and design statement from the beginning of Chapter Four. In this analysis phase, I transcribed all of the audio recordings from the workshop, group evaluation and the telephone interviews. I then coded these as described in the model above, according to the following codes.

*WWW - What worked well* identifies elements of the pilot protocol that supported the inquiry into designing for engagement. As an example, the participants found the use of story-sharing in the Discover activity to be particularly effective for surfacing their tacit understanding of engagement in learning.

*EBI - Even Better If* locates protocol components that did not support the inquiry or that could have been more effective had they been executed differently. An example would be that the protocol did not allow adequate time to generate a rich action plan in Destiny; so it would have been *Even Better If* the process had included more time for this activity.

*AI - Appreciative Influence* flags events in which the novelty of applying an appreciative approach to the workshop overwhelmed the topic of engagement design. For example, in their evaluations of the process, most participants stated that experiencing an appreciative methodology was their most memorable takeaway, (as opposed to building a new insight or understanding about engagement).

##### **2. OUTCOMES ANALYSIS**

In the second phase of my analysis, I attempted to identify outcomes or results of the process and relate them to the research goal of informing engagement design. In

effect, I sought to find out what, if anything, the participants gained from the workshop that would help them make their TML activities engaging. All of the data were coded as with the codes below.

**BP - Behaviour / practice** identifies indicators of change. Specifically, by tracing explicit or articulated behaviours and practices throughout the process, I attempted to flag when a new behaviour or change in practice surfaced with respect to engagement design.

**ID - Instructional design** signifies proposed or actual changes made by the participants to their existing design process.

**K - Knowledge** codes for expressions of new knowledge or insight by the participants with respect to designing for engagement. I identified these by tracing explicit statements of understanding or knowledge throughout the process and attempting to identify the moment of and impetus for change.

**EE - Elements of engagement** identifies factors affecting learner engagement that were raised by the participants during the workshop. I compared these with the engagement design guidelines generated in Chapter Three and noted any additional factors that I had not included in the guidelines, as well as any that were absent.

I also coded the online survey data for Outcomes as per the description above.

### **3. REFLECTION ANALYSIS**

Once I completed the Process and Outcomes analysis, I reviewed the data to identify instances of reflection and revision to the process, indicative of an effective and cyclical action research method. This included analysing the workshop transcripts to identify changes made to the protocol during the session itself, which would inform future development of the protocol. I also coded the group evaluation and individual interview transcripts using the WWW and EBI codes to gather suggestions for improvements to the process that surfaced during discussion.

### **4. COMPARATIVE ANALYSIS**

Data collected from the two surveys were plotted question by question for a comparative analysis. There was one anomaly, in which the responses of P8 from the first survey were deleted by the survey host. This participant completed the survey again three days after the workshop and attempted to replicate her responses.

As noted, two participants did not complete the post-workshop online survey; their data were not included in the comparative analysis. However, several of their responses from the first survey still proved useful.

## **5. SECONDARY ANALYSIS**

After completing the analyses described above, I reviewed and re-organized the data to identify themes that raised questions requiring further investigation. In my efforts to address these questions, I returned to the un-coded data to enable new themes to emerge. As an example of this process, after coding for Outcomes, I identified a relative lack of actions taken. I identified this as a new question and reviewed the data to see if I could discover why this occurred. In another example, when I determined that the AI process itself had dominated the discussion of engagement, I returned to the workshop data to attempt to explore where and how the focus on engagement faded.

In this secondary analysis, I also attempted to identify links between process and outcomes to understand better how the protocol addressed the research sub-question. As part of this work, I analysed each activity from the workshop to see if and how it built on the previous one.

At this point, I shifted my focus to the elements of engagement identified and referenced by the participants throughout the process, from the first online survey until the final post-workshop online survey. In particular, I was interesting in seeing if the participants referenced and valued specific elements of engagement consistently all the way through; that is, did the participants attempt to create a strategy in the final workshop activity (Destiny) that supported design for an element of engagement they had identified in the Discover phase as being important for their learners? Once I had identified new themes here, I returned to the literature review to see how and if they were supported in my findings.

Once my analysis was complete, I had intended to have one of the participants review my findings in an attempt to address the need for rigour in my analysis. However, she had left the bank on an extended leave of absence and none of the other participants had the time to conduct such a review.

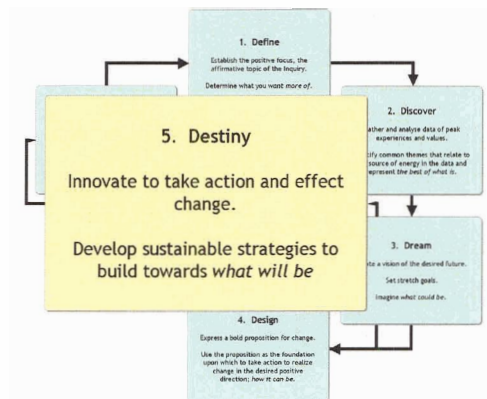
#### **4.3.7 Summary**

In summary, this Chapter describes a vision of a process to enable designers to address the need for engagement among learners in their specific context; presents a research framework and pilot protocol for such a process; and describes the research method for the AIEW study, in which I evaluated the viability of the protocol with a group of learning design practitioners at a national bank. I present the results of this evaluation study in the next Chapter.



## 5 Destiny: Engagement by Design

Figure 9. Chapter 5: Destiny



Chapter Four described the research activities for the AIEW study to evaluate the pilot protocol for a process to support designers in their efforts to generate engagement for their specific learner audience. This Chapter presents the results of that study.

### 5.1. AIEW Study Overview

The AIEW study was a six-hour workshop held at the learning centre of a national bank on March 2, 2006. Six employees attended: five women and one man. All were involved in the design, delivery or management of learning programs for the bank. They all volunteered to participate in the workshop at the suggestion of their managers. Though they all indicated a genuine interest in the topic of the inquiry, their attendance may also have been politically motivated: an effort to please their superiors. I had requested that the participants all be instructional designers; however, only three indicated that this task was part of their job. Their primary job functions are represented in Table 5 below.

**Table 5. AIEW Study: Participant Job Function Breakdown**

| <b>JOB FUNCTION</b>  | <b># PARTICIPANTS WITH THIS ROLE</b> |
|----------------------|--------------------------------------|
| Instructional Design | 3                                    |
| Research             | 4                                    |
| Content Creation     | 3                                    |
| Management           | 2                                    |
| Testing              | 3                                    |
| Co-ordination        | 1                                    |

Three participants worked together on the same team; two participants worked on another team; and one worked alone. Four of the six had been with the bank for 15 years or more; however, their average years of experience in education and learning was only six. As mentioned previously, two of the participants were last minute additions, recruited the night before the workshop.

In conducting the AIEW study, I followed the research process described in Chapter Four. The only exception to this process was that two of the participants, (P7 and P9) did not complete the final online survey.

The results of this study are presented in the remainder of this Chapter. Chapter Six provides a discussion of the findings and offers suggestions for future work.

## **5.2. AIEW Results**

The sections that follow describe my findings in terms of Process and Outcomes analysis, as described in the Data Analysis Process in Table 4. However, as I worked through the data, I often found it difficult to delineate clearly between the two. As a result, there are instances where my results are discussed in both the Process and Outcomes categories.

Due to the limited temporal scope of the AIEW study, there were few clear indicators of change in behaviour, practice or understanding with respect to engagement. In considering this, I found it useful to reflect on the writings of Meyer (Meyer, 2000) on

action research. "The success of action research is not whether change can be positively demonstrated, but more what was learnt from the experience of trying to change practice" (ibid, p.9). This is certainly true of the results of the current study and is a feature of much qualitative work.

### **5.2.1 Process findings**

In keeping with my analysis framework (Table 4) and the Snyder model, I first completed the Process evaluation. This section describes my findings: significant results related to the viability of the workshop protocol itself, including the use of AI as a framework. The primary question I attempted to answer was: how effective was the protocol at supporting the participants in their inquiry into designing for engagement?

The analysis that follows starts at a high level and becomes more specific towards the end of this section.

#### **GENERAL IMPRESSIONS**

In the six-hour session, we followed the protocol with few deviations. Most participants stated that they felt that the positive approach inherent in AI that focused on existing strengths and knowledge made sense and that the process overall was easy to understand.

*P8 "I also really liked the whole approach, the way we went about uncovering the - the step by step method of looking at things appreciatively."*

However, two of the six did reveal in the interviews that they felt lost during the morning exercises and were uncertain as to where the activities would lead. In retrospect, they said that it made sense, but felt they would have benefited from a more detailed introduction.

*P7 "You know what? I was confused at the beginning. It did get more structured in the afternoon. But at the beginning, I was a bit confused. I wasn't sure where we were going with this. For the whole morning - sorry! In the afternoon, everything started to connect."*

Several participants identified the face-to-face group work as a highlight, since they do not have the opportunity for such interaction as often as they would like.

*P7 "We need to do more of those things around here. Work as teams. We do a lot by email and conference calls and lose that human touch. I found that we were more creative and innovative as a group in that room than we are when we're not together."*

### **STORY-SHARING**

One activity they all enjoyed was the story-sharing in Discover. In particular, they commented that the use of stories for inquiry supported their learning because they find them easy to remember.

*P9 "I like the stories. Stories can be really effective, so I've been on courses where, you know, it was a good day and all. But days weeks months later, what did I remember? I remember a couple of the stories that were told."*

-----

*P8 "It's the stories I love and remember. And hopefully that will link me back to everything else. That will be the ground point that I can - 'and then we did this, and then we did this' ".*

One participant also felt that the story-sharing broke down barriers between participants who were strangers and helped them to build a working relationship.

*P7 "I didn't know a couple of people there very well ... I think that it worked because we put the barriers down by sharing information, a bit about ourselves."*

The story-sharing was also highly effective at surfacing elements of engagement that the participants believed work well to gain and hold their interest, as well as support their learning. They told and discussed 18 stories, in which they identified 50 elements of engagement (See Appendix A for this list).

### **FOCUS ON ENGAGEMENT**

It was difficult to keep the focus specifically on engagement during the course of the entire session. In all four activities, the participants tended to widen the scope of their discussion to good or effective learning and seemed to find it difficult to think of examples and ideas specific to the topic of engagement.

P8 *"So the thing that I thought about is when I like learning most is when I'm travelling."*

-----

P5 *"I was going to say that my best learning experience was when I learned to drive standard with my father."*

-----

P9 [in reference to the group design statement] *"'Consistently superior learning experience' should be in there somewhere."*

## DOMINANCE OF AI METHOD

Many participants indicated that the benefits of experiencing and learning an appreciative process were the most memorable part of the process: more so than any specific ideas generated during the workshop on how to create engagement. The AI method was still resonating with most of them five weeks after the workshop as being interesting, neat, cool and "a positive approach to managing change" [quote from Participant 9].

P9 *"One of the things that really stands out about the process is that it's a very positive one. So, as opposed to focusing on an issue or a problem and looking for a solution for that, it seems to attempt to draw out from people and involve people ... to find out what they feel we do well and draw out the positive things and how they feel we can do more of those good positive things."*

Another participant was quite affected by her exposure to AI. She felt that she had a new, appreciative perspective on her practice and her life.

P5 *"It's actually kind of appropriate that you called today and we're doing this today because without even realizing it over the last few days it's already started to change the way that I think about things in general ... not always focusing on what's wrong but what is really good. What goes on that makes life worth living. So on the whole, it's been a rather eye-opening experience, when I least expected it."*

-----

P5 *"It is very exciting. It's almost like, always in your life looking left, looking left, looking left and then somebody says, 'Do you know you can look right?' And you say, 'What? I can look right?' And you look right and you're like, 'Oh my god! Right is cool! How come I never looked right before? It's a whole different world!'"*

## CREATING AND VALUING VISION

### *Difficulties dreaming.*

Although we had spent two hours working in an appreciative fashion, a couple of the participants had difficulty making the transition from Discover storytelling to the visioning activity in the Dream section of the workshop. They struggled to let go of the constraints they perceived in their practice, to imagine the possibilities, to think positively beyond the status quo. In particular, one participant could not or did not want to go through an exercise to imagine extraordinary possibilities without also attempting immediately to find solutions or strategies to make the Dream real. If she could not see how to achieve it, then she did not want to dream about it.

