Leapfrogging Pedagogy: A Design Approach to Making Change in Challenging Contexts

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Abstract: At a time of substantial change, globalization, and ubiquitous access to information, educators struggle to change even the most basic aspects of their classrooms. This is especially true for those in challenging contexts where many perpetuate the "mind numbing" practice of rote instruction. This paper describes a collaborative partnership among academics in Canada and East Africa as they develop Innovative Learning Centres (ILC) in their respective institutions to leapfrog pedagogy in imaginative ways, drawing on experiential learning and the Maker Movement in a studio based learning environment.

Keywords: Transformative pedagogy, Maker Movement, design thinking, studio based learning, challenging contexts

1. Background

While educators have always worked in challenging times and varied contexts, it is acknowledged that currently society is in an unprecedented time of substantial change due to a variety of circumstances including globalization and ubiquitous access to information. As other sectors seem to adopt innovative practices and embrace change, educators tend to struggle to change even the most basic aspects of classroom practice, and it is well recognized that teachers typically teach in the ways in which they themselves were taught (Britzman, 1991). As Dewey noted, *"If we teach today as we taught yesterday, we rob our children of tomorrow."*

Teachers working in challenging contexts face even a more daunting task. Crichton and Onguko (2013) define challenging contexts as settings in which individuals, due to a variety of circumstances, conditions or environmental constraints, do not have

- Access to consistently available and affordable electricity

- Access to reliable, unfiltered or uncensored Internet

- Access to previous formal learning and / or opportunities for ongoing formal learning that support individual learning needs

- Access to non-formal, yet appropriate learning opportunities

- Access to or participation in learning activities due to cultural or religious reasons

- Access to transportation and mobility

- Access to prior learning

- Access to other situations linked directly to poverty (health, fees, low wages, inappropriate clothing, etc.).

Unfortunately, that list is not exhaustive as additional challenges surface with climate change, social / economic upheaval, and other geographic / social contextual factors. In a recent conversation with educators in Mombasa, Kenya[1], additional access issues were identified. These include a lack of access to:

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[1] The author shared the initial list with students in a certificate course offered by Aga Khan University, Institute of Educational Development, East Africa. Students were then asked to brainstorm conditions / constraints that should be added.

- Clean water and adequate sanitation

- Fair and just leadership

- Adequate nutrition and safe food supply

- Safe environment free from hostilities and violence

- Support for the disabled.

The identified conditions are all too commonly experienced in almost all parts of the world today with varying degrees of impact or intensity. The term challenging contexts is used throughout this paper, suggesting it is much more respectful and specific of the people and their situations than more commonly used labels such as *developing countries* or *third world environments*. Challenging contexts suggests these situations exist, in vary degrees, in neighborhoods from New York to London, Karachi to Mombai, from rural settings globally, and the ever increasing refugee camps where generations are forced to live out their lives.

Addressing the challenges identified above requires thoughtful, considered initiatives that first recognize the specificity of constraints and then attempt to ameliorate them by providing simple, relevant, contextual solutions that minimally disrupt the peoples' lives and involve all stakeholders in design. This approach aligns with Schumacher's definition of appropriate technology – an intervention that is minimally disruptive but does include the end users in the design rather than delivering a pre-done, out of context solution on the people.

A recent article entitled "How Jeffrey Sachs Failed to Save Africa" is a case in point (2013). Wente reviews Nina Munk's recent book, *The Idealist: Jeffrey Sachs and the Quest to End Poverty* (2013). Munk explains, "Recent history is littered with the wreckage of grand plans to save Africa. So why should we care about another? … Promises that can't be kept invariably result in disappointment, cynicism and donor fatigue." Munk's criticism is directed at Sach's Millennium Village Project, which she brands as too technocratic and prescriptive. Wente's review departs from Munk's thesis by concluding, "… things are gradually improving. And African themselves are increasingly taking the lead." This paper builds pragmatically on that hope, suggesting that it is through collaborative approaches with academics and educators, local and global, a better future for education can be imagined that is inclusive, respectful, and contextually relevant - one that is actually developed within the challenging context itself.

