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Chapter 9

Collaborative Contagion: A Case Study in Curriculum Development, Distribution, and Adoption

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Abstract

The collaborative contagion model is the culmination of a three-year project designed first to develop a curriculum in business ethics and entrepreneurship (BE&E), then to increase the adoption of that curriculum by leveraging professional educators' established networks. The development of a new curriculum, the collaborative portion of the program, was accomplished through a series of four-day, in-person disruptive innovation workshops (DIWs), after which educators continued their working relationships in a specially developed online community. To distribute this curriculum, we developed the contagion portion of the model, through which we encouraged and incentivized not only adoption of the curriculum on the part of the participants themselves, but also on the part of people in their broader networks. After our first year of workshops, 18 K-12 and 21 higher education participants helped formulate 10 modules and 60 grade-specific K-12 lesson plans. We have established pilot programs at 13 separate institutions, and built partnerships with seven organizations. These early results indicate that the collaborative contagion model is a viable, and potentially strong method by which curricular materials can be developed, and then disseminated to a broad audience.

Keywords: collaborative curriculum design, professional development, disruptive innovation workshops, curriculum distribution, networking

1. Introduction

Since 2013, we have been working to develop a curriculum that will challenge the status quo in the design and delivery of business ethics and entrepreneurship (BE&E) education on both the K-12 and collegiate levels. Building previous work, which assessed innovative models for

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gathering input from academic networks using targeted colloquia and workshops, we have begun implementing a new model for curriculum development and distribution we call the collaborative contagion model.

The collaborative contagion model was conceived both to yield a curriculum designed utilizing collaborative curriculum design (CCD), teacher design teams (TDTs), and course design intensives (CDIs) and to foster the adoption of that curriculum by leveraging the established professional and educational networks of the educators who worked to create the curricular materials in the first instance.

To begin the process, we hosted a series of four-day disruptive innovation workshops (DIWs) with participants from across the United States. K-12 teachers and administrators, education professionals, college professors, and university administrators all took part in the proceedings. We then developed an online forum for generating, hosting, revising, and rapidly distributing modules for BE&E curricular content for both the K-12 and college constituencies. This chapter summarizes the literature behind the collaborative contagion model, tracks its early implementation, and explores the model's potential for broader deployment.

2. Understanding the contagion approach

We divide the literature that undergirds our application of the contagion model into four distinct approaches. We begin with an exploration of the benefits of CCD in instructors' professional development, and in promoting a collaborative culture among faculty and staff. We then explore the potential obstacles between curriculum development and implementation, and how the likelihood of implementation might be increased. Third we explore the logic behind the collaborative contagion model. Finally, we compare the literature surrounding CDIs with an integral part of the contagion model: the disruptive innovation workshop (DIW).

2.1. Benefits of CCD for teachers and educational faculty

Multiple studies show how collaborative curriculum design aids in the professional development and learning of instructors [1–4]. Common to these studies is the conclusion that instructors who assist with curriculum development show "increased self-confidence, increased pedagogical content knowledge, a deeper understanding of subject matter content, refined ideas of curriculum development in their personal practice, and perceptions of good teaching and being a good teacher" [2]. The collaborative process is also an opportunity for instructors to interact with peers and experts in an environment that both broadens teaching perspectives and builds the leadership skills required for curriculum implementation [3, 4].

Beyond the professional development of individual teachers, the educational climate at an institution also benefits from CCD approaches to curriculum design and review [5]. Robert Rothieaux, the facilitator of a new, collaboratively-built MBA curriculum at Hamline University in St. Paul, Minnesota, has found indications that collaboration on innovative

curriculum can prompt longer-term institutional change and develop a culture of collaboration more generally [6]. To this end, Rothieaux encourages bringing faculty, staff, and administrators, including those who would not typically participate in collaborative curriculum development, into the collaborative process [6]. Collaboration in this sense becomes a catalyst for greater knowledge sharing and interaction among faculty. In short, a wide variety of studies focused on the process of curriculum development has found that CCD approaches benefit individual instructors specifically, and educational institutions more generally.