*P2 "I hear you. We think all this stuff: make it appealing, fun so that they can practice, challenging, real life simulations, interactive, like I wrote all this down. And then there's just the - the banker in me that goes - whoa! Wait a minute! ... We can dream and then reality just sucks you right back in ... We have to be very realistic in what we design and put together, recognizing that we can't build in a dream world."*

### *Value in vision.*

Despite some initial difficulties in engaging their imaginations, many participants recognized that there was value in developing and articulating their visions. They said that it was worth taking time to focus on an important issue: to dream beyond their current reality, deadlines and constraints to develop a vision. They acknowledged the need for stretch goals, to spend more time focusing on possibilities than the constraints.

*P9 "I think we'd be wise to spend more time thinking about what might be and establishing some stretch goals, despite the constraints. ... You might surprise yourself."*

*P5 "It's surprising how crafty you can be when you're really determined."*

Many also became aware of the need to articulate what they want in order to work towards achieving it, as they did in the Dream and Design activities.

*P8 "I liked the Dream phase, because it's not something we often get an opportunity to do. Reality is all around us. Deadlines are there and constraints also there. ... To think about, if we didn't have those*

*[constraints], what would we like to do? Because it's true, until you articulate that, you're never going to be working towards that."*

When they tried to imagine what it would feel like to participate in learning activities that were guided by their final design statements, they felt that such experiences would be desirable.

P4 [referring to the design statements *describing engaging learning activities*] *"I'd like those."*

P5 *"I would too, yeah. I'd be like, sign me up!"*

### **Shared vision**

Participants also recognized the value of having a shared goal or vision statement. When given the option to write individual design statements or collaborate on a joint one, they chose to collaborate.

P9 *"It would be good for us to walk away with a statement that we could all walk away with, to think about more - and strive."*

The participants said that their joint final design statement was powerful. One participant felt that it would be his most significant memory.

P7 *"For me it will be that out of those few words we have on the board, we were able to come up with such a powerful statement."*

## PROCESS BREAKDOWN

### *Disconnect in Destiny*

The process built well throughout the day and the participants said that they had generated a powerful joint design statement. But when it came time to create strategies to bring that statement to life, the process seemed to break down in the final phase, Destiny. The group did not connect the current activity (building an action plan to design for engagement) to their earlier work in the session (Discover, Dream and Design). Instead, the participants focused on a broad range of process, management and resource challenges they seemed to perceive as barriers.

*P8 "How can you reuse old technology - how can you rebuild a base and re-use old tools so that you're not doing infrastructure anymore? You can spend your money on interactivity instead of infrastructure."*

-----

*P5 "There are silos, funny enough ... There's one group here and one group here and one group here and they do their thing and we do our thing. They have simulation technology - we don't. How come? How come they have simulation technology? It's very funny but it's very fragmented like that."*

This breakdown in Destiny may have been related to the timing of the activity. It was the end of the day and we were rushing to finish the workshop on time. The result was that I felt the need to suggest action items for them, to facilitate the process.

RESEARCHER [with respect to researching engagement among their learners]  
*"Face-to-face time I know is expensive and almost impossible to get. But you bump into people. Everybody here [at the bank] is a learner. So sitting at lunch, a five minute chat."*

Also, the participants seemed reluctant to commit to any action items that would increase their already taxing workloads. At the end of the day, they only committed to five relatively minor actions.

*P4 "I'm emailing the group! That's my to-do."*

-----

*P9 "The working group is a big commitment, unless it can be shared ... it's a big thing for one person or two people to take on."*



### ***Lack of follow-through***

These last two comments were indicative of a lack of follow-through after the workshop ended. The AI cycle is most effective when it becomes embedded into on-going practice and is owned by the participants. Unfortunately, I did not structure the protocol to support this. So, the cycle ended for the participants once they had completed their action items. Only two of the six appeared to take on any ownership of the process during the workshop. There may have been several reasons for this.

The interviews revealed that there was some confusion about the purpose of the workshop. I assumed that they had all read the information sheet I provided the week before, which turned out to be a false assumption. They also had some questions about who would have access to what they said and did, which may have affected their participation: in particular, their eagerness to commit to action at the end.

Their lack of follow-through might also have been because the workshop was represented to them as a research project. They felt that they were helping me out, which may have affected their willingness to take ownership of the process.

P4 *"This is just for you, right?"*

-----

P7 "I was worried that you weren't getting what you needed from us."

I discuss this apparent lack of follow-through more in the next Chapter.

### **SAMPLE SELECTION**

The sample selection was poor and may have negatively affected the outcome. Only three out of six participants were involved in learning design; as a result, the issue of learner engagement may not have been particularly meaningful for the others. This may have affected their willingness to commit to action in the final Destiny activity. It may also explain why they found the appreciative methodology more memorable than what they learned about engagement.

The fact that at least half of the group spend the majority of their time doing non-design-related work may explain why the discussion in Destiny focused less on how to address engagement through design and more on the effects of the design environment (budget, personnel, management practices, etc.) on their practice.

Two participants also felt that it would have helped to have a broader representation from other members of the development team. AI generally works best when it is experienced by all or at least key members of the group who will follow it through.

*P9 "You don't want a lot of people but if we'd had a few more people with some E-experience. Maybe some web designers. So having a greater mix of experience."*

-----

*P5 "It would also have been nice to have included people from other areas. For example, having a couple of the guys from the web development team come."*

-----

*P4 "It probably would have been more effective if that whole team had been there ... including their manager or whatever."*

It would be difficult for those who were not there to understand and adopt the process in theory alone, which means that the participants would have had a hard time bringing their non-attending team members on board.

### **5.2.1.1 Process evaluation summary**

The workshop appeared to flow well until the final stage and many participants said that they found the process easy to follow. In particular, they liked the use of story-sharing to support their learning and help them get to know each other better. They also found value in declaring and sharing visions of what design for engaging TML for adults could be like.

However, two of the participants had difficulty seeing beyond their perceived constraints to be able to imagine such learning. The issue of constraints re-surfaced in the last activity, Destiny. At this stage in the workshop, the participants seemed to have trouble thinking of ways in which they could work within these constraints to

take action to bring their design statement to life. The result was that there were few concrete actions committed to and little significant follow-through on the workshop activities by the participants in the five weeks after the session.

### **5.2.2 Outcomes findings**

In this section, I attempt specifically to identify outcomes that relate to engagement, which was the focus of the workshop. These included the development of new knowledge, a changed understanding, or changes in behaviour or practice by the participants.

In analysing the data, I found it difficult to identify outcomes such as these that could be linked explicitly to the activities of the workshop. My ability to do this was restricted primarily by the limited time that the participants were available. Thus, many of the findings below stem from observations made by the participants themselves. There may also have been outcomes that occurred after I finished the study that I was not able to document.

### **ELEMENTS OF ENGAGEMENT**

The workshop did surface aspects of the participants' understanding of engagement as it relates to learning design. As mentioned in the previous section, the participants identified 50 elements of engagement in their Discover stories. (See Appendix A for the full list). They shortened this list to 15 elements they felt were important to support learning. These are presented in Table 6 on the next page.

**Table 6. Participants' Engagement List**

**WORKSHOP ELEMENTS OF ENGAGEMENT**

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Practice in a safe environment  
Discovery  
Collaboration  
  
Relevant  
Excitement  
Fun  
Encouragement  
The "a-ha" moment  
Interactivity  
Flexible, options  
Wonder, curiosity  
Accessibility - learning styles  
Time  
Accomplishment  
Empowered

This list includes new elements of engagement highlighted by the participants that were not addressed in the design guidelines presented in Chapter Three; (see Table 7 on the next page for these new elements). These were present in several of the stories told and referred to throughout the day by the participants. Several of them were also included in the design statements drafted during the workshop.

**Table 7. New elements of engagement identified by participants**

**NEW ELEMENTS OF ENGAGEMENT**

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Fun / excitement.

A sense of accomplishment.

Experiential learning and opportunities to practice.

Quality, uninterrupted time and space for learning.

Safe environment with appropriate support and scaffolding.

Use of informal, casual language.

I discuss these further and relate them to the design guidelines proposed in Chapter Three later in this Chapter.

**IDEAS AND INSIGHT**

***Engagement design***

The Dream phase of the workshop generated specific new ideas for how to address engagement. Several of these linked directly to elements of engagement discovered in the story-sharing activity: (see Table 6). As an example, one participant told the story of her visit to Pier 21 in Halifax, where she was able to experience the arrival of an immigrant as if she herself were an immigrant. In the next activity, another participant built on that experience and suggested developing training from a customer's point of view to help develop empathy in bank employees.

**Table 8. Summary of ideas for engagement generated by participants**

**IDEAS FOR ENGAGEMENT**

- 
- Deliver the content from different points of view.
  - Tap the potential of games for learning.
  - Find ways to give learners time for activities - free of distractions and worry.
  - Ensure that technology works and is not a barrier.
  - Offer flexible learning options to support different kinds of learners.
  - Provide on-going support during and after learning activity.

In addition, all the participants generated design statements to describe their visions of how engaging learning should be. These are found in Appendix B.

At least one participant felt that the workshop would affect her practice with respect to designing for engagement, although she did not know how that would happen.

*P8 "So now that we've spent a whole day talking about engagement within this Appreciative Inquiry framework, even if I don't do anything specifically, it's going to affect everything I do from now. It could be just little ripples, little nuances. But sometimes those can be really effective too."*

***Collaboration***

Building on their discussion of engagement, the participants developed several new ideas for ways in which they could collaborate to share resources and ideas. One suggestion that surfaced several times was to start an informal design forum, possibly online, through which the participants could connect with other learning developers at the bank. Through such a forum, they felt that they could begin to discover what was working well with respect to creating engagement in other learning programs.

However, they recognized that co-ordinating such an initiative would be a lot of work and were hesitant to commit to it. One participant did raise the idea with her senior manager, who expressed interest. But by the time the study ended, the idea had not yet been implemented.

The participants also suggested that they collaborate more closely in the development process with the technical members of their teams. They believed that this might enable them to be more creative with their existing resources, since they often did not fully understand the technological potential of their systems; nor did they know what kinds of short cuts were possible.

### ***Value of engagement***

P2 articulated new insight into the value of engagement in the final interview. She was the participant who had the most trouble letting go of her constraints (“*the banker in me*”) to engage her imagination in the Dream exercise. As seen in her comments below, one week after the workshop she realized that, by making learning activities more engaging, the learners might be able to complete the training and build the required new knowledge in less time. This would mean that they would be away from their jobs for shorter periods of time, which would reflect in the bottom line.

*P2 “Maybe we just need to step back and realize, if there’s there some way that we could make this more engaging then they would forget everything that’s around them, and the learning would be quicker. The transfer of knowledge would happen in much less time ... Because I think that having to spend less time to train, then there’s more time to serve customers. So something that would take them an hour to go through, because it’s flat and everything in the branch is interrupting ... if you could get them to focus and forget what’s going on around them for that moment of time in training, of course they’ll learn faster. And then, of course it will affect the bottom line, in a good way.”*

### **ACTION**

The workshop did result in some specific changes in behaviour and practice by the participants, which were designed to generate engagement. Most of these grew out of the discussion in the Destiny activity, during which the participants generated a long list of ideas for actions they could take to address engagement in their work. From this list, the participants committed to those they felt were achievable, given their current workloads. Several examples of these actions follow.

After the workshop, all the participants shared and discussed their joint design statement with their immediate team members. This statement, which they called their “Learner Experience Promise”, incorporated seven of the elements of

engagement they identified in their stories. These elements are indicated in italics below.

Learner Experience Promise: “Our learning engages the participant through *fun, interactive* and powerful learning experiences. Our *flexible* learning path will capture and delight learners’ sense of *curiosity*. Through a *collaborative* process of discovery, in a *safe* learning environment, learners make *personally relevant* connections needed for success.”

Two participants initiated a simple online survey to research engagement among their learners. This marks the beginning of a shift for them, to consider integrating learner-centred research into their design practice.

One of these two participants, P5, also presented her findings from the workshop to her team. She urged them to consider taking greater ownership of their design guidelines and consider how they can make things more engaging and appreciative.

