

Do entrepreneurship students really want to be entrepreneurs? Examining the impact of pedagogical methods in entrepreneurship education

Frances Y.M. Chang,¹ Jennifer Lai,¹ Agnes Bosanquet,²

¹Macquarie Business School, Management Department, Macquarie University, Australia

²Torrens University, Sydney, Australia

Abstract

Entrepreneurship education (EE) helps provide a creative space for students to explore the viability of launching and managing their own businesses as a career choice. Drawing on inspiration theory, this empirical study examines the role of pedagogical approaches in inspiring students to pursue their entrepreneurial intentions. Examining data from a survey of entrepreneurship and leadership undergraduate students, multiple regression analysis shows that for entrepreneurship students, EE as a course, and entrepreneurship as a topic, impact the possibility of students becoming entrepreneurs. Content analysis of qualitative data suggests that a pedagogical approach that is interactive, requiring students to be action-oriented and to interact with others as part of their learning, provides inspiration for students' learning. This interactive approach applies to lectures, tutorials and assessments. We contribute to current discourse on pedagogical approaches that inspire students' learning in ways that reinforce their entrepreneurial intention. Findings of this research have implications for entrepreneurship educators, demonstrating that pedagogical design needs to incorporate an activity-based approach that mirrors real-world practice and that faculty policies in recruitment and training programs need to meet students' needs for contemporary pedagogical approaches.

Key words: Entrepreneurship education, inspiration, pedagogical methods, career choice.

Introduction

It is widely accepted that entrepreneurship is a primary driver of economic growth (Acs & Szerb, 2007; OEDC, 2019; Schumpeter, J. A., 1934). Research indicates that even in adverse economic conditions, such as recessions and economic financial crises, entrepreneurial and business activities actually increase (Bullough & Renko, 2013; Fairlie, 2013). Entrepreneurial activities such as new business formations, launch of new products and services contribute positively to economic growth and create employment opportunities. In view of these positive contributions, governments around the world actively invest in programs and policies to motivate entrepreneurial activities (European Commission, 2015; OECD, 2009). The Australian government, for example, has a number of programs and incentives to drive entrepreneurial new businesses (Australian Government, 2016a). Past and present entrepreneurship literature embraces the characteristics of creativity and innovation as critical to entrepreneurial outcomes (Drucker, 2005; Norton & Hale, 2011; Schumpeter, J., 1947; Tidd & Bessant, 2013). It seems fitting that in tandem with the strategy of driving entrepreneurial activities, aggressive innovation programs are launched by the Australian government (Australian Government, 2016b). Together, these programs create an entrepreneurial ecosystem that harnesses the

financial resources of the government and the resources of entrepreneurs such as their knowledge, innovation and networks to create new products and new markets.

Following the line of argument that entrepreneurship education influences entrepreneurial intention, our study focuses on the pedagogical approaches to entrepreneurship education (Haddoud, Onjewu, Nowinski, & Alammari, 2020; Rauch & Hulsink, 2015). Our research builds on previous studies which examine the relationship between entrepreneurship education (EE) to entrepreneurial intention (EI). We ask: “Do entrepreneurship students really want to be entrepreneurs?” We further advance this field of research to investigate the pedagogical approaches that best inspire entrepreneurship students. Our findings contribute to extant research on the relationships of EE to EI. First, we show that EE has an impact on EI and second, through iterative content analysis of qualitative data from open-ended questions, we identify three key pedagogical methods of lectures, in-class activities and assessments that play key roles in inspiring EE students’ learning. This may be useful to EE educators in designing and delivering course content to entrepreneurship students. Thirdly, we contribute to the current discourse on the benefits of a constructivist versus an instructivist approach to teaching entrepreneurship and business education (Hilliard, 2021; Kolb & Kolb, 2005). Our study shows the benefits of a constructivist approach in lectures, tutorials and assessments, where students experience and build their knowledge of the entrepreneurial process through working collaboratively with others in pitch presentations, case studies and start-up business plans. Connecting with real-world entrepreneurs through guest speakers at lectures and an assessment task of interviewing real-world entrepreneurs add to the benefits of an experiential and constructivist approach in entrepreneurship education. Findings of this research might help entrepreneurship educators when designing pedagogical approaches in entrepreneurship studies.

Theoretical background

Universities add to the entrepreneurial ecosystem by providing entrepreneurship education and other entrepreneurship programs, such as business-planning skills and industry interactions. Indeed, the increase and popularity of entrepreneurship education is quite evident (Kauffman, 2008; Kuratco, 2005), for example, a study by Maritz, Jones and Shwetzzer (2015) identified 584 entrepreneurship-related subjects and 135 ecosystems related to entrepreneurship in Australia. It is reasonable to assume that an increase in entrepreneurship education offerings has led to an increase in the number of students enrolled in entrepreneurship studies. Simultaneously, numerous conceptual and empirical studies have emerged on the effectiveness of entrepreneurship education (Aparicio, Iturralde, & Maseda, 2019; Bae, Qian, Miao, & Fiet, 2014; Kuratco, 2005) but findings are far from conclusive. While extant studies largely suggest a positive relationship between entrepreneurial education and entrepreneurial intention (Haddoud et al., 2020; Rauch & Hulsink, 2015; Souitaris, Zerbinati, & Andreas Al-Laham, 2007), others suggest an insignificant, even negative relationship whereby students, having completed their entrepreneurship studies, reported no desire to pursue an

entrepreneurial vocation (Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Oosterbeek, van Praag, & Ijsselstein, 2010). Entrepreneurship scholars suggest that these mixed findings on the efficacies of entrepreneurship education may be a result of different research methodologies and a host of research variables, making it difficult to compare findings (Lorz, Volery, & Müller, 2011; Rauch & Hulsink, 2015). For example, some studies indicate that contextual factors such as culture and the external environment affect the attractiveness of entrepreneurship, while others suggest that personal attitude and emotions of inspiration and entrepreneurial intention influence students' enrolment in entrepreneurship studies (Bae et al., 2014; Souitaris et al., 2007).

Entrepreneurship education and entrepreneurial intention

Following established literature, we define entrepreneurship education (EE) as “any pedagogical program or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities (Fayolle, Gailly, & Lassas-Clerc, 2006, p. 702). Specific to higher education, EE aims to cultivate an awareness of entrepreneurship as a viable career option (Slavtchev, Laspita, & Patzelt, 2012) and to encourage students to pursue their entrepreneurial intention of setting up novel business ventures (Nabi, Holden, & Walmsley, 2010).

Empirical studies on EE tend to focus on EI as the dependent variable, with the theory of planned behaviour (TPG) often applied to examine the relationship of EE to EI (Ajzen, 1991; Kautonen, van Gelderen, & Fink, 2015; Rauch & Hulsink, 2015). TPG suggests that intention is a strong predictor to behaviour and in the case of EE students, having EI indicates a desire to start their own business. Intention itself is influenced by other exogenous factors such as attitudes, for example, education, subjective norms and prior entrepreneurial experience. Intention is also influenced by perceived behavioural control (PBC) such that positive intention, while being a strong predictor to behaviour, may be negated with weak PBC (Ajzen, 2001, 2002, 2006).

