

The Eurasia Proceedings of Educational & Social Sciences (EPESS), 2022

Volume 24, Pages 17-28

ICRESS 2022: International Conference on Research in Education and Social Sciences

Talent Development: Examining the Impact of University Education on Entrepreneurship

Jonathan PARKES
University of Guelph

Davar REZANIA
University of Guelph

Abstract: The purpose of this research was to identify various components of university education that influence students' venture creation and entrepreneurial behaviour. A literature review was completed to identify how university education impacts entrepreneurship. Based on a conceptual model developed, a realist evaluation was conducted to examine the relationship between university education and entrepreneurship. For the evaluation, fifteen student entrepreneurs from the University of Guelph in Ontario, Canada were interviewed to gain insight into their experience and evaluate which components of university education they found pivotal to their entrepreneurial undertaking. Interviewee responses were assessed to establish collective findings and identify elements of university education that may be modified to promote students' entrepreneurial behaviour further. The research demonstrates direct alignment between interviewee responses and literature, identifying the promotive influence of an adapting and engaging university environment, decentralized curriculum, diversity of involvement, promotion of intrapreneurship and entrepreneurship, and contributing to community development. As a result of the interviews conducted, the study identifies two unspecified elements within the literature, collaborative education and emphasizing the application of education. These findings provide concrete insight into the impact of university education on entrepreneurship.

Keywords: Entrepreneurship, University education, Realist evaluation

Introduction

Education and entrepreneurship are two individual entities that are influential in the development of society. Each promotes knowledge and proficiency in specific disciplines and can initiate innovation. This study defines the term entrepreneur as an individual who creates a business, enduring financial risk with the anticipatory motive of generating sustained profit. University education is not a directive component necessary to pursue entrepreneurship, as many have found success in entrepreneurship without formal education. Therefore, how university education can uniquely play a role in pursuing entrepreneurship is to be examined. The capacity in which education affects entrepreneurship development is to be explored as the relationship's potential generates intrigue. Investigating specific elements of university education that are influential to entrepreneurial development will provide ideas on how to develop a curriculum for entrepreneurship education.

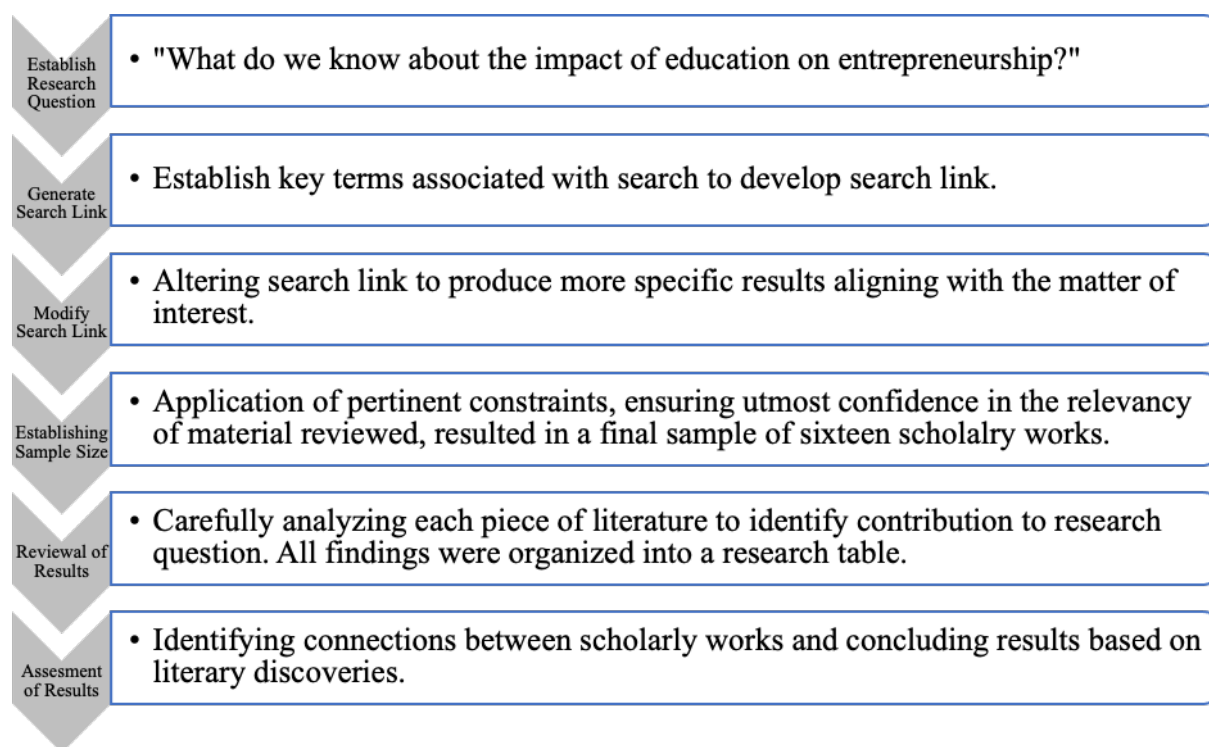
A literature review was conducted to examine the impact of education on entrepreneurship. Using the results of the literary research, fifteen student entrepreneurs from the University of Guelph were interviewed to verify and extend the findings in light of their perspectives on the impact education has on entrepreneurship. The findings from the literature were considered as a program theory. The method of a realist evaluation examines the impact of the elements of education that contribute to entrepreneurial venture creation, expanding on the relationship between education and entrepreneurship and providing evidence for the literary findings with firsthand research.

