

How entrepreneurship influences other disciplines: An examination of learning goals

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Abstract:

Entrepreneurship is now a mainstream curriculum in higher education across the globe. On many campuses, entrepreneurship education programs have expanded to include cross-disciplinary courses that contain learning objectives in entrepreneurship and the home discipline. While research has been conducted on cross-disciplinary entrepreneurship education, little has been published from a curricular diffusion standpoint. Greater insight into curricular adoptions and pedagogical change stemming from cross-disciplinary entrepreneurship is necessary from both a theoretical and practical point of view. This study uses content analysis on 345 learning goals from a massive cross-disciplinary entrepreneurship program and reports on learning themes and pedagogical strategies. Results confirm the role of entrepreneurship education in other fields is to instill entrepreneurship skill sets and to create a bridge to introduce traditional business topics. The roles of specific entrepreneurship topics are uneven. A gap in career preparation foci for self-employment and venture creation careers was also noted, as well as the absence of exit strategy discussions. The study offers a useful methodology that could be adopted by other institutions for comparison purposes. Implications and future research are discussed.

Keywords: entrepreneurship | curriculum | methodology

Article:

1. Introduction

The first entrepreneurship course was delivered in 1947 at Harvard Business School. By 2008, more than 5,000 entrepreneurship courses were being offered in two-year and four-year institutions in the United States. Today, well over 400,000 students a year take courses in the subject, and almost 9,000 faculty members teach it (Kaufmann Panel on Entrepreneurship Curriculum in Higher Education, 2008), not counting MOOCs (e.g., Welsh & Dragusin, 2013). Entrepreneurship education programs world-wide have also grown rapidly (Kuratko, 2004; Neck, Greene, & Brush, 2014; Preedy & Jones, 2015; Solomon, 2007; Valdez & Richardson, 2013). The positive association between entrepreneurship, economic growth, and innovation has spurred much of the growth in entrepreneurship education (Ferreira, Fayolle, Ratten, & Raposo, 2018). Van Praag & Versloot, 2007). For example, the focus on entrepreneurship education in

the UK came out of the need to increase employment skills (Etzkowitz, Webster, Gebhardt, & Cantisano, 2000), reduce unemployment by college graduates (Onuma, 2016), and as a vehicle to improve low economic performance (Matlay, 2006). However, there are continuing calls to validate entrepreneurship education's economic as well as social impact (Fayolle, Gailly, & Lassas-Clerc, 2006; Fayolle & Gailly, 2015; Fiet, 2001; Matlay, 2005).

Entrepreneurship education research that is recognized as a separate academic discipline (Jones & Jones, 2011; Jones & Matlay, 2011). Entrepreneurship scholars around the world contribute to the development of entrepreneurship from multi-faceted perspectives addressing diverse ecosystems and economic challenges (Bruton, Khavul, Siegel, & Wright, 2015; Jain, Nair, & Ahlstrom, 2015). Some argue that the U.S. model of entrepreneurship is not universally applicable around the world (Bruton, Zahra, & Cai, 2018). The limited comparisons between countries concerning entrepreneurship education (i.e., Lee, Chang, & Lim, 2005) has contributed to our lack of understanding regarding the universality of entrepreneurship education.

1.1. Reviews of entrepreneurship education

Early reviews of entrepreneurship education literature from 1974 to 1984 were conducted by Dainow (1986), followed by a review from 1985 to 1994 by Gorman, Hanlon, and King (1997). There are three major reviews of entrepreneurship education that focus only on higher education (Nabi, Linan, Fayolle, Kreuger, & Walmsley, 2017; Pittaway & Cope, 2007; Rideout & Gray, 2013). However, the study by Pittaway and Cope (2007) focused on data 10 years old or more and the review by Rideout and Gray (2013) covers articles up to 2010/2011. The review by Nabi et al. (2017) covers 159 articles published from 2004 to 2016 on university-based ENT impact not covered in previous reviews (e.g., Rideout & Gray, 2013) or meta-analysis of ENT education general outcomes (e.g., Martin, McNally, & Kay, 2013). Nabi et al. (2017) provide a teaching model framework that examines the relationships between pedagogical methods and outcomes. They divided the main types of impacts into personal change and business change. Under personal change, they examined the following impacts: attitude (32 articles, 20%), skills and knowledge (34 articles, 21%), feasibility (42 articles, 26%), entrepreneurial intention (81 articles, 51%). Under business, impact included: business start-up (21 articles, 13%), performance & socio-economics (8 articles, 5%). Other impact did not fit into either category (41 articles, 26%). The researchers found that there is still an emphasis on short-term outcome measures that are subjective and do not fully describe the pedagogies being tested. Longva and Foss (2018) reviewed 17 rigorous experimental impact studies on entrepreneurship education and concluded that there was a great lack of methodological rigor on entrepreneurship education impact. A meta-analysis was conducted specifically on 73 studies on entrepreneurship intentions and entrepreneurship education (Bae, Qian, Miao, & Fiet, 2014). The researchers found a significant but small correlation between entrepreneurial intentions and entrepreneurship education which was bigger than correlations of the former with business education. When controlling for pre-education entrepreneurial intentions, the relationship between post-education entrepreneurial intentions was not significant. The authors advise further studies on the education-intentions relationship as well as further examination into the moderators of this relationship to increase our understanding of entrepreneurship education (Bae et al., 2014).

1.2. Entrepreneurship education today

Morris and Liguori (2016) stated, “the emergence of entrepreneurship education has occurred so rapidly that it has outpaced our understanding of what should be taught by entrepreneurship educators, how it should be taught, and how outcomes should be assessed” (p. xvi). Neck and Corbett (2018) contend that “the very essence of entrepreneurship education is the teaching and learning of entrepreneurship” (p. 9). Documented learning outcomes of entrepreneurship education in the U.S. include increased entrepreneurial propensity, start-up intentions, actual startups, and levels of self-employment (See Greene, Katz, & Johannisson, 2004; Greene & Saridakis, 2008; Joensuu-Salo, Varamäki, & Viljamaa, 2015; Peterman & Kennedy, 2003; Rideout & Gray, 2013; von Graeventiz, Harhoff, & Weber, 2010). Additionally, students who complete entrepreneurship education courses obtain skills and knowledge, confidence, and independence that go above and beyond to assist in an entrepreneurial career (Beynon, Jones, Packham, & Pickernell, 2014; Galloway & Brown, 2002; Young, 1997). Subject specific knowledge and experience are developed, particularly through experiential learning projects and internships (DeTienne & Chandler, 2004; Politis, 2005). Changes in entrepreneurial attitudes have also been observed (Packham, Jones, Miller, Pickernell, & Thomas, 2010; Peterman & Kennedy, 2003; Souitaris, Zerbinati, & Al-Laham, 2007). For example, the authors have observed students becoming more creative and innovative in their thinking and applications to Problem solving leading to entrepreneurial solutions.

1.3. Cross-campus entrepreneurship

Cross-disciplinary programs for teaching entrepreneurship across the curriculum have emerged across US campuses in the past 15–20 years, spurred by the applicability of entrepreneurship to all disciplines. Cross-disciplinary entrepreneurship refers to entrepreneurship across programs, departments and schools in a university in contrast to entrepreneurship found in one school (i.e., business). This has led to funding from foundations (e.g., Coleman Foundation, Inc., Chicago, IL, USA, Kauffman Foundation) that wish to effect positive economic and social impacts across many sectors (Kauffman Panel on Entrepreneurship Curriculum in Higher Education, 2008; Rasmussen & Sorheim, 2006; Welsh, 2014). In addition, entrepreneurship indirectly impacts politics in terms of public policy setting and grants for innovation projects and small businesses (Campbell & Mitchell, 2012).