Considerable empirical studies on the relationship between EE and EI, show evidence of positive links between EE and EI (Haddoud et al., 2020; Lange, Marram, Jawahar, Yong, & Bygrave, 2014; Sancho, Alicia, & Ramos-Rodríguez, 2020). These studies suggest that students exposed to EE are more likely to start new ventures and, in doing so, have potential to contribute to economic growth. Other studies indicate a positive but inconclusive link between EE and EI (Nabi et al., 2018; Nowiński, Haddoud, Lančarič, Egerová, & Csilla Czeglédi, 2019; Oosterbeek et al., 2010). Nabi et al., (2018) and Oosterbeek et al., (2010) suggest a negative relationship between EE and EI, arguing that EE may reduce the likelihood of entrepreneurship venturing as students begin to see other viable career options. Most EE research treats EI as an outcome of entrepreneurship studies, even as scholars suggest that there are other beneficial signals to EE even if students do not end up starting their own ventures, for example, self-assessing skills to explore if self-employment is a suitable career choice, acquiring human intellectual capital and professional workplace skills when studying

entrepreneurship (Goltz, Hietapelto, Reinsch, & Tyrell, 2008; Nabi, Linan, Fayolle, Krueger, & Walmsley, 2017; Passaro, Quinto, & Thomas, 2018; von Graevenitz, Harhoff, & Weber, 2010).

Given numerous conceptual and empirical studies on EE, and the mixed findings thereof, this paper focuses on the pedagogy of EE, exploring pedagogical approaches delivered in entrepreneurship classes, and students' perceptions of inspiration in participating in EE.

Pedagogy of entrepreneurship education

While past and extant studies on EE have primarily focused on outcomes, typically with EI as the dependent variable, some studies have looked at pedagogical methods that influence entrepreneurial attitude, drive, intention, perceived behavioural control and commitment (Florin, Karri, & Rossiter, 2007; Rauch & Hulsink, 2015). In a study of two Masters programs of entrepreneurship and supply-chain management, Rauch and Hulsink (2015) provide a list of teaching methods comprising lectures, group work, case studies and field projects, and find that EE has positive influence on attitude and intention (at T2) and perceived behavioural control (at T3) but it is unclear in their findings which specific pedagogy has stronger influence. Sherkat and Chenari's (2020) study suggest that 78% of implementation intention change can be attributed to entrepreneurship curricula, pedagogy and university climate with the same variables predicting 66% change in goal intention. Their study further finds that an EE enhances commitment of students to their entrepreneurial goals. In a study of 3,775 entrepreneurship alumni, Lange et al., (2014) find a positive influence of EE to EI when students studied two or more entrepreneurship subjects. Interestingly, the authors find significant influence when students write a business plan (Lange et al., 2014). Some studies frown upon the task of writing a business plan, regarding it as rather out of date and inflexible as a pedagogical method (Ries, 2011) while others have found positive learning outcomes where writing a business plan is part of EE (Lange et al., 2014; Schultz, 2022). One of few studies that explore qualitative findings of students' learning is a pre-and post-study by Nabi et al., (2018). Using a mixed method of quantitative and qualitative analysis, the authors find mixed results of the relationship between EE and EI, indicating an inverse relationship. However rich insights from their qualitative analysis suggest four key factors that EE influence EI: practical inspiration, learning practical entrepreneurial skills and knowledge, understanding the entrepreneurial process, and theoretical inspiration to start their own venture through observing others who have done it. There appears to be support for taking a more practice-based approach in EE teaching (Hilliard, 2021; Lange et al., 2014; Nabi et al., 2018).

Entrepreneurship is a field of education that is driven by contemporary social science and innovative thinking, thus requiring a 'learning by doing' approach to professional skills and knowledge in ways that contribute to problem-solving and creative thinking skills (Kolb, 1984; Kolb & Kolb, 2005). Kolb (1984 p.41) describes this 'learning by doing' approach as experiential learning, defined as "the process whereby knowledge is created through transformation of experience...from

the combination of grasping and transforming experience". In a similar vein, others (Johannison, 1991; Johannisson, Landstrom, & Rosenberg, 1998) describe this 'learning by doing' approach as entrepreneurial learning, a teaching and learning approach especially relevant for entrepreneurship students who desire to learn how to launch their own business venture. Hilliard (2021 p.387) reinforces this pedagogical approach with the view that "entrepreneurial education should reflect the real-world entrepreneurial process by providing for experiential learning".

The role of inspiration in entrepreneurship education

The concept of inspiration comprises three characteristics of transcendence, evocation and motivation. Transcendence involves the state where individuals strive to go beyond their ordinary limits, evocation where they tap into inner resources of experience and memories of creative energy, and motivation which compels them to act. Inspiration as a concept has been used in disciplines as diverse as psychology, education, management and theology (Thrash & Elliot, 2003, 2004; Thrash, Moldovan, Oleynick, & Maruskin, 2014). To be inspired suggests that a positive feeling is triggered towards an identified object or person and is accompanied by a state of strong emotional motivation. In entrepreneurship studies, inspiration is often described as a change of hearts (emotion) and minds (motivation) evoked by events or inputs from the program and directed towards considering becoming an entrepreneur (Souitaris et al., 2007, p. 573). Inputs from the program may include the various aspects of pedagogical content and delivery, teaching staff and peers' influence. In a study of science and engineering students who took up entrepreneurship courses, Souitaris et al., (2007) found positive correlation between inspiration towards subjective norms and EI but insignificant correlations to attitudes and perceived behavioral control. Other studies find that inspiration has positive mediating influence between EE and EI (Haddoud et al., 2020), while studies from Nabi et al., (2018) indicate that inspiration has a positive effect on students' learning outcomes, even as inspiration effects can change as EE students' progress through their entrepreneurship studies. With the concept of inspiration underpinning our research, we proposed the following hypotheses:

- H1: There is a significant difference between entrepreneurship students and non-entrepreneurship students on the inspiration of the entrepreneurship course.*
- H2: There is a significant difference between entrepreneurship students and non-entrepreneurship students on how the course inspired them about entrepreneurship.*
- H3: There is a significant difference between entrepreneurship students and non-entrepreneurship students on how the course inspired them to consider the possibility of becoming entrepreneurs in the future.*
- H4: Inspiration of the entrepreneurship course and entrepreneurship as a topic influences the possibility of students becoming entrepreneurs in the future.*

Method

Data Collection

A survey questionnaire was distributed to 439 undergraduate students. Students were given a link to the survey questionnaire from Week 10, with weekly reminders until Week 13, to encourage their response. Week 13 is the final week of the semester for their course of study. After data sorting and cleaning we received 148 completed and usable responses (34%). Of these 148 responses, 103 (70%) were entrepreneurship students and 45 (30%) were non-entrepreneurship students. Students were advised that their participation is voluntary, all responses are de-identified and that ethics approval for this study has been granted by the university's Ethics Committee.

Sample description

Table 1 provides the demographics of our participants. The sample included 45.3% female and 54.7% male. Participants ranged in age from 26 to 44, with 26.4% of them aged 28. Participants were from 30 different countries, including Australia, China, the United Kingdom, Argentina, the United States of America, South Africa, etc. which fell into 6 different continents, including Oceania (58.1%), Asia (26.4%), Europe (8.1%), North America (3.4%), Africa (2%) and South America (2%). Participants were from various academic disciplines with students from Business Administration (76.4%) making up the majority. Other participants were from Social Sciences, Formal Sciences, Humanities, Natural Sciences and Engineering as shown in Table 1.

