Using A Challenge Driven Innovation Approach and Design Based Thinking / Research To Enable System Change and Inform Professional Development Strategies

"Insanity: doing the same thing over and over again and expecting different results."
- Einstein

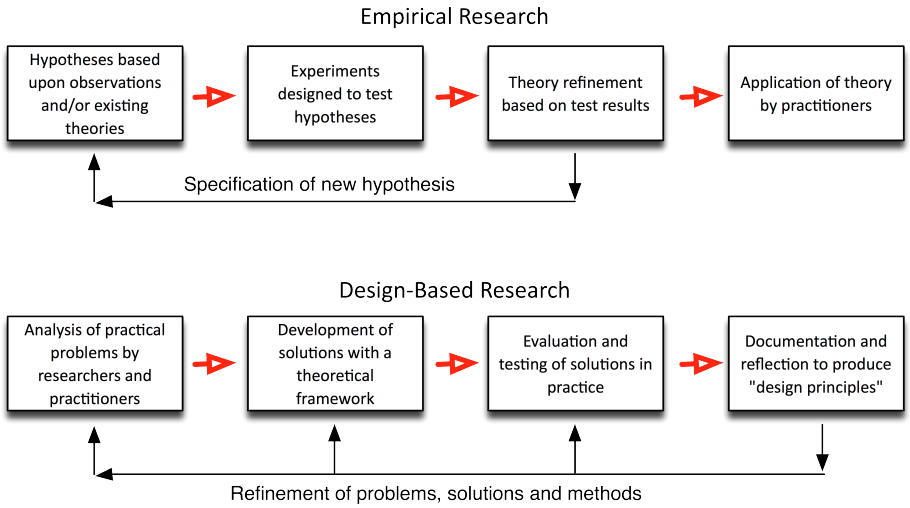
While the Einstein quote is one an over cited statement regarding change, it bares consideration as we design ways to implement a flexible learning approach across jurisdictions and within Alberta Education. The approaches described in this paper are practice developed, research informed participatory strategies offered to open the conversation of how best to address system change.

Challenge Driven Innovation (Porter, 2013)
Challenge Driven Innovation (CDI) provides a framework to accelerate innovation outcomes by leveraging open development and crowdsourcing strategies along with defined methodologies, processes, and tools. CDI helps institutions develop and implement actionable solutions to key problems, opportunities, and challenges that their constituents (educators, students, parents, industry partners, others) face.

A CDI approach requires participants within the institution to be transparent, making their development documents accessible on the open Internet, tagging their work with a Creative Commons license, providing their source code and schemas for download where appropriate, and using crowdsourcing techniques to openly solicit input from stakeholders and partners (sometimes in the form of *challenges to be solved*).

By being clear about the development (innovation) strategy, the institution can better communicate its organizational intentions to constituent members and respond to actual constituent challenges for which collaborative programs, services and system are needed.

Design-Based Research (Porter, 2013)
A design-based research (DBR) method is useful for managing and evaluating capacity-building projects because of its ability to address emergent contexts where pragmatic and flexible approaches to development are required. The following adapted diagram (Reeves, 2006, p.88) compares DBR to Empirical Research.



Wang and Hannafin (2005) describe DBR as "… a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories." Design-based research (DBR) addresses practice improvement through an intervention-based approach. DBR involves developers and practitioners in iterative cycles, reinforcing their understanding of the practice/s being implemented and evaluated, and generating design principles based on actual needs exposed in a local context that can inform further development and testing, as well as guide downstream policy.

A design-based research approach for Alberta Education would allow educators to document and openly disseminate detailed information about programs, systems and services, successes and challenges, with the goal of improving practice and ultimately influencing policy. Such an approach is often adopted to enhance an organization's reputation for leadership, innovation, and open practices.

Design Thinking

Design thinking is a way of bringing "about effective transformation in abstract multi-dimensional issues." "It is the combination of the processes, skills, cognitive processes, and attitudes prevalent in design is being used to infuse innovation" and " bringing about new ideas for affecting wide spread behavior modification through designed interventions which range from a highly personal level to policy" (dSchool, n.d.).

As education wrestles with more complex and intertwined performance related issues, often termed wicked problems (Rittel & Webber, 1973), the need for creative, innovative, and imaginative solutions increases. Wicked problems are characterized as challenges with

- No unique "correct" view of the problem;
- Different views of the problem and contradictory solutions;
- Most problems are connected to other problems;
- Data are often uncertain or missing;
- Multiple value conflicts;
- Ideological and cultural constraints;
- Political constraints;
- Economic constraints;
- Often a-logical or illogical or multi-valued thinking;
- Numerous possible intervention points;
- Consequences difficult to imagine;
- Considerable uncertainty, ambiguity;
- Great resistance to change; and,
- Problem solver(s) out of contact with the problems and potential solutions (Horn & Weber, 2007).

Design thinking can follow specific excise processes (Design Resources, n.d.) that encourage participants to consider problems / solutions from multiple perspectives, including wild card options.

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