2. Introduction

Sir John Daniel (2010) explains that education in the 21st century should lead to the "nurturing of human capabilities that allow [students] the freedoms to lead worthwhile lives" (p. 6). He stressed that it should not merely train individuals to become the human capital required for economic production, recognizing the importance of fostering personal agency, creativity, imagination, and sense of hope and possibility. Further, he suggests contemporary education must address the issue of school retention and quality by working to enhance student engagement and make classwork more relevant and interactive.

Increasingly, educators are learning that student engagement is more than time on task and academic success. In 2007, the Canadian Education Association (2013) initiated in a multi-year research study to explore student engagement entitled, *What Did You Do in School Today?* The study gathered information from approximately 60,000 students in more than 18 schools districts across Canada. Specifically, the study popularized a multidimensional framework of student engagement that includes social, institutional and intellectual engagement. The dimension of intellectual engagement includes two measures: 1) Intellectual Engagement (a composite of rigor, relevance, interest and motivation, and effort) and 2) Instructional Challenge (a summary of students' experiences of learning based on Csikszentmihalyi's theory of *Flow).*

Findings suggest educators are generally comfortable in their understandings and practices concerning academic engagement (the learning of skills), but they are less skilled in enacting intellectual engagement as

expressed in instructional challenges that foster curiosity and imagination. These findings are significant for this paper as this gap is especially present in schools located in challenging contexts where one typically finds teacher directed, rote learning. Social engagement and active learning are typically missing in those schools as teachers wrestle to simply cope with overcrowded conditions with few, if any resources or supports.

Therefore, the overarching question guiding the work shared in this paper is how might the development of an Innovative Learning Centre (ILC) in an Institute of Educational Development or a Faculty of Education, help educators in challenging contexts improve pedagogy; foster academic, intellectual and social engagement; and encourage teachers and their students to escape from the "deadening tradition of rote learning" (Daniel, 2010, p. 31). A related question is how might a change in pedagogy help educators imagine contextually and culturally relevant innovations that might improve classroom practice in both contexts?

This paper describes an ongoing, collaborative partnership among academics as they develop an Innovative Learning Centre (ILC) in each of their two institutions. The author designed the initial ILC at the University of British Columbia and is currently working with her former doctoral student and his colleagues to develop an ILC in his institution within the Institute of Educational Development – East Africa (IED, EA), which is part of the Aga Khan University.

Crichton (2012) explains the role of an ILC in her institution is to bring academics, educators, and industry together to imagine and create transformative pedagogical practices, using appropriate technologies in a design based, research informed, studio based learning environment. In challenging contexts, she suggests an ILC could be used to leapfrog existing paradigms constraining innovative practice. Leapfrogging, in the context of sustainable development, is a term used to describe the accelerated development of an intervention by "leaping over" conventional approaches and/or technologies and moving directly to a more appropriate, and often more advanced, one. An often-cited example is found when regions skip over the installation of landline telephony and move directly to mobile phone connectivity, leapfrogging the lack of phone access by embracing the newer, more appropriate mobile phone solution.

A pedagogical example of leapfrogging in challenging contexts would be the adoption of an inquiry approach to teaching and the authentic use of the environment as a teaching resource. Rather than spending time and money trying to catch up by equipping schools in configurations favouring a teacher-centric delivery, the ILC suggests finding regional partners and developing resources, tools and strategies that address contextual issues with local solutions. This approach would help leapfrog traditional classroom practices, both the pedagogy and physical design of the actual learning environment, allowing educators to embrace the change suggested in the literature, including UNICEF's Child-Friendly School (CFS) standards (Irvine & Harvey, 2010).