- This is an Open Access article distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

- Selection and peer-review under responsibility of the Organizing Committee of the Conference

© 2022 Published by ISRES Publishing: www.isres.org

Literature Review Process



The literary sources analyzed generated a global perception applicable to the Canadian university ecosystem. There was a significant variation of countries from which literary works were collected: Netherlands, United Kingdom, Hong Kong, Ukraine, Russia, Brazil, Spain, and Canada. Each piece contributed a unique perspective, as no two scholarly journals were distinctly alike. However, upon analyzing the findings, there were similarities amongst the generated discoveries.

Results of Scoping Review

Studying internationally was found to influence how students engage with entrepreneurship. Students who conduct their education in a foreign setting are more likely to become entrepreneurs than students who do not (Breznitz & Zhang, 2019). The opportunity for students to immerse themselves in an unfamiliar setting and partake in a diverse range of opportunities contributes to the development of oneself. Breznitz and Zhang (2019) identified international experience as foreign study, volunteering, internships, and personal travel. The incorporation of various elements was thought to maximize students' time abroad. Krabel (2018) also recognized international experience to play a role in students' pursuit of self-employability upon graduation; however, their findings were of modest influence. The ability to broaden and diversify one's global perception is advantageous. Foreign experience translates well in business operations as it provides managers with a comprehension of international relations. This positively benefits organizations regarding internationalization, especially newly developed and smaller firms (Breznitz & Zhang, 2019).

A discovery consistent throughout the scholarly results was the contribution an adaptive and engaging educational environment has to students' venture creation. A case study conducted exclusively at the University of Chicago Booth School of Business elaborates on how the institution adapted to provide additional resources for students interested in pursuing entrepreneurship (Miller & Acs, 2017). The university accommodated student entrepreneurial spirit by introducing other applicable courses, maximizing alumni engagement, and venture incubation. The institution created an empowering environment where students can be confident in their entrepreneurial undertakings (Miller & Acs, 2017). Success has been demonstrated, and external stakeholders are keen to collaborate due to the University of Chicago's model. Publicly traded firms such as Grubhub, Groupon, and Braintree Financial are all entrepreneurial ventures that originate from student entrepreneurship at the University of Chicago (Miller & Acs, 2017). Contributing to this ideology of a promotive educational environment, Moraes et al. (2020) found that providing a nurturing environment in which prospective student entrepreneurs could network, gain input from experienced entrepreneurial faculty members, and potential access

to investments was crucial in facilitating student-led ventures. The structure and passion of the institute are influential in the success of its entrepreneurial education program (Zhang et al., 2016). A degree of widespread variation in the university ecosystem offerings was also a significant factor in the relationship between university education and entrepreneurship. Broadened studies are preferred at the undergraduate level compared to valid specialization (Nieuwenhuizen et al., 2016). The assimilation of a decentralized curriculum allows students to customize their education to align with their interests and further explore entrepreneurial aspirations.

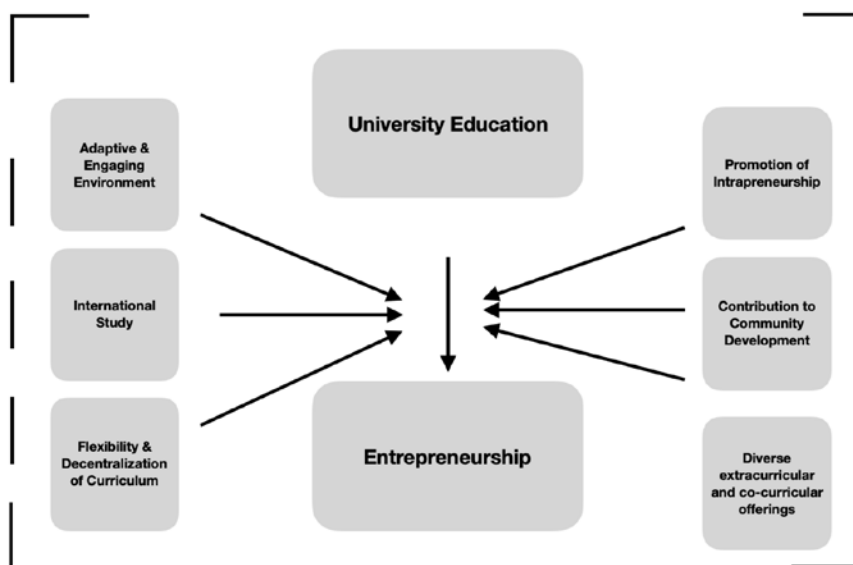
Diversity of involvement exposes students to an array of opportunities. Shirokova et al. (2017) identified extracurricular and co-curricular participation, such as student clubs, mentorship programs, and case competitions, to provide an exceptional experience in enhancing students' social capital and providing them with invaluable skill development. Such opportunities generate entrepreneurial thinking and stimulate innovation amongst university stakeholders (Guerrero et al., 2016).