P5 “[I said to them] *So if we constantly use traditional methods of doing things, then that’s what they come to expect and so it becomes very comfortable but if we start to change the way we develop and the standards we use, don’t we, in fact, drive the change?*”

RESEARCHER “*So how was that received?*”

P5 “*Mmmmm, a lot of silence in the room. A lot of people have to take that in. But, I mean there are some people on our team that are staunch traditionally based ID [instructional design] people. So they were like, ‘OK, back to the standards issue.’ ... But I think it really did give people pause, which was interesting.*”

P5 also re-wrote a script for one of her programs, to make the language more accessible and engaging. And she is considering adapting the AI process for use as a stand-alone, learner-centred design process.

P8 planned to apply the customer perspective idea, developed from the Pier 21 story discussed above, to an empathy learning activity she was designing.

Finally, P2 was planning to increase interactivity for learners in the up-coming re-design of a major program to make it more engaging.

The full list of proposed action items can be found in Appendix C.



## CONCEPTUAL CHANGE

### *Importance of engagement*

Despite the actions of the participants described above, the workshop offered potential for much more significant follow-through. The fact that this potential was not realized indicates a persistent disconnect between the participants' stated recognition of the importance of engagement and the attention they give it in their practice.

All of the participants indicated that engagement was imperative or very important for learning in the pre-workshop survey; they also said in the group evaluation that they felt that spending a day on the issue of engagement had value. Before the workshop, none of them indicated in the survey that they had explicit strategies to address engagement in their practice. I expected this to change after the workshop, but only one participant (P5) indicated in the final survey that she changed her practice with respect to engagement.

In addition, P5 was also the only participant who demonstrated a changed understanding of engagement in the post-workshop online survey. In her post-workshop definition of engagement, she included three key elements of engagement that surfaced during the workshop that were not in her pre-workshop response.

Thus, it appears that the workshop did not facilitate substantial conceptual change for most of the participants.

### *Discrepancy between beliefs*

In both the pre and post-workshop online surveys, participants were asked to rank engagement techniques they believed to be most effective, as well as the techniques they used most often in their practice; see Table 9 on the next page for a list of responses. In both questions, before and after the workshop, they ranked *Interactivity* as number one. However, none of the other top-ranked techniques were technology-dependent. These included the use of *Story and Scenarios*, *Learner Control*, *Collaboration* and *Meaningful Content*. Some of the lowest ranked techniques were *Virtual Reality*, *Large Screens*, *Avatars and Animated Coaches* and

*Game Play*. Thus, it appears that the participants favoured the use of engagement strategies that are not technology-dependent.

**Table 9. Survey data: Believed technique effectiveness & actual technique use by participants.**

| Rank | Techniques believed most effective (before workshop) | Rank | Techniques used by participants (before workshop) | Rank | Techniques believed most effective (after workshop) | Rank | Techniques used by participants (after workshop) |
|------|------------------------------------------------------|------|---------------------------------------------------|------|-----------------------------------------------------|------|--------------------------------------------------|
| 1    | Interactivity                                        | 1    | Interactivity                                     | 1    | Interactivity                                       | 1    | Interactivity                                    |
| 1    | Story and Scenarios                                  | 2    | Story and Scenarios                               | 1    | Story and Scenarios                                 | 1    | Meaningful Content                               |
| 2    | Meaningful Content                                   | 2    | Meaningful Content                                | 2    | Learner Control                                     | 2    | Story and Scenarios                              |
| 3    | Learner Control                                      | 2    | Performance Measures & Requirements               | 2    | Collaboration                                       | 3    | Learner Control                                  |
| 3    | Collaboration                                        | 3    | Learner Control                                   | 3    | Meaningful Content                                  | 3    | Collaboration                                    |
| 4    | Rich Media                                           | 3    | Collaboration                                     | 4    | Game-play                                           | 3    | Rich Media                                       |
| 4    | Rewards                                              | 4    | Game-play                                         | 5    | Humour                                              | 3    | Performance Measures & Requirements              |
| 4    | Game Play                                            | 5    | Rewards                                           | 5    | Virtual Reality                                     | 3    | Game-play                                        |
| 4    | Humour                                               | 5    | Rich media                                        |      |                                                     | 4    | Rewards                                          |
| 4    | Avatars & Animated Coaches                           | 5    | Humour                                            |      |                                                     | 4    | Humour                                           |
| 4    | Existing Interest in the Topic                       | 5    | Avatars & Animated Coaches                        |      |                                                     | 4    | Existing Interest in the Topic                   |
|      |                                                      | 5    | Existing Interest in the Topic                    |      |                                                     | 4    | Large Screens                                    |
|      |                                                      | 5    | Large Screens                                     |      |                                                     | 4    | Novelty                                          |

However, when we view this preference for non-technological techniques in relation to the participants' responses to the final question, which asked them to suggest ways in which their learning activities could be made more engaging, we find a discrepancy. Before the workshop, their answers to this final question were simulations, interactivity, scenarios and multimedia technologies. In the post-workshop survey, three out of four responses to the same question indicated that they felt that increased resources were the answer.

From these data, it appears clear that there are conceptual discrepancies between the participants' stated beliefs about engagement; their personal experiences of engagement; and their design practice for engagement. Interestingly, despite the fact that they all experienced this conflict firsthand during the workshop and were exposed to new ideas about engagement, only one of the six participants demonstrated a change in understanding of engagement in the survey data before and after the session. This may be an indicator of the difficulty of triggering conceptual change in this area.

### ***Technology is the answer***

The desire for increased access to technology and resources highlighted above was also reflected in the discussion during Destiny in the workshop. In earlier activities, (Discover, Dream, Design), the participants identified several elements of engagement design not related to technology that they felt were effective. These included curiosity, discovery, a sense of accomplishment, experiential learning, relevance and fun. Yet, when asked in Destiny how they could generate engagement in their learning activities, they felt that access to more resources to develop their use of technology was the solution.

*P2 "They [developers] have great stuff. I've sat in the pod with them and they've showed me things they can do but we just don't have the budget. They can build it for us but it will take x number of developer days and we don't have the budget."*

Technology seemed to be perceived by the participants as the "holy grail" for engagement. This type of response was not limited to the Destiny activity, but was consistent throughout the workshop. The participants repeatedly highlighted interactivity as an important engagement strategy. They also referred to other technology-driven design techniques they believed to be engaging, including the use of "web safari's" and virtual classrooms. Yet, when challenged, they were often unsure about why they thought these technologies supported engagement.

RESEARCHER *"So I'm going to press you. What do you mean when you say interactivity?"*

P9 *"So I think of two-way communication, so I'm communicating something to the PC and it's communicating something back to me."*

RESEARCHER *"That's not a pre-programmed response?"*

P9 *"It probably is."*

P4 *"So just a click."*

P9 *"It probably is. But I'm getting some response, like 'Wrong' or 'It should be this' or 'Go here.'"*

P8 *"Because I think a lot of people would consider interactivity as basically words with just more words. 'Click here for more words', which isn't interactivity - it's just using more words. It's when it engages someone's thought processes; they have to think about it; they have to provide an answer and they get their feedback, that's interactivity - when they have to do something with the words."*

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RESEARCHER *"When you're in a virtual classroom, what stops you from multi-tasking? No one can see you, so what stops you from going off and doing three other things?"*

P8 *"Nothing" (laughs).*

P2 *"As the facilitator, you need to constantly ask questions. 'If I could just get a room check if everybody's ...' and you can see - ding ding ding - green checks go off. And then there'll be somebody that didn't and it brings that person back on."*

RESEARCHER *"Trying to interact with them?"*

P2 *"You have to constantly ask for agreement - a show of hands. You're constantly asking for that, so that they're either putting up their red X's or green check marks to make sure they're still with you. Because yes, they can still go off and multi-task but all of a sudden, you can be on the spot, 'Oh so and so - do you agree?' And it's like oh oh. So then they need to be back on."*

Thus, they claim to support non-technological design approaches for effectiveness in engagement design, but desire more technology and resources. In reviewing these data, it is unclear why this is so; why do the participants accept technology as a source of engagement? One possible explanation could be the success of various technology marketing initiatives.

It may also be that their understanding of engagement and its role in design is minimal; I discuss this and other findings related to conceptual change further in the next chapter.

#### THE ROLE OF CONTEXT

The original pilot protocol for the workshop included an activity to address contextual issues in the design environment that could affect the participants' ability to generate engagement. This is often considered an integral part of an Appreciative Inquiry; however, I left it out because of time constraints for the workshop. Despite this, these issues were raised by the participants themselves during the Destiny action planning activity. They identified many perceived barriers to designing for engagement within their organizational processes. Examples included: the need for uninterrupted time for learners to engage with the activity; overlaps in design processes and content generation; barriers to sharing resources and information among design groups; and an acute awareness that their ultimate goal was not to support learning but to support the bottom line of the organization through training.

*P5 "They have all the screen captures that we use on our program but we can't ask them to use them. Why not - I don't understand? Well, that's their stuff and we have to go get our own. OK? So manpower, time, it doesn't make any sense at all!"*

*P4 "Isn't that stupid? That's so stupid."*

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*P5 "It's all about the bottom line, bottom line, bottom line."*

Discussion of such issues dominated the action-planning activity. This suggests that it is critical that future versions of the protocol address context.

### 5.3. Summary

The findings of the data analysis of the AIEW study confirmed the value of many of the activities of the pilot protocol, including the use of story-sharing for data collection and the importance of creating, articulating and sharing visions.

Despite a smooth flow through the first three phases of the workshop, (Discover, Dream, Design), the process appeared to break down in Destiny, although the cause of this disconnect was not apparent. This is discussed in the next Chapter.

The analysis also revealed that the novelty of the Appreciative Inquiry method dominated the discussion of engagement as a memorable outcome.

With respect to outcomes, as stated, it was difficult to identify outcomes that related clearly to the activities of the workshop. As well, outcomes and process were often intertwined. An example of this was the case of P5; when she launched a survey to research engagement among her learners, she decided that it would be most effective to phrase her survey questions about engagement appreciatively.

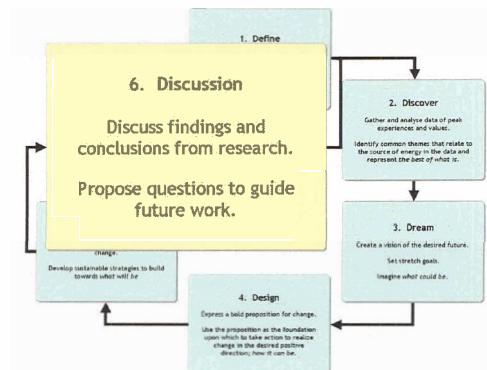
In addressing the main issue of engagement, the workshop did surface key elements of engagement and generated several practical design ideas the participants could apply immediately.

However, some of the most interesting findings in the outcomes analysis relate to the discrepancies between the participants' stated beliefs about engagement; their personal experiences of engagement; and their design practice for engagement.

The role of context also emerged as a critical element of the process, one that was not included in the protocol. The issues raised during the final Destiny discussion revealed that that the participants perceived many elements of their design environment to be barriers to engagement. I discuss the implication of this and the other findings in the next and final Chapter.

## 6 Discussion: *On-going Engagement*

Figure 10. Chapter 6: Discussion



In this final chapter, I discuss the results of the AIEW study and the implications of my findings on future implementations of the protocol. I return to the research questions posed in Chapter One, to summarize my attempts to address them. I offer revised engagement design guidelines, based on the outcomes of the AI workshop. Finally, I identify outstanding and new questions to guide future inquiries.

### 6.1. Workshop Evaluation

The AIEW study was completed in an attempt to address the following question:

*How can an Appreciative Inquiry framework support practitioners in their efforts to design engaging TML activities for adults in their own, unique design context?*

I discuss the results from this evaluation and suggest revisions to the workshop protocol below.

#### 6.1.1 Protocol: Findings

As seen in the previous chapter, the workshop protocol did support an investigation into generating engagement in the participants' context, albeit with limited success. The activities of the session did make explicit a number of design factors that can generate engagement; they also stimulated discussion into how the participants might address engagement in their practice. Yet, at the end of the session, when asked to create and commit to an action plan, the list of concrete actions the group was willing to take on was short: just five tasks.