A review of cross-campus entrepreneurship in higher education shows a variety of models. Some programs are co-curricular, where students engage in entrepreneurship activities outside of formal course environments (Gstraunthaler & Hendry, 2011; Nab, Pilot, Brinkkemper, & Berge, 2010; Preedy & Jones, 2015; Vincett & Farlow, 2008; Zimmerman, 2014). In another case, non-entrepreneurship programs have required students to take entrepreneurship courses or minors to fulfill the home departments’ program requirements; typically, these courses or minors are housed in the academic unit offering the entrepreneurship degree (Bisoux, 2012, 2013; Zhou & Rosini, 2015). Finally, programs, such as the one at our university, infuse entrepreneurship learning goals into cross-listed academic courses outside of the entrepreneurship administrative unit as well as offering core courses via the formal entrepreneurship major and minor; these cross-listed courses are administered by non-entrepreneurship academic units, and a majority of the cross-listed courses are hosted outside of the business school (Ahmad, Bakar, & Ahmad,

2018; Jones, Jones, Williams-Burnett, & Ratten, 2017; Ratten, 2011, 2017; Streeter, Jaquette, & Hovis, 2002; Welsh, 2014).

There has been significant faculty involvement in the creation of cross-disciplinary programs due to the growing popularity of entrepreneurship, the focus on experiential learning, faculty funding in the form of mini-grants and other incentives, training, as well as a realization by faculty that entrepreneurship skillsets apply to all students as well as themselves (Welsh, 2014). Multiple authors stress the importance of faculty to cross-disciplinary entrepreneurship efforts, indicating that programs that adopted curricular-based models, emphasized faculty members' teaching and research needs, and trained non-entrepreneurship faculty were more sustainable than programs that were purely co-curricular or simply opened entrepreneurship major courses to more outside students (Bécharde & Toulouse, 1998; Morris, Kuratko, & Pryor, 2014; Roberts, Hoy, Katz, & Neck, 2014; Welsh, 2014; Welsh & Tullar, 2014). Attitudes towards entrepreneurship as a discipline have become more positive (Packham et al., 2010) in terms of supporting business launches as well as impacting career paths through the knowledge and skills graduates gain during their studies (Jones, Pickernell, Fisher, & Netana, 2017). Some of the knowledge and skills gained can be attributed, in part, to entrepreneurship education expansion both in business schools and across the curriculum with strong focus on business start-ups, and alternative career paths (Jones & Matlay, 2011). The applicability of entrepreneurship "to be creative and innovative in all one does that brings value" (Welsh, 2014, p. 37) resounds universally with students, faculty, administrators within academic institutions as well as in the outside environment.

However, these findings reveal little about academic side changes that have been brought about by faculty cooperating in cross-disciplinary entrepreneurship efforts. Greater insight into curricular adoptions and pedagogical change stemming from cross-disciplinary entrepreneurship is necessary from both a theoretical point of view, as well as from a practical point in terms of applicability and effectiveness. Indeed, academicians have called for a greater examination of entrepreneurship education, in general, both from what is taught to how it is taught and the underpinning theoretical foundations (Nabi, Liñán, Fayolle, Krueger, & Walmsley, 2017; Sirelkhatim & Gangi, 2015). We answer the recent call by Nabi et al. (2017) to examine "a broader range of pedagogical methods using a teaching model framework" (p. 292). Pittaway and Cope (2007) also called for more in-depth investigation into the link between different pedagogical methods and student/graduate entrepreneurial outcomes. Further, examination of cross-disciplinary pedagogical methods is limited. Martin et al. (2013) note the lack of detail on pedagogical interventions and methods as well as the need to assess the impact of these interventions with theory (see Baptista & Naia, 2015; Fayolle & Gailly, 2008; Krueger, 2015; Lackeus, 2015; Neergaard, Robinson, Tanggaard, & Krueger, 2012).

Therefore, the contribution of entrepreneurship education to other fields must be examined critically for the inherent value the former imparts to the latter (and vice versa). While there are some authors presenting curricular frameworks for developing cross-campus or cross-disciplinary entrepreneurship education in higher education (e.g., Neck & Greene, 2011; Neck, Greene, & Brush, 2014), few of these directly inspect the entrepreneurship learning objectives that other fields adopt from the entrepreneurship discipline or field of practice. Moreover, there is a dearth of insight into any unique learning goals being created by other disciplines under the

auspices of cross-disciplinary entrepreneurship education that might inversely benefit traditional entrepreneurship studies. However, there is a growing body of literature that looks at entrepreneurship blended with other disciplines that can be applied to student careers in disciplines as varied as arts entrepreneurship (Welsh, Onishi, & DeHoog, 2014) and biodesign innovation (Kauffman Panel on Higher Education, 2008), for example. Entrepreneurship is one of the few careers that students can actively pursue while they are in college in the form of off-campus work, fellowships, business creation, projects and Problem solving (Kauffman Panel on Higher Education, 2008). Studying entrepreneurship has been suggested to directly conceptualize the relationship between entrepreneurship, labor markets and career options (Burton, Sørensen, & Dobrev, 2016).

Toward this end, we present findings derived from a study of the learning goals of both core entrepreneurship degree program courses and cross-listed courses in an extensive cross-disciplinary entrepreneurship program at our university. The Entrepreneurship Cross Disciplinary Program (ECDP) has been built within a public university in the United States as a matrix organization that is supported by an academic board outside the business school as well as reporting to the business school administrative head. The ECDP is separate from the entrepreneurship degree program. It does not offer a degree itself but involves an organized group of cross-campus faculty who share interests in promoting entrepreneurship within their respective disciplines and across the university campus and in surrounding communities as well. This is an exploratory study which is limited to the consideration of learning objectives and expected learning benefits for students taking cross-listed and core entrepreneurship courses and does not attempt a discussion of the administration or funding of the ECDP. The implications of our findings for management education are discussed. In our paper, management is viewed as an 'other' discipline.

2. Background

The field of entrepreneurship has proliferated since the 1970s and 1980s (Katz, 2003). Entrepreneurship is viewed as a separate discipline from traditional management and business studies, even though entrepreneurship faculty were often housed in Management and Business Administration departments (Katz, 2003; Kuratko, 2004). Solomon, Duffy, and Tarabishy (2002) conducted a nationwide study on the state of entrepreneurship education and results showed that it is differentiated by including information on business launch, not just how to manage a business. Gartner and Vesper had concluded the same in 1994 (Gartner & Vesper, 1994). Now there are separate departments of entrepreneurship (i.e., Indiana University, among others) and schools of entrepreneurship (i.e., Schulze School of Entrepreneurship at the University of St. Thomas, Babson College). There are Ph.D. programs in Entrepreneurship (i.e., University of Louisville, Indiana University, among others). Research on entrepreneurship education has been gaining momentum since the 1980s (i.e., Farhangmehr, Goncalves, & Sarmento, 2016; Gorman et al., 1997; Souitaris et al., 2007; von Graevenitz, Harhoff, & Weber, 2010). Our paper contributes to this growing body of literature by considering how entrepreneurship serves other disciplines in a university, specifically through the curricular changes that have occurred in developing an interdisciplinary program. North (2015) emphasizes the importance of this activity.

To be clear, ‘interdisciplinary,’ defined in the context of the current study, refers primarily to our current model of cross-listing courses that are hosted by academic units outside the entrepreneurship major; such courses carry the registrar's identifiers for both entrepreneurship (ENT) and one other discipline. A more accurate term is cross-disciplinary because the cross-listing in our case involves a process of identifying faculty outside the entrepreneurship major who are willing to include a minimum of two entrepreneurship learning objectives in their syllabi and to engage in joint oversight of the cross-disciplinary program as academic board members. A course typically aggregates learning objectives, content, instructional and assessment activities from both disciplines following best practice (Henry, 2015).