2.2. Bridging the gap between curriculum development and adoption

One of the primary challenges for curriculum designers has been bridging the gap between curriculum development and its adoption. Ideally, the professional development benefits from CCD would translate into improved classroom practice, and potentially, enhanced student outcomes. The reality is somewhat less clear. Professional development of any sort often falls short of substantive change to classroom practice. During a workshop, instructors have to navigate an unfamiliar design process, and reflect on new pedagogical methods and novel subject matter, which often supports the development of a host of new skills and knowledge [3, 7]. Unfortunately, instructors often return to classroom environments where responses to innovation are blunted, support of new skills is limited, and which are generally unresponsive to innovation [4, 8]. Without adequate support during and after the curriculum design process, it is unlikely instructors will experience anything more than short-term teaching changes [1].

In response to these concerns, Clark and Hollingsworth developed a model of Professional Development. Their Interconnected Model of Professional Growth (IMPG) highlights a set of domains in which long-term change in teaching practice might be achieved through collaborative curriculum design. We focus primarily on three of these domains as most important to our understanding of how to engage the collaborative process to substantively improve teaching practice: (a) the personal domain (in which instructors change their knowledge, beliefs and attitude); (b) the domain of practice (in which instructors change via professional experimentation); and (c) the domain of consequence (in which the collaborative process produces salient outcomes for instructors and/or students). A fourth domain in the model, known as the external domain, provides instructors with external sources of information or stimuli, but is largely outside of our approach to curriculum development. Indeed, our own experience suggests this domain is unlikely to drive long-term changes [1].

Active consideration of each of the domains by those interested in facilitating collaborative curriculum design is especially useful, as enactment and reflection in one domain may have an impact on the others [1]. Change through these domains can lead to simple, short-term teaching changes, or even long-term professional growth. The realization of the latter depends on, among other things, the level of ongoing support from colleagues and administration, resources and equipment, and the broader context in which instructors work [1, 9].

Researchers have investigated the support needs of curriculum designers required for curriculum adoption and long-term implementation of alternative teaching practices [4, 10].

In addition to limitations on time and knowledge, instructors often lack the design expertise required for curriculum development [10]. Incorporating design specialists into TDTs enables instructors to apply their knowledge, skills, and contextual understanding to content and pedagogy efficiently. Another option is to provide instructors with "existing or exemplary curriculum materials … to help [them] define the goals and design task" [4]. In any case, ongoing support and guidance by external facilitators and specialists improved instructors' overall learning during the design process [4, 10]. Voogt et al. also discuss the importance of maintaining an explicit focus on implementation during the design process, but curriculum implementation ultimately hinges on "teachers' ownership of and their knowledge about reform ideas" [10]. In other words, instructors are more likely to adopt and use, over the longer term, curricular changes in which they are involved [2, 3].

Building from these foundations, and desiring to facilitate the support needs required for curriculum adoption, we have built two follow-up workshops into our BE&E curriculum design process. We designed these conferences to provide ongoing support for instructors facing unforeseen contextual challenges and to build the network in a continuous fashion. Additional support is provided through a curriculum specialist at Utah State University, and a website that cultivates a community of curriculum adopters.

2.3. Description of the contagion model

Given the indication in the literature of the substantial value of collaboration in the curriculum design process, we were further interested in how significant adoption of collaboratively designed curriculum might be facilitated. We take our basic approach from an observation from Sorenson and colleagues and our own experience that "knowledge spreads from its source not in concentric circles, but along conduits laid by social connections". New innovations are adopted in a manner that resembles an epidemic spreading through a population, moving slowly at first but later engulfing nearly the entire population [11]. Social connections and proximity to the original source affect where new innovations in education are adopted, and the rate at which they spread [12].

Without adopting the epidemic analogy in its entirety, our expectations for the collaborative contagion model share in many aspects of Sorenson et al.'s description of knowledge spreading [11]. Curricular contagion begins at the collaborative design conferences, disruptive innovation workshops (DIWs) and relies on the efforts of workshop attendees and their own individual networks. After the workshops, which are designed in part to create a working community of conference attendees, we provide support for instructors to refine, adopt, and share developed materials with their colleagues. Deploying a curriculum through established networks enables us to reach a variety of new faculty, students, entrepreneurs, and policy makers well beyond the people who attended our events.

Our own experience suggests that the dissemination of these curricular materials, their adaptation and implementation has been far more successful in navigating the internal politics, accreditation requirements, and general inertia against innovation precisely because they are the product of ongoing collaboration between faculty members rather than simply curriculum

supplied by an outside group. At its essence, the collaborative approach provides a natural review process where every instructor using the materials is free to adapt, modify, and then share those modifications with their collaborators in the process.