Table 1. Demographics of participants

	Total Number	Percentage (%)
Gender		
Male	81	54.7%
Female	67	45.3%
Age		
1979 (44 years old)	1	0.7%
1988 (35 years old)	1	0.7%
1989 (34 years old)	4	2.7%
1991 (32 years old)	1	0.7%
1992 (31 years old)	9	6.1%
1993 (30 years old)	16	10.8%
1994 (29 years old)	34	23.0%
1995 (28 years old)	39	26.4%
1996 (27 years old)	33	22.3%
1997 (26 years old)	10	6.8%
Country of Origin		
Oceania (e.g., Australia, New Zealand, Fiji)	86	58.1%
Asia (e.g., Myanmar, Indonesia, China, Malaysia, Thailand, Pakistan)	39	26.4%
Europe (e.g., United Kingdom, Germany, Ukraine, Sweden, Norway)	12	8.1%
North America (e.g., Canada, United States)	5	3.4%
Africa (e.g., South Africa)	3	2.0%
South America (i.e., Bolivia, Argentina)	3	2.0%
Disciplines		
Business Administration	113	76.4%
Other programs related to specific professions	11	7.4%
Social Sciences	9	6.1%
Humanities	6	4.1%
Formal Sciences	6	4.1%
Natural Sciences	2	1.4%
Engineering	1	0.7%

Course programs

The entrepreneurship course was delivered over a 13-week semester with a weekly 2-hour lecture and 1-hour tutorial. Industry guest speakers presented in two of the thirteen lecture weeks.

Graded assessments for entrepreneurship students include (a) group work on developing a new business venture with a written start-up plan and pitch presentation, (b) individual report on the concept of entrepreneurship incorporating a short interview of an entrepreneur or small business owner, (c) weekly active participation in class, and (d) a final exam. For non-entrepreneurship students, graded assessments include (a) case study and presentation, (b) individual research essay on global marketing, (c) weekly active participation in class and (d) a final exam.

Measures

The three key variables of entrepreneurship education, inspiration and entrepreneurial intention were operationalised using established literature. We capture entrepreneurship education based on students'

self-selection of this unit, either as a core unit or an elective. Inspiration items were captured using inspiration scale developed by Thrash and Elliot (2003, 2004) using a 5-point Likert scale. Students were asked to rate the extent of their inspiration: 'I was inspired by this course', 'The course inspired me about entrepreneurship' and 'The course inspired me to consider the possibility of becoming an entrepreneur myself'. Items in the entrepreneurial intention construct were adapted from various empirical research on entrepreneurial intention using a 5-point Likert scale (Liñán & Chen, 2009; Nabi et al., 2018). Students were asked the extent to which they agree or disagree: 'My professional goal is to become an entrepreneur' and 'I prefer to be employed in an organisation and not be an entrepreneur (R)'. Statistical Package for the Social Sciences (SPSS) Version 27 was used to undertake all statistical analysis.

Additional explanatory power to our quantitative analysis was captured by using feedback from students to investigate aspects of the course that inspired their learning or otherwise. The qualitative data were obtained from the two open-ended questions in the survey which asked students to provide comments on the aspects of the course that (a) inspired their learning and (b) aspects of the course that they found uninspiring to their learning. To do this, we first imported all qualitative data from the survey into Leximancer 4.5 which provides a text analysis tool based on most mentioned words to display a visual map that shows how these words are related.

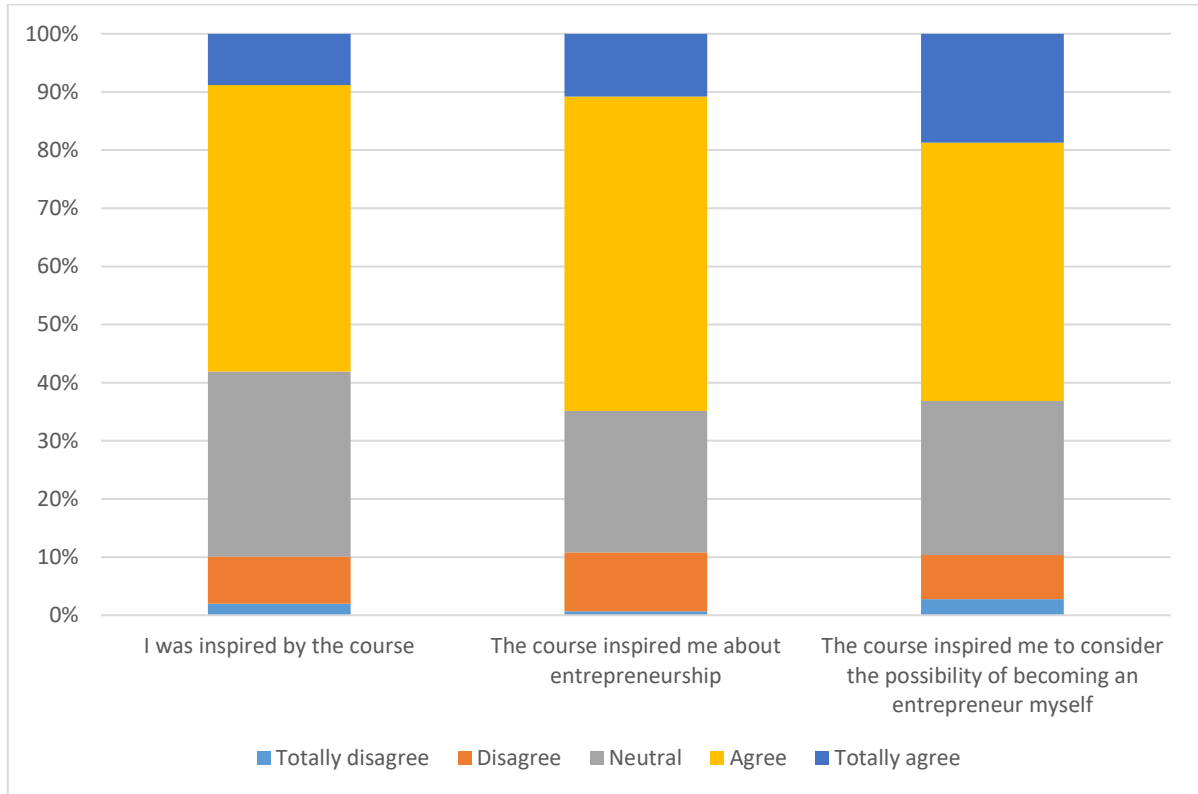
We proceeded to data cleaning and content analysis. During data cleaning, we included only feedback transcripts that were given in full sentences, whether long or short sentences and omitted any feedback that was just a single word or incomprehensible description. We then proceeded to an iterative process of content analysis (Krippendorff 2004), starting with identifying first-level themes. During the process of coding for core themes and subthemes, two PhD students and the first author separately did the initial coding and then met to compare notes and re-coded where necessary to ensure coding consistency of core and subthemes. With each theme, we matched each 'most mentioned word' to students' feedback for context. As we examined each theme for relevant content, we looked for patterns to identify pedagogical concepts and coded the concepts accordingly.