CFS is one example of an educational reform initiative developed for challenging contexts, and while there are many others, its standards provide a valuable framework for the development of an ILC in East Africa. The CFS standards were developed to offer specific ways to accomplish the inter-related six Education For All dimensions expressed in the United Nations Millennium Development Goals (United Nations, 2010):

- Expanded early childhood care and development (ECCD) provisions;
- Universal access to and completion of primary or basic education;
- Improved levels of learning achievement;
- Reduction of adult illiteracy;
- Expanded basic education and training for youth and adults; and
- Enhanced life-skills for sustainable development through traditional and modern communication (p. 3).

Child-Friendly Schools encourage a strong connection between schools and the communities they support by providing greater access to an inclusive learning environment. They provide a "child-centred pedagogy fostering more independent thinking, entrepreneurial skills, and professionalism among teachers and attention to the all-round development and welfare of individual children" (p. 4).

The United Nations recognizes that achieving the CFS standards of practice will not be easy, and more tacit agreement in principle rather than meaningful actual practice will probably happen. However, universities must play a major role in championing these standards by acknowledging them in their curricula and developing innovative learning centres where faculty, students, and other participants could come and imagine, develop, test, and try new ideas, tools and approaches. Interestingly, the seven quality areas identified by the CFS initiative create a structure for thinking about ILC projects by questioning how educators might:

- Create friendly, rewarding and supportive learning atmospheres in their schools

- Support cooperation and active learning as an integral approach to teaching and learning activities

- Ban physical punishment and violence and institute positive ways of interacting

- Stop bullying, harassment and discrimination

- Develop creative activities and imaginative learning opportunities

- Connect school and home life by involving parents in school activities

Promote equal opportunities and participation in decision making for all members of the school community – school leaders, teachers, students and parents (p. 5).

Developing viable answers to these quality areas, that are both sustainable and contextual relevant, will take creative thinking, imagination, and design thinking. Educators know there is no shortage of policy documents, initiatives, and good ideas about education reform; what is in short supply are innovative practices that are sustainable, scalable and relevant to educators in challenging contexts. The innovation behind the ILC approach rests in the collaborative partnership of academics, educators, and industry in a reciprocal and iterative approach to the design and development of educational tools, software and interventions. This partnership can help inform policy and product design by situating the work within school contexts and collaborating with industry in their early stages of product design. Post secondary institutions, specifically those with a Faculty of Education, are uniquely positioned to facilitate an interprofessional dialogue among partners, drawing the best from each sector. An ILC can bring these individuals together to imagine the future of learning by offering and co-creating images of changed practices – both the physical configuration of learning spaces as well as innovations in the design and development of culturally relevant / respectful resources and tools.

While research suggests educational reform and school change do not happen easily, and "there is no easy science or set of rules for enabling education transformation," (Nicolai, 2009, p. 29) design thinking might offer promise. Design thinking is "… a discipline that uses the designer's sensibilities and methods to match people's needs with what is technologically feasible and … viable … " (Brown, 2013). The Institute of Design at Stanford University is leading much of the innovation around design thinking through the establishment of their design school (http://dschool.stanford.edu/) and the development of significant resources such as *dSpace* (Witthoff & Doorley, 2012), which focuses on the physical configuration of rooms and equipment to foster collaboration and creativity as well as methods to facilitate innovative thinking (Stanford University Institute of Design, 2013).

This paper suggests that if we want to change educational practices, we need to think and act differently, to design a preferred future for educators and their students. As Einstein (1931) aptly said, "The definition of insanity is doing the same thing and expecting a different result."

3. Thinking behind the ILC Design

In Fall 2011, the plan for the initial ILC, located at the University of British Columbia's Okanagan campus (http://blogs.ubc.ca/centre/), was approved. The ILC was granted university centre status so it would be eligible for external funding and a director could be appointed and an advisory committee formed. The ILC was built on the principles guiding 21st century learning (Trilling & Fadel, 2009), studio based learning (Lackney, 1999), and Dewey's original work describing experiential learning (1938).

Dewey argues for "the importance of the social and interactive processes of learning," noting the challenge is to create learning experiences that are "fruitfully" organized in a progression that guide students' learning. He states "Educators must think about the experiential continuum—[a] continuity of experiences" (p. 32). Dewey goes on to critique traditional school structures, suggesting they are "insular environments" that rarely interact with the world and therefore lack the potential for an understanding of the world and a context for richer learning opportunities, noting that everything must have a context in order to be an educational experience.