Several immediate suppositions need to be clarified prior to moving forward. First, we argue that exposing non-entrepreneurship students to entrepreneurship education offers these students some valued benefit beyond what the home discipline provides. Otherwise, there would be no incentive for other disciplines to add entrepreneurship into the mix of learning objectives they have for their students. Secondly, this study assumes that non-ENT programs are porous enough in their curricular structures to assimilate content or perspectives from the entrepreneurship field into one or more courses. Given the substantial growth of cross-disciplinary entrepreneurship programs across the US, both these expectations appear to be sensible (Morris, Kuratko, & Cornwall, 2013).

2.1. Definitions of entrepreneurship education

There are many entrepreneurship learning topics in the typical entrepreneurship college degree program, yet generally, they may be sorted into: entrepreneurship core mindset development, i.e., creative or design thinking, innovation; entrepreneurship core skill sets, i.e., business model formation, feasibility analysis (idea to opportunity), business planning (opportunity to action), entrepreneurial finance; and entrepreneurship supplementary areas, i.e., global entrepreneurship, social entrepreneurship, franchising, family business, technology entrepreneurship (for a complete synopsis of the topics, see Hynes, 1996). Entrepreneurship-owned courses are narrowly specified since the degree must be differentiated in concrete ways from other business programs to satisfy regional accreditation requirements, i.e., establishing unique learning goals for different degree programs. Thus, to gain curricular approval, entrepreneurship degree curricula must pass the test of not overlapping too much with the other business disciplines.

However, it is important to recognize that entrepreneurship education coexists with the generalized business curriculum and with other skills deemed critical to entrepreneurial success, such as communication and teamwork (Freeman, 2012). Entrepreneurship majors may be required to take business common core or minor courses. For example, the National Content Standards for Entrepreneurship Education encompass three broad strategies in their breakdown of desired competences for budding entrepreneurs:

- **Entrepreneurial Skills** - The unique traits, behaviors and processes that differentiate an entrepreneur from an employee or manager;
- **Ready Skills** - The business, or entrepreneurial, knowledge and skills that are prerequisites or co-requisites for the study of entrepreneurship. These include

communications, team skills, and critical thinking/information literacy/research skills. Career or professional preparation also falls within this category; and

- Business Functions - The traditional business activities performed in starting and running a business. Financial Management, Resource Management, Information Management, Marketing Management, Operations Management, Risk Management, and Strategic Management (Consortium for Entrepreneurship Education, 2004).

These standards explain in the broadest terms what students need to be self-employed or to create and grow a new venture. While 'Entrepreneurial Skills' may reflect specific courses offered by entrepreneurship faculty, clearly business readiness and functional skills factor greatly into the equation of entrepreneurial success. By making this distinction between narrow and broad, we are drawing reader attention to the complexity and constraints surrounding the act of defining entrepreneurship education in terms of its role in higher education as well as its relationship with other disciplines both within business and outside the business school. Moreover, in studying cross-disciplinary entrepreneurship education, we are open to the widest set of possible learning goals. We expect to see entrepreneurship education learning foci emerging both systematically (due to training and influence of entrepreneurship faculty on non-entrepreneurship partner faculty who cross-list their courses) and organically (due to other fields' modifications of entrepreneurship to fit their disciplines).

2.2. Entrepreneurship education and pedagogical strategies

Extant literature claims many benefits of entrepreneurship learning for students through novel pedagogical strategies, for example, the increased use of hands-on learning. There are several teaching strategies commonly associated with entrepreneurship education: experiential learning, Problem-solving, career preparation, and community engagement. Therefore, in addition to verifying what learning themes are present in the EDCP program, we also attempt to characterize the presence of these four strategies.

Entrepreneurship education motivates students through learning by experience. Entrepreneurship education has used novel pedagogical methods to spur student learning (and enthusiasm). As the field of entrepreneurship education has evolved, faculty members have shifted toward experiential learning models (Solomon, 2007). Experiential learning is a significant feature of many cross-campus entrepreneurship education programs (U.S. Department of Commerce, 2013).

Through the implementation of creative classroom learning, students develop concept models, feasibility studies, business plans, and implementation plans for businesses and innovative ventures, profit-based and non-profit. One university program argues that entrepreneurship offers an expanded educational landscape: "A true hallmark of the [entrepreneur] E-scholar program is that it overcomes common barriers to learning. Students are exposed to other useful learning environments outside the classroom; they can tap into expertise of numerous business professionals besides their professors" (Johnson & Envick, 2014, p. 137). In such experiential settings, students who are passive in classroom situations may be found to actively

engage more willingly with individual and team tasks (Krueger, 2007). Entrepreneurship education within and beyond the traditional classroom has been reinforced through the emergence of on campus or community-based entrepreneurship centers, which are good sources of guest speakers and other activities (Kuratko, 2004).

Entrepreneurship makes students better Problem solvers. In addition, ENT programs uniquely support learning about starting a new business from the ground up (venture creation) and try to creative thinking and opportunity-seeking into the mindsets of their students (Gorman et al., 1997). In addition, students learn integrated approaches to applying relevant data and information sources to problem resolution. Part of the intentional design of the cross-disciplinary programs is to effect student learning at higher levels of Bloom's taxonomy (Anderson, Krathwohl, & Bloom, 2001). The benefit for students is that they develop critical thinking: one of the principal competencies desired by business employers that is identified as lacking in college graduates (Scriven & Paul, 1987). Critical thinking is often transdisciplinary in that it synthesizes information and ideas from different fields of study (Aldrich, Anderson & Barthelemy, 2014). In summary, entrepreneurship courses are seen to make students more readied for problem solving and leadership roles (Ratten, 2017).

Entrepreneurship enhances job readiness. Entrepreneurship degree programs are like many other professional degree programs in that students are being prepared to get a job or to enter graduate school. However, there is a strong belief that entrepreneurship faculty are better preparing students for the real world by stressing personal skill development as well as business skill development (Minniti & Bygrave, 2001; Sherman, Sebor, & Digman, 2008). Student activities such as onsite business visits, entrepreneur guest speakers, investment idea consulting and competitions, and entrepreneurship club conferences enhance job readiness in what Bedwell, Fiore, and Salas (2014, p. 173) refer to as the “hidden curriculum”, where important professionalization skills, e.g., interpersonal skills, initiative, dependability, may be experientially learned through external or hands-on opportunities, rather than being explicitly taught through readings and tests.

Providing students with realistic career perspectives and understanding of self-employment risk is a common academic rationale for embedding entrepreneurship into the curricula of other disciplines. West, Gatewood, and Shaver (2009) document that liberal arts faculty see entrepreneurship education to provide another career avenue for students. Music entrepreneurship has been touted to avoid rampant music-related career failures stemming from inadequate career preparation in college music degree programs (Friedrichs, 2017). Sports management is another field adopting entrepreneurship to capitalize on opportunities and ensure that athletes are more strategic and innovative in planning for their futures (Ratten, 2011).

Entrepreneurship involves students in community engagement. Universities are surrounded by entrepreneurs, in fields ranging from arts and crafts to agriculture to digital and technological ventures. Entrepreneurship programs can harness the collective energy and entrepreneurial skills of faculty, student entrepreneurs and local business people to support sustainable local business development (Schalin, 2010). Entrepreneurship programs enable students to share new business models with people in the surrounding community (Brown, Debbage, & Bowen, 2018) and at the same time students develop connections with information resources that can help them achieve

their own entrepreneurial goals (Bosma & Schutjens, 2008; Stam, 2009). This is true on a national as well as international level (Acs, 2006; Carree & Thurik, 2010).