An intriguing finding that possesses excellent potential contribution to socioeconomics is the development of intrapreneurship stemming from entrepreneurial education. Intrapreneurship is the strategic promotion of employee engagement with innovative initiatives (Ewango-Chatelet, 2019). This is a significant discovery as it identifies the employable potential associated with entrepreneurial education. A misconception of the relationship between education and entrepreneurship is that self-employment and venture creation are explicit options available to graduates. Disruptive thinking can benefit organizational growth, and intrapreneurship amongst employees may offer great potential. Intrapreneurship is also present within the university ecosystem, as faculty are encouraged to be innovative in the entrepreneurial development of traditional education (Moraes et al., 2020).

Prevalently identified by multiple scholarly journals was the regional benefit of promoting entrepreneurship in universities. Entrepreneurial development contributes to regional and national economies (Pugh et al., 2018). Regional challenges, both social and economic, drive institutional research and venture creation leading to the inception of solutions. A concept identified as the Knowledge Triangle, the relationship between education, research, and innovation (Unger & Polt, 2017) elaborates on innovative education's beneficiary impact on institutions and their external environment. In addition, Stavtyskyy et al. (2019) discovered a direct relationship between the Global Innovation Index and education funding. The innovative work enriches socioeconomic growth, making a vital contribution to society due to community engagement and strategic alliances.

Therefore, it is to be concluded that the following elements of university education have a substantial impact on the development of entrepreneurship; experience studying abroad, participating in an adaptive and engaging university environment, flexibility and decentralized curriculum, diverse extracurricular and co-curricular offerings, the promotion of intrapreneurship and entrepreneurship, and contribution to community development. The collection of literary works provides insight into the relationship between education and entrepreneurship and awareness of the relationship's potential.

Conceptual Framework of University Education's Impact on Entrepreneurship



The conceptual framework above demonstrates an interaction effect, a variable’s impact on a direct relationship. The identified elements of university education can strengthen university education’s impact on entrepreneurship. This contributes to education theory, which explains the relationship between university education and entrepreneurship. As identified above, university education can significantly impact entrepreneurship using strategic resources.

Verification of the Conceptual Model

At this study stage, the conceptual model developed through the literature review was utilized as a program theory to conduct a realist evaluation (Pawson & Tilley, 1997) of a university program to develop student entrepreneurs. In this approach, the experience of student entrepreneurs within a university ecosystem was assessed and cross-examined with the data through the conceptual model. The realist approach emphasizes the exploration of specific circumstances that form the setting of a program and its capacity to identify the presence of exceptional potential. A case of an incubator program that supports students in developing their entrepreneurship was considered.

The John F. Wood Centre for Student and Business Enterprise is affiliated with the Gordon S. Lang School of Business and Economics. The centre operates an initiative called The Hub Incubator Program, also referred to as “The Hub,” promoting and supporting innovative start-ups initiated by University of Guelph students and alumni. The Hub provides comprehensive knowledge to benefit entrepreneurs in their entrepreneurial ventures and is an elite resource for University of Guelph students and alumni. Its support ranges from developing a stable business model to monetary funding opportunities.

As part of the evaluation, fifteen student entrepreneurs who had participated in the program were interviewed to gain input on their experience and evaluate which components of university education they found pivotal. The purpose of the interviews was to use the conceptual model developed from the literature review to identify various parts of university education deemed influential in students’ venture creation, identify connections between the interviewee’s experiences, and indicate elements of university education that may be modified to promote entrepreneurial behaviour further. The interview protocol included questions such as:

- What compulsory courses or developmental activities would you recommend to students interested in entrepreneurship?
- What part of your educational experience would you alter if you had the chance to?
- What metaphor would you use to describe the impact of education on your entrepreneurship?

Fifteen student entrepreneurs who had gone through the program participated in the semi-structured interviews answering a series of questions curated specifically from the conceptual model for this study. All interviews were conducted securely via virtual meeting platforms to abide by COVID-19 health & safety regulations. The interviews were recorded, converted to transcripts, and coded using NVivo 12.

An essential element of diversity present amongst the entrepreneurs interviewed was the stage of their enterprise. As presented in table 1, some entrepreneurs were in the early stages of their business, others had been operating for more than a year, and some entrepreneurial ventures had proven to be unsuccessful. The range of accomplishments achieved by each entrepreneur’s venture offers a valuable array of perspectives.

Table 1. Representation of interviewees

	Female	Male	Under graduate	Graduate	Total Representation
Bachelor of Commerce	1	2	3	0	3
Bachelor of Engineering	1	6	6	1	7
Bachelor of Science	2	3	4	1	5
Total	15		15		15

Following the theory-driven (Pawson & Tilley, 1997) design of the verification process, the template analysis style of thematic analysis was used (King, 2012) for analyzing the interviews. Template analysis is helpful as the focus is more on a cross-analysis of responses rather than an analysis of individual responses (Brooks & King, 2012). The conceptual model serves as ‘a priori’ tentative themes developed before the analysis process (King, 2012). The analysis helped us use these a priori themes, identify which were present in the interview data, and identify new themes emerging through analytic engagement with the data. These new themes could

refine the conceptual model. Following the tradition of template analysis, a mixture of top-down and bottom-up coding approaches were followed (King, 2012). The first stage was theory-driven, in which the transcripts were read to identify themes and categories in the conceptual model.

