Online Learning Effectiveness and Instructor Resistance In Adult Learner Centered Extension Programs

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Abstract: This paper reports the preliminary results of an ongoing mixed methods study to determine if the integration of online learning modules can help entrepreneurs accomplish business planning and elicit business start-up behavior. Insight is shared about why some adult learners and instructors are reluctant to migrate to online learning.

Small business owners are increasingly turning to the Internet for their educational needs through online learning. However, little is known about the effectiveness of online learning with small business owners and the possible implications of such for program educators. Increasingly, programs that serve the educational needs of entrepreneurs are turning to online learning as a way of providing education and knowledge to aspiring entrepreneurs. Yet, there is ample documentation concerning the problems of attrition, persistence and low completion rates associated with online learners in traditional college settings (Martinez, 2003).

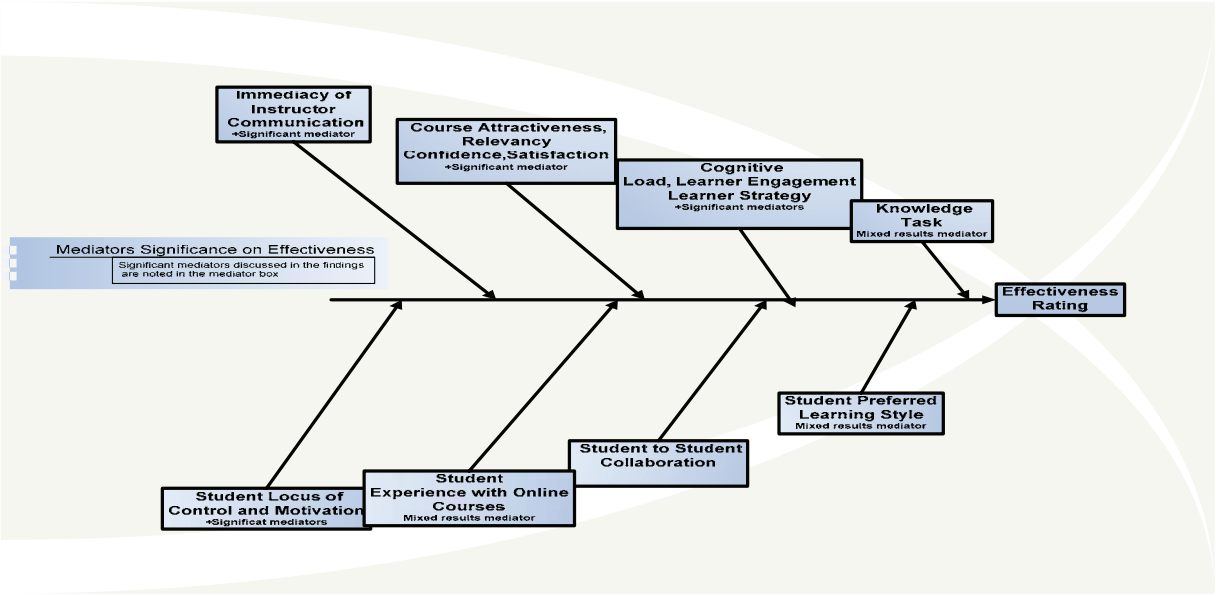
Literature Review Implications for Practice and Future Research

Previous research suggests that entrepreneurs may present special learning needs when compared to the general population. For example, Logan's (2008) quantitative study found that 35% of U. S. entrepreneurs experience dyslexia, compared to only 1% of this incidence with U.S. corporate managers. These dyslexic entrepreneurs indicated that they were either good or excellent at visualization, oral communication, problem solving and delegation, while the non-dyslexic entrepreneurs rated themselves as average or good on these same learning dimensions. Cope and Watts, (2000) Cope (2003), Rae and Craswell (2000) Van den Broeck and Willem (2007) each discuss the important role that mentors play in helping entrepreneurs reflect on their past experience and critical incidents through a dialogic process that helps make tacit knowledge explicit. Smith's (2001) qualitative study investigated business success from the perspective of Black women entrepreneurs, who comprise one of the fastest growing segments of entrepreneurs. The study determined that the dominant learning strategies used by the participants included observation, listening, modeling, apprenticeship, collaborative learning, mentoring, and transfer of learning. Also, these strategies were used in both formal and informal learning settings, often simultaneously. The prior entrepreneurship learning research makes it imperative to question – what are the implications for program educators serving entrepreneurs? – as policy makers and funding agencies push to transition these nascent entrepreneurs to an online learning environment.