Setting the stage for our contemporary thinking about authentic learning and active engagement 75 years ago, Dewey suggested students must feel a sense of purpose in their learning to avoid mental slavery, explaining there "no defect in traditional education greater than its failure to secure the active cooperation of the pupil in construction of the purposes involved in his studying" (p. 28). Dewey was particularly concerned with the role of the educator in providing the continuity of experiences required for a thoughtful education, and he felt the difficulty in doing so would rest with the educator's ability to continually adapt subject matter to the growing sphere of individual experiences as students progress. Of course, this concern is addressed beautifully by Vygotsky's notion of the zone of proximal development (1978) which suggests students can do more with the guidance / scaffolding of a timely mentor with experience.

Contemporary writers such as Trilling and Fadel (2009) suggest learners need opportunities to learn in authentic and social settings; create mental models, work with their multiple intelligences, and develop internal motivation. They draw on brain research, suggesting it offers an important revolution in our understanding of how people learn" (p. 30). They describe authentic learning as the context or the condition in which students learn, noting "the people, objects, symbols, and environment, and how they all work together to support are much more influential than previously thought" (p. 31). They suggest students need "more real-world problem solving, internships or apprenticeships in real work settings, and other authentic learning experiences that make learning last and be useful" (p. 31).

The creation of mental models allows learners to evolve their thinking over time. While initially a child might consider the boundaries of their world to be their own neighborhoods, in time, through the use of tools like Google Earth, maps on school walls, or globes, they can begin to understand their place in a larger global community. It is through the creation of these models that we use our learning to shift our thinking and expand our understanding through both virtual and physical representations. Using visualization software (i.e. Google Earth, Gephi - https://gephi.org), emerging multimedia tools, and physical models made from found objects in the natural environment, we support the development of our multiple intelligences when we personalize representations of our individually constructed learning. Gardner's work (1983), while continually mis-referenced to suggest that we have one dominant intelligence, explains the need to hone our multiple and varied intelligences to support our diverse learning styles and learning activities. Use of Universal Design for Learning approaches to support students as they develop their own knowledge are added by the thoughtful and appropriate uses of technologies (Rose, Meyer, Strangman, & Rappolt, 2002).

Trilling and Fadel (2009) note internal motivation is critical for active and engaged learning, suggesting it is fostered when people, "have an emotional connection to what is being learned – a personal experience or question" (p. 33). Increasingly we are seeing emotional connections being supported through online social interaction, but we need to remember that in-class conversations, discussion groups with community experts and elders, promote active, engaged learning, both informally and formally.

Drawing on Lackney's description of a studio based learning environment, the ILC at UBC hosts a physical "classroom" designed to disrupt educators' notions of what a learning environment might look like. The space is called a learning lab rather than classroom to further signal changed practice. While there is space for 40 people, there are NOT 40 spaces available for everyone to be doing the same thing. Please see Section 1.6.1 Work Space Layout for Learning Lab for a more detailed description and the ILC blog (http://blogs.ubc.ca/centre/2013/08/23/a-little-tour/) for images of the actual space.

As stated earlier, the ILC is built on the principles of experiential learning. ILC is a studio based learning environment that encourages experimentation and engagement with materials and resources to make personal meaning, and by inviting academics, educators, and industry into the learning space, the authentic, contextual learning that Dewey, Papert, Trilling and Fadel and others describe is possible. Those working in the ILC are encouraged to tinker and explore together and design new ways of knowledge building. John Seely Brown describes tinkering as constructing / playing / wrestling with objects by appropriating, transforming and personalizing them for one's own learning and practice (Brown & Duguid, 2000). Inherent in the ILC design is a space to construct – build, collaborate, modify, and test ideas. It is designed to draw on the best of Papert's notions of constructionism (Resnick, 2012). "In Papert's view, children should be able to design, create, and express themselves with new technologies" (p. 42). Inexpensive alternatives to computers, such as Cambridge's Raspberry Pi (Mullins, 2012) allows children to do more 'than just interacting with animations, games, and simulations, children should learn to program their own animations, games, and simulations—and, in the process, learn important problem-solving skills and project-design strategies" (Resnick, 2012, p. 42). Other promising technologies include Ardruino (http://www.arduino.cc/) and littleBits (http://littlebits.com/) - both allow children and educators explore robotics, circuits, and design thinking with minimal equipment and prior knowledge.