The second stage was data-driven. In this stage, themes describing the impact of education on entrepreneurship development were searched. This stage consisted of reading the interviews, assessing the revealing ideas or concepts, and tagging them with codes. This approach allowed research findings to emerge from the interview transcripts without the limitations imposed by the framework (Thomas, 2006). After the analysis, the interview data were compared with the conceptual model to clarify, improve or refute the conceptualization (Pawson, 1996). Conceptual memos were used to record the results of this comparison. These codes and their level of agreement have been included in the results.

Results

The literature review indicated that university education allows students to acquire and develop skills. Therefore, interviewees were asked if they could identify three skills they formed in university that have translated to their entrepreneurial undertaking. The array of skills developed in university was regarded as influential and translatable to entrepreneurship. Expanding on interviewees' answers, critical examples of the most identified skills were organized to understand the impact further. Time management, communication, networking, and problem-solving accounted for over 40% of total responses.

By immersing themselves in the university ecosystem, students develop a skill set that gives them a foundation to pursue entrepreneurship confidently. One interviewee communicated that education supports entrepreneurs as the training wheels that balance a bicycle.

"Sometimes there's even trauma that's associated with learning to ride a bike without training wheels. So, the risks of not wanting to go back to a bike are higher without the training wheels than there is if you learn with training wheels because if anything, it might just take longer."

The interviewee expressed that education has supported them in their venture, providing them with confidence as they had acquired the skills in university necessary to become a successful entrepreneur. In addition, another interviewee voiced how education served as building blocks from which their venture creation stemmed.

"I think that education is really kind of the building blocks on, you know, rising up to the level where you understand how these different components kind of come together."

This is compelling information contributing to skill development in university to be influential in students' venture creation.

Interviewees also shared curricular, extracurricular, and institutional elements of their university experience that they attributed as influential in their venture creation.

Table 2. Entrepreneurial skills developed in university

Skill	Number	Frequency	Connection to Entrepreneurship
time management	6	0.136	"Taking responsibilities and managing your schedules and being organized because you have all these different conflicting things going on in business, while sorting other deadlines and courses and exams and papers and all that stuff"
communication	4	0.091	"Definitely communication like everything's about people. You have to be able to communicate with people. And believe it or not, I used to be like a really shy kid. So, university like high school, I guess a little more. But at university I was just like case competitions, like you kind of name it, that sort of thing. And I think that really helped me" "Just being out there on campus and even having regular chit chat, it improves your communication skills by a lot"
networking	4	0.091	"Going to conferences or panel events, just talking to anyone there and shaking their hand, getting your name in their face and asking what they do, and I think it can go a long way if you link them on LinkedIn and you never know when it might come up"

			<p>“I would say another one that I learned is this actually learn from the business campus is that people are always willing to help people. People generally want to see other people succeed and people are always willing to help. That's the point of your network. If you reach out to them, you can actually move boulders quite easily. You just have to get people moving in the right direction and acting quickly”</p> <p>“I'd say a social aspect throughout university, you have to be social to meet new people, make new connections, and that's very big in the business world”</p>
problem-solving	4	0.091	<p>“I would say definitely the idea that no problem is insurmountable, everything can be broken into pieces to solve slow and slow and steady”</p>
analytical skills	3	0.068	<p>“Analytical skills...seeing things from different perspectives and finding new ways to look at things”</p>
presentation skills	3	0.068	<p>“Another thing that I got from education would be speaking public speaking, which is another key thing”</p> <p>“So, a lot of the classes, I'm sure you can probably relate that there was a lot of group work you had to present and get up in front of the class. So, presenting skills, definitely. And I think that would help with kind of coordinate with pitching. So, I think that's important”</p>
resiliency	3	0.068	<p>“The willingness to fail, so this isn't my first failure as an entrepreneur, and they're not I don't see them as failures personally. I see them as learning experiences. But as well in my coursework, I've failed I've not gotten to where I would hope to be. So that's definitely something I learned”</p>
organization	3	0.068	<p>“Organizing your time, planning everything and throwing everything on Apple calendars, that was pretty big”</p>
design	3	0.068	<p>“I'm going to say the first one is definitely like problem solving and like the design process. I think a lot of that comes from engineering, but it's very much like instead of just accepting or settling for something the way it is, it's I think I saw this like; how can we be more efficient? How can we be better? How can we innovate to make this problem easier or get rid of this problem and like in everyday life?”</p>
getting things done	3	0.068	<p>“I'd say the drive to just do things so. You can talk about doing an idea all day, but just doing it, getting it done, I think through my coursework I just had to get things done. It doesn't matter if they were done to the perfection they wanted. They just had to get done. And that kind of translated to my business eventually”</p>
teamwork	3	0.068	<p>“You learn how to work as a team when you're with other people and especially people who are like minded and around the same skill level”</p>
technical skills	2	0.045	<p>“The technical knowledge that at least I need for a lot of the projects I work on”</p>
entrepreneurial spirit	1	0.023	<p>“Having six courses that are very intense, like just like really push your time management skills and it pushes you it pushes you to limit until you realize that was never a limit and then you just keep going. And so, I think especially in entrepreneurship like that mindset, like it's a lot of work. It's not a joke. Like you have to be willing to like that”</p>
critical thinking	1	0.023	<p>“I mean, engineering is very broad discipline and there's a lot of different types of engineers. But I think most of them have to have critical thinking where they're able to, you know, look at a situation or problem from multiple perspectives and not just the most obvious one and end the problem solving how to actually solve the problem and understanding that there are typically multiple solutions to the problem”</p>
collaboration	1	0.023	<p>“I find that with every group project, I learn something better, like I learn who I like to work with, who works well with me, and I learn how to be a better group member and how to be complacent or compromising to a certain degree”</p>