2.4. Comparing and contrasting CDIs and DIWs

Our approach to facilitating collaboration is in large part rooted in the model for large-scale e-learning applications developed by Oxford Brookes University in 2003. In that model, course design intensives (CDIs) promote innovation and networking through curriculum design workshops. In a span of three to 4 days, CDIs yield tangible course materials as output [In a 2012 evaluation, Dempster and colleagues described how CDIs utilize extended teams alongside assistance from technologists, curriculum specialists, educational developers and subject librarians]. CDIs focus explicitly on cross-disciplinary networking, using "multiple program teams working in parallel…" [13].

Instead of leaving lecturers to their "usual subject-focused autonomy," CDIs encourage participants to work collaboratively at the program level, thereby engaging a wider array of stakeholders with various skills and experiences "to confront and to engage with alternative and better conceptions and practices" [13]. Dempster et al. measured CDI success using tangible deliverables, confidence in and collective ownership of developed materials, networking beyond department colleagues, and conceptual and pedagogical changes for lecturers [13].

DIWs share many foundational elements with CDIs. Both workshops aim to produce tangible output in the form of modules, with another expressed goal being broadening participants' networks. Like CDIs, DIWs use parallel sets of extended teams, equipped with experts to analyze theory, discuss technical obstacles and solutions, and draft modules. Dempster et al.'s measures for successful CDIs apply equally to our internal measures for gauging curricular contagion [14].

Unlike DWIs, CDIs "are not a tactic to initiate change or raise awareness" [14].[1] We intend our DIWs to change the delivery and design of BE&E courses through heightened awareness and outreach. The contagion effect depends on participants' willingness and ability to share resources and improve BE&E course quality.

The composition of teams also differs between CDIs and DIWs. The CDIs reviewed by Dempster et al. assembled teams from faculty and staff at a single university. Our DIWs, on the other hand, hosted educators from multiple institutions ranging in size, approach, scope, and location. It was our goal to create an environment that would address a broad range of programmatic needs heretofore inhibited by geographic and institutional siloing, thereby encouraging nationwide curriculum adoption.

[1]While this is generally true, there are small exceptions. La Trobe University, for example, has used CDIs for curriculum renewal purposes [14].

3. The process behind the contagion model

We began the process of developing the contagion model after researching potential gaps in existing BE&E curricula. After surveying 170 BE&E course syllabi culled from colleges and universities throughout the United States, we found that new offerings in these subjects had taken on a variety of forms, transitioning from appendages of more established disciplines into discrete, stand-alone courses. Entrepreneurship courses often considered only new venture startup, without broader discussion of what it meant to be entrepreneurial or the benefits of entrepreneurship to society. Different AACSB-accredited schools offered courses under the business ethics banner that contained completely disparate content [15]. Some business ethics courses emphasized a foundation in classical philosophy, whereas others focused exclusively on a legal-positivistic approach, stressing adherence to established codes and policies. While we have always viewed educational flexibility and license in a positive light, our concern was that such disparity might leave business students ill-equipped to navigate an array of moral dilemmas faced in the workplace.

We designed the innovation workshops to utilize the dispersed knowledge of participants, and to task those participants with drafting modules that would address these and other shortcomings in existing courses, consolidating, to a degree, BE&E curricula being offered throughout the country. Our goal was to initiate a process of collaboration and refinement that would culminate in usable, standards-ready materials that could be shared and adopted at no monetary cost to instructors.

When recruiting attendees for the innovation workshops, we sought participants with little or no connection to one another. Our academic network and social media presence helped us identify individuals within business schools, philosophy departments, and K-12 institutions who would all, we hoped, make significant contributions in developing new course materials. Although participants' notoriety and roles varied, each demonstrated a shared desire to effect a positive change in the current orientation of ethics and entrepreneurship courses. Appendix 1 includes an infographic illustration of the logic of the contagion model.

Prior to the innovation workshops, we asked participants to submit readings that could provide a baseline for subject matter competence, and would facilitate conversation among participants on common difficulties in teaching BE&E. After compiling and distributing the readings, we asked that participants read all materials before coming to the workshops.

At the beginning of each day during the workshops we used design-thinking activities to encourage new ways of thinking about BB&E, and to overcome barriers to participation. Round-table discussions at the conferences helped instructors and administrators establish the current state of the courses, and navigate pedagogical and institutional obstacles they face when trying to innovate in their classrooms or utilize a new curriculum.