Results

Quantitative analysis

We first analyse the quantitative part of our data. Figure 1 shows that 50% of the students rated 'agree' or 'totally agree' that they were inspired by the course, whereas 57% of them 'agree' or 'totally agree' that the course inspired them about entrepreneurship. The percentage of students who rated 'agree' or 'totally agree' that the course inspired them to consider the possibility of becoming entrepreneurs themselves was similar at 56%.

Figure 1. Participants' responses relating to inspiration.



Independent samples t-tests

Three independent samples t-tests in SPSS 27 were used to examine the differences between the inspirations towards entrepreneurship between entrepreneurship students and non-entrepreneurship students. For the first statement, “I was inspired by this course”, there was a significant difference in the scores between entrepreneurship students ($M = 3.65$, $SD = .78$) and non-entrepreneurship students ($M = 3.21$, $SD = .99$); $t(134) = 3.28$, $p = .01$. Regarding the sentence “The course inspired me about entrepreneurship”, there was also a significant mean difference between entrepreneurship students ($M = 3.77$, $SD = .77$) and non-entrepreneurship students ($M = 3.26$, $SD = .95$); $t(68) = 6.31$, $p = .00$. Lastly, when prompted “The course inspired me to consider the possibility of becoming an entrepreneurship myself”, there was a significant difference in the scores for entrepreneurship students ($M = 3.76$, $SD = 1.06$) and non-entrepreneurship students ($M = 3.16$, $SD = 1.22$); $t(138) = 1.23$, $p = .00$.

The results of the three independent samples t-tests showed that compared to non-entrepreneurship students, entrepreneurship students found the course inspired them about entrepreneurship, and they would consider becoming entrepreneurs in the future (see Table 2). The p-values of all three t-tests were less than .05. The quantitative results addressed our first research aim

to examine the relationship between entrepreneurship education (EE) to entrepreneurial intention (EI). There are significant differences between entrepreneurship and non-entrepreneurship students on the inspiration of the course (H1), how the course inspired them about entrepreneurship (H2) and how the course inspired them to consider the possibility of becoming entrepreneurs in the future (H3).

Table 2. Independent samples t-test results

	Entrepreneurship students		Non-entrepreneurship students		df	t	p-value
	M	SD	M	SD			
Inspired by the course	3.65	.78	3.21	.99	134	3.28	.01**
The course inspired me about entrepreneurship	3.77	.77	3.26	.95	68	6.31	.00***
The course inspired me to consider the possibility of becoming an entrepreneurship myself	3.76	1.06	3.16	1.22	138	1.23	.00***
Note. Significant differences were found between entrepreneurship students and non-entrepreneurship students with regard to the three questions. <i>df</i> = degrees of freedom; <i>t</i> = t-values, $p < .05$, ** $p < .01$, *** $p < .00$							

Multiple regression analysis

A multiple regression analysis was conducted to test if the course itself and entrepreneurship as a topic impact the possibility of entrepreneurship students becoming entrepreneurs. The regression model revealed significant impact of *inspiration of the entrepreneurship course* ($\beta_{\text{inspiration of the entrepreneurship course}} = 0.25, p = .26$) and *inspiration of the entrepreneurship as a topic* ($\beta_{\text{inspiration of the entrepreneurship as a topic}} = 0.51, p < .00$) on *possibility of students becoming entrepreneurs in the future* (Table 3). The entire model was significant ($R^2 = .51, F(2, 92) = 46.30, p < .00$) and H4 was supported.

Table 3. Multiple regression analysis results

<i>Independent variables</i>	<i>Dependent variable</i> <i>Possibility of students becoming entrepreneurs in the future</i> (β coefficient)
<i>Inspired by the entrepreneurship course</i>	0.25*
<i>Inspired by the topic of entrepreneurship</i>	0.51***
Model F	46.30***
Degree of freedom	2
Adjusted R^2	0.50

Qualitative analysis

Only qualitative responses from entrepreneurship students were analysed as this cohort forms the study sample for our research. We received 96 comments from 103 entrepreneurship students, registering a high 93% response rate. We started by creating visual maps of word clouds based on the most mentioned words used when students described aspects of the course that they find inspiring and uninspiring. Visual maps of word clouds give an aerial perspective of how each word relates to other words, allowing us to understand the context of relationship between concepts based on most mentioned words (Davies, 2011). We first looked at aspects of the course that students find inspiring (see Figure 2) and uninspiring (see Figure 3). To the right of the word cloud maps are shown themes based on relative importance for example *group* was ranked highest in Figure 2, and scrolling down the ranking of themes provides context of the theme, for example “... group assignment let me experience what it's like to pitch a business... this inspired me to try and pursue my own business.”