Table 3. Developmental aspects of university influential to entrepreneurship

Influential Aspect	Number	Frequency	Connection To Entrepreneurship
curricular	19	0.543	<p>“Yeah, honestly, I feel like business courses always are a benefit because at the end of the day, no matter where you work, you're working for business. And in order to do that effectively, you need to know how they run.”</p> <p>“I would recommend engineering just because, like, you learn how to break things down, like into the minor details where you just tackle them one at a time and just solve problems.”</p>
extracurricular	9	0.257	<p>“I would have been given the opportunity to get involved, getting out of your comfort zone and meet people, networking, collaborating with others to share your ideas. I think that that contributes to it. And finding like-minded individuals as well.”</p>
institutional	7	0.200	<p>“I consider university to be a community where people come together to develop their own skills and collaborate and grow individually, but collectively as well, and then take those requirements alone and to do good benefits.”</p> <p>“So, I think just like surrounding yourself with mentors and people and seeking those people, especially in a university environment, there's tons of people that are willing to give you guidance, mentorship and just. Run with an idea.”</p>

Exclusively of the interviewees studying engineering, four of the seven communicated their design courses to be imperative for their entrepreneurial success. One interviewee elaborated on the ambiguity associated with the class.

“I think design courses for engineers really help, or at least it really helped me because you're essentially given a very broad issue, and you're told, you know, you can fix this however you want just to do this. And so, you're given the end goal and you're not really given any path to get there.”

Interestingly, the ambiguity of the course delivery aligns with the element of a decentralized curriculum communicated in the literary review. In addition, interviewees expressed other examples of decentralized course delivery as influential.

“Business consulting, that was one I took last year. It's kind of in your later years, but you actually work with an industry partner to solve a problem. So that was huge for entrepreneurs.”

The opportunity to participate in experiential learning and generate solutions for problems commercial entities face was thought to contribute to intrapreneurial thinking and community development. The literary review findings also supported this information.

Besides key curricular developmental components, extracurricular involvement was expressed as a promotive experience. One interviewee found that expanding on class learning was vital for pursuing entrepreneurship.

“I think definitely extracurriculars, number one, just getting beyond you're in-class learning experience, but actually going out into the community and doing all these entrepreneurial things like product development was my big one.”

Volunteerism was also perceived to be influential by one of the interviewees.

“Something to meet people and, you know, sign up and do something. I think it's always good to volunteer.”

This element of education possesses potential, aligning with the literary review finding that contributing to community development may influence building entrepreneurial spirit.

The university ecosystem was seen as a direct influence on many interviewees' entrepreneurial spirit. One interviewee found it the most significant factor, trumping curricular and extracurricular components.

“I will say the overall environment was more influential and inspirational than the courses or the lectures.”

Multiple interviewees identified the networks they developed in university as influential in promoting their entrepreneurial behaviour. The opportunity to connect with like-minded individuals in an innovative community was repeatedly mentioned as an element of university education that benefitted them in their venture creation. One interviewee contributed the following statement.

“The best thing I did get from my education, and I think this is really important, was the connections and the main reason why I enrolled in [my program] that was actually because it was one of the harder programs to get into. And I really wanted to meet like the really brilliant, bright people. And it just so happened I had a lot of friends who are very brilliant, and they helped me out a lot with school as I was doing this business at the same time”

Connecting with like-minded individuals and developing meaningful relationships provided them with a secure social network they may feel comfortable reaching out to for valuable feedback, support, and insight. From the perspective of the student entrepreneurs interviewed, drawing from these qualitative discoveries, education has influenced their entrepreneurial spirit and venture creation. Interviewees found that the university considerably affected their entrepreneurial venture by developing various skills and gaining invaluable experience from curricular, extracurricular, and institutional involvement.

One question encouraged interviewees to reflect on their entrepreneurial venture and offer advice to others who may be interested in pursuing entrepreneurship. A typical response was to start. Multiple interviewees expressed that individuals tend to hesitate to begin an entrepreneurial venture. Ironically, in many cases, the initiation of the enterprise proved to be a momentous moment. The inauguration of a venture may be perceived as intimidating; however, taking that first step is imperative.

Interviewees were also asked how they dealt with risk. The general behaviour towards risk was that it is purely an element of venture creation. There will always be the possibility of failure, and although some ventures could not achieve their anticipated success, it did not deter them from trying. The study participants showcased resilience and courage when explaining the presence of risk associated with entrepreneurship. Risk is to be accepted and managed diligently as well strategically.