We encouraged ownership of developed materials by asking workshop participants to contribute activities and lesson plans from their own experience. As they did, we constructed prototypes. These prototype lesson plans were then posted online for educators to use freely, revise, and distribute to their colleagues. The website continues to provide a virtual medium

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for ongoing collaboration, keeps a log of new participants in the growing network, and tracks where curricular adoption takes place.

At the end of the workshops, participants were surveyed about the knowledge they gained from the experience and their ongoing commitment to implement modules and lesson plans in their various professional positions across the United States. We provided post-workshop support for instructors in the form of pre-prepared course evaluation tools and surveys for future BE&E courses.

4. Results and indicators of success

We worked with a total of 18 K-12 and 21 higher education participants at our first two disruptive innovation workshops. Through these events, we established pilot programs at 13 separate institutions and built partnerships with seven organizations. Participants produced five general lesson ideas/activities, from which we have built 10 modules and 60 grade-specific K-12 lesson plans.

Many of the participants attending the conference had little experience with design activities and lacked the requisite vocabulary for understanding and producing novel curricular components. The discomfort was especially pronounced for K-12 educators. One K-12 teacher said "there was a bit of disconnect between the university professors and the 'ground truth' of K-12 educators." Another K-12 teacher expressed concern that "the majority of the conversations seemed about philosophy rather than pedagogy," making it difficult to participate. While professors thrived in the open-ended, early curricular discussions, several K-12 educators wanted more definitive pedagogical items to discuss.

4.1. Post-workshop activities

Shortly after this first set of curriculum design workshops, we compiled the contributions of participants into a pilot pack for teaching Business Ethics and Entrepreneurship. Given the wide array of disciplines represented among instructors helping us develop a new BE&E curriculum, the pilot pack we produced was a raw framework into which instructors could incorporate existing materials, lesson plans, learning objectives, activities, and assessments. Instructors who happened to be teaching entrepreneurship or business ethics directly could adopt the materials entirely as written. This flexibility, which was one of the primary requests of workshop participants, has broadened the audience the workshop's materials could reach.

In the first round of pilots, we distributed the pilot pack to instructors in nine states: Louisiana, Florida, Illinois, Oklahoma, California, New Jersey, Arizona, Maryland, and North Carolina. Each teacher was asked to administer pre and post surveys that assessed students' overall knowledge in Business Ethics and Entrepreneurship, and how students' perspectives of business ethics changed as a result of the course. The surveys also solicited feedback from instructors regarding the quality of the materials and the likelihood that they would adopt the virtue framework in future courses and share resources with colleagues.

Contemporaneous with our pilot courses, we initiated a content review using eight professors with content expertise and experience developing resources in Business Ethics and Entrepreneurship. Reviewers received a stipend to evaluate materials line by line and address any lingering pedagogical or curricular issues. A few reviewers expressed concern over the ambiguity of specific virtues within the virtue framework of the curriculum, noticing an incompatibility among certain virtues and their associated activities. Other reviewers suggested new readings, alternate activities, and changes to the language of the pilot pack.

We used this feedback to make alterations to the existing pilot pack, specifically the virtue framework, and tailor another round of conferences to refine the curriculum further. The second set of conferences engaged over 40 educational professionals to identify how we could address shortcomings within the initial pilot pack, and how we could accelerate distribution and adoption of the new materials. In addition to the pilot pack, a few short readings were distributed prior to the conferences to prime discussion and set the tone. Similar to the first set of conferences, we started each day with design activities intended to encourage conversation among participants and spark ideas. Unlike the first set of conferences, the second set focused exclusively on refining a set of ideas and curricular elements rather than creating an entirely new curriculum.