Parker (2003) confirmed that a learner's locus of control as measured by Rotter's Locus of Control scale is a significant predictor of academic persistence. Fredericksen, Picket, Pelz, Swan, and Frederickson (2001) found that the transparent interface, frequent instructor interactions and dynamic discussions are the most significant factors of student success with online learning.

Reisetter, LaPointe and Korcuska (2007) found that the timing of teacher input was a critical pedagogical difference between face-to-face (FTF) and online learners. Benbunan-Fich and Hiltz (2003), Kuhl (2002) and Rovai (2003) each consider the importance of providing for student-to-student interactions when designing online courses. Ashill, Eom, and Wen (2006) hypothesized that course structure, self-motivation, learning styles, instructor knowledge and facilitation, and interaction and instructor feedback would affect perceived learning outcomes. Although each of these factors were significant when measuring student satisfaction for the online course, only the students learning style and instructor feedback were significant when measuring for student perceived learning instead of instructor assessment. Figure 1 depicts the eight mediators that impact online learning effectiveness that were discussed in the literature review.

Figure 1. Mediators impacting online learning effectiveness.



The qualitative aspect of this study clearly pointed to a level of effectiveness for online learning that is on par with FTF learning. The raises several interesting questions: Can we experimentally test for this effectiveness? Can we find out whether or not entrepreneurs exposed to online learning in a blended format with personal consulting support do better than entrepreneurs who obtain the same personal consulting support, but who choose not to register for online learning?

Quantitative Methods

There were two hypotheses for the quantitative study. In order to provide for a two-tailed test, the hypothesis is stated as a null hypothesis.

H_0: There will be no difference between the online training group and the no-online training group in completing a written business plan.

H_1: There will be no difference between the online training group and the no-online training group in the decision whether or not to open a business.

Data was obtained from the Pennsylvania Small Business Development Centers (PASBDCs) that included information about whether or not the clients registered for online training as well as identifying whether or not the client had achieved a certain number of milestones. It was decided

to limit the data to only one center's clients because it was the only one which had a large enough population of clients who had registered for online training to provide enough samples to compare. Additionally, data collected was just for two years when online learning was available from January 2006 to August 2008. There were 2004 subjects who met the criteria. The subjects were separated into two groups: those who had registered for online learning, (n = 310): those who had not registered for online learning (n = 1694). Next, the milestones for each subject were codified. There were 32 different types of milestones, many of which had nothing to do with the topic of the study. Similar milestones such as "Completed a Business Plan" and "Completed a Marketing Plan" were grouped together for each hypothesis. Two binary variables were created from the groupings: Planning Completed, and Decision Made. Subjects were determined to have completed planning if they met any of the similar milestones for planning. Subjects were determined to have made the decision if they had a milestone for either "Started a business" or "Decided not to go into business." Due to the binary nominal nature of the data, a chi-square test (using SPSS 16 for Windows) was used to determine whether or not there was a significant difference in the achievement of milestones between the two groups.

Quantitative Results

Both hypotheses were rejected. There was a significant difference between the online training group and the group that did not do online training. The contingency table is shown in Table 1. The actual count of subjects was greater than the expected count for the group which registered for online learning for both Decision Made and for Planning Completed, with a much larger discrepancy for the Planning Completed variable.

The initial review included the descriptive statistics of the data. A little more than half of the subjects had not yet officially started their businesses (52.3%). Less than 4% were considered "homebased" businesses. Forty-seven percent of the businesses were owned by a male, thirty-two by female, and twenty-one percent by both male and female. A comparison of their ethnicity and gender did not differ significantly from the general population. Business size ranged from very small to large and followed a normal bell-shaped curve distribution.

The Pearson Chi Square for significance resulted in a value of 21.268, which is significant ($p < .001$). None of the cells had an expected count of less than 5, so it was not necessary to apply the Yates correction.

While the Chi Square test shows us the results are significant, it does not tell us the strength of the results. To analyze the strength of the nominal by nominal relationship, the Phi statistic (a correlation technique for dichotomous variables) was utilized. The value was .103, which indicates that though there was a significant difference, the relationship between the variables is not extremely or highly correlated. Cramer's V, another test of strength of relationship, showed the same thing.

Limitations of Study

There are several limitations which impact the generalizability of the findings. The data was from a single center only; an unknown geographically-based variable may have impacted the results. Additionally, the study did not differentiate by consultant; perhaps the difference was due to quality of consultant, or a tracking bias. Subjects registered for online learning may have been more closely watched for milestones than non-online learning subjects.