In contrast to the elements of risk and failure, interviewees were asked to define success—some identified success as ample monetary wealth. However, two specific measures of success were communicated repeatedly; the ability to make a positive impact on others through the operation of their enterprise and the achievement of incremental growth. The anticipated notion that entrepreneurs pursue such undertakings to grow their business into large, lucrative organizations did not prove true in the interviews. Interviewees commonly expressed measured growth and the ability to benefit their clientele with an innovative product or service as factors of a successful venture. For many entrepreneurs, the most satisfying moment was seeing a particular aspect of their business evolve, for example, making their first sale or working with their first client. One entrepreneur expressed that their most satisfying moment was before the launch of their business and being aware of the growth they had made from the inception of the idea to the production of their palpable product.

“That was a super fun feeling and something that I thought was really cool just because I've been thinking about this being an app for so, so long and then finally being able to see it on my phone and functionality was definitely one of the most satisfying moments.”

Each entrepreneur was asked to define success and provide an in-depth view of the aim of their entrepreneurial journey. An intriguing response communicated by one entrepreneur was that they felt defining success was limiting their ability.

“I don't really like putting a definition of success on myself because I feel like it's a bit of a limitation.”

The interviews generated insightful answers from each participant, contributing to understanding student entrepreneurs and their perception of education's influence on their entrepreneurial ventures.

Reviewing the results, elements identified in the conceptual framework and components communicated in the interviews offered some resemblance, as showcased in the Venn diagram above. The aspects of university education showcased within the comparative model above are to be concluded as impactful towards entrepreneurship as identified by both the literature and the student entrepreneurs.

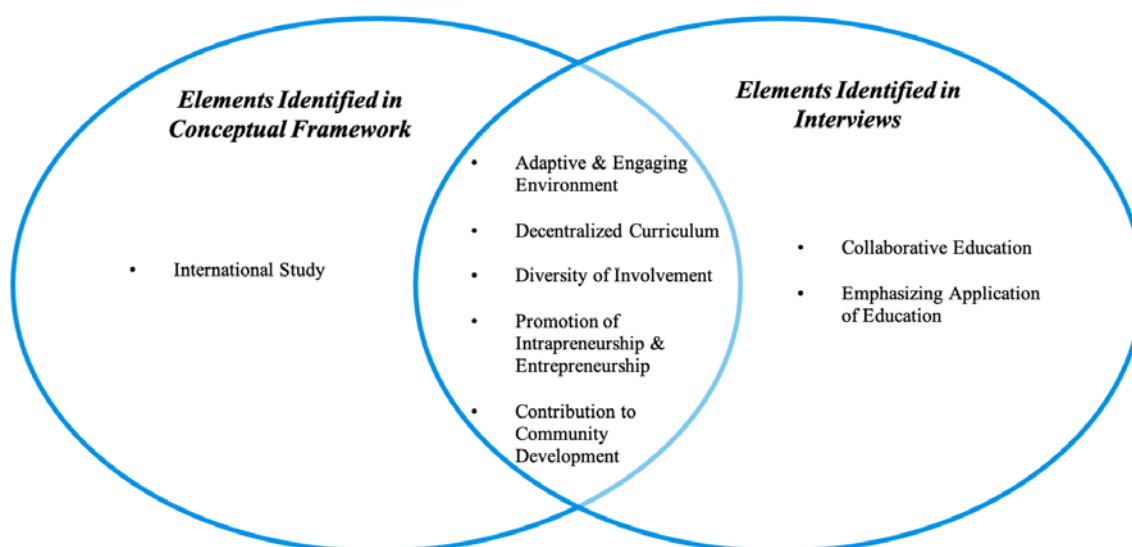


Figure 1. Comparative model of university education’s impact on entrepreneurship

Education Theory

Education theory addresses the intention of education and its delivery, acquisition, and utilization. The approach revives the relationship between education and entrepreneurship by implementing active resources, such as The Hub, that are influential in initiating venture creation. The theory possesses various streams, although social learning theory is predominant in association with the relationship between education and entrepreneurship. The elements of university identified to be impactful towards students’ pursuit of entrepreneurship are products of the university that students acquire through engagement with the institution. Through further development and promotion, there is an opportunity to further impact students’ entrepreneurial ability. The elements instilled within the university ecosystem, communicated in the realist evaluation, relate to education theory demonstrating the ability to influence students’ entrepreneurial potential. As supported by this study's findings, incorporating education theory within the university ecosystem will significantly influence entrepreneurial development and venture creation.

Recommendations

Expanding on the current relationship between education and entrepreneurship, a topic of intrigue was determining if and how education could be maximized to promote further and support entrepreneurship. Throughout the fifteen interviews, two recommendations, unidentified by the literature, were consistently communicated; integration of collaborative curriculum and the incorporation of curriculum that emphasizes the applicability of education. These recommendations can catalyze university education to achieve its full potential.