3. Methods

3.1. Background information on sample

The Entrepreneurship Cross Disciplinary Program (ECDP), founded in 2011, is a unique curricular design of cross-listed courses that serve B.S. in Entrepreneurship majors, Entrepreneurship minors (open to all students), graduate students, and as electives for business students and non-business students from across the University. From the start, institutional policy has supported the diffusion of entrepreneurship across the campus. In 2006, the university participated in the preparation of a statewide entrepreneurial proposal to the Kauffman Foundation that did not culminate. However, this process revealed widespread enthusiasm for teaching entrepreneurship on this campus. Building on this momentum, a taskforce including cross-disciplinary faculty began in the fall of 2007 to weave entrepreneurship into the fabric of the university by fueling and funding its entrepreneurial spirit. In 2008, an endowed chair in entrepreneurship was hired in entrepreneurship and led these initial efforts and expanded the reach and expertise of the Entrepreneurship Cross-Disciplinary Program (ECDP) that resulted in an entrepreneurship major, minor open to business and non-business students, and a graduate certificate—all of which included cross-listed courses throughout campus. The ECDP included development grants to faculty wishing to create new courses; support for student and faculty research on entrepreneurship; entrepreneurship education for students and faculty; public forums to educate the campus and community about entrepreneurship; lectures by visiting experts in various types of entrepreneurship; and workshops, symposia, and panels. Most of the academic funding and support came from the Coleman Foundation through their Entrepreneurship Fellows Program with grants through 2019. In April of 2009, the Board of Trustees approved the formation of an Entrepreneurship Center to expand entrepreneurial connections in the region, state and beyond by helping entrepreneurs start and grow their businesses. The role of the North Carolina Entrepreneurship Center is externally-focused while the ECDP is internally-focused but both entities work together to promote entrepreneurship on campus and beyond.

We have 59 entrepreneurship courses in 29 departments that teach not only an entrepreneurial mindset, but an entrepreneurial skillset (Welsh, 2014). Table 1 shows the breadth of faculties and courses involved in the cross-disciplinary program under study in this paper.

Entrepreneurship majors or minors can take cross-listed electives to satisfy their degree requirements and students outside the degree can take core entrepreneurship courses, although most of the latter are double majors or minors. As of fall 2018, there is a total of 158 entrepreneurship majors (first major 146 students, 2nd business major 9 students, non-business school 2nd degree 3 students) and 78 students minoring in entrepreneurship (34 business school students, 44 non-business school students). As of spring of 2018, double majors or minors have included students from almost every other major field in the university and the business school. Also, the Arts department has developed a concentration in Arts Administration with two required ENT cross-listed courses. During the 2017–2018 school year, approximately 7.25 percent (2142/29549) FTE undergraduate students enrolled in at least one ENT course and, of

those, 14.61% took more than one entrepreneurship class (313/2142). Approximately 1.64% of the graduate student body in 2017-18 took at least one entrepreneurship class (86/5247).

Table 1 Distribution of courses across fields participating in the EDCP.

Discipline/Field	Number of courses	Undergraduate (U)	Graduate (G)	Blend (U/G)
<i>Entrepreneurship</i>	14	14		
Arts administration	1	1		
Art	2	2		
Counseling and education development	1			1
Chemistry	1		1	
Consumer and retail studies	2	2		
Dance	2	1	1	
Economics	2	2		
Education leadership	1	1		
English	2	1		1
Geography	1			1
Gerontology	1			1
Health	2	1	1	
Health and human sciences	2	2		
Interior architecture	1	1		
Information systems	4	3	1	
Kinesiology	2	1	1	
Library science	1			1
Marketing	5	5		
Media studies	2	1		1
Music performance	1	1		
Music studies	1		1	
Philosophy	1	1		
Peace and conflict studies	1	1		
Specialized education services	1	1		
Tourism/hospitality	2	2		
Social work	1			1
Theatre	1			1
Visual and performing arts	1	1		
Total	59	45	6	8

The cross-disciplinary program has influenced curricular design for entrepreneurship majors and minors, who benefit by applying their knowledge base to other fields. The major (B.S. Entrepreneurship) is part of the curriculum in the school of business and consists of the university general education core requirements and standard business core found in most US-based accredited business schools (2 courses in economics, 2 courses in accounting, one course in finance, two courses in computers/management information systems, one course in business communications, one course in statistics, one course in calculus). We also require a sustainability course. Then students majoring in entrepreneurship take six courses: two core courses (feasibility analysis-idea to opportunity, and business plan-opportunity to action), one course in an area of emphasis, and two entrepreneurship electives that include all courses in all areas of emphasis as well as general entrepreneurship electives. Any student at the university can minor in entrepreneurship without the core business courses with five entrepreneurship courses. Students minoring in entrepreneurship take the same two core courses mentioned above. If the student is in the business school, the student takes one course from an area of emphasis and two electives; while students outside the business school take one more core requirement-entrepreneurial finance for non-business students. These students then choose one course from the area of emphasis and one elective for five courses total. Emphasis areas for majors and minors comprise: Creative Industries, Education, Family Business, Franchising, Healthcare Entrepreneurship, International Entrepreneurship, Social Entrepreneurship, Science, and Technology & Innovation Entrepreneurship and Sports Entrepreneurship. Majors and minors must take one area of

emphasis with at least one course in the area. Emphasis areas for the entrepreneurship degrees have grown organically as new disciplinary faculty have joined the cross-disciplinary program. Entrepreneurship majors and minors gain a fuller appreciation of the role of entrepreneurs in society, especially in the sciences and arts, as well as focusing on developing knowledge and skills necessary to start a business, grow a business, and enhance creativity/innovation in an array of professional fields. Welsh (2014) gives a complete description and assessment of the program as well as curriculum forms and sample syllabi in her book.

ECDP is guided by a 28-member advisory council made up of Coleman Entrepreneurship Cross-Disciplinary Fellows who teach the cross-disciplinary courses, as well as administrators (i.e., associate dean, department chair), and the student entrepreneurship club president. The program is under the provost's office, with the director reporting directly to the dean of the business school and indirectly to the provost. The Fellows serve as mentors for new cross-disciplinary entrepreneurship faculty and the Director provides one-to-one training and mentoring. In addition, the Program sends the Fellows to entrepreneurship conferences (i.e., Small Business Institute, U.S. Association for Small Business & Entrepreneurship, ICSB-GW Global Entrepreneurship Conference) as well as the Experiential Classroom at the University of Florida that specifically is designed for those who are new to teaching entrepreneurship and may come from other disciplines or outside academia (Welsh, 2014).

Sampling frame. Both core entrepreneurship degree courses (14) and cross-listed courses (45) offered by other departments were included in the present analysis. Our initial dataset of 339 entrepreneurship-specific student learning goals was compiled from the collected Form A syllabi of registered courses in the cross-disciplinary entrepreneurship program. A Form A syllabus is the one that is attached to the request for new or revised course approval (Form A request). Using the Form A syllabus as the source of our student learning goals was a control mechanism since Form A requests have the advantage of having faculty, curriculum committee, and administrative oversight on syllabus content. We wanted to avoid the vagaries of latter versions of syllabi that might not match intended learning goals exactly.

Inclusion protocol. The initial dataset included 105 learning objectives from core entrepreneurship major courses and 234 from cross-listed courses. Given that the goal was to identify what entrepreneurship learning themes were being emphasized, learning objectives were included from a cross-listed course syllabus based on two alternative tests. If the course title and description were centered on any of the following: entrepreneurship, small business, venture creation, or start-ups, then all learning objectives from that syllabus were included. If the cross-listed course did not specify a focus on entrepreneurship specifically in the title or course description, then usable learning objectives were required to have word roots relevant to: business model, business start-up, creativity, entrepreneurship, feasibility, funding, innovation, opportunity, small business, self-employment, or venture creation.