Without conducting a comparative study using an alternative workshop protocol with the same group, it is impossible to say if this lack of commitment to action was due to the methodology itself or some other variable. This raises the question; would a non-appreciative or problem-based six-hour workshop on engagement have had the same or a different impact on the same group? As one participant pointed out in the Group Evaluation after the workshop:

*P8 "When you bring something from the swirl of your everyday and you focus your attention on it, you can't help but carry it forward. So now that we've spent a whole day talking about engagement within this Appreciative Inquiry framework, even if I don't do anything specifically, it's going to affect everything I do from now."*

Despite the limited scope of this study, it did yield a number of insights into the role of engagement in this group's design practice and learning design in general, as well as implications for future applications of the protocol in this domain. I discuss these, the major findings of my data analysis, below.

### ***Engagement is not a design priority for this group.***

As noted in Chapter One, (Csikszentmihalyi & Hermanson, 1995; Palmer, 2005; Rotto, 1994) engagement is often assumed by designers to be present by virtue of the learner's participation in an activity. I suggest that this may also be true for this group of practitioners: if so, then engagement is likely not a design priority for them. The reasons for this suggestion follow.

In the pre-workshop surveys, the participants all said that generating engagement among learners was either "very important" or "imperative". Despite this, all six also said that they did not have existing strategies for addressing this need in their practices. In addition, only one participant said her team had a working definition of



engagement. She and two others provided definitions of engagement as it relates to learning that were similar to those discussed in Chapter One; the other three did not demonstrate as clear an understanding of the concept.

As discussed previously, the participants also reported few follow-up activities from the Destiny action list after the workshop. Note that I cannot infer what may have happened after I finished my data collection. Perhaps the effects of the process persisted beyond my five-week data collection period: perhaps not. This was a flaw in my method; I should have designed the process with a longer and more detailed evaluation period.

This lack of action on the part of the participants could be attributed to several factors. They may have felt that they could not take on new tasks with their existing workload. (One participant did cite workload in the post-workshop survey as the reason why she had not taken any action.) As indicated by the comments in Chapter Five, they may have felt that the workshop was “just” a research project, so that commitment on their part was not necessary. They may also not have felt that they had ownership of the process and outcomes. With respect to this last point, the data shows that I had to encourage them to commit to action. My impression during and after the session was that, if I had not facilitated that activity and encouraged them to suggest actions they could take, they would not have committed to anything on their own. Finally, they may not have found enough value in the workshop to make it worth the effort of taking on more work; the issue of learner engagement may not have been meaningful for them.

I suggest that this last reason is the most compelling explanation for my assertion that engagement is not a priority. This would explain why, as described in Chapter Five, they were unwilling or unable in the Destiny activity to translate their design statement, which included seven elements of engagement, into specific design strategies. Instead, they shifted their attention and discussion to other issues related to resource access, such as lack of budget and lack of developer time. They only addressed specific design strategies related to engagement, such as creating challenges or making learning meaningful, when I turned the discussion in that direction. This suggests that these broader, contextual issues may be a higher priority for them than designing for engagement. It may also be that they are so busy simply

trying to get all their work done, that access to resources that may help with their workload take priority over engagement design, which could be perceived as an additional task or burden. Another possibility is that the participants may be stuck operating within a model of constraints rather than opportunities: a belief system they were unable to challenge or change during the workshop. I discuss the role of conceptual change in this study later in this section.

Finally, despite their declaration that engagement is imperative for learners, the participants demonstrated a limited understanding of what engagement is and how to generate it in design. They revealed pre-existing and unfounded assumptions about the abilities of technology to engage. The data also revealed an inconsistency between the elements in their stories they said were engaging and what they indicated in the survey would support enhanced engagement. As mentioned above, these pre-existing beliefs are likely persistent and difficult to change.

This finding, that engagement was not a priority for the participants, reveals a weakness in the protocol design. Appreciative Inquiry theory (Cooperrider et al., 2005) suggests that it is critical to allow the participants to choose their own topic of inquiry. I did not do that. As a result, the topic of engagement may not have been meaningful for them; so many did not fully engage with the process (Brown, & Duguid, 2000; Csikszentmihalyi, 1990; Heidigger, as cited in Stahl, 2005; Stahl, 2005). As an aside, I find it ironic that the need to make activities relevant and meaningful for learners is one of my own engagement design guidelines; yet, I failed to ensure that this activity was relevant for all of the participants in my study. I make specific recommendations to address this issue in the protocol revisions section that follows.

In sum, for this protocol to be a success, the topic of the inquiry must be a priority for the participants. They should have an awareness of their pre-existing beliefs and perceptions about engagement design, so that they can relate them to what they discover in the workshop. They should also have an interest in and working knowledge of engagement and its relationship to TML design. Further discussion of how to stimulate interest in engagement design is at the end of this section.

***Practitioners need a deeper understanding of engagement & how to design for it.***

As suggested above, for the protocol to work effectively, the workshop participants need a deep and working understanding of what engagement is, how it relates to learning and how to generate it within their design practice.

In the evaluation study, I assumed that the participants had such knowledge. The data suggests that this was not so. These data include their inability to articulate the benefits of interactivity in supporting engagement; their assumptions that technologies such as virtual classrooms, web safaris and screen shots can support engagement without referencing the need for an engaging instructional design; their lack of distinction between engaging learning experiences and excellent learning experiences in the story-sharing activity; and half the group's inability to provide a reasonably accurate definition of engagement in the surveys.

In particular, the participants placed a strong (and unfounded) emphasis on the use of technology to support engaging design. After analysing the data, I realize that this may be attributed to a lack of ability to distinguish between TML tools and instructional strategy, as discussed by Clark (1994). This author maintains that media on its own, such as video, audio and even text cannot influence learning; they are simply delivery mechanisms for content. It is the pedagogical design of a learning activity that facilitates knowledge building. In the discussions about engagement during the AIEW study, the participants did not make this distinction. They did not seem to be aware that they could design for engagement with their current technologies or without any technology, by applying non-technology-dependent strategies such as those included in my design guidelines in Chapter Three: create challenges, make learning meaningful, identify clear goals, provide support and foster collaboration.

To explore this further, I compared data from the surveys on the participants' pre-existing beliefs about design techniques they *believe* support engagement, as well as those they said they *used* in their practice both before and after the workshop - with the elements of engagement they identified in their stories during the workshop. In all these categories, few of the elements and techniques are technology-dependent. They include design elements such as *safe*, *collaborative*, *relevant* and *flexible*. *Interactivity* is the only element of engagement that may be specifically associated with technology.

However, when asked in the surveys what they thought would make their learning more engaging, their pre-workshop survey answers indicated a need for greater access to technologies, while their post-workshop answers clearly identified more funding as being most important. In addition, when asked to bring the design statement to life, they turned the discussion to the issue of access to resources, in particular technology, rather than a discussion of non-technological learning design approaches.

This disparity between their personal experiences of engaging learning and what they say they need to engage their learners was also reflected by some participants in the Dream activity, as described in Chapter Five. They expressed difficulty trying to connect the concept of engagement generated by learning to snowboard or reading a great book to engagement created in an online learning activity on opening a chequing account.

As discussed in the previous Chapter, the data also indicate that, despite what the participants experienced in the workshop, only one (P5) demonstrated a change in her overall understanding of engagement. None of the others indicated that the workshop had enhanced their understanding of engagement. Thus, only one participant demonstrated conceptual change from her pre-existing beliefs. This is consistent with research on this topic that demonstrates that conceptions are very resistant to change (McCracken, 2002).

This finding is significant, in that it indicates that this one day AI workshop did not facilitate conceptual change in the majority of participants. In reviewing the data, my impression was that the participants felt confident that they already knew what to do to engage their learners; they simply lacked the resources. They did not appear to believe that any changes in their understanding of designing for engagement were required; they seemed unaware that their existing knowledge and assumptions were often false and/or unfounded.

Given the discussion above, I suggest that, as a prerequisite for future versions of the AIE workshop, participants be able to demonstrate an adequate understanding of engagement; this is discussed more fully in the revisions section that follows.

The discovery that the participants demonstrated only a superficial understanding of engagement and how to design for it also raises questions with respect to their pre-

existing beliefs about design and engagement. Where do these beliefs come from; on what are they based? What informs the participants' practice with respect to engagement? This discussion also raises questions about knowledge building and information validity. In the data, the participants did not change their pre-existing beliefs about engagement, despite having described engaging experiences that did not support these beliefs. This suggests that they do not trust their own experience. So what information sources do they trust? Do they rely on external sources, such as marketing literature? These questions indicate a need for further research into the sources of information for engagement design.

Thus, I conclude that this AIEW study was designed to support an investigation that required a level of understanding of engagement design that exceeded that of the participants. This suggests a need within the TML design domain for on-going practitioner education on designing for engagement.

***Story data did offer insight into learner engagement.***

Despite the limitations discussed above, the story-sharing and analysis activities did contribute to an enhanced understanding of engagement design.

The list of elements of engagement the participants created corroborated those I included in the design guidelines presented in Chapter Three. All the elements from my guidelines appeared repeatedly in the participants' Discover stories; and all but two were represented in their short list of valuable elements of engagement.

In addition, the list generated by the participants identified four sets or categories of elements that I had not included in my guidelines. Several of these are supported by the literature review in Chapter Two. I discuss these later in the Chapter.

Interestingly, story itself was not one of their elements. Story clearly played a role in several of their own experiences of engaging learning that they shared in Discover; yet they failed to identify it as an explicit factor that can support engagement. In addition, in the pre and post-workshop survey data, the use of story and scenarios was ranked by the participants as one of the top two design techniques they believed to be most engaging. Several participants also indicated in the workshop data that story-sharing was important to them in supporting their learning process. This failure to

acknowledge the role story can play in designing for engagement in learning supports the suggestion that this group may benefit from further education in this field.

Despite this lack of recognition of the value of story, I suggest that the rich data surfaced through story-sharing and the participants' endorsement of story as an effective learning support tool indicate that the use of similar activities such as those used in the Discover phase of the inquiry may have potential to support further education into engagement.

***Need to make engagement a design priority.***

If engagement is not a design priority; yet the learning theorists are right and it is critical to support learning (Berlyne, 1968; Dewey, 1916; Gagne, & Briggs, 1979; Greeno, 1996; Schiefele, 1991), then what needs to be done to make this issue a priority for designers?

Simply put, engagement needs to be made more meaningful to both design practitioners and their management. One way to do this would be to provide evidence that engagement supports both learning and business goals. For example, in the post-workshop interviews of the AIEW study, two participants indicated that they could see a link between engagement and the bank's business goals. They realized that, if they made their learning activities more engaging, the participants might learn more quickly, which could reduce the cost of training. If they could demonstrate this link to their management, they might be able to make a case for focusing resources on engagement design.

Interestingly, in television, everyone involved in program design understands that engagement links directly to sales and advertising revenue. The more viewers a program has, the more the network can charge for advertising. Thus, more engaging programming results directly in more revenue, which in turn makes more money available for programming. However, such evidence does not exist currently for contemporary TML environments and adult learners. Thus, further research into this issue is needed to develop additional strategies to prioritize engagement among TML design practitioners and providers.

A review of the principles of User-Centred Design as discussed in Chapter One offers more reasons for practitioners to focus on engagement design. Supporting learner or user satisfaction through designing for engagement can enhance: the learners' trust in the activity; efficiency in the design process; the designer and learning provider's reputations; competitive advantage in an open market situation; and profit (Kuniavsky, 2003).

### **6.1.2 Protocol: Revisions**

The data analysis and discussion above of the AIEW study highlight several aspects of the pilot protocol that require improvement to make it viable as a method for supporting practitioners in their efforts to design for engagement. In general, these refer to sample selection, the AI process itself and the need to consider the context of the design environment. I offer suggestions for revisions to the protocol to address these issues below.

#### **1. Let the participants define the topic of the workshop.**

The data analysis indicates that it is necessary to ensure that the workshop participants play a role in identifying the specific topic of the AI session. The lack of follow-through on action in the AIEW study may have occurred because the group did not define their own inquiry topic. AI is less engaging when the topic is selected *for* the participants, rather than *by* them. To accommodate this need, the protocol could be revised to include an activity in which the researcher facilitates an exploration of the question of engagement with the participants and allows them to choose one or more aspects of engagement design they wish to investigate. Inviting participants to play a significant role in the definition of the topic could help to foster both commitment to and ownership of the process (Cooperrider, & Whitney, 2000).