Integrating collaborative education would allow students from various disciplines to collaborate in class and develop a solution to an interdisciplinary problem. In contrast, each student draws from their specialized knowledge. The cross-discipline curriculum would allow students to work with a diverse network of students, each representing different specializations. Each student’s university education would contribute to the amalgamation of knowledge possessed by the group. An interviewee in engineering expressed their input on the opportunity.

“I think that there was a big, missed opportunity with our design course that we could have easily had an interdisciplinary collaboration with. You know, we could have brought in one economics major or finance major for each team and that could have been part of you know, an assignment for one of their classes where they collaborate with us for a week. And they do that portion. We understand and we learn together, you know, and because really entrepreneurship is collaboration.”

This concept is intriguing as it offers students with experiential learning transferable to cross-functional teams commonly utilized in industry settings. Maximizing each member's unique contribution to the team's success would allow students to learn from one another and contribute to group camaraderie.

Education is commonly perceived as the bridge to a career. The acquisition of knowledge and specialized skills in university benefits graduates' employability. However, adding knowledge and technical skills may not be perceived as transferable to entrepreneurial venture creation. Various interviewees communicated that they wished the possibility of entrepreneurship was further promoted within their university curriculum. One interviewee believes that had more students been made aware of entrepreneurship due to their acquired skills, they would have explored the opportunity.

"I'd never been exposed to entrepreneurship, like in any realm of my life. So, it was very interesting coming from like a zero-knowledge background."

The opportunity to be integrated into an intellectual community while earning education concentrated on individual interests served as an innovative environment for entrepreneurs. Promoting entrepreneurship stemming from skills developed and knowledge learnt in university will allow students to create creative competencies helping both entrepreneurs and intrapreneurs. Therefore, incorporating a curriculum to emphasize the applicability of their education was seminal. Interviewees expressed the importance of experiencing failure; therefore, incorporating assessments focusing on experiential learning was beneficial. Multiple interviewees addressed the prioritization of learning rather than testing.

"I think, to the experiential learning that you think is so important that you identify it to be so important because it should be offering feedback on how they're learning and acquiring these new skills, more so than testing them on their knowledge of it."

A discussed experiential learning method was to allow students to execute a project or systematically work to solve a problem over the semester. Students would be assessed on what they learned over their assignment and what they gained from their experience rather than only the results of their work. This concept offers an alternative assessment method while providing students with the opportunity to embrace the process and be daring with their solutions. The key here is that they will not be penalized for taking chances. Also, it should be noted that some non-business participants shared their desire for business and entrepreneurial courses to be incorporated into their curriculum. They felt strongly that this addition would have been beneficial to their venture. Taking more relevant classes for individual pursuits was communicated as being favourable. The recommendations offered by the interviewees present a compelling position to be thoughtfully considered as they are identified by actual individuals who are pursuing entrepreneurship while attending university.

Discussion

Assessing similarities between the conceptual model produced and the findings of the student entrepreneur interviews, specific elements of university education were found to be impactful towards the individual pursuit of entrepreneurship. Although they were not communicated in the interviews, international studies were identified within the literature. Despite not being evident in the discussions, there is further opportunity to assess its impact on the development of entrepreneurial ability. Breznitz and Zhang (2019) and Krabel (2018) highlight the diverse opportunities associated with studying abroad that contribute to the development of entrepreneurs. In addition, it is to be identified that none of the interviewees had studied abroad during their university experience; therefore, it cannot be concluded as irrelevant.

The demonstrated overlap between elements identified in the conceptual framework and the student entrepreneur interviews justifies the findings' relevancy. The study's contribution is the elements communicated in the discussions unspecified within the conceptual framework, collaborative education and emphasizing the application of education. Collaborative education is an opportunity to diversify students' knowledge base and skill set within interdisciplinary studies. This allows students to engage with students of different disciplines, problem-solve collaboratively, and uniquely contribute to the success of a group. Relating to entrepreneurship, this experience may promote students' ability to embark on new challenges and embrace collaboration with a broad knowledge base. Further exploration of the concept is encouraged to assess its degree of influence.

Furthermore, highlighting the relevancy of knowledge provided to students was identified as influential to students' entrepreneurial development. Facilitating the identification of opportunity and utilization of learning

acquired in university in developing an entrepreneurial undertaking was impactful for students engaging in entrepreneurship. Being able to recognize their ability and act upon it was pivotal. Therefore, university education should provide students with the tools to succeed and demonstrate how to best use their acquired resources.

Conclusion

This study aimed to analyze the relationship between education and entrepreneurship, investigate the influence university education has on entrepreneurship, and examine how education may be maximized to support entrepreneurial undertakings. There was direct alignment between literature and interviewee responses identifying the promotive influence of an adapting and engaging university environment, decentralized curriculum, diversity of involvement, promotion of intrapreneurship and entrepreneurship, and contributing to community development. This justifies the generated findings.

As demonstrated by the results generated, it is to be concluded that university education is an influential element of entrepreneurial venture creation. There is immense potential in the relationship between education and entrepreneurship; however, it is a matter of institutions acting on the opportunity and adapting. Universities have the unique opportunity to be the leading facilitators of venture creation through entrepreneurship education while at the same time promoting the commercialization of innovative enterprises.