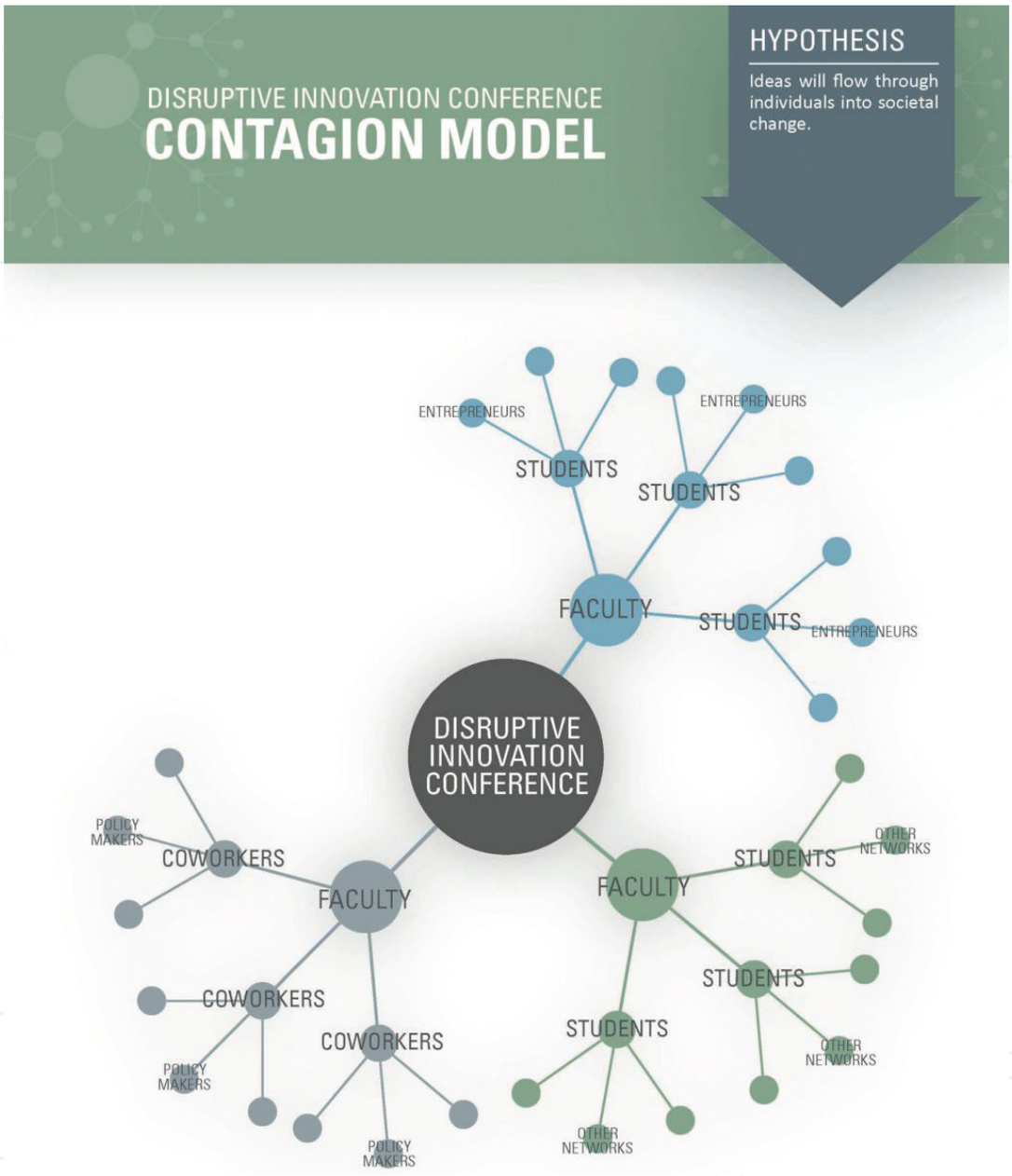
One of the participants at the conference suggested a partnership with his organization to enhance our distribution among K-12 teachers in the Western United States. Shortly thereafter, we partnered with his California-based entrepreneurship center that has been developing curricular materials in the K-12 space for over 20 years. Together we added more concrete layers to our pilot pack framework, which included richer content and activities, standards alignment for Texas and California, differentiation suggestions for students with special needs, uniform design, videos, and training materials for adopters. These materials were then built into our web portal for instructors to review, download, and distribute freely.

5. Conclusions and potential applications

Citing economist Kenneth Arrow, Sorenson and colleagues described how "[t]he generation of new knowledge often requires substantial investment in research and development, but the repeated application of this knowledge, once produced, entails little if any incremental cost" [11]. Our goal in developing the collaborative contagion model was to create a framework through which instructors could prototype, refine, and distribute BE&E course materials at no monetary cost. We expect the dispersed knowledge, expertise, and professional networks of professors to yield materials suited to a variety of situational demands. Ongoing refinement of modules among participants should produce multiple prototypes of lesson plans from which instructors can choose and adapt. Instructors also have a number of incentives to participate: better lesson plans, professional development hours, network building, and program development ideas. Inviting educators from different regions helps avoid knowledge sharing limitations across geographic boundaries, limits silo-ing of content, ensures essential coverage of foundational principles, and encourages wider curricular adoption.

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Appendix 1. Contagion model infographic



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