

# Experiments in Learning Design

## Opportunities for Experiential Learning

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### **Abstract**

Employers claim to want well rounded college level graduates but recruitment efforts focus on experience with technical skills. Experiential learning is one method to acquire work type experience in a class room setting. Learning design is a broadly defined learning approach using technology as a means of providing a more customized learning experience. A learning activity designed for an information system strategy course demonstrates how learning design can be used to provide a customized experiential learning opportunity. Students are empowered to select, learn and demonstrate a marketable, technical skill of their choice. This ongoing experiment is discussed using the core concepts of the learning design framework proposed at the Larnaca Declaration of Learning Design (2012).

### **Introduction**

Research indicates there is a gap between what academic programs provide and what employers claim they seek (Debus and Lawley, 2012). Employers claim to seek academically, well rounded information system graduates (educated) but, in job advertisements require experience with specific technical skills. Many academics argue that the role of higher education is to educate students, not train them.

Learning design (LD) is a broad educational construct. It can be viewed as a cluster of loosely linked teaching approaches using technology to mediate more customizable opportunities for student learning and sharing of innovative learning practices.

An LD approach was used to design a project for an undergraduate information system strategy course using the Learning Design-Conceptual Map (LD-CM) framework developed by the Larnaca Declaration of Learning Design. The goal was to supplement a traditional course in information system strategy with skill development. Students were required to identify and learn a technical skill which was of interest to them and would also enhance their resume. In this assignment, technical skills are computer related skills advertised by employers such as customer relationship management, social media analytics, desktop management, and medical records.

The LD-CM framework identifies the contextual components of LD and how they interact. These components and interactions are examined in the context of this assignment. The initial goal of the assignment was to provide a supplemental learning activity in technical skill development. An under-anticipated benefit was the level of information sharing among students. This three year experiment in LD provides one interpretation of how the LD-CM framework can be used as a viable experiential learning opportunity.

## Discussion

The context from which LD emerges can be summarized as ‘objectives of education are changing, from the acquisition of a relatively stable set of competencies to the need of empowering learners with the ability to learn and work in autonomy with others in a fast-changing where knowledge is dynamic and technology is pervasive’ (Persico and Pozzi, 2015, p230). This is the precise context of this research.

A project for an information systems strategy course was designed to improve students’ prospects for job opportunities. Students researched jobs and selected one, resume enhancing, technical skill based on interest, access and perceived ability. Instructor approval was required. Students were required to learn the skill to a basic user level. Students demonstrated this ability to the class in the form of a basic training module on the technical skill. Students conducted simple business transactions, analyses or demonstrated other related activities. Students explained the relevance of these skills in the context of information system strategy.

Learning design (LD) is a broad educational construct rooted in instructional design. LD offers an opportunity to enhance learning by offering a more customized, technology mediated approach to learning. The customizable nature of LD can enable greater student involvement in learning and instill a sense of empowerment and resourcefulness.

As a relatively young field, definitions of LD are diverse. Dobozy (2013) identified eight definitions in her research on LD. Of these definitions, the Larnaca Declaration offers a broad working framework that is inclusive of broad pedagogical approaches and day-to-day practices. The framework is driven by the core concepts of LD: guidance, representation, and sharing.

At the core of the LD-CM is the teaching cycle, an ongoing process of design and planning, student engagement, reflection and professional development. Factors external to the teaching cycle include educational philosophy, theories and methodologies and learning environments: characteristics and values. Employers fall under the learning environments. The level of granularity drives the internal factors such as program, modules session, and learning activity level. Project work is handled at the learning activity level.

Following the teaching cycle, the external and internal forces drive the design and plan of the activity, as designed by the instructor. Engaging with students meant empowering students to make plans and decisions, customized to their need. Class met once a week. Each week class began with a roundtable discussion. These roundtable discussions represented a blend of student engagement, reflection and professional development.

Underlying this process are the core concepts of LD, guidance, representation and sharing. In this case, guidance is received from the instructor. Obviously the instructor provides guidance. The learning activities describe the methods used to acquire skill. Sharing is at core of the student engagement phase.

## Data Collection

Data collection, like this ongoing experiment has been iterative and evolved by year.

The only data collected the first year was on the project outcome. Students demonstrated an ability to independently learn and demonstrate a technical skill they value and wanted to learn. Only one student in three years did not meet the intent of the assignment. The student demonstrated a version upgrade of a system he was already working with and did not meet the resume enhancing requirement. . Students were allowed to use work projects but needed to demonstrate the values and attainment of the skill. Roundtable discussions during the first year focused on assignment clarity.

With improved assignment clarity, the focus of roundtable discussions in the second year switched to ways of learning. These included traditional methods such as user manuals but expanded extensively to You-Tube videos and MOOCS. The sharing of learning methods significantly enhanced the spirit of roundtable discussions. This enthusiasm was hypothesized to be attributable to student empowerment and resourcefulness. The results of this informal study are posted in Table 1.