Figure 2: Inspiring aspects of the Course

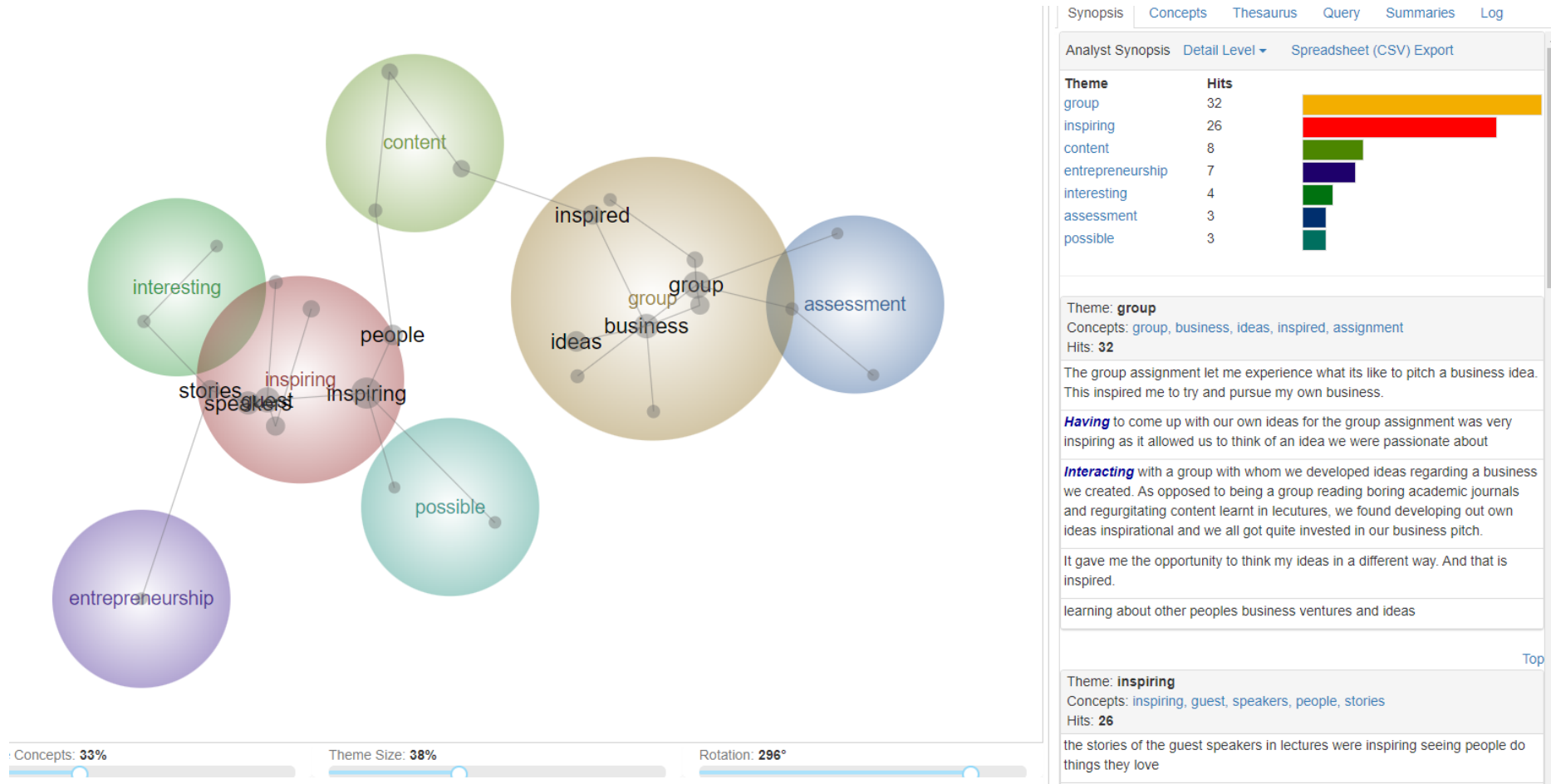
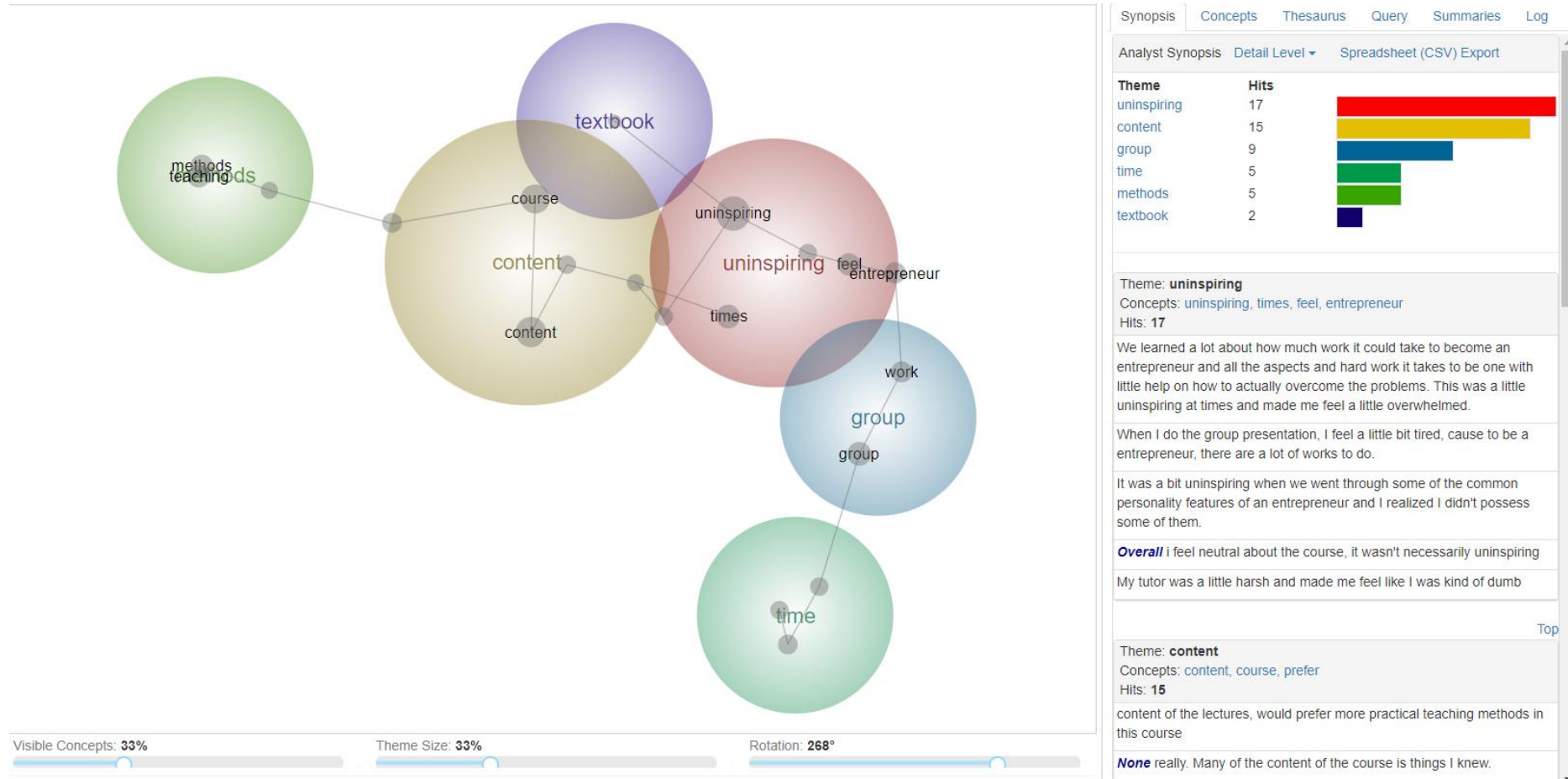


Figure 3: Uninspiring aspects of the Course



To understand the context of the word relationships we then explored a higher detailed level of the most mentioned words to describe their inspiration (see Table 4) and their non-inspiration (see Table 5). Table 4 shows a total of 120 most mentioned words from students commenting on their perceived inspiration, and the third column of Table 4 shows exemplary words indicating their perceived inspiration. In contrast, Table 5 shows a total of just 62 most mentioned words from students indicating their perception of non-inspiration. Exemplary words expressing their perception of non-inspiration is shown in the third column of Table 5.

Table 4: Words connecting to inspiring aspects

First level themes	Number of Hits	Most mentioned words
Inspiring	34	Inspiring, guest speakers, people, stories, entrepreneurs, interesting, life, success
Group	31	Group, business, ideas, assignment, pitch, developing, work, feasible, working
Inspired	16	Inspired, content, inspirational
Successful	13	Successful, entrepreneurial, lectures
Entrepreneur	10	Entrepreneur
Entrepreneurship	7	Entrepreneurship
Assessment	3	Methods, assessment 2
Lecture	3	Lecture
Possible	3	Possible

Table 5: Words connecting to uninspiring aspects

First level themes	Number of Hits	Most mentioned words
Uninspiring	19	Uninspiring, times, feel, entrepreneur, aspects, questions
Content	17	Content, course, prefer, felt, vague
Group	9	Group, work
Time	8	Time, lecture, students
Method	7	Methods, teaching, lectures
Textbook	2	Textbook

With each first-level theme, we matched each ‘most mentioned word’ to students’ feedback for context on their feedback. As we examined each theme for relevant content, we looked for patterns to identify pedagogical concepts and coded the concepts accordingly. From here, we determined eight clusters of subthemes: Content, Teaching, Lecture, Tutorials, Presentations, Case Study, Group discussions and Group work. From further analysis and abstraction of subthemes, three Core themes emerged as Lectures, In-class activities, and Assessments. This abstraction process to identify core themes is required as there is overlapping feedback in the subthemes, as visualised in Figures 2 and 3. While Content was largely related to Lectures, Feedback on Presentations, Group discussion, Group work and Case Study, content also related to Tutorials as well as Assessments. In this case, we

grouped feedback as they were given in relation to In-class activities and Assessments. Table 6 shows exemplary student feedback on the perception of Inspiring and Uninspiring pedagogical methods of their entrepreneurship studies.