It may also be better to run the workshop at the beginning of the participants' development cycle, so that they can apply the process to a specific project.

## **2. Introduce Appreciative Inquiry in a separate activity.**

For many people, exposure to this alternative methodology can be exciting, unsettling or overwhelming. As I found in my study, the Appreciative Inquiry process was more memorable for the participants than any new insight into engagement. Without the “novelty”, distraction, and possible confusion caused by this new methodology, the participants might have been able to focus more clearly on the topic of engagement in their learning and might have generated different outcomes. This suggests that it would be useful to find a way to mitigate the novelty factor of the method for future iterations of the protocol.

One possibility would be to run a short (two-hour) AI session as an introduction to the methodology one or more days before the workshop. Once participants have experienced working with an appreciative approach, they may be better able to focus on the topic of the inquiry, rather than the method itself.

## **3. Ensure that participants have an adequate understanding of engagement.**

Before starting the workshop, it would be useful to conduct an in-depth review of the participants’ existing knowledge level, understanding and pre-existing beliefs about engagement. This will help to ensure that the focus of the inquiry is appropriate for them. It will also identify potential misunderstandings or inaccurate beliefs that need to be addressed before the workshop begins.

## **4. Include learners in the workshop.**

Bringing designers and learners together in the AIE workshop could offer a rich research opportunity to discover what truly engages a specific audience. Such a learner-centred and participatory design approach could have many benefits, as highlighted in the discussion of UCD in the previous section. It could also generate fundamental information to help the development team understand how to ensure that the TML activity will have value for the learners, by making their needs and goals clear (Zazelenchuk & Boling, 2003). Involving learners may also generate other benefits, such as improving their willingness to participate in future research, as well as their overall satisfaction with the designers and learning provider (Kuniavsky, 2003).



## **5. Include all team members in the workshop.**

As suggested by the participants, including all the team members affected by the outcomes of the inquiry in the workshop might result in more commitment and support for action in Destiny. It is difficult to appreciate and understand the value of an appreciative approach unless you have participated in the process. Enabling entire teams to commit to joint design statements and draft action plans is an obvious benefit to such an all-inclusive approach. As several participants also pointed out, different team members bring different expertise to the process; the combined knowledge and synergy of the entire group should be more powerful than each individual's contribution.

## **6. Ensure that story-sharing activities relate to the practitioners' context.**

Since some participants struggled to connect their stories of engaging learning to the kinds of learning activities they design, it would have been better if I had drawn the story-sharing closer to the bank and workplace learning. Offering an example of a sample dream might have helped. One participant also suggested that it might have made it easier for him in the Dream exercise if I had related dreaming to a child's unfettered imagining.

Thus, it is essential that the initial invitation to share peak experiences in Discover be phrased carefully to ensure that the stories will enable the participants to relate to their own context in subsequent activities.

## **7. Address the design environment and context explicitly.**

Cooperrider et al. (2005) suggest that an Appreciative Inquiry should address the context in which the participants operate, so that they can consider it when they create their action plan in Destiny. I did not do this, because of time constraints.

Given that contextual issues dominated the discussion in Destiny in my study, I suggest that future iterations of the protocol address this issue. One suggestion would be to have the group create a list of major contextual elements that could affect the outcome of the workshop, then choose to focus on one or more of those in their design statement and subsequent Destiny activities. This would limit the extent of the

inquiry's impact but may also enhance the probability of follow-through by the participants, since the goals they set would likely be smaller in scope and grounded in their design context.

#### **8. Allow more time for Destiny.**

For participants who are new to the AI process and working within an appreciative perspective, it can be difficult to conceive of achievable, positive actions. They may need time to generate examples and small scale suggestions in this vein, before they are able to build a viable appreciative strategy to facilitate change.

Therefore, I suggest that it may be more effective to conduct the Destiny activity the day after Design, so that participants have time to reflect on their findings thus far in the process and let appreciative ideas surface. The drawbacks of this suggestion are that it may mean that more time needs to be allocated for the workshop. There is also a risk that some participants might not be able to attend the workshop on the second day.

#### **9. Include a follow-up strategy.**

Helping participants find ways to weave AI and the findings from their inquiry into their on-going practice is key to the success of the process. Unfortunately, this only happened with one participant in my study. This may have been due to a weakness in my method. I did not set the process up to be continued after the workshop. This was an attempt to avoid influencing their participation by pushing them to continue their investigation into engagement in their work. I now realize that this approach of trying to minimize my influence as the researcher was not consistent with an action research approach.

Cooperrider, Whitney et al. (Cooperrider, & Whitney, 2000; Cooperrider et al., 2005) are adamant that the success of AI as a process for facilitating change is largely due to their strategy of "giving it away". The workshop facilitator must include a strategy for supporting participants after the session is over and ensuring that they take ownership of the AI process to apply it as they see fit in their practice. Such support could include asking for a volunteer to be the team AI leader; providing access to resources on how to use AI on their own; supplying a worksheet for follow-up activities or

creating such a sheet with the participants; or continuing contact with the participants during a pre-established follow-up period.

### **6.1.3 Protocol: Summary**

The pilot workshop session generated many positive outcomes, specifically in helping participants to recognize and articulate factors of a learning experience that can generate engagement. Although the participants had difficulty generating action plans to build on these findings in Destiny, revisions to the protocol as described above should make this final stage of the process more viable.

The data analysis also revealed a set of prerequisites for participants that would increase the workshop's effectiveness. These are an interest in and commitment to engagement design, as well as a reasonable understanding of what engagement is and how it is generated.

In consideration of the findings discussed, I suggest that an AI protocol that included the revisions suggested above would support future investigations into designing for engagement in TML for adults.

## **6.2. Engagement Design Guidelines**

In the workshop, the participants generated a short list of 15 elements of engagement, based on their stories. On the next page, I attempt to relate these to my findings in Chapter Two, as well as to the elements of engagement included in the design guidelines I offered in Chapter Three.

**Table 10. Comparison of elements of engagement from design guidelines and participants**

| DESIGN FOR ENGAGEMENT GUIDELINES<br>(CHAPTER THREE) | STORY ELEMENTS OF ENGAGEMENT<br>(PARTICIPANT SHORT LIST) |
|-----------------------------------------------------|----------------------------------------------------------|
| Cognitive conflict                                  | Wonder, curiosity<br>Discovery<br>The "a-ha" moment      |
| Challenge                                           |                                                          |
| Relevance                                           | Relevant                                                 |
| Goals                                               |                                                          |
| Interactivity                                       | Interactivity                                            |
| Control                                             | Flexible, options<br>Accessibility - learning styles     |
| Social interaction                                  | Collaboration                                            |
|                                                     | Practice in a safe environment                           |
|                                                     | Fun<br>Excitement                                        |
|                                                     | Accomplishment<br>Empowered<br>Encouragement             |
|                                                     | Time                                                     |

The need for *wonder*, *curiosity* and *discovery* as identified in the participants' list are supported in Chapter Two, in reference to the theories of Keller, Wang & Kang, Piaget, Berlyne and Lepper & Cordova (Berlyne, 1968; Keller, 1987; Lepper & Cordova, 1992; Moessinger, 1978; Piaget, 1977; Wang, & Kang, 2005).

*Relevance* correlates to Chapter Two and the work of Keller, Norman, Palmer, Seely-Brown and Duguid, and Heidigger (Brown, & Duguid, 2000; Heidigger as cited in Stahl, 2005; Keller, 1987; Norman, 1993; Palmer, 2005).

Chapter Two also highlights *interactivity* and shows how it supports learning, with references to the work of Arnone, Bangert-Drowns and Pyke, Cavalier and Weber, Laurillard, Mallon and Webb, Murray, and Plowman et al. (Arnone, 2003; Arnone, 2003;

Bangert-Drowns & Pyke, 2001; Cavalier & Weber, 2002; Laurillard, 2002; Mallon & Webb, 2000; Murray, 1998; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999).

The need for *flexible options* and *control* is supported in earlier Chapters by de Jong et al., Facer and Williamson, Fisher, Gruber, Jonassen, Mott et al, Roussou, as well as Knowles' theory of andragogy (de Jong et al., 1998; Fisher, 1991; Gruber, 1977; Knowles, 1984; Mott, Callaway, Zettlemyer, Lee, & Lester, 1999; Roussou, 2004).

I also address the role of *collaboration* and *social interaction* as presented by Wenger and Vygotsky (Wenger, 1998; Vygotsky, L.S., 1978) in Chapter Two.

In addition to the seven engagement design factors I included in my original guidelines, the participants identified a number of other elements they considered important. I attempt to relate these to the literature as reviewed in this thesis.

*Practice in a safe environment* appears to be a concept particularly important to the participants in reference to workplace and adult learning. They felt that offering opportunities to practice what was being taught would make the activity more relevant and interactive for the learner. In addition, providing a safe environment might help adult learners overcome anxiety associated with TML, as well as the perceived risk associated with trying something new. As discussed in Chapter Two, adults need support and scaffolding (Grow, as cited in Merriam and Caffarella, 1999; Plowman, Luckin, Laurillard, Stratfold, & Taylor, 1999) and may desire structure and guidance (de Jong et al., 1998; Rieber, 2002).

The desire for *fun* and *excitement* are obvious; who does not want to have fun? It is a logical assumption that an activity that is fun is also desirable, which should support engagement. Ironically, the AIEW study data surfaced a cultural bias against fun in learning activities by the participants. They commented that such experiences could be perceived as juvenile and therefore not worthwhile. Yet, Lepper and Cordova, Piaget and Rieber (Bhattacharya, & Han, 2001; Lepper & Cordova, 1992; Rieber, 2001) all consider play to be an essential element to support learning.

The participants felt that creating activities that are *empowering*, *encourage the learner* and *recognize her accomplishments* in the activity were also important elements of engagement. I suggest that these affective responses can be addressed by

ensuring that the learner receives appropriate feedback; by designing challenges that evolve with the learner's skill level; and by making goals clear. These aspects of engagement design are already inherent within the guidelines in Chapter Three.

Finally, the participants raised the concept of uninterrupted, quality *time* for learning to support engagement. This became the focus of a lengthy discussion for them, which suggests that it is a critical issue. It relates to one of Csikszentmihalyi's conditions of Flow (1997), which is to eliminate distractions.

After reviewing the evidence supporting these additional elements of engagement suggested by the participants, I decided to revise my design guidelines as follows.

**Table 11. Revised Design for Engagement Guidelines**

**To design for engagement ...**

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1. Create a gap between what the learner knows and desires to know.
2. Design evolving challenges that match and stretch the learner's skills.
3. Ensure that the activity and information being taught is meaningful to the learner.
4. Identify clear and achievable goals.
5. Provide relevant opportunities for experiential learning and practice of new skills and knowledge.
6. Include interactivity that is dynamic, reciprocal and offers agency to the learner.
7. Offer the learner significant control over the delivery and execution of the learning experience.
8. Create a safe environment that includes appropriate support, scaffolding and feedback for the learner.
9. Include activities that naturally foster collaboration and social interaction.
10. Eliminate distractions.
11. Make it fun!

Note that none of these rely on access to sophisticated or specialized technology; they can be applied by any practitioner who creates technology-mediated learning activities for adults.

### 6.3. Research Questions: Revisited

As I begin to draw this thesis to a close, I return to the main research question and sub-questions posed in Chapter One to summarize my findings.

The original research question was:

*How can designers of technology-mediated learning activities for adults generate and sustain learner engagement? In addressing this question, I refer to the sub-questions associated with it.*

The first sub-question - what is engagement - was addressed in Chapter One. For the purposes of this thesis, I offered the following working definition of engagement: "the pleasurable sensation of being engrossed and interested in an activity that one wishes to continue". Engagement is closely associated with, but distinct from motivation, curiosity and interest.

In exploring the second sub-question - how does it relate to adult learning - I show that engagement supports learning for everyone. However, the factors necessary to generate and sustain it may differ for children and adults. In the workplace, or any other busy environment in which distractions abound and competition for learner's attention is fierce, engagement is critical to enable the learner to focus on the activity. As suggested by two of the participants, deeper engagement may shorten the time required for a learner to build knowledge.