The ILC also incorporates ideas from the Reggio Children's Network that offer ways of thinking about one's learning about learning in terms of authentic questioning, documentation and exploration of the local environment (Reggio Children, n.d.). While the Reggio approach uses digital tools to support children's work and create ways to document learning in significant and very visual ways, it fundamentally provides support for using one's environment as an additional teacher and rich, place based resource for teaching and learning.

The recent enthusiasm surrounding the Maker Movement (Martinez & Stager, 2013a) offers further evidence of / opportunities for experiential, hand on learning. The maker movement "overlaps with the natural inclinations of children and the power of learning by doing. The active learner is at the center of the learning process, amplifying the best traditions of progressive education" (Martinez & Stager, 2013b), and at the time of writing this paper, the ILC has been funded to host one of the first Maker Days for educators.

4. One Design – Two Contexts

Imagining a studio based design space within a Faculty of Education is a lovely challenge. To get it right, one must consider the types of environments in which creativity and imagination might be fostered while considering the types of pedagogical approaches that might enable learners from various contexts and backgrounds to come together and collaborate. Since the very beginning of the design process for the ILC at UBC O, the physical space has been conceptualized as a learning lab – a place for people from a variety of ages and stages and a range of professions, vocations, avocations and experiences to come together and form a knowledge building collective for innovative thinking. In conversations with the very supportive dean of the

Faculty of Education, it was agreed that in a time of substantial change, globalization, and ubiquitous access to information faculties of education needed to step up and lead changed pedagogy and model alternative and innovative learning environments. This approach parallels Thomas and Seely Brown (2011a,b) call for a new culture of learning based on the following assumptions:

- The world is changing faster than ever and our skill sets have a shorter life

- Understanding play is critical to understanding learning

- The world is getting more connected that ever before – can that be a resource?

- In this connected world, mentorship takes on new importance and meaning

- Challenges we face are multi-faceted requiring systems thinking and socio-technical sensibilities

- Skills are important but so are mind sets and dispositions

- Innovation is more important than ever – but turns on our ability to cultivate imagination

- A new culture of learning needs to leverage social and technical infrastructures in new ways

- Play is the basis for cultivating imagination and innovation.

Play and tinkering are the core business of the Innovative Learning Centre. If academics, both faculty and graduate students; educators, both preservice and K-20, working in both formal and informal settings; and industry are to thrive, they must be together. To quote Einstein (1931), "We can't solve problems using the same kind of thinking we used when we created them." Using the Child-Friendly School's seven quality areas as a starting point for design thinking, those working in the ILC can begin to create tangible options to move beyond rote teaching and begin to support inspired and engaged thinking and learning.

The ILC contains spaces to support the creative design cycle – imagining, creating, playing, sharing, and reflecting … an iterative, Möbius strip of design thinking. The ILC has both a physical and virtual space. The virtual space will continue to morph and grow, and currently exists as a blog (http://blogs.ubc.ca/centre/) and a Twitter account (#UBCILC). Apart from the learning studio, there is a breakout room that accommodates up to eight people and can be used to host meetings and collaborative sessions with industry and education colleagues. Additional space is required for storage of IT equipment as the success of the ILC is its ability to be "off the grid" of the university's network regulations and standardized software and hardware requirements.