Coding process. Once learning goal data were obtained and transferred into a spreadsheet, the coding process was initiated. First, two researchers independently coded the contents of the 105 entrepreneurship core learning goals to identify the themes that constituted required entrepreneurship learning in the major. Following inductive coding techniques (Huberman & Miles, 2002), the researchers used previously described literature related to entrepreneurial skills,

business readiness skills, and business functional skills to verify an initial set of coding categories. If a learning goal theme appeared more than once in this sample, it was included as a coding category; new categories were added as distinct topical themes emerged in the data. Using the initial framework from the entrepreneurship major, the researchers then coded the remaining objectives from cross-listed courses, again, creating new categories as needed based on emerging themes. A third trained graduate student researcher independently coded all learning goals into the framework, with several instances of negotiated coder agreement after the fact. Each coder counted the frequency with which each of the learning goal themes appeared in the dataset. Similar strategies were adopted for subsequent analyses.

Coder negotiation generally revolved around the fact that the choice of verbs was confusing the coder. For example, “Articulate different entrepreneurship skills and how they are used in the music performance field,” was ultimately coded as apply entrepreneurship to a field rather than communication. Another example is “Appraise business opportunities in the health and fitness marketplace,” where the verb appraise was questioned as to its being an indication of feasibility or finance focus. Upon further reading of the source syllabus, it was determined that the objective belonged best in the opportunity recognition theme group.

A few learning goals carried more than one theme and no dominance could be detected, for example, “Develop entrepreneurial skill sets in the areas of opportunity recognition, research, and team dynamics.” This objective was therefore counted under three themes: opportunity recognition, critical thinking/information literacy, and team skills. This treatment of double-barreling meant that two goal rows were added to the entrepreneurship core data (now 107) and four goals to the cross-listed sample (now 238), representing minor modifications overall.

4. Results

Prior to coding, the median number of entrepreneurship learning goals per course was assessed. Median number of goals was 6 for core entrepreneurship degree program courses and 5 for other fields. These results suggest that the non-entrepreneurship faculty involved were relatively open to supporting entrepreneurship within their fields; they went beyond the minimum of two objectives required to be in the cross-disciplinary program. Thus, our assumption that other fields are sufficiently porous in their acceptance of entrepreneurship learning is supported.

4.1. Themes in learning goal statements

At the end of coding, 18 discrete learning themes were identified and are presented along with their frequencies in Table 2. Sample learning objectives for each theme category are presented in Table 3. Comparing learning goals from the entrepreneurship degree program and those goals from cross-listed courses developed outside the entrepreneurship faculty, one finds that there are differences in frequencies of themes (see Table 2). For the entrepreneurship degree core, the top five themes are management, finance, generalized entrepreneurship competence, global entrepreneurship, and creativity skill-building. For courses outside the entrepreneurship degree core, the top five are marketing, opportunity recognition, communication skills, management, and career preparation. In contrast, the lowest five for entrepreneurship degree core courses are applications of entrepreneurship to other fields, ethics, career focus, marketing, and team skills.

The lower six for cross-listed courses outside entrepreneurship are global entrepreneurship, legal issues, feasibility, startup case evaluations, team skills, and ethics.

Table 2. Distribution of learning goal themes in the entrepreneurship (ENT) core and cross-listed courses.

Student Learning Objective (SLO) Theme	# SLOS ENT Degree Core Courses	%	#SLOS Cross-Listed Courses	%
Management	18	16.82%	20	8.40%
Financial skills	15	14.02%	11	4.62%
Generic ENT goals	11	10.28%	13	5.46%
Global issues	10	9.35%	3	1.26%
Creativity skills	9	8.41%	10	4.20%
Social ENT or issues	9	8.41%	9	3.78%
Legal issues	6	5.61%	4	1.68%
Opportunity recognition	5	4.67%	24	10.08%
Communication skills	5	4.67%	21	8.82%
Business plan development	4	3.74%	14	5.88%
Critical thinking and information competence	4	3.74%	11	4.62%
Feasibility analysis	3	2.80%	8	3.36%
Start-up case evaluations	3	2.80%	8	3.36%
Team skills	2	1.87%	8	3.36%
Marketing	1	0.93%	31	13.03%
Career preparation	1	0.93%	19	7.98%
Ethical issues	1	0.93%	8	3.36%
Application of ENT to a field	0	0.00%	16	6.72%
Total	107	100.00%	238	100.00%

Table 3. Sample learning objectives by thematic category

ENT Learning Goal Theme	Sample written learning objective from Form A syllabi
Application of ENT to a field	Describe the role of entrepreneurship in global health practice
Application of ENT to a field	Evaluate how to integrate entrepreneurship in their music performance business
Business plan development	Organize and compose business plans for new venture creation on the Internet.
Business plan development	Develop a novel business plan in music performance that incorporates concepts of entrepreneurship
Career preparation	Distinguish various career paths in arts administration and entrepreneurship.
Career preparation	Evaluate the benefits and problems associated with starting a clinical practice and/or providing self-employed private services.
Start-up case evaluations	Evaluate successful and failed entrepreneurial global health ventures
Start-up case evaluations	Analyze the competitive business and market advantages of sample entrepreneurial businesses in the hospitality and tourism industry
Communication skills	Identify effective communication skills in the workplace for professional and entrepreneurial careers
Communication skills	Apply effective written and oral communication skills to business and coaching related situations.
Creativity skills	Produce ideas for innovative products to promote and protect health.
Creativity skills	Demonstrate an understanding of right-brain and left-brain directed thinking
Critical thinking	Think critically about myriad dimensions of entrepreneurial activity both from an historical economic perspective and a contemporary perspective,
Critical thinking	Evaluate the research and data analytical skills relevant to entrepreneurship activities in the public sector.
Generic ENT goals	Articulate different entrepreneurship strategies and how they are used among different business settings
Generic ENT goals	Analyze what dimensions of entrepreneurship apply to starting or growing a service industry venture
Ethical issues	Form ethical approaches to business practices that value the dignity of older individuals and the diversity within the older adult population.
Ethical issues	Describe the roles and responsibilities of entrepreneurs and small business owners in implementing sustainable and ethical business practices
Feasibility analysis	Discriminate between an idea that is an opportunity and an opportunity that can be acted upon in the health and fitness marketplace.
Feasibility analysis	Evaluate the feasibility of a new business concept that is based on the hospitality/tourism skill set
Financial skills	Analyze the options for financing a clinical practice (e.g., grants, public monies, private funds, partnerships).
Financial skills	Select suitable business financial tools to evaluate the significance of the proposed business plan and project the potential growth.
Global issues	Apply the tools and concepts learnt in the course to identify, evaluate, start, and manage international ventures.
Global issues	Locate, interpret, and evaluate information on diverse global culture from the entrepreneurial angle.
Legal issues	Understand basic legal requirements to start a business.
Legal issues	Interpret contract negotiation and union laws
Management	Practice leadership skills for dance administration
Management	Create mission and vision statements that describe the meaningful work that have an impact on others
Management	Define the concepts of specialization, centralization, span of control versus management levels, and line versus staff positions.
Marketing	Develop effective marketing materials for an independent art studio
Marketing	Apply effective customer service skills to increase sales in an independent retail store.
Marketing	Apply key demographic and market segmentation analysis using a values-based approach to product development and service delivery.
Opportunity recognition	Conduct research to identify business opportunities for a student run art studio
Opportunity recognition	Identify opportunities for sustainable urban planning and urban entrepreneurship
Social ENT or issues	Evaluate what a social entrepreneurship venture is and how best to accomplish its goals and objectives.
Social ENT or issues	Apply entrepreneurship classroom learning to the community
Team skills	Work effectively in a multi-function team
Team skills	Demonstrate the ability to work with a team in a collaborative manner.