Designing for TML activities can be quite different from designing for face-to-face experiences, which is the subject of the third sub-question. A teacher or facilitator in a face-to-face environment can mediate the activity to adapt it as required by the learners; this type of dynamic moderation is much more difficult and often impossible to do with current technologies. Another factor to consider is that the technology must work or else it can be a barrier to engagement and learning. In addition, adults are often anxious about using technology for learning, based on previous poor experiences.

Given these findings and those presented in Chapters One and Two, the needs of the learners in TML must be researched thoroughly, anticipated and supported in a variety of ways.

The next question asked: What learning design elements can generate engagement? Chapter Two is dedicated to this question and explores the related literature to discover what design elements can support engagement. I found these to be: relevance, cognitive conflict (including novelty, story and challenge), social learning, interactivity (as well as feedback), learner control, as well as specific technologies such as simulations and rich media. However, technologies such as live video cannot generate and sustain engagement on their own; they must be paired with engaging pedagogical design strategies.

To build on the findings from Discover, the fifth sub-question asks: How can designers control these elements to generate and sustain engagement? This question speaks to the heart of this thesis and the main research question. In an attempt to summarize my findings from the literature review and present them in a practical and useful way, I wrote the design guidelines, the revised version of which was presented in this Chapter.

As discussed in Chapter Three, such high-level and generic guidelines are of limited value to practising designers. They also need a way to enhance their understanding of how to design for engagement in their own unique context. In response to this need and the last sub-question - how can designers create effective strategies to generate and sustain engagement within their own unique learning environment - I developed and evaluated the workshop protocol presented in Chapter Four. Revisions to the protocol, based on the results of the AIEW study, are offered earlier in this Chapter.

The sum of my efforts to address these sub-questions begins to offer some insight into my original query. In addition, it raises further questions and suggests opportunities for future work. I discuss these next.



## 6.4. Future Work

There appears to be great interest in designing for engagement among learning theorists; yet little research has been done in contemporary technology-mediated learning for adults to investigate what works well and how practice can be improved. With this in mind, and with a view to building on the work I have begun here, I offer the following suggestions for future research.

1. Research and develop strategies for making engagement a priority for designers and decision-makers in the TML design environment.
2. Conduct research to generate data that connects engagement to organizational goals. This may include identifying gains in ROI (Return on Investment), learning outcomes, time required for learning, productivity, etc.
3. Design learning strategies to help practitioners deepen their understanding of engagement and discover how to develop engaging TML activities that are not dependent on technology.
4. Carry out another study, this time with the revised workshop protocol. Initiate the workshop at the beginning of the participants' development cycle so that the workshop focuses on a specific project. Adapt the protocol so that the participants continue to work with an AI framework until development of their learning activity is complete. Measure the outcomes to explore the effectiveness of the protocol at supporting engagement design.
5. Develop and test a problem-based protocol for a six-hour investigation into engagement design with another group of learning design practitioners at the bank, to compare the findings to those presented earlier in the Chapter.
6. Investigate the relationship between engagement and adult learning more thoroughly. In particular, research the true nature of self-directed learning, as well as the effects of cultural barriers such as fear of technology and prejudices against having fun while learning.

7. Adapt the basic AI framework to create a learner-centred and participatory design process to support engagement. Test the adapted process during a complete TML design cycle.

There are many other outstanding questions related to engagement and TML design for adults. However, I have limited my suggestions to those most relevant to this thesis.

## **6.5. Contributions and Conclusion**

This thesis responds to the challenges faced by designers in their attempts to generate and sustain engagement in technology-mediated learning activities for adults. By exploring and summarizing the nature of relationship between engagement and TML as addressed in the literature, I discover some of the elements that can be controlled by designers to encourage engagement. In subsequent Chapters, I build on my findings in engagement theory to create a set of practical guidelines to support designers in their work. I also develop, evaluate and revise a protocol in the AIEW study for an appreciative workshop that practitioners can use to support research into engagement design in their environment. Findings from this study reveal a need for designer education into engagement, as well as research to raise the profile of engagement and make it a design priority. The AIEW study also showed that AI itself offers potential for future design research.

In summary, this work illustrates that designing for engagement does not have to cost money; many techniques exist that can be applied to basic or sophisticated technological learning systems. However, practitioners are unlikely to be aware of the value of such strategies until they make engagement a design priority. This requirement evokes the classic chicken and egg scenario; they cannot generate evidence that engagement has value to learners and their organization, until they design for engagement.

For me, this thesis provides a solid foundation for future research and practice. I plan to continue building on both the design guidelines and protocol in future projects. However, as seen from the results of the evaluation study, there are many surprises lurking in the transition from theory to practice. I will report on these in future publications.

## Appendices

## **Appendix A. Elements of Engagement List**

*(Generated by participants)*

Getting involved with others  
Learning something new  
Reflecting  
Succeeding  
Sharing  
Sense of discovery  
Experience  
Venturing into unknown territory  
Immersion - complete, authentic experience  
Working together  
Communication  
Personal interest  
Challenge  
Learning for learning's sake  
Hearing people's stories - empathizing with them  
Experiencing a part of people's stories - what people went through / felt  
Challenge and change  
Simulation experience revealed my risk tolerance and challenges of working with those with a different risk tolerance  
New things  
Love of the job  
Sharing interests  
Seeing results from decisions team made that were input to the simulation  
Self-discovery  
Accomplishment  
Discovery  
Break from routine  
Humour  
Unexpected delights  
Broadening horizons  
Self-discovery  
Awareness  
Learning from mistakes  
Simulations were realistic, clever  
Excitement, passion  
Break in routine  
Meeting new people  
Sim experience - through our operational error, had to accept bad situation, act quickly to recover our position  
Universal friendliness, curiosity, humanity  
Creativity  
Research  
Change - new interests  
New challenge  
Accessibility  
Excitement  
Sharing our experiences  
Sharing  
Curiosity  
Novelty  
Feeling and experiencing something new  
Doing something new

## **Appendix B. Design Activity: Design Statements**

### **DESIGN STATEMENTS**

#### **P2 (Individual)**

Our learning engages the participant through fun, interactive exercises. The flexible options of various learning styles captures and maintains their curiosity and the transfer of knowledge empowers them to experience the thrill of providing exceptional customer service.

#### **P9 (Individual)**

We will deliver a consistently superior learning experience through programs that encompass flexible learning paths and will “delight your sense of curiosity”. Programs are interactive, accessible and just-in-time. Learners will return with “strong sense of accomplishment” and empowered to improve their individual performance and exceed their goals.

#### **P4, P5, P7 (Group)**

Our learning programs strive to create a fun, exciting and interactive learning experience. They encourage discovery and curiosity while focusing on what’s relevant in a safe learning environment.

#### **P8 (Individual)**

##### **Learner Experience Promise**

We will build an exciting, flexible and collaborative process of discovery so you can make the personally relevant connections you need for job success.

#### **Final Group (all six participants)**

##### **Learner Experience Promise**

Our learning engages the participant through fun, interactive and powerful learning experiences. Our flexible learning path will capture and delight learners’ sense of curiosity. Through a collaborative process of discovery, in a safe learning environment, learners make personally relevant connections needed for success.

## Appendix C. Destiny Activity (Proposed Action Items)

- Share the Design statement. Build on it, create buy-in, and create momentum. When shared, it grows. (Everyone)
- Keep engagement up front, top of mind.
- Talk about it in meetings. Put it on the team meeting agenda.
- Email it - P4 will email it to the group.
- Bring it to the developers team meeting - P5.
- Invite feedback on it - P7 - with the Developers.
- Create an Instructional Design forum or working group. Build on the Design statement. P9 to put it on the table and invite collaboration to kick it off.
- Create a web page for this - or use Sharepoint. Share information and ideas.
- Begin to build/enhance a sharing culture - Everyone.
- Interactivity - Two-way interaction. Less presentation, more application. Learners tell P8 they always want more.
- Flexible learning paths - make the content last longer.
- Process - engage the back end developers in the design process. Invite their ideas - what are the possibilities? Make this an on-going part of the Design process.
- Research the learners' readiness "e-literacy".
- Create a simulated and safe learning environment.
- Give learners more control.
- Explore what is working already - what are we doing well in our learning activities - in our own group - in other groups? Share. (Everyone).
- Ask learners and designers - what is fun, delightful, engaging?
- Ask designers at forums, using pop-us P9 P7.
- Ask learners - include an appreciative question on the evaluation. What was the best part about this learning activity? The most fun? The most interesting? P2.
- Conduct impromptu surveys, discussions, face-to-face with everyone.
- Look at how collaboration is being used in virtual classrooms and in the cohort. How to tap the best of that?
- Look for other research opportunities.

## Appendix D. Original Workshop Protocol

March 2, 2006. 8:30-15:30

### SET-UP

Set up chairs in circle. Supplies on tables. Centrepiece.

List Circle contracts on flip chart (see below).

### START 08:30 - 08:50

1. **INTRODUCTION. (20 minutes).**
  - Welcome everyone. (5 minutes).
  - Offer refreshments.
  - Collect release forms.
  - Explain that the activities will be recorded using audio.
  - Housekeeping - timing, washrooms, breaks, phones.

1. **Outline the day's activities. (10 minutes)**

Brief introduction to my work in engagement & technology-mediated learning. There is no clear definition of engagement in the work we do - yet we feel intuitively that it is desirable.

A working definition may emerge for you over the course of the day.

Brief introduction to Appreciative Inquiry.

- Roots are in action research.
- Most research in this field is deficit-based - what is the problem?
- Represents an alternate approach to problem solving. Instead of "How can we make our learning less boring?", we ask "How can we make our learning more engaging?" To do this, we need to discover what *is* engaging, what engagement means for you and your learners.
- Appreciative Inquiry (AI) does this by seeking out and building on existing strengths. It is purposefully positive.
- AI does not ignore problems - it helps you re-frame them to address them with strengths.
- It is highly participatory - there is no set content to deliver.
- Theoretically, AI is based on several principles:
- In every system, something works. AI is grounded in experienced success.
- The more positive the focus of an inquiry, the more enduring the change.

- We evolve and grow in the direction of what we study.
- Inquiry is action.
- We'll be working through four commonly applied phases of AI.
- Discover - the best of what is.
- Dream - what might be.
- Design - how it can be.
- Destiny - what will be.

Note that this is a research project. Appreciative Inquiry is typically applied to facilitate organizational change. It has not been applied to design in this way before.

AI is an emergent process. There is a plan for today - but anything can happen! We will go with the positive energy.

2. **Call the Circle.** (5 minutes).

We will work in Circle for the first part of the day.

De-mystify Circles. They have been part of human history forever and continue in our society - family council, girls' night out, sports huddles, workplace think tank, coffee with friends, campfire.

Re-state our goal - to use Appreciative Inquiry to help you to enhance learner engagement in your technology-mediated learning activities.

Establish contracts/agreements for behaviour within and outside the Circle.

- Listening with respect.
- Protecting confidentiality.
- Agreeing to support and be open to each other.
- Agreeing that participants may pass or choose not to speak.
- Trusting the strength of the Circle.
- Sharing responsibility for activities and the discussion.
- Check in with each member.

3. **DISCOVER. The best of what is.** (1 hour, 30 minutes). 08:50 - 10:20

Invite participants to tell their stories of exceptional experiences.

Introduce the use of the talking stick for this activity.

**Tell me about the most engaging learning activity you've ever experienced.**

This may include an event that occurred at any time in your life during which you were learning. It may be from a formal or informal learning experience, such as taking a course on graphic design, watching polar bears wrestle at the Zoo, or learning a new culinary skill while cooking dinner with a friend.



It might help to think of this as an experience that was compelling, interesting, motivating or fun; an activity from which you could not tear yourself away, that you did not want to end and couldn't wait to do again; a time when you were "in the zone", "swept away" or "in flow"; when you feel alive, energized and challenged.

The main thing is that the experience was engaging and supported learning.

*Look for peak energy, highlights. Where is the satisfaction most obvious? What are key adjectives used? What part is referred to again and again?*

What did you feel like when you were really engaged? What did it make you want to do?

When you felt really engaged during this activity, how did that affect your learning experience?