Table 6: Exemplary student feedback on perceived Inspiring and Uninspiring pedagogy delivery

Core themes	Exemplary student feedback	
	Perceived Inspiring	Perceived Uninspiring
Lectures	<i>"I think it is content in lectures. From the contents I learnt how to be an entrepreneur very specific, that makes me feel maybe I can be an entrepreneur, too."</i> <i>"I was already inspired prior to studying this course, however a lot of the content, including the case studies, sparked more inspiration."</i> <i>"The stories of the guest speakers in lectures were inspiring seeing people do things they love... During lectures I liked hearing from the guest speakers and the stories of successful entrepreneurs. It was motivating and inspiring."</i>	<i>"Some of the course concepts were difficult to understand, which resultantly unmotivated me."</i> <i>"Content of the lectures, would prefer more practical teaching methods in this course."</i> <i>"As I'm currently reading chapter 15 of the textbook, and since I'm not really good at maths, this content in the textbook is uninspiring, though it's important to know how to do financial plans."</i>
In-class activities	<i>"Interacting with a group with whom we developed ideas regarding a business we created. As opposed to being a group reading boring academic journals and regurgitating content learnt in lectures, we found developing own ideas inspirational and we all got quite invested in our business pitch."</i> <i>"It sounds weird, but it was inspiring to be able to differentiate between feasible business ideas and unfeasible. Before I used to think that any idea was possible, and it is not entirely true."</i> <i>"Having to come up with our own ideas for the group assignment was very inspiring as it allowed us to think of an idea we were passionate about."</i>	<i>"It was a bit uninspiring when we went through some of the common personality features of an entrepreneur, and I realized I didn't possess some of them."</i> <i>"Group work with students who don't care."</i> <i>"The participation part, at times I felt pressured to formulate opinions based upon things I have only just heard about, I prefer to think about things for a while before coming up with an answer."</i>
Assessments	<i>"The group assignment let me experience what it's like to pitch a business idea. This inspired me to try and pursue my own business."</i> <i>"The assignments make me found out a lot more about the entrepreneurship which I adore, which keep me inspiring."</i> <i>"...individual report and interviewing business owners... learnt a lot".</i>	<i>"... the group assignment kills the mood of the course...not everyone in the group worked with the same passion."</i> <i>"Committing the broad range of content to memory for the final exam has been difficult and takes a lot of dedicated time."</i>

Our qualitative findings address our second research aim of exploring the pedagogical delivery of entrepreneurship studies that inspire (or otherwise) students' learning. Referring to Tables 3 and 4, our findings clearly indicate a higher level of perceived inspiration compared to perceived non-inspiration from EE students. The current discourse on pedagogical methods suggests the impending death of lectures and big lecture halls given the rapid transition to online delivery of lectures and the vast array of online knowledge easily accessible by students (Grimley, Green, Nilsen, Thompson, & Tomes, 2011; Roberts, 2019; Wolff, Wagner, Poznanski, Schiller, & Santen, 2015). We find this not necessarily true as students' feedback indicates the importance of lectures as a means to acquire content and knowledge of the unit: *"The lectures because they broke down entrepreneurship (a very broad career choice) into clearly defined parts to help strengthen my own knowledge and understanding of what is required to be an entrepreneur."* In our findings, invited guest speakers who are entrepreneurs themselves played a critical role in capturing students' attention and inspiring students' entrepreneurial intention by encouraging open questions and answers.

In-class activities and group work overwhelmingly garnered the greatest amount of positive feedback: *"teaching us how to pitch, seeing other groups' pitches was a great insight and unlike anything I've ever seen in a tutorial before"* and *"group work increased my awareness of how to effectively communicate."* While most of the feedback indicates in-class activities and group work are most inspiring, some students struggle with in-class group work and discussions: *"The participation discussion part, at times I felt pressured to formulate opinions based upon things I have only just heard about, I prefer to think about things for a while before coming up with an answer."*

On assessment, students' feedback was generally quite positive. This is somewhat a surprise as students typically regard assessments as stressful, although a necessity to determine outcomes of their learning.

Discussion

Much has changed since the emergence of the first entrepreneurship course from Harvard Business School in 1947 (Kuratco, 2005). Entrepreneurship education is here to stay (European Commission, 2015; Maritz et al., 2015) and students' expectations and values are different now. Perhaps their expectations are more demanding in view of a dynamic and fast-moving business and job environment (Pearson & Chatterjee, 2004). Drawing on inspiration theory we investigated the pedagogical methods that best inspire entrepreneurship students. When EE students are inspired by course content and delivery there is a higher likelihood of EI and being motivated to pursue starting their own business (Souitaris et al., 2007; Thrash & Elliot, 2003, 2004; Thrash et al., 2014).

Scholars argue that after studying entrepreneurship, students acquire self-assessing skills to inspire them whether they are suitable for self-employment as an entrepreneur (Passaro et al., 2018). Our empirical results provide support that EE influences students' EI and positively answers the

question ‘Do entrepreneurship students really want to be entrepreneurs?’ The results of our three independent samples t-tests indicate that compared to non-entrepreneurship students, entrepreneurship students were significantly more inspired by the course, more inspired by the topic of entrepreneurship, and more inspired by the possibilities of self-employment as an entrepreneur in the future. Following our t-test, we did simple multiple regression analysis. Again, results reveal significant impact of course inspiration and inspiration of entrepreneurship as a topic to the possibility of students becoming entrepreneurs. The entrepreneurship course which included lectures, in-class activities and assessments provided students with the opportunity to acquire practical entrepreneurial skills/knowledge and to observe others who have gone through the entrepreneurial process, for example guest speakers in lectures and interviewing real-life entrepreneurs as part of an assessment (Nabi et al., 2018).

We find that lectures, in-class activities and assessments play important roles. It is in-class activities that garnered the greatest amount of student feedback, followed by lectures and assessments. Underpinning students’ perceptions is the action-oriented approach to learning that students find most inspiring. Scholars term this the experiential constructive learning approach whereby students learn by constructing their own knowledge and by interacting with others (Johannison, 1991; Kolb, 1984; Kolb & Kolb, 2005). This experiential learning approach is implemented throughout lectures, in-class activities and assessments. At lectures, invited guest speakers engage students by sharing their entrepreneurial journey and interacting through Q&A sessions. External guest speakers can help break the monotony of lectures and encourage students to attend, whether on campus or online. While lectures are often seen as an instructivist approach to teaching, thus suggesting a passive approach to learning, it is the first building block for knowledge acquisition that prepares students to engage in experiential learning (O’Connor, 2022).