TABLE 1
Contingency Table for Crosstabulation of Milestones By Online Learning

			OnLineReg		
			No Online Learning	Registered for Online Learning	Total
Milestones	Neither Decision nor Planning Completed	Count	1454	235	1689
		Expected Count	1427.7	261.3	1689.0
	Decision Made	Count	102	27	129
		Expected Count	109.0	20.0	129.0
	Planning Completed	Count	138	48	186
		Expected Count	157.2	28.8	186.0
	Total	Count	1694	310	2004
		Expected Count	1694.0	310.0	2004.0

Furthermore, registration for online training was measured, not actual participation in online training. There was no way to tell if the clients actually followed through with the online training, or felt that the training was helpful to them. Subjects who were not registered for online learning may have taken part in online learning elsewhere.

With the data collected it was impossible to measure *how* the subjects integrated the learning with their practice. The clients took a blended learning approach, utilizing both online learning and FTF interaction in order to get the help they needed in developing a business plan or making a decision as to whether or not they should start a business. There was no way to delineate the impact of the online learning from the consulting help in general. Additionally, the quality of the business plan was not evaluated. It may be that the group that did not do online training had superior plans to the online training group. Both the online and no online training groups had members who were just starting or who owned existing businesses. These results raised questions concerning why such a small percentage of SBDC clients actually availed themselves of the online learning. The next section provides some insight to this question.

Qualitative Interviews

This section discusses several themes developed from 10 interviews with PASBDC consultants who volunteered to participate in the interviews. Consultants employed at the various SBDCs provide FTF education and mentoring to help prepare entrepreneurs who come to the centers for business planning help. The interviews were conducted with consultants representing rural, urban, suburban areas in Pennsylvania and the consultants had each attended a professional development conference six months prior to the interviews to help prepare them to integrate the online tools for their learners. The interview questions focused on gaining an understanding why most of the consultants in the PASBDC program had not been more successful with integrating online learning with their FTF consulting. Two distinct themes emerged.

Consistent with the previous literature, the interviews reinforced the notion that entrepreneurs utilize online learning courses and online tools based on a number of needs, attributes and characteristics. For example, an adult learner's time constraints, schedule flexibility and Internet access all affect their willingness to utilize online learning. Those learners who are under 45, who have more education, professional office work experience and experience with computers are more apt to adopt online learning. Moreover, students learning style, degree of self-directedness (motivation) and prior experience with online learning each affect their willingness to adopt online learning. The more comfortable the student and their consultant are with computer technology the more likely that online learning will be adopted in the mentoring engagement.

A center's culture plays a role with how readily consultants embrace online learning. Those centers where innovation and change is embraced and valued are more apt to have consultants that adopt online learning. There was palpable resistance and fear among the PASBDC consultants who were familiar with the online learning resources. This fear could be interpreted as caused by a concern that the online learning would be used in place of FTF consulting or fear that they would be expected to become computer experts to help students navigate the various online resources. Several voiced a concern of not wanting to be put in a position of becoming a technology expert. Everyone voiced a desire for more release time to take the online modules in order to better understand what they are recommending to their entrepreneurs.

In addition, some interesting observations were made about the things that were *not* talked about during the interviews. For example, no one discussed online learning in terms of how it could enable their center to have a competitive advantage over other economic development agencies. A surprise was that no one talked about policy and procedure or center performance issues as being a major concern for adopting online learning. Everyone talked about how online learning fits their current student needs, but only one consultant talked about how online learning might open opportunities for new marginalized learners. This consultant discovered that offering blended learning educational programs increased participation by the physically challenged by over 200%.

Discussion and Implications

Despite the noted limitations, the findings of the quantitative aspect of this study clearly indicate that providing online learning opportunities has a positive impact on whether or not entrepreneurs complete their milestones on the way to starting and growing their businesses. Considering the cost and resource differential between providing FTF and online learning, this blended approach may serve entrepreneurs the best.

Entrepreneurs use more formalized learning networks, and their needs are very different from most people. Logan's research about the high incidence of learning disabilities in the entrepreneurial learning community may help online course designers take additional steps to improve the interface to assist entrepreneurs with various cognitive learning issues. As new technology improves, and as knowledge about learners advances, researchers will need to consider new questions about the relationship between these exciting new developments. Especially considered in the light of the qualitative findings regarding the differences in the way that entrepreneur's learn, the quantitative results indicate that it would be beneficial to support entrepreneurs learning through making more online training available. The two themes developed from the qualitative interviews support the need for additional training for the PASBDC program consultants. This training should help the consultants better understand how to use the online resources to make their mentoring role with their entrepreneurs more effective and enjoyable. Consultants need more time to experiment with the new online learning resources and they need reassured that their FTF role with their entrepreneurs is valued and they need to better understand how online learning can help expand opportunities for their marginalized learners.

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