When you were engaged in the learning activity, what sorts of things did you do to keep it interesting, fun, challenging?

What specific things can you remember about the activity that made it engaging for you? What did you like the best about it?

How did you feel when it ended?

Tell me about the most engaging learning activity you've ever experienced that used technology.

What is it about technology that facilitates engagement?

Tell me about the most engaging learning activity you've ever helped to create or facilitate. This may include a learning activity or program that you helped to design or deliver at here at the bank or elsewhere.

How did the learners react to the activity? What kinds of things did they do, say?

What do you think made the activity engaging?

What did the learners do to help make it engaging?

How do you think the high level of engagement affected their learning experience?

What did it feel like to know that you helped to create that kind of high value learning and engagement?

What is it about this organization that facilitates/encourages learning - and how does that support engagement?

What is it about learning here that facilitates the generation of engagement?

**4. BREAK (15 minutes). 10:20-10:35**

List a logline for each story on the flip charts.

**5. DREAM. What might be. (1 hour, 10 minutes). 10:35 - 11:45**

**6. Invite the group to get up and use coloured sticky notes to brainstorm/list**

**all the outstanding features/values of the stories. (15 minutes).**

What made the stories engaging, memorable? Call these the Elements of Engagement.

**7. Dream about what an exceptionally engaging TML experience would be like. (15 minutes).**

Pick any one of these Elements of Engagement that really speaks to you - that you connect with - are excited about.

Write it down.

Go find a quiet place in the room. You can close your eyes, look out the window, or go for a walk.

I want you to take the next 15 minutes to imagine a technology-mediated learning activity here at the bank 5 years from now. Move beyond the status quo to dream about *what could be*.

Jot down notes or sketch key elements of this Dream. Be specific. Use vivid language.

Consider these questions while Dreaming. (List on white board or hand out).

- What is the activity like?
- What does it look like, sound like, feel like, smell like?
- What are the learners doing?
- Where are they?
- What are their reactions to the activity?
- How are they engaging with the activity?
- What is it about the activity that engages them?
- What is unique, special or different from today's activities?

**8. Share the Dreams in pairs, using the following questions for discussion. (10 minutes). (List on white board or hand out). *\*Could skip this.***

- Which Element from the brainstorm did you pick? Why?
- What is the learning activity like with more engagement? How is it different from existing activities?
- How do the learners react to this exceptionally engaging activity?
- What are you doing to make this happen?
- How do you feel as a creator of such an experience?
- What does it feel like to learn when you are deeply engaged?
- What does more engaged learning mean for the bank? What is the value? How is it reflected or demonstrated?

9. **Reconvene as a group and share highlights of the Dreams.** (15 minutes).
10. **Working all together, try to create a shared vision or Dream of exceptionally engaging learning at the bank.** (15 minutes).

Keep it positive but simple - don't get bogged down in words. This is more about feeling and energy.

You can represent the Dream any way you like. Try to keep it fun, simple, creative - a picture, poem, tableau, song, one word, pose, emotion.

11. **LUNCH BREAK. (45 minutes) 11:45 - 12:30**
12. **DESIGN. How it can be. (1 hour) 12:30 - 13:30**

This is when you will begin to structure the Dream and think about how to achieve it. What do you want your future learning activities to be like?

13. **Return to the list of Elements of Engagement. Try to short-list the key ones on the white board.** (15 minutes).

Consider the shared Dream and individual Dreams from the morning. Which Elements of Engagement do they reflect most strongly?

14. **Move on to consider the existing Design environment.** (15 minutes).

*• (May drop this if too confusing or tight for time).* Think about the existing environment in which you practice. Considering the big picture only (don't get too detailed), try to list the main Contextual Elements that make up your design environment. Use the coloured sticky notes or whiteboard to create the list. These Contextual Elements can be any parameters in your practice or organizational system. Examples include:

- People (learners, managers, peers, clients, suppliers, stakeholders).
- Technologies.
- Organizational structure.
- Organizational culture.
- Corporate policies.
- Finance.
- Other organizational groups (like HR).
- Existing beliefs/attitudes, etc.

15. **In pairs again, pick one Element of Engagement (and one Contextual Element) that interest you. Work together to try to draft a Design Statement.** (20 minutes).

A Design Statement is a bold declaration of what you want in the future - stated in the present tense as if it already exists. It bridges your Dream - with Elements of Engagement - to your real world Context.

It is your statement of design that describes the way your learning activities

*should be* - in relation to your world. It is a statement of possibility for the future. "At this bank, our technology-mediated learning engages ... because ..."

Make sure the Design statement is (list on flip chart:

- Provocative (challenges the status quo).
- Grounded (in Discover stories, experience).
- Desired.
- Affirmative.
- Bold.
- Participative.

16. **Come together as a group and share your Design statements. (25 minutes).**

We don't need consensus here. Different parts of the Dream and different Design statements will appeal to different people.

17. **BREAK. (15 minutes) 13:30 - 13:45**

18. **DESTINY. What will be. (1 hour, 15 minutes) 13:45 - 15:00**

An invitation to action. In the next hour and a half, we will focus on what you can and will do to realize the Dream. This is about more than delivery and implementation. Destiny goes beyond this workshop. It supports a change in perspective - you *can* design the learning you want - you *can* create the learning environment you want.

There is no best way to do this. Often what happens is that people who are passionate about implementing a particular aspect of the Design statement(s) step forward and join with like-spirited collaborators to make a plan.

19. **Revisit the Design Statements and your Dreams. Commit to action. (1 hour).**  
(Note these on the flip chart)

- What will it take to bring these to life?

What are three things you can do - individually or collectively to make the Design Statements a reality?

Think outside the box. Change habits. Push the boundaries of positive potential. Experiment in the margins.

Include baby steps - to see the results of your actions and experience the sense of progress.

- What are three things that you can ask others in the organization to do?
- How can you build support for your Dream in the organization?

Give AI away to everyone - colleagues, partners, learners. Begin to create an appreciative learning culture. Encourage collaboration and participation beyond this room. This is the secret to the success of AI. Stand back and watch what happens.

- What is one simple appreciative action that you can do tomorrow?

20. **Write these actions and strategies on the flip chart.** I will collect and forward them by the end of the day.

Commit to them. This is the time when you publicly declare your intended actions and ask for organization-wide support from every level.

21. **Wrap up. (15 minutes).**

This has been a whirlwind journey. We have travelled from *Discover* - what is - to *Dream* - what could be - to *Design* - how it could be - to *Destiny* - what will be.

**Close the Circle.**

## Appendix E. Sample Story from AIEW Study

### [ELEMENTS OF ENGAGEMENT IN BOLD SQUARE BRACKETS]

P9: *A few years ago, we did a family trip to the east coast. And in Halifax, went to Pier 21. Do you know it? So it was just soon after it had opened. So, Pier 21 was the Pier where immigrants came through when they arrived in Canada and were processed there. It, I believe, closed around 1970, was closed for years and then was restored and opened in around year 2000 or something. So, we went through and there's this **experiential element [interactive, authentic]** that you go through. So, they have all kinds of boards up with people's stories and historical information. They had immigration officers sitting at a desk, in costume. And there were all these elements throughout where you could experience was it was like, coming through and being processed as an immigrant, which was really effective. So, we **walked up to this desk [interactive]** and these very stern immigration officers are asking you for your papers **[social interaction]**. And you right away feel intimidated. And, you know, we **felt safe [safe]**, obviously. But you can imagine what an immigrant must have felt and especially if there are language barriers, they want to see your papers and you don't know if you're going to be accepted, or declined and sent back or what have you. And there was another area, and you walked down a hall and this is once you've been processed and approved or accepted to stay in the country. And they would put people onto trains and ship then across the country. So, they might send them to somewhere in Saskatchewan or Manitoba or whatever. So, they had this hall with a simulated train. And you would step into a train car. And there would be, there might be some statues, not statues but dummies or whatever the right word is, and a recording with somebody's story, a family's story **[cognitive conflict, meaningful]**. So, they would put people on these trains and they would get a piece of paper that they were being sent to, Yorkton Saskatchewan or something. And these people have no clue what that is or where that is and what's waiting for them. I found it very effective in being more able to empathize **[meaningful]** with what these people experienced. And how **terrifying and exciting [emotional]** and all the things they must have gone through ... Anyway, I found that the way they had ... set these museums up, there was this experiential element that I thought was really effective and really got you empathizing with those people's experiences.*

## Appendix F. Telephone Interview Questions

1. Were parts of the workshop more effective for you than others? Which ones? Why?
2. How could it be better next time?
3. Has this experience affected the way you address learner engagement? How so?
4. Has your experience in the workshop affected your work in other ways? How so?
5. Did the workshop reveal any other connections between engagement and learning that were new or helpful to you? If so, what are they?
6. What appreciative actions - if any - have you taken since the workshop?
7. At the workshop, the group made connections between learner engagement and larger issues such as time and mental space for learning. Could Appreciative Inquiry or anything you have experienced as part of this process help you address such challenges? How?

## Appendix G. Sample Telephone Interview Clip

[CODES FOR DATA ANALYSIS IN BOLD SQUARE BRACKETS]

RESEARCHER: *Did the workshop reveal any other connections between engagement and learning - things you hadn't thought about before you came in? Or things that we unexpected for you?*

P5: *For me, it all tied back to that appreciative inquiry, appreciative learning, that whole perspective. [AI] Because what we might think is engaging and what we might think is valuable to the learner isn't necessarily so. So, for me, the biggest part was being able to put that whole appreciative perspective into it. Because I always have this idea that's - this is what's engaging, this is what the learner would like because this is what I would like. And again, the same thing, you know, finding out about learning styles and asking the learner, to me, that was probably the biggest part of it all. [K] Does that answer your question?*

RESEARCHER: *It does. So, is that something that you didn't really do a lot of before; it wasn't really part of your practice?*

P5: *Yeah, it isn't really part of what we do. [ID] And the thing is is that that is what we want. We want the learners to see value in what we do - especially because we do it for them. We want them to see value in it and we want them to find that it is engaging from their perspective. But we've never really come out and asked them - what is engaging to you? And in a way where we actually find out from them - I don't think it's ever been done that way. [BP] So, it's always just been one of those things where we build it the way we know how to build it and we put it out there and we hope that people use it and like it and if they don't, well we do little things to tweak it here and there and hope it works. And then, soliciting the feedback, our feedback questions are very - did you find this helped you with your job? Well, it can also bring a negative response to it. So now, we can pose it as - how did this help you with your job? Make it a positive thing. [AI] And then find out the parts we did really well and apply that in other places. [BP] So, it's just looking at it from a different point of view.*



## Appendix H. Pre-Workshop Survey Questions

Welcome to the Pre-Workshop Survey for the graduate research project: Appreciative Inquiry: Designing for Engagement in Technology-Mediated Learning.

Please read the short information sheet about the research project before taking the survey. You can read it [here](#).

This survey has 15 questions and should take 15-30 minutes to finish.

Please complete and submit it at least one day before the Workshop, which is scheduled for Thursday March 2, 2006.

Try to answer all the questions as completely and honestly as you can. If you need to stop before you have finished, you can click on the "Exit this survey" link in the top right hand corner. Your responses will be saved. When you have time to come back to the survey, you'll be able to pick up where you left off.

If you have difficulties or would like more information about the study, please contact me: Denise Withers [withers.sfu@mac.com](mailto:withers.sfu@mac.com)

1. Please enter the participant code provided to you for this research project.
2. How long have you worked in the learning or education field?
3. How long have you been with this bank?
4. Select any of the following that describe the work you do.
  - Interaction Design
  - Content creation
  - Testing
  - Media production (graphics, video, audio, animation)
  - Programming / Technical Implementation
  - Management
  - Research
  - Instructional Design
  - Teaching / Facilitating
  - Other (please specify)
5. Please describe briefly your current Instructional Design process. (For example - Analysis, Design, Development, Implementation, Evaluation).
6. Does your team have a working definition of "engagement" as it applies to learning that you use in your Instructional Design process?  
Yes / No
7. Please provide your team's working definition of "engagement" here.
8. How would you personally define "engagement" with respect to learning?
9. How important do you think it is to engage your learners?  
Not important. Somewhat important. Important. Very important. Imperative.
10. Does your team have an explicit or deliberate strategy for addressing learner engagement in the design process?