With in-class activities, typically during tutorials, teachers and students engage in ‘practice-based’ activities of teamwork and problem-solving, sharing creative business ideas and pitch rehearsals before submitting their presentations for assessment grading. These activities help prepare students for the business and management world, whether they are managing their own entrepreneurial business or working in established firms (Goltz et al., 2008; Lange et al., 2014). While assessment in general, and exams in particular, are often debated as to their validity and reliability (Gardner, 2011; Knight, Shum, & Littleton, 2014), assessment nevertheless “sits at the heart of learning” (Knight et al., 2014 p.23) with scholars suggesting that if “we want to change student learning, then change the methods of assessment” (Brown, Bull, & Pendlebury, 1997 p.9).

At the assessment level, our course continues to follow principles of experiential learning by incorporating active approaches to encourage students to put knowledge into practice. For example, a group project work to develop a new business venture involves a Pitch Presentation and written Start-up Business Plan, and an Individual Report requires students to interview an entrepreneur or a business owner and analyse their interview data with theoretical and conceptual support as part of

their final individual report. The interviewing task extends the experiential learning approach by requiring students to be well-read and prepared for their interactions with real-life entrepreneurs. We surmise that the approach taken to assessments that require students to work in teams to solve problems such as developing a new business idea, writing a business plan and pitching their business ideas, as well as interviewing a working entrepreneur, gives students the opportunity to be creative in approaching their own learning (Goltz et al., 2008; Lange et al., 2014; Norton & Hale, 2011). Overall, students' feedback was positive although some found interviewing a real-life entrepreneur a rather daunting task as part of their learning experience.

In entrepreneurship classes, the role of a teacher can be particularly challenging as we find from our students' feedback. The teacher is expected to create a conducive climate to encourage creative thinking in problem-solving, developing a new business venture and teamwork. Students in our entrepreneurship classes find that instructors (whether lecturers or tutors) with entrepreneurial or business backgrounds appear to be more inspiring, as they have more work experience to share. While this may not be specific to entrepreneurship students, it suggests business students expect not just the transfer of explicit knowledge but also engagement in tacit knowledge transfer as students learn to be entrepreneurs (Davidsson & Honig, 2003). This has implications for teaching staff and for faculty's learning and teaching policies in the area of staff recruitment and training.

Conclusion

Entrepreneurship is likely to thrive in an increasingly dynamic and competitive global environment where the search for creative ideas, new technology and economic growth seems to be relentless (Acs & Szerb, 2007; Australian Government, 2016b; OEDC, 2019; Tidd & Bessant, 2013). In tandem with this scenario is the continuing growth of entrepreneurship education (European Commission, 2015; Kauffman, 2008; OECD, 2009).

Our study contributes to the continuing discourse on entrepreneurship education. We contribute first by showing that EE has a positive influence on EI, this means that enrolling in an entrepreneurship course is a worthwhile investment for students intending to explore self-employment as a career option. Second, our qualitative analysis of students' feedback shows the pedagogical methods that best inspire learning. The implication here is that active learning in lectures, in-class activities and assessments has a role in inspiring students' (Souitaris et al., 2007; Thrash & Elliot, 2004; Thrash et al., 2014). Underpinning the inspiration to learn is the experiential learning approach to course design (Johannisson et al., 1998; Kolb, 1984; Kolb & Kolb, 2005). This action-based approach means that students learn by doing, and in doing they construct their own knowledge. An experiential learning approach permeates the whole course design. This means that key questions of why, what, how, who (to teach and for whom are we teaching) and intended results to be addressed from the start are agreed on (Fayolle & Gailly, 2008). Third, we contribute to the current discourse on

the benefits of a constructivist versus an instructivist approach to teaching and learning. For entrepreneurship and business students, our study indicates that students are more inspired to learn when they interact with others to share and collaborate, thus reflecting the real world of business management (Hilliard, 2021; Kolb & Kolb, 2005).

There are limitations to our study. Our sample is a rich and diverse cohort of students from different academic disciplines comprising international and domestic students. Despite this, the small sample of 148 responses means the generalisability of our results is constrained. Future studies may consider a larger sample size and explore ways to improve students' inspiration towards an entrepreneurial intention. Future studies may conduct multi-faculty or multi-institutional studies to improve the generalizability and practicality of entrepreneurship studies. As well, future studies may examine the role of an entrepreneurial ecosystem of government incentives in driving innovations and the role the pedagogical interventions from university incubators and accelerators may play in inspiring students' entrepreneurial intentions.

Note: We thank the reviewers for their time in reading our paper and for their very helpful comments. In particular, the comment on “addressing self-selection bias by controlling for pre-existing EI or prior entrepreneurial exposure” is most helpful. Thank you for picking this up. We missed this in our analysis, but will certainly include this when we revise our paper to submit for journal publication.

References

- Acs, Z., & Szerb, L. (2007). Entrepreneurship, Economic Growth and Public Policy. *Small Business Economics*, 28, 109-122.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychology*, 52(1), 27-58.
- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I. (2006). Behavioral interventions based on the theory of planned behavior. Retrieved from Available in <https://people.umass.edu/aizen/pdf/tpb.intervention.pdf>.
- Aparicio, G., Iturralde, T., & Maseda, A. (2019). Conceptual structure and perspectives on entrepreneurship education research: A bibliometric review. *European Research on Management and Business Economics*, 25, 105-113.
- Australian Government. (2016a). Entrepreneurs Programme. Retrieved from <https://www.business.gov.au/assistance/entrepreneurs-programme-summary>
- Australian Government. (2016b). Innovation Australia. Retrieved from <http://www.industry.gov.au/innovation/Innovation-Australia/Pages/default.aspx>
- Bae, T., Qian, S., Miao, C., & Fiet, J. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship Theory and Practice*, 38(2), 217-254.

- Brown, G., Bull, J., & Pendlebury, M. (1997). *Assessing Student Learning in Higher Education*. London: Routledge.
- Bullough, A., & Renko, M. (2013). Entrepreneurial resilience during challenging times. *Business Horizons*, 56(3), 343-350.
- Davidsson, P., & Honig, B. (2003). The Role of Social and Human Capital among Nascent Entrepreneurs. *Journal of Business Venturing*, 18(3), 301-331.
- Davies, M. (2011). Concept mapping, mind mapping and argument mapping: what are the differences and do they matter? *Higher Education*, 62, 279-301.
- Drucker, P. (2005). *Innovation and Entrepreneurship (Reprint)*. London: Elsevier Butterworth-Heinemann.
- European Commission. (2015). *Entrepreneurship education, a road to success A compilation of evidence on the impact of entrepreneurship education strategies and measures*. Brussels: Publications Office Retrieved from <https://op.europa.eu/en/publication-detail/-/publication/c6590fd6-3e54-4989-bbe0-21d9785dff54>
- Fairlie, R. (2013). Entrepreneurship, Economic Conditions, and the Great Recession. *Journal of Economics & Management Strategy*, 22(2), 207-231.
- Fayolle, A., & Gailly, B. (2008). From craft to science Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, 32(7).
- Fayolle, A., Gailly, B., & Lassas-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: a new methodology. *Journal of European Industrial Training*, 30(9), 701-720.
- Florin, J., Karri, R., & Rossiter, N. (2007). Fostering Entrepreneurial drive in business education: An attitudinal approach. *Journal of Management Education*, 33(1), 17-42.
- Gardner, J. (2011). *Assessment and Learning* (2nd ed.). London: Sage.
- Goltz, S., Hietapelto, A., Reinsch, R., & Tyrell, S. (2008). Teaching Teamwork and Problem Solving Concurrently. *Journal of Management Education*, 23(5), 541-562.
- Grimley, M., Green, R., Nilsen, T., Thompson, D., & Tomes, R. (2011). Using Computer Games for Instruction: The Student Experience. *Active Learning in Higher Education*, 12(1), 45-56.
- Haddoud, M., Onjewu, A.-K., Nowinski, W., & Alammari, K. (2020). Assessing the role of entrepreneurship education in regulating emotions and fostering implementation intention: evidence from Nigerian universities. *Studies in Higher Education*, 47(2), 450-468.
- Hilliard, R. (2021). Start-Up Sprint: Providing a Small Group Learning Experience in a Large Group Setting. *Journal of Management Education*, 45(3), 387-403.
- Johannisson, B. (1991). University training for entrepreneurship: Swedish approaches. *Entrepreneurship and Regional Development*, 3(1), 67-82.
- Johannisson, B., Landstrom, H., & Rosenberg, J. (1998). University Training for Entrepreneurship—An Action Frame of Reference. *European Journal of Engineering Education*, 23(4), 477-496.
- Kauffman. (2008). *Entrepreneurship in Higher Education: A Report from the Kauffman Panel on Entrepreneurship Curriculum in Higher Education*. Retrieved from
- Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the Theory of Planned Behavior in Predicting Entrepreneurial Intentions and Actions. *Entrepreneurship Theory and Practice*, 39(3), 655-674.