A secondary analysis of theme prevalence was conducted by both highlighting higher order themes discussed in the background literature and sorting learning objectives by higher order meta-disciplines (see Table 4). Looking at the entrepreneurship degree core, we see that most of its learning goals are associated with core entrepreneurship skills, business functions (management and finance) and social issues (social, global, legal, and ethical). Most of the other groups have a critical mass of learning goals in the entrepreneurship core skill and business functions themes. Two approaches that seem to be markedly unique in this comparison are the singularly strong focus of the arts and performance courses on overt career preparation learning goals and the English, Philosophy, and Library Science faculties' prioritization of business readiness skills. Arts and performance and business-related entrepreneurship courses seem to have lower concentrations of learning goals around social, global, legal, and ethical issues.

Table 4. Distribution of Entrepreneurship (ENT) learning goals across meta-discipline categories

(n of sample)	All	ENT Core	Arts, Dance, Music, Theatre	Education, Social Work, Peace & Conflict Studies	Business, Economics, & Geography	English, Philosophy, & Library Science	Health & Science
	(345)	(107)	(72)	(21)	(76)	(22)	(47)
Entrepreneurship core	32.16%	32.71%	31.94%	47.62%	28.95%	18.18%	38.30%
Business functions	27.83%	31.78%	22.22%	19.05%	40.79%	4.55%	21.28%
Business readiness	14.78%	10.28%	15.28%	4.76%	13.16%	45.45%	17.02%
Issues (social, global, ethics)	14.49%	24.30%	6.94%	23.81%	2.63%	22.73%	14.89%
Career preparation	5.80%	0.93%	19.44%	4.76%	1.32%	4.55%	4.26%
Applications of ENT to a field	4.64%	0.00%	4.17%	0.00%	13.16%	4.55%	4.26%
Total	100.0%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.2. Pedagogical references in learning goal statements

Lastly, the content of the learning goals was reviewed for references to pedagogical strategies discussed in the literature section that are perceived to be particularly strong in entrepreneurship education. Experiential learning is defined as the engagement of the student in doing something beyond the class-based exercises or readings, e.g., simulated or real deliverable for a business.

Experiential learning, career preparation, and community engagement. Content analysis of the full set of 345 learning goals produced Fig. 1, Fig. 2, Fig. 3, which display the percentage frequencies and types of sub topics under the categories of experiential learning (n = 23), career preparation (n = 16), and community engagement teaching strategies (n = 7). Fig. 1 shows nine instances of business plan construction with all other techniques showing up once or twice in the data set. Each item in Fig. 1 represents a hands-on tool or deliverable product described in a course learning goal.

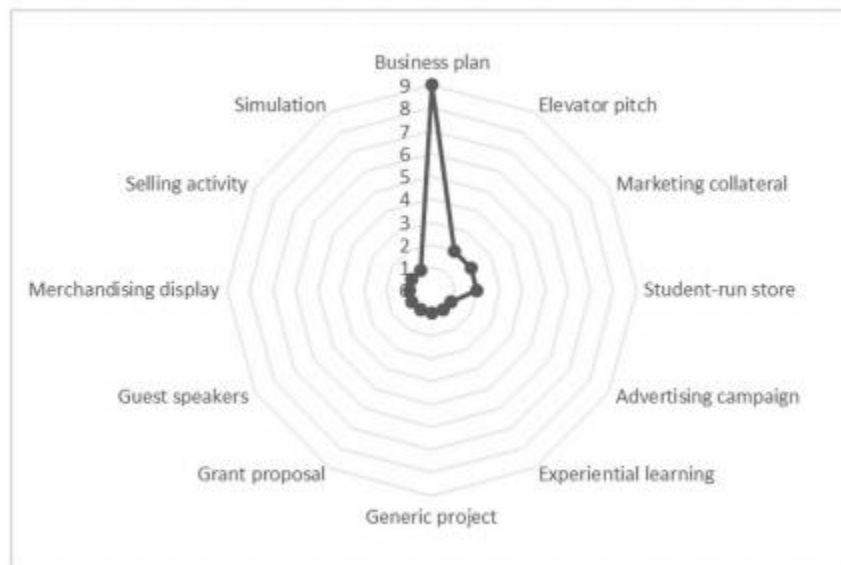


Fig. 1. Experiential learning techniques used (raw frequencies).



Fig. 2. Career preparation techniques used (raw frequencies).

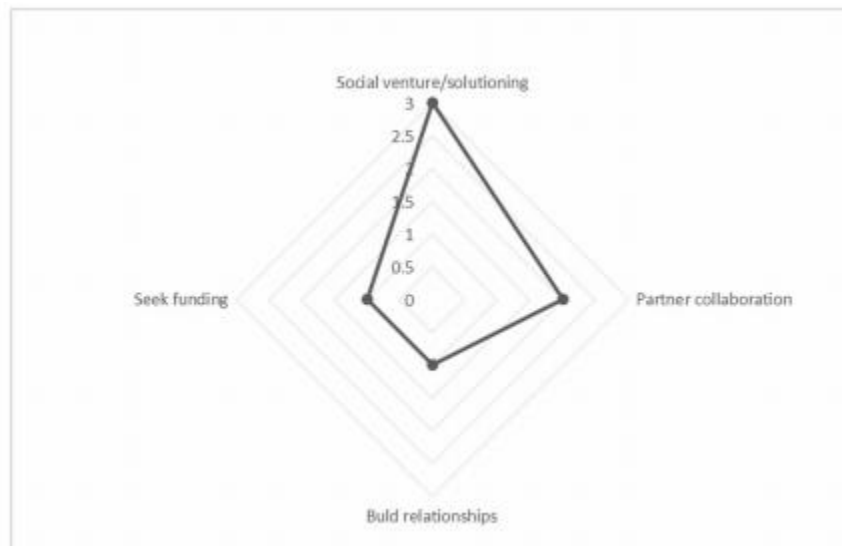


Fig. 3. Community engagement techniques used (raw frequencies).

In Fig. 2 we see that six learning objectives on goal setting were present in the dataset. Other career preparation foci ranged from self-employment career awareness and field-based job prospecting to more specific professional and personal development. Fig. 3 shows very few explicit mentions of community engagement in this set of entrepreneurship learning goals; constructing solutions to social problems appeared three times.

Problem solving capability. In the final analyses, we directed our attention to the area of building better problem-solvers through entrepreneurship education. We opted to employ Bloom's taxonomy (Anderson et al., 2001) to conduct this content analysis, specifically sorting the objectives by their verbs into the six levels of cognitive competence: remembering, understanding, applying, analyzing, evaluating, and creating. Fig. 4 presents a chart comparing the percentages at each cognitive learning level of the entrepreneurship degree core with the non-entrepreneurship crosslisted courses. Both groups seem to have a great deal of emphasis on

application exercises. In terms of lower cognitive learning levels, the entrepreneurship degree seems to prefer ‘understanding’ level verbs more than does the non-entrepreneurship group. For both groups, the bulk of their learning goals are at Bloom’s level four or lower.