Yes / No

11. Please describe briefly your team's strategy for addressing learner engagement here.

12. Tell me briefly about any connections you believe exist between engagement and learning, with respect to learners at your organization.

13. From the following list of techniques and technologies, please select FIVE (5) that you believe are most effective at engaging learners.

- Rewards.
- Story and scenarios.
- Virtual reality.
- Interactivity.
- Performance measures and requirements.
- Rich media - video, audio, animation, music, sound effects.
- Content that is meaningful to the learners.
- Avatars and animated "coaches".
- Collaboration.
- Game-play.
- Humour.
- An existing interest in the topic.
- Novelty.
- Learner control of the learning experience.
- Large screens.
- Other (please specify)

14. Which of these techniques or technologies do you currently use in your Instructional Design practice?

Please choose ALL that apply.

- Humour.
- Rewards.
- Avatars and animated "coaches".
- Large screens.
- Story and scenarios.
- Content that is meaningful to the learners.
- Collaboration.
- Game-play.
- Novelty.
- Performance measures and requirements.
- Learner control of the learning experience.
- Rich media - video, audio, animation, music, sound effects.

- An existing interest in the topic.
- Interactivity.
- Virtual reality.
- Other (please specify)

15. What do you think would make your technology-mediated or online learning activities more engaging?

Thank you! This is the end of the survey.

I'd like to thank you for your time and support of this research project.

For the up-coming workshop, please take a few minutes to think about learning activities you've experienced that were highly engaging. It might help to think of these as experiences that were compelling, interesting, motivating or fun; activities from which you could not tear yourself away, that you did not want to end and couldn't wait to do again; times when you were "in the zone", "swept away" or "in flow".

These may include learning activities or programs that you helped to design or deliver here at the bank. They may also include events that occurred at any time in your life during which you were learning. They could be from formal or informal learning experiences, such as taking a course on graphic design, watching polar bears wrestle at the Zoo, or learning a new culinary skill while cooking dinner with a friend. The main thing is that the experiences were engaging and supported learning.

## Appendix I. Post-Workshop Survey Questions

Welcome to the Post-Workshop Survey for the graduate research project:

Appreciative Inquiry: Designing for Engagement in Technology-Mediated Learning.

Thank you for taking time to complete this final activity.

You'll notice that many of these questions may seem similar to those you answered before the workshop. Please answer them all again, as they apply to your work today. You should be able to finish the survey in 15-30 minutes.

I'd appreciate it if you could complete and submit the survey by Wednesday, April 12, 2006.

Try to answer all the questions as completely and honestly as you can. If you need to stop before you have finished, you can click on the "Exit this survey" link in the top right hand corner. Your responses will be saved. When you have time to come back to the survey, you'll be able to pick up where you left off.

If you have difficulties or would like more information about the study, please contact me:  
Denise Withers withers.sfu@mac.com

1. Please enter the participant code provided to you for this research project.
2. Does your team have a working definition of "engagement" as it applies to learning that you use in your Instructional Design process?

Yes / No

3. Please provide your team's working definition of "engagement" here.
4. How would you personally define "engagement" with respect to learning?
5. How important do you think it is to engage your learners?

Not important. Somewhat Important. Very important. Imperative.

6. Tell me briefly about any connections you believe exist between engagement and learning, with respect to learners at the bank.

7. Tell me briefly about any connections you see between learner engagement and the bank's corporate goals.

8. Has your Instructional Design process changed at all since the workshop?

Yes / No

9. In what way(s) has your Instructional Design process changed since the workshop?

10. From the following list of techniques and technologies, please select FIVE (5) that you believe are most effective at engaging learners.

- An existing interest in the topic.
- Large screens.
- Rich media - video, audio, animation, music, sound effects.
- Avatars and animated "coaches".
- Rewards.
- Novelty.
- Humour.
- Story and scenarios.
- Interactivity.
- Virtual reality.

- Collaboration.
- Game-play.
- Performance measures and requirements.
- Learner control of the learning experience.
- Content that is meaningful to the learners.
- Other (please specify)

11. Which of these techniques or technologies do you currently use in your Instructional Design practice? Please choose ALL that apply.

- Collaboration.
- Novelty.
- Story and scenarios.
- Performance measures and requirements.
- Humour.
- Content that is meaningful to the learners.
- Interactivity.
- Rewards.
- Learner control of the learning experience.
- Large screens.
- Game-play.
- An existing interest in the topic.
- Avatars and animated "coaches".
- Rich media - video, audio, animation, music, sound effects.
- Virtual reality.
- Other (please specify)

12. Which of the following action items suggested during the final stage of the workshop have you completed?

- Give learners more control over their learning activities.
- Ask learners for positive and appreciative feedback on learning activities.
- Design flexible learning paths into activities.
- Increase the amount and quality of interactivity in learning activities.
- Conduct impromptu surveys and face-to-face discussions with people you meet to discover what they find engaging.
- Share the Design Statement with others.
- Research how collaboration is being used to enhance engagement in learning activities in other parts of the bank, such as in the virtual classrooms.
- Establish an on-going process to invite input and participation from back-end developers and other team members into the Instructional Design process.
- Share knowledge and experiences about learning and Instructional Design with colleagues.
- Create a web page for sharing the Design Statement and other resources related to the workshop.

- Discuss the Design Statement with others.
- Ask learners and designers what they think is fun, delightful and engaging.
- Create an Instructional Design forum or working group.
- Invite feedback on the Design Statement.
- Others (please specify)

13. Which of the following action items suggested during the final stage of the workshop do you intend to complete?

- Give learners more control over their learning activities.
- Invite feedback on the Design Statement.
- Establish an on-going process to invite input and participation from back-end developers and other team members into the Instructional Design process.
- Conduct impromptu surveys and face-to-face discussions with people you meet to discover what they find engaging.
- Discuss the Design Statement with others.
- Increase the amount and quality of interactivity in learning activities.
- Ask learners and designers what they think is fun, delightful and engaging.
- Design flexible learning paths into activities.
- Ask learners for positive and appreciative feedback on learning activities.
- Share knowledge and experiences about learning and Instructional Design with colleagues.
- Create a web page for sharing the Design Statement and other resources related to the workshop.
- Create an Instructional Design forum or working group.
- Research how collaboration is being used to enhance engagement in learning activities in other parts of the bank, such as in the virtual classrooms.
- Share the Design Statement with others.
- Others (please specify)

14. What other actions, if any, do you intend to take to enhance engagement in your learning activities?

15. Besides access to greater budget resources, what do you think could help you make your learning activities more engaging?

16. Has the way you do your job changed at all since the workshop?

Yes / No

17. In what ways has the way you do your job changed since the workshop?

18. What do you think is the impact of this change?

## Appendix J. Key Survey Summary Data

Q4: How would you define "engagement" with respect to learning?

### RESPONSES

|     |                                                                                                                                                                                                                                                                                                      |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P2: | To quickly capture and hold the learners interest, who exist in a time restraint [sic] environment. (NB. Pre and post-workshop responses were identical).                                                                                                                                            |
| P4: | <i>Pre-workshop:</i> Engagement - capturing and maintaining learners interest.<br><i>Post-workshop:</i> no response                                                                                                                                                                                  |
| P5: | <i>Pre-workshop:</i> the ability to draw in a learner using interesting and meaningful learning experiences; active participation by the learner in all aspects of a learning program<br><i>Post-workshop:</i> providing a safe environment in which a learner can be challenged, have fun and learn |
| P7: | <i>Pre-workshop:</i> I think engagement is to help someone to be part or to take part of something.<br><i>Post-workshop:</i> no response                                                                                                                                                             |
| P8: | <i>Pre-workshop:</i> learner is self-motivated, learning is relevant and meaningful, positive interactions<br><i>Post-workshop:</i> Learner values learning, finds it both interesting and relevant, self-motivated - actively seeks to benefit from learning                                        |
| P9: | <i>Pre-workshop:</i> Learners appreciate the value of the learning, are motivated to get the most out of it and apply learnings [sic] to future activities/ improve performance.<br><i>Post-workshop:</i> no response                                                                                |

**Q. Tell me briefly about any connections you believe exist between engagement and learning, with respect to learners at the bank.**

**RESPONSES**

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P2 | <p><i>Pre-workshop:</i> Quickly capturing and holding the learners' interest will assist the transfer of knowledge.</p> <p><i>Post workshop:</i> (same).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| P4 | <p><i>Pre-workshop:</i> Engagement is very important for learning to occur. If learners are not engaged then they may not be able to fully appreciate and grasp the learning that is occurring [sic].</p> <p><i>Post workshop:</i> I think that there is definitely [sic] connections that exist between engagement and learning at BMO. We strongly feel that engaging our learners is top priority and it makes for a positive [sic] learning experience. After - learning is a top priority.</p>                                                                                                                                                                                                                                                                                                                                     |
| P5 | <p><i>Pre-workshop:</i> engagement is essential for learners at BMO since the programs available to them either creates the foundation of their work environment or enhances their current level of knowledge; they can read all sorts of information but if they don't understand why they are learning it or how to apply the learning in a meaningful way then the effort to create programs seems useless</p> <p><i>Post workshop:</i> engagement in learning tends to occur more in a face-2-face environment due to the nature of the instructional method with online learning, it is more difficult to achieve with a limited budget and therefore resources. we attempt to achieve engagement in learning by offering a variety of learning techniques that provide interactive experiences within the learner's workgroup</p> |
| P7 | <p><i>Pre-workshop:</i> NA</p> <p><i>Post workshop:</i> no response</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| P8 | <p><i>Pre-workshop:</i> learning culture is evident -- even when you don't work for the IFL - that's a good start for engagement - the investment of the IFL itself speaks to the importance of engaging learners in an immersive way very good at accomodating [sic] learners with disabilities - that's certainly an important way to engage where budget allows, we always go for the fun and creative stuff that we can.</p> <p><i>Post workshop:</i> directly related to level 1 assessments also improved retention &amp; performance</p>                                                                                                                                                                                                                                                                                         |
| P9 | <p><i>Pre-workshop:</i> F2F learning - (likeable) facilitators are consistently ranked highly. Excellent facilitators and/or learners appreciate the personal connection and relevance fac can bring. Learners are demotivated (to invent a word): if learning is not at right level or targeted to their role, if change mgmt has not effectively demonstrated the value/need for the change, if there is not enough interaction and/or the wrong type of interaction. Very important=value of learning to their job.</p> <p><i>Post workshop:</i> no response</p>                                                                                                                                                                                                                                                                     |



**Q. What do you think would make your technology-mediated or online learning activities more engaging?**

**RESPONSES**

|    |                                                                                                                                                                                                                                                                                                               |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P2 | <i>Pre-workshop:</i> enhanced scenario based simulations.<br><i>Post-workshop:</i> More funding                                                                                                                                                                                                               |
| P4 | <i>Pre-workshop:</i> Interactivity.<br><i>Post-workshop:</i> More funding                                                                                                                                                                                                                                     |
| P5 | <i>Pre-workshop:</i> increased use of multi-media technologies increased use of scenario-based learning increased use of interactive learning events to reinforce the learning<br><i>Post-workshop:</i> interactive learning paths                                                                            |
| P7 | <i>Pre-workshop:</i> Make more interesting activities (simulations)<br><i>Post-workshop:</i> no response                                                                                                                                                                                                      |
| P8 | <i>Pre-workshop:</i> fast forward / read only buttons for slow talking presentation dialogue playful activities socialization.<br><i>Post-workshop:</i> Longer timelines to develop learning greater understanding of the demand/benefits of more engaging learning (e.g. the ROI to share with the business) |
| P9 | <i>Pre-workshop:</i> richer media, gaming. Learners need to be able to make the link from what they're learning to what's required of them on the job to enable them to transfer learning to the job.<br><i>Post-workshop:</i> no response                                                                    |

## **Appendix K. Group Evaluation Questions**

1. What do you think worked well in this workshop?
2. How could this workshop be better?
3. What has been the most memorable or effective experience you've had in this process so far?
4. What are you taking away from the workshop?
5. Were parts of the workshop more effective for you than others? Which ones? Why?
6. How will you be able to use your experience in the workshop in your Instructional Design practice?

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