- Knight, S., Shum, S., & Littleton, K. (2014). Epistemology, Assessment, Pedagogy: Where Learning Meets Analytics in the Middle Space. *Journal of Learning Analytics*, 1(2), 23-47.
- Kolb, A. (1984). *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.
- Kolb, A., & Kolb, D. (2005). Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. *Academy of Management Learning & Education*, 4(2), 193-212.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Thousand Oaks, CA: Sage.
- Kuratco, D. (2005). The emergence of entrepreneurship education: Development, trends and challenges. *Entrepreneurship Theory and Practice*, 29(5), 577-598.
- Lange, J., Marram, E., Jawahar, A. S., Yong, W., & Bygrave, W. (2014). Does an Entrepreneurship Education Have Lasting Value? A Study of Careers of 3,775 Alumni. *Frontiers of Entrepreneurship Research*, 31, 210-225.
- Liñán, F., & Chen, Y.-W. (2009). Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, 33(3), 593-617.
- Lorz, M., Volery, T., & Müller, C. (2011). *The impact of entrepreneurship education on entrepreneurial intention*. (Doctoral dissertation). The University of St. Gallen,
- Maritz, A., Jones, C., & Shwetter, C. (2015). The status of entrepreneurship education in Australian universities. *Education + Training*, 57(8/9), 1020-1035.
- Nabi, G., Holden, R., & Walmsley, A. (2010). Entrepreneurial intentions among students: towards a re-focused research agenda. *Journal of Small Business and Enterprise Development*, 17(4), 537-551.
- Nabi, G., Linan, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda. *Academy of Management Learning & Education*, 16(2), 277-299.
- Nabi, G., Walmsley, A., Liñán, F., Akhtar, I., & Neame, C. (2018). Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Studies in Higher Education*, 43(3), 452-467.
- Norton, W. J., & Hale, D. (2011). Protocols for Teaching Students How to Search for, Discover, and Evaluate Innovations. *Journal of Management Education*, 35(6), 808-835.
- Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Csilla Czeglédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44(2), 361-379.
- O'Connor, K. (2022). Constructivism, curriculum and the knowledge question: tensions and challenges for higher education. *Studies in Higher Education*, 47(2), 412-422.
- OECD. (2009). Strengthening Entrepreneurship and Economic Development in East Germany, . *Local Entrepreneurship Reviews*. Retrieved from <http://www.oecd.org/site/cfecpr/42367462.pdf>
- OEDC. (2019). *The Missing Entrepreneurs 2019: Policies for Inclusive Entrepreneurship*. Retrieved from OEDC Publications Centre:
- Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation. *European Economic Review*, 54(3), 442-454.

- Passaro, R., Quinto, I., & Thomas, A. (2018). The impact of higher education on entrepreneurial intention and human capital. *Journal of Intellectual Capital*, 19(1), 135-156.
- Pearson, C., & Chatterjee, S. (2004). Expectations and values of university students in transition: Evidence from an Australian classroom. *Journal of Management Education*, 24(4), 427-446.
- Rauch, A., & Hulsink, W. (2015). Putting Entrepreneurship Education Where the Intention to Act Lies: An Investigation Into the Impact of Entrepreneurship Education on Entrepreneurial Behavior. *Academy of Management Learning & Education*, 14(2), 187-204.
- Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*: Random House.
- Roberts, D. (2019). Higher education lectures: From passive to active learning via imagery? *Active Learning in Higher Education*, 20(1), 63-77.
- Sancho, M. P. L., Alicia, M.-N., & Ramos-Rodríguez, A. R. (2020). Will they end up doing what they like? the moderating role of the attitude towards entrepreneurship in the formation of entrepreneurial intentions. *Studies in Higher Education*, 45(2), 416-433.
- Schultz, C. (2022). A Balanced Strategy for Entrepreneurship Education: Engaging Students by Using Multiple Course Modes in a Business Curriculum. *Journal of Management Education*, 46(2), 313-344.
- Schumpeter, J. (1947). The Creative Response in Economic History. *The Journal of Economic History*, 7(2), 149-159.
- Schumpeter, J. A. (1934). *The theory of economic development. An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. Translated from The German by Redvers Opie* (7th ed. Vol. XLVI): Boston, Mass, Harvard Business School Press.
- Sherkat, A., & Chenari, A. (2020). Assessing the effectiveness of entrepreneurship education in the universities of Tehran province based on an entrepreneurial intention model. *Studies in Higher Education*, In Press. doi:<https://doi.org/10.1080/03075079.2020.1732906>
- Slavtchev, V., Laspita, S., & Patzelt, H. (2012). Effects of entrepreneurship education at universities. *Jena Economic Research Papers*, 25, 1-33.
- Souitaris, V., Zerbinati, S., & Andreas Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566-591.
- Thrash, T., & Elliot, A. (2003). Inspiration as a Psychological Construct. *Journal of Personality and Social Psychology*, 84(4), 871-889.
- Thrash, T., & Elliot, A. (2004). Inspiration: Core Characteristics, Component Processes, Antecedents, and Function. *Journal of Personality and Social Psychology*, 87(6), 957-973.
- Thrash, T., Moldovan, E., Oleynick, V., & Maruskin, L. (2014). The Psychology of Inspiration. *Social and Personality Psychology Compass*, 8(9), 495-510.
- Tidd, J., & Bessant, J. (2013). *Managing Innovation: Integrating Technological, Market and Organizational Change* (5th ed.): John Wiley and Sons, UK.
- von Graevenitz, G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, 76(1), 90-112.

Wolff, M., Wagner, M., Poznanski, S., Schiller, J., & Santen, S. (2015). Not another boring lecture: Engaging learners with active learning techniques. *The Journal of Emergency Medicine*, 48(1), 85-93.