While the learning lab incorporates spaces to support the design cycle (see Figure 1), it is recognized that users of this space will work where they feel most comfortable and the most appropriate tools are available. To paraphrase Sullivan's notion, form follows function and the thinking behind the design of the ILC suggests physical spaces can invite creativity and imagination. Based on comments from users of ILC at UBC, the physical space does encourage changes practices, but individual instructors are the gatekeepers. Surveys have been given to groups using the ILC for the last six months. The majority of instructors / facilitators have embraced the affordances provided within the ILC, and one instructor has wrestled to re-arrange the furnishings to resemble what she termed "a real classroom." A significant finding from this initial study of 300 users is access to the space must be voluntary, as instructors assigned to the space may not be prepared to change their practices to function within a studio-based environment. What was confirmed by the survey findings was that an entirely different pedagogical approach needed to be developed to encourage risk taking and creativity and create learning opportunities that fostered the creative design cycle illustrated in Figure 1.

In December 2012, the design for a second ILC, situated in Aga Khan University - Institute of Education Development (AKU,IED) in Dar es Salaam, Tanzania, was proposed. This paper reports on the design and development of the two ILC spaces, focusing on the Tanzanian model and will share initial thoughts as to how the ILC might support academic, education, and industry partners leapfrogging current practices and develop learning innovations to encourage pedagogical change in challenging contexts.

4.1 Work Space Layout for Learning Studio
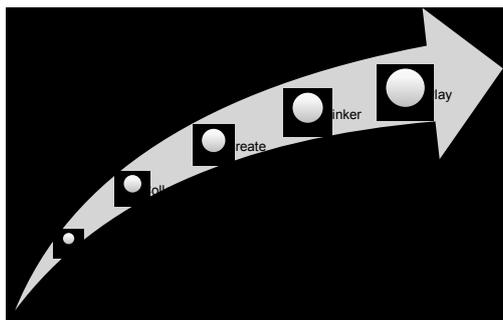
Figure 1: Creative Design Cycle - ILC

Figure 1 suggests five specific areas within the learning lab. The area to encourage *Imagination* should occupy about a quarter of the room. It should be furnished with soft seating to support informal conversations. Where possible, the furniture should be locally sourced and easily moved to accommodate different activities and groupings. Cushions should be comfortable and made from local fabric to set a regional tone for the room (e.g. in Tanzania local wooden furniture covered with *kitenge* cloth). This area is designed for approximately eight people at a time. Writeable walls should surround the seating area so people can brainstorm and create images their ideas. These walls can be created using chalkboard over existing smooth walls. Graphic facilitation techniques should be taught to foster visualization skills, and coloured chalk should be provided to make the illustrations vivid and dramatic. People can use their cell phone cameras to capture / document their ideas and share them among the group.

The *Collaboration* area utilizes the majority of the learning lab. There could be up to seven wooden tables, and stools rather than chairs should be used to encourage people to get up and move around – the seating should not be too comfortable or too fixed. The tables can be pulled together for large collaborative activities or kept separate, seating groups of three people. The addition of a white painted wall in this area serves as the projection screen, while the bulk of the wall area surrounding this area, as described in the Imagination paragraph above will be painted black so people can write on it with coloured chalk.

The area for *Creating* occupies one wall of the studio space. There should be four wall mounted computer stations (computers with large screen displays). The counter surface should be continuous so it is also a workspace. Wireless mice and keyboards are required for easy of sharing amongst participants and to support the use of the table top for project activities.

Tinkering / testing can be done using relatively easily to build iClass table (https://www.cushing.org/iclass) or gesture table (http://blogs.ubc.ca/centre/2013/04/23/gesture-table/) to support the use of a Leap Motion controller. An interactive table can run on open source software or Air Space apps and can be easily made with fairly reasonable components. It is a horizontal version of an interactive whiteboard. Four people can sit around the table to tinker and test their ideas and work.

Of course, *Play* will take place throughout the room. It is assumed that people will move from location to location depending on the aspect of a task on which they are grappling. Obviously, faculty using this learning lab space will need to change their pedagogy to embrace the notion of knowledge building and creative design for learning.