By the third year, the assignment remained unchanged but the nature and depth of roundtable discussions had further evolved. As discussions of learning methods continued, so did a deeper understanding of the nature and context of the technical skill. Students shared experiences and insights into the benefits and limitations of proprietary versus open source software. Sophistication of projects has also evolved. Table 2 captures the breadth of technical skills acquired by students. Table 3 shows student responses about activities that made them feel empowered or resourceful.

## Results

Table 1 is a year-end assessment of the project by students. While the hypothesis of the survey was to measure empowerment and resourcefulness, the highest mean along with narrowest standard deviation went to valuable.

Year 2 Survey

	N	Minimum	Maximum	Mean	Standard Deviation
Valuable	9	4.00	5.00	4.778	.44096
Marketable	9	3.00	5.00	4.111	.78174
Add to Resume	9	3.00	5.00	4.556	.88192
Empowered	9	3.00	5.00	4.333	.70711
Resourceful	9	3.00	5.00	4.556	.88192

Table 2 lists the diversity of domains of student interest.

Year 3 Survey – Skills Presented

Technology	Vendor	Open Source
CAD Software	Dassault Systems	No
Project Planning	TargetProcess.com	No
Electronic Medical Records	OpenEMR	Yes
Customer Relationship Management	Salesforce	No
Network Security/Monitor	Wire Shark Spiceworks	Yes Yes
Virtualization	Oracle	Yes
Web Development	Vistaprint Adobe Dreamweaver	No No
Business Process Management	Bonita	Yes
Workflow Software	Process Maker	Yes
Mobile Application Development	Apple	Yes
Social Media Analytics	Not recorded	No

Finally, Table 3 lists activities which students identified empowered or resourceful.

Year 3 – Empowerment and Resourcefulness

Technology/ Open Source (Y/N)	Empowered	Resourceful
CAD Software/ N	Scan tutorials Identified achievable skill level Experiment Explore functions	Found inexpensive resources Purchased tutorial Completion of a task/step
Project Planning/ N	Decision of suitability of project Assessing skills required Select presentation technology	Installing required software Creative presentation technique
Electronic Medical Records/ Y	Download software Decision for right look of screens	Identifying resources Troubleshooting
Customer Relationship Management/ N	Self-assessment of current skills Experiment	Internet as a resource Friends Explore other vendor sites
Network Security/Monitor/ Y	Scanning networks for free Choose approach to take Making technology choice Experimenting with options Decisions of technical details	Had right equipment Understanding requirements/choice Learning new things Complete a task/step Collaborating

Virtualization/Y	Ask colleagues for assistance Change direction if desired	Extended network to friends Resources for various options
Web Development/ N	Work at own pace Identify and select options How long to spend on assignment Make decision on vendor	Finding free trial Research resource requirements Extensive research on products Create account
Business Process Management /Y	Decision on options Try again after failure Vendor selected	Researching Download software Asking for help
Workflow Software/ Y	Identified software Identified specific workflow	Articles/Youtube as reference Using phone to do research Videos on vendor Web sites
Mobile Application/ Y Development	Set up account Make coding decisions Create mobile Web site	Use of videos Friend to assist
Social Media Analytics/ N	Identify/choose SM sites Experiment Selecting and learning functions	Identify choose SM analytics Learning the tools Watching videos

### **Conclusions**

While a formal definition of LD remains inconclusive, this study finds three themes of LD to be highly effective. These themes are customization, technology mediated, and sharing. Customization and technology mediated go hand-in-hand. Even though the goal of this assignment was to learn a technical skill, the self-selected learning process leading to learn that skill involved some type of technology mediation.

The power of sharing cannot be overstated. The class benefitted from two contexts. The first came up in roundtable discussions on where to find learning tools. The second benefit is the broad exposure the class (and instructor) receive on latest business technologies. The spectrum was vast.

Students were encouraged to include their accomplishment on their resume. While it is not experience with an employer, it is a real experience and it makes for a story to get the potential employer's attention. Students can describe an experiential learning opportunity where initiative, persistence, and fundamental communication skills were demonstrated. Students are empowered to create their own narrative. Students are encouraged to promote their mix of education and skills as an experiential learning substitute.

Finally, a thought on what makes LD difficult to define. All of the key definitions of LD involve terms like process, structure, sequences and the like (Dobozy, 2013). The Lanarca Declaration, however, offers a broad framework which welcomes diverse pedagogical approaches. The core concepts of LD, guidance, representation and sharing are just as cultural as they are procedural. .

## **International and Managerial Implications**

LD is an approach where the teaching cycle is influenced by external and internal factors. It provides a standardization of cause and is customizable to individual or groups.

### **References**

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