An intriguing question to expand on in the findings of this paper is whether or not such influential elements may help create successful enterprises, providing entrepreneurs with the ability to achieve longevity and sustained prosperity. Education is a continuous process. Therefore, there is also potential that entrepreneurs would benefit from constant learning of innovative practices. In addition, although the international study was not identified as an influential element in the qualitative research, perhaps there is evidence to determine how international study contributes to entrepreneurship and in what capacity.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

Acknowledgements or Notes

This article was presented as an oral presentation at the International Conference on Research in Education and Social Sciences (www.icress.net) conference held in Baku/Azerbaijan on July 01-04, 2022.

This work was partially supported by Social Sciences and Humanities Research Council of Canada grant# 430-2020-00096.

References

- Breznitz, S. M., & Zhang, Q. (2019). Determinants of graduates' entrepreneurial activity. *Small Business Economics*, 1-18.
- Brooks, J., & King, N. (2012). *Qualitative psychology in the real world: the utility of template analysis*.
- De Moraes, Gustavo Hermínio, Salati Marcondes, Fischer, B. B., Campos, M. L., & Schaeffer, P. R. (2020). University ecosystems and the commitment of faculty members to support entrepreneurial activity. *Brazilian Administration Review*, 17(2), 1-26.
- Ewango-Chatelet, A. (2019). Managing universities for the entrepreneurial society: Entrepreneurial loops and innovative teaching initiatives *. *Management International*, 23(5), 66-77, 119-121.
- Guerrero, M., Urbano, D., Fayolle, A., Klofsten, M., & Mian, S. (2016). Entrepreneurial universities: Emerging models in the new social and economic landscape. *Small Business Economics*, 47(3), 551-563.
- King, N. (2012). Doing template analysis. qualitative organizational research. *Core methods and current challenges*, 426, 77-101.

- Krabel, S. (2018). Are entrepreneurs made on campus? the impact of entrepreneurial universities and graduates' human capital on graduates' occupational choice. *Journal of International Entrepreneurship*, 16(4), 456-485.
- Miller, D. J., & Acs, Z. J. (2017). The campus as entrepreneurial ecosystem: The university of Chicago. *Small Business Economics*, 49(1), 75-95.
- Nieuwenhuizen, C., Groenewald, D., Davids, J., Leon Janse, v. R., & Schachtebeck, C. (2016). Best practice in entrepreneurship education. *Problems and Perspectives in Management*, 14(3), 528-436.
- Pawson, R. (1996). Theorizing the interview. *The British journal of sociology*, 47(2), 295-314.
- Pawson, R., & Tilley, N. (1997). *Realistic evaluation*: Sage.
- Pugh, R., Lamine, W., Jack, S., & Hamilton, E. (2018). The entrepreneurial university and the region: What role for entrepreneurship departments? *European Planning Studies*, 26(9), 1835-1855.
- Roger, P. M., & Gurrisi, M. (2017). The online promotion of entrepreneurship education: A view from Canada. *Education & Training*, 59(9), 990-1006.
- Seguí-Mas, E., Oltra, V., Tormo-Carbó, G., & Sarrión-Viñes, F. (2017). Rowing against the wind: How do times of austerity shape academic entrepreneurship in unfriendly environments? *International Entrepreneurship and Management Journal*, 1-42.
- Shirokova, G., Osiyevskyy, O., Morris, M. H., & Bogatyreva, K. (2017). Expertise, university infrastructure and approaches to new venture creation: Assessing students who start businesses. *Entrepreneurship and Regional Development*, 29(9-10), 912-944.
- Stavytskyy, A., Dluhopolskyi, O., Kharlamova, G., Karpuk, A., & Osetskyi, V. (2019). Testing the fruitfulness of the institutional environment for the development of innovative-entrepreneurial universities in Ukraine. *Problems and Perspectives in Management*, 17(4), 274-288.
- Thamae, T. M., Thamae, R. I., & Thamae, L. Z. (2016). A process model for university-industry cooperation in sub-Saharan Africa: Lessons from Lesotho. *African Journal of Business and Economic Research*, 11(2), 103-125.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation*, 27(2), 237-246.
- Unger, M., & Polt, W. (2017). The knowledge triangle between research, education and innovation – A conceptual discussion. *Foresight and STI Governance*, 11(2), 10-26.
- Wannamakok, W., & Chang, Y. (2020). Institutional environments and social entrepreneurial intentions: A case of Thailand. *Review of Integrative Business and Economics Research*, 9(1), 97-111.
- Zhang, Q., Mackenzie, N. G., Jones-evans, D., & Huggins, R. (2016). Leveraging knowledge as a competitive asset? the intensity, performance and structure of universities' entrepreneurial knowledge exchange activities at a regional level. *Small Business Economics*, 47(3), 657-675.

Author Information

Jonathan Parkes

University of Guelph
50 Stone Rd E, Guelph, ON N1G 2W1, Canada
Contact e-mail: parkesj@uoguelph.ca

Davar Rezania

University of Guelph
50 Stone Rd E, Guelph, ON N1G 2W1, Canada

To cite this article:

Parkes J. & Rezania D. (2022). Talent development: Examining the impact of university education on entrepreneurship. *The Eurasia Proceedings of Educational & Social Sciences (EPESS)*, 24, 17-28.