The learning lab is design to accommodate forty people which is consistent with the stated class size of many K – 12 classrooms. While it is well known that many classrooms in challenging contexts may have upwards to 60 or 70 students, the ILC is designed to accommodate 40 people with the potential to have small stools and floor seating on mats to accommodate more. The learning lab is to be used to imagine innovations in pedagogy and

model changed practice. It is designed with the belief that members of AKU, IED community can transfer best practices from the ILC into their work with teachers and educators in the field.

5. Next Step – How Will We Know If the ILC Design Has Made a Difference?

It is still early days for both the ILC designs. The ILC at UBC is underway. A variety of industry partners are currently working with academics and educators to design apps and web resources for Math, Physics, Social Emotional Learning, and holistic assessment. At the time of writing this paper, the learning lab at UBC has been in use for two academic semesters. Users of the UBC ILC have signed ethical consent forms so their activities, challenges and approaches can be studied, and photographs have been taken of the various furniture configurations as no single instructor or group tends to use the space in exactly the same way.

The basic design of an ILC for East Africa has been discussed with academics at IED and in a seminar in June 2013 with graduate students there. There was great enthusiasm amongst the students who felt the learning environment would foster creativity and would help them to creative meaningful learning resources for their colleagues and students. The discussions also introduced students and faculty to the Maker Movement, exploring ways in which a focus on "doing" could help recapture the importance of traditional ways of knowing and doing. Using the phrase "Mafundi wako juu,[2]" we modeled simple passive solar water heating to improve food safety / handling and basic sanitation. As one student stated, learning about these ideas has actual application - " I have been thinking of how I can use solar to heat water in my place. This is a project that I will implement when I go back to my place."

A grant funded by the International Development Research Centre (IDRC), Association of Colleges and Universities in Canada (AUCC), and the Canada/Africa Research Exchange (CAREG) was received September 2013. These funds will allow faculty in Canada and East Africa to collaborate, with limited funding being provide to help equip the ILC in East Africa. The research proposed in the grant will explore the efficacy of the ILC design to build capacity and support the development of local / regional pedagogy and content that help educators to leap frog current practices experienced in many challenging contexts with Tanzania. It will follow an iterative design research approach, including a review of the literature; visits to sites recognized for supporting innovation, creative and / or knowledge-building; analysis of online collaborations with colleagues; documentation of workshop activities with educators; and maintaining of researcher field notes. Argyris and Schön's (1978) gap analysis approach was used to analyze findings and inform the iterative design of both ILCs, and semi-structured interviews using a phenomenological approach will be conducted with participants.

6. Conclusion – The Start of the Beginning

This paper shares the thinking behind the ILC concept and the value placed on the cultivation of partnerships among institutions in order to build models of practice and create places for pedagogical exploration and educational change. The interactions and knowledge sharing among faculty at Aga Khan University, Institute of Educational Development and the University of British Columbia Okanagan has been essential, and it has been both collaborative and collegial.

Faculty members have had much to share including their lived experiences, research approaches and experiences, varying understanding of contexts, and professional networks. What brought the colleagues together five years ago was an understanding of the potential and promise of appropriate technologies to support learning; what keeps them together is a belief that "Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world,

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[2] Literally translated as Fundis trades people) rock!

and all there ever will be to know and understand" (Einstein, 1931). Both partners, UBC and IED, EA recognize their equal and essential roles in the work and design.

The Innovative Learning Centre is designed to foster change and leapfrog the existing practices found in so many schools. The one planned for East Africa will contextualize the concept, drawing heavily from UNESCO's Child-Friendly School initiative as well as other projects and ideas relevant to its context. Therefore, the overarching question guiding the work shared in this paper is how might the development of an Innovative Learning Centre in both an Institute of Educational Development and a Faculty of Education can help educators in challenging contexts improve pedagogy; foster academic, intellectual and social engagement; and encourage teachers and their students to escape from the "deadening tradition of rote learning" (p. 31). A related question is how might a change in pedagogy help educators imagine contextually and culturally relevant innovations that might improve classroom practice in both contexts?

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