Examining Fig. 5 which presents data only from the non-entrepreneurship courses, we see that the five meta-disciplines are generally similar in their distributions of learning goals for their entrepreneurship cross-listed courses with a few notable exceptions. The education and public-oriented disciplines seemed to be stressing the cognitive activities of analysis and evaluation rather than the first three cognitive levels or the highest level of ‘creating’. Arts and performance faculties have a slightly stronger focus on application and creation activities than do the other fields. Business-related and science-based fields appear to have relatively balanced distributions of verbs in their syllabi across these six cognitive learning categories.

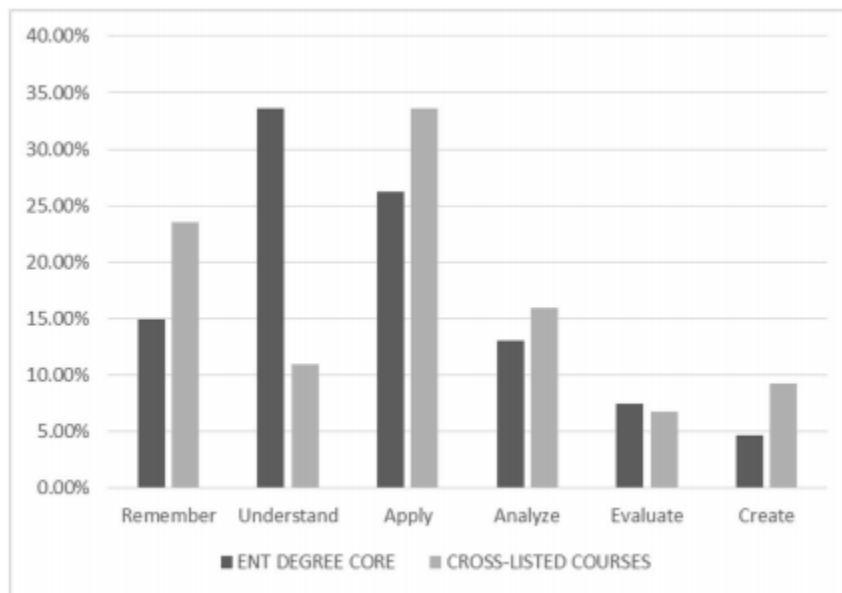


Fig. 4. Cognitive levels based on verb frequency (Bloom’s Taxonomy).

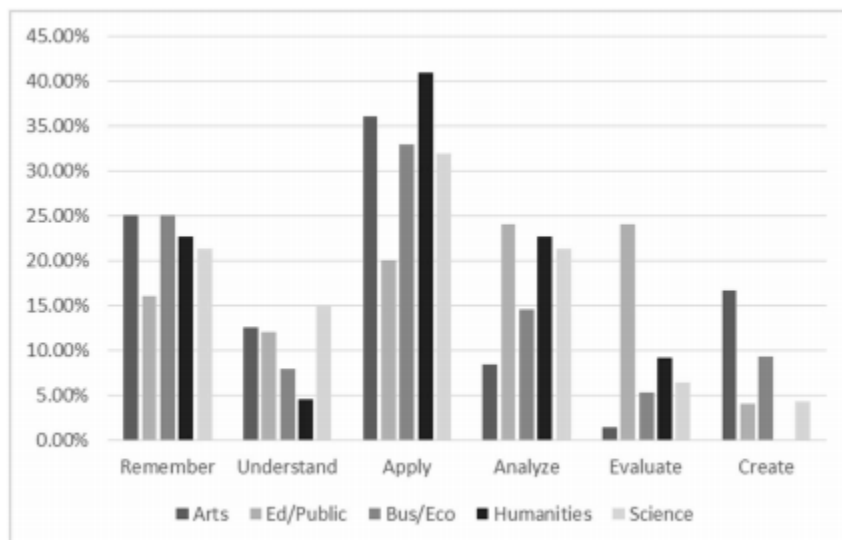


Fig. 5. Cognitive levels of verbs (Bloom's Taxonomy across meta-disciplines).

5. Discussion

The findings will be discussed from two vantage points. First, we look at what the entrepreneurship field is providing to other disciplines that have developed cross-listed courses and entrepreneurship learning goals for their students. This is accomplished by looking at the similarities between the core entrepreneurship degree learning goals and those goals specified in the non-major cross-listed courses. Secondly, looking at differences between the two sets of learning objectives, we explore topics of interest in cross-listed courses in other fields to see if there is anything useful for strengthening the entrepreneurship core degree program. In other words, do the other fields contribute something novel related to entrepreneurship that can be exploited by the entrepreneurship degree itself?

5.1. What do other fields gain from adding entrepreneurship learning goals?

When combining two or more fields in a course or program, instructors must make choices as to what learning goals will be emphasized from each of the proposed fields. New skill sets, such as entrepreneurship, when added to a course or program in a distinct field, may be reworked or adapted to fit the context of the borrowing discipline. Looking at the entrepreneurship themes that are being transferred into non-entrepreneurship cross-listed courses, one sees strong showings of marketing, opportunity recognition, communication skills, management, and career preparation. Additionally, looking at the comparison of themes across meta-disciplines (Table 4), we note that over half of the learning goals for four of the six groups are centered on entrepreneurship core topics and business functional topics. This confirms a few things.

Clearly, the role of entrepreneurship education in other fields is both to instill concepts from the core entrepreneurship skill set and, also, to create a bridge whereby business topics such as management, marketing, and finance may be introduced to students outside the business school. While this is intuitive, less obvious is that, only one of the core entrepreneurship skill areas, opportunity recognition had a strong presence in the non-entrepreneurship course sample. The other four (business planning, creativity, feasibility analysis, and start up case evaluations) were only moderately visible, to the extent that one might perceive the need to further develop other fields' perceptions and uses of these latter skill sets in preparing their students for self-employment careers. Otherwise, entrepreneurship education might be viewed by others as merely 'business' as usual rather than a more narrowly defined set of specialized competences facilitating venture creation and self-employment. This can be resolved by further training faculties to recognize the differences between general business and entrepreneurship in terms of entrepreneurship's specific skill sets.

The tension between disciplinary and entrepreneurship priorities is visible in this sample; education and public fields show stronger commitments to social issues (23% of goals) than most other fields (except entrepreneurship), business school cross-listed courses emphasize business functions (40%), and humanities faculty are centered on business readiness skills (45% of goals) rather than entrepreneurship core or business functions. It is also interesting that communication and career preparation were visibly among the more popular entrepreneurship goal themes for cross-listed courses. This exhibits that entrepreneurship education does indeed relate to the

concept of business readiness and that other fields, particularly arts and performance faculties, are taking advantage of entrepreneurship cross-listing to professionalize their graduates in ways they have not done previously.

5.2. Lessons for ENT degree programs for other fields deploying ENT goals

For the entrepreneurship degree core, the top five themes are generalized entrepreneurship competence, management, finance, global entrepreneurship, and creativity skill-building. In contrast, the lowest five for entrepreneurship degree core courses are applications of entrepreneurship to other fields, ethics, career focus, marketing, and team skills. We note that the learning goals related to the differentiated skills of business planning, feasibility analysis, start case evaluations, and opportunity recognition, while certainly present, are overshadowed by general business goals related to management. This suggests room for further differentiating the present entrepreneurship degree core from more generalized management topics of leadership, workforce development, and strategy, by expanding efforts in the delivery of core entrepreneurship skills and mindset development.

These results must also be taken in the context of entrepreneurship being a business major that participates in the undergraduate common core of the business school. It makes sense that entrepreneurship core courses do not emphasize ethics or marketing since entrepreneurship majors will be taking these courses under the wider business school requirements. However, the entrepreneurship core degree program has fewer objectives in two areas not served directly by the business school common core: applications of entrepreneurship in other sectors and practical entrepreneurship career preparation. The former goal is being served at present by having entrepreneurship majors and minors take a concentration within one of the allied cross-listed field areas. This effectively guarantees students will see entrepreneurship in action in different fields. The second goal needs more thought and systemization of career scoping and planning, since general career planning support provided by the school and the university focuses on working for large employers.

5.3. The role of entrepreneurship in fostering pedagogical strategies

We also endeavored to determine to what extent any of four pedagogical strategies are referenced in the learning goals collected and what intelligence could be gathered about them: experiential learning, Problem solving, career preparation, and community engagement. In terms of pure numbers, analysis of the full set of 345 learning goals showed low frequencies for hands-on experiential learning ($n = 23$), career preparation ($n = 16$), and community engagement activities ($n = 7$). Nonetheless, the qualitative information provides a good look at what is possible for instructors wishing to promote these strategies.

Experiential learning activities comprised business plans, elevator pitches, development of marketing collateral, student-run store, advertising campaign development, writing and submitting grant funding proposals, merchandising displays, selling activities, simulations and guest speakers. Noticeably absent were poster sessions and competitions which are available, but conducted under co-curricular opportunities, e.g., student clubs. Popular career preparation tactics included student personal goal setting, assessing career paths and risks, engaging in

personal and professional development workshops, and compiling a portfolio of skill-based evidence. Four concrete instructional strategies fell under community engagement: developing a business or social venture to solve a community challenge, building and engaging with community partnerships, and seeking funding from community-based sources.

Regarding student Problem solving, our analysis of the cognitive levels represented across the EDCP shows that the learning levels that dominated among these entrepreneurship goals were ‘analysis’ (level four) or below. This finding suggests that the upper levels of Bloom that are usually associated with critical thinking and improved problem solving are not being achieved across the board in the current course designs. Arts and performance with higher levels of creative activity and education/public sector fields with higher levels of evaluation (likely related to the impacts of government policies) are the ones that lead in documented commitment to upper levels of cognitive learning.

Conclusion

This study on the learning goals of a massive cross-disciplinary entrepreneurship program provides insights into the relationship between entrepreneurship and other disciplines both inside and external to the business school. In an analysis of syllabi across the Entrepreneurship Cross-Disciplinary Program, we have identified 18 critical learning goal themes within our dataset of 345 student learning goals extracted from 59 courses across our program. We have furthermore classified these learning objectives into critical entrepreneurship skillset areas with the following results: entrepreneurship core (112), business functions (96), business readiness (51), social/ethical/global/legal issues (50), career preparation (20) and applying entrepreneurship to a field (16) (See Table 4).

6.1. Theoretical implications

Our major contribution is to start a more coherent conversation about the relationship between entrepreneurship degree curricula and courses hosted by other disciplines within the framework of cross-disciplinary programs. In addition, we identify 18 discrete goal themes and six higher order themes that can be used to assess other cross-disciplinary programs. From a methodological perspective, we have established student learning objectives as one key source of intelligence about curricular changes effected by entrepreneurship education expansions into new fields. We believe that several of the approaches used to review the learning goals in our dataset may be replicated effectively by other researchers or program assessors.

6.2. Practical implication for faculty outside ENT

Firstly, there is evidence of a continued influence of the traditional management field on the core topics embedded in the entrepreneurship degree program as well as in the entrepreneurship learning goals adopted and developed by non-entrepreneurship faculty. Topics on leadership, strategy, and global business issues may overlap with management curricula. We see also concepts and skills related to planning, organizing, directing, and controlling tasks and people. In many cases, the adopted management learning goals are made relevant to entrepreneurship by adding words such as “start-up or growth phases” and “for entrepreneurs or self-employment.” In the absence of approved access to regular management courses in the business school, non-

business majors may find that entrepreneurship courses provide such content and skill development.

Faculty should take what this paper provides and apply it to their own context. The mission and vision of each university is unique. According to observations by one of the authors who consults regularly with universities on building cross-disciplinary entrepreneurship programs, research-focused universities often prioritize entrepreneurship that fosters technology transfer and patentable products, while teaching-oriented and professional programs emphasize self-employment, internships, and hands-on client based projects. Another example is the degree to which a university's business school faculty are connected to small and medium-sized business development versus formulating strategies for large traditional corporations. With the former, faculty may view entrepreneurship with more interest since it applies directly to self-employment and new business creation. It will be imperative to review the learning goals of each entrepreneurship course prior to permitting management students to take the course for credit under the management degree. Some entrepreneurship courses add value for business students, others may replicate what business students already know either from their own major or from the business common core.

Entrepreneurship courses do offer hands-on learning opportunities, yet again, faculty in other disciplines should move cautiously rather than assuming every entrepreneurship course is equal in that regard. Opportunities may be more prevalent in co-curricular settings. We do argue that both the entrepreneurship degree and other disciplines beyond arts and performance fields can benefit from an increase in directed self-employment career planning within entrepreneurship courses. It is apparent that arts and performance faculty are helping students establish entrepreneurship career goals to compensate for potential acting, art, or music career disappointments and serve as a viable model. In this vein, we also note no mention of business or career exit strategies across the board. This is another topic that may be enhanced.

Where entrepreneurship core and cross-listed instructors shine perhaps is in their openness to interdisciplinary focus, as evidenced by their willingness to incorporate learning goals from multiple fields. Some fields are not so porous. Extant literature suggests that management disciplines were slow to integrate diverse types of knowledge into their curricular frameworks, although the potential for more effective student Problem solving by doing so was acknowledged early on (Cheit, 1991; Easton, 1991; Payne, 1998). This occurs even within the traditionally integrative strategic management courses; Kuperman, Athavale, and Eisner (2007) remark that strategic management teachings have neglected the concerns of the financial community. Knowledge of the law and related issues of corruption was also lacking in management students (Becker, Hauser, & Kronthaler, 2013).

However, management education is expected to benefit from the addition of entrepreneurial skills sets in its curriculum (Ahmad et al., 2018; Jones et al., 2017). From this stance, exposure to entrepreneurship curricula may provide added lessons in synergy of perspectives and multiple stakeholder requirements. The present model of an entrepreneurship degree which requires focused study in fields of practice made available by the non-entrepreneurship cross-listed courses is one that can ensure that general management students have experience in an industry or two prior to graduation. There clearly is added value in introducing management students to

cross-disciplinary entrepreneurship courses that go beyond the core knowledge, attitude, and skills in traditional entrepreneurship degree courses.

6.3. Limitations and future research

In terms of sampling, the focus of this study was on entrepreneurship learning goal statements, using a controlled sampling frame of Form A syllabi, rather than a survey of what faculty are doing or other data source. Thus, the findings should be considered measures of intentions of the faculty rather than actual implementations. However, given that these learning goals received official approval, they represent commitment and institutionalized curricular designs. Also, a manipulation check conducted by a graduate student showed that most Form A syllabi learning goals were the same on the most recent offering of each course.

There is room for improvement in terms of reviewing whole syllabi or other data to determine if instructors may have mis-specified their intentions, i.e., used an action verb that did not truly signify the actual level of learning going on. It is also probable that information about student exposure to hands-on activities may be elsewhere in the syllabus or course documentation, e.g., website announcements, so more holistic study methods might be warranted in future. We note this is a study of one program. One constraint was the position of the entrepreneurship degree within a business school where students took the common core. Future studies might look across a multi-university set of cross-disciplinary efforts to garner additional insights into how the location of the entrepreneurship degree core impacts the definition of entrepreneurship education and, concomitantly, its influence on the curricula of non-entrepreneurship fields.

Appendix A. Supplementary data

Supplementary data related to this article can be found at
<https://doi.org/10.1016/j.ijme.2019.01.003>

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