WHAT IS THE IMPACT OF ENTREPRENEURSHIP EDUCATION PROGRAMS IN DEVELOPING COUNTRIES? A SYSTEMATIC REVIEW AND RESEARCH AGENDA

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ABSTRACT

This paper aims to critically review the literature on the impacts of entrepreneurship education (EE) in developing countries (DCs). To this end, we used the systematic review technique and performed a vote counting analysis to assess the overall dominant effect of EE based on the included articles. The results reveal that three types of EE programs (EEPs) have been evaluated in the literature, namely education programs "about" entrepreneurship, "for" entrepreneurship and "through" entrepreneurship. The vote counting analysis shows that all these different types of EEPs have a positive overall dominant effect on students' entrepreneurial orientation. However, despite this positive overall effect, the low representativeness of studies devoted to the impact of EEPs on students' actual engagement in entrepreneurship does not enable us to conclude that EEPs really promote the emergence of new entrepreneurs in DCs. This paper contributes to advancing knowledge in three ways: Firstly, it includes a vote counting analysis to identify the types of EEPs that have a positive overall dominant effect on students' entrepreneurship in the specific context of DCs. Secondly; it proposes an integrative conceptual framework which provides a comprehensive characterization of EE's impact. Thirdly, it suggests new avenues for future research.

Keywords: Entrepreneurship education, Entrepreneurial Intention, Entrepreneurial Engagement, Psycho-Cognitive Impact, Business Creation, Systematic Review.

INTRODUCTION

The idea that entrepreneurship is an important source of economic growth is popularly shared in the literature (Singer et al., 2015; Aidis, 2005). This idea dates back to the work of Schumpeter (1911), who states that entrepreneurs have the peculiarity of achieving "*new combinations*" that generate economic growth and employment. In order to benefit from these, governments implement policies that promote the growth of already existing entrepreneurs but also, and more importantly, the emergence of new generations of entrepreneurs. These policies include especially, the introduction of EE in university education with a view to encouraging entrepreneurship among students. EE has therefore grown considerably in recent decades (Adcroft et al., 2004; Adekiya & Ibrahim, 2016; Lin & Xu, 2017; Wu, 2017). EE has therefore grown considerably in recent decades (Adcroft et al., 2004; Adekiya & Ibrahim, 2016; Lin & Xu, 2017; Wu, 2017). This increase in the availability of entrepreneurship training programs has attracted the attention of scholars who have devoted an extensive literature to EE. The literature covers several themes that consider the objectives and content of EEPs, the effectiveness of the

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teaching methods used in these programs and their impacts on students' entrepreneurial orientation (Gielnik et al., 2017; Wu & Wu, 2017; Yu et al., 2017; Secundo et al., 2019).

With specific reference to the study on the impacts of EE, scholars have conducted empirical investigations to determine whether EE does indeed contribute to the making of new entrepreneurs. The empirical investigations have focused both on psycho-cognitive impacts (perception of entrepreneurship, entrepreneurial intention, etc.) and impacts on entrepreneurial action (preparatory actions for start-up, business creation). However, although study on the impacts of EE has received sustained attention in the literature, it is important to note that the results obtained by the authors are not always in corollary with one another. Thus, some authors state that EE positively affects students' entrepreneurial orientation (Gielnik et al., 2015; Gielnik et al., 2017), while other studies prove the opposite by showing, for example, that EE has a negative effect on students' entrepreneurial intention (Aloulou, 2016a; Lima et al., 2015; Badri & Hachicha, 2015; Hyder et al., 2011), or that the effect is not statistically significant. Most of the previous literature reviews (Dickson et al., 2008; Martin et al., 2013; Gelaidan & Abdullateef, 2017) indicate that these contradictory findings may be due to methodological artifacts. However, they may also be due to the different teaching methods used in the EEPs evaluated in the literature (Nabi et al., 2017; Anosike, 2017; Tang et al., 2014). Indeed, the different pedagogical approaches adopted in teaching can produce divergent results. Similarly, the context and characteristics of the various countries studied may be at the root of the contradiction observed in the results. Indeed, factors such as culture, educational system, university ecosystem and level of economic development are likely to affect the impact of EE on students' entrepreneurship. Thus, similar EE programs will not necessarily produce the same results in different institutional and economic environments. Due to socio-institutional and economic differences, the impact of EE could therefore be significantly different between developing and developed countries.

This review focuses specifically on the context of DCs in an attempt to enhance a better understanding of the impact of EEPs on students' entrepreneurship. The emphasis on DCs is important in the sense that entrepreneurship is capable of providing an adequate response to the socioeconomic challenges (unemployment, low income, low production, etc.) that most of these countries are grappling with. To some extent, these difficulties are linked to the lack of entrepreneurial activities that characterizes some developing regions. The contribution of EE is therefore crucial in fostering a change of mindset and a greater inclination of young people towards self-employment. In addition to the emphasis on the specific context of DCs, this review differs from previous reviews by introducing an analysis of the dominant effects of the different types of EEPs evaluated in the literature. To this end, we performed a vote counting analysis to identify the types of EEPs that have a positive overall dominant effect on students' entrepreneurial orientation. This analysis is critically important because, as Rideout & Gray (2013) state, the most important thing is not only to know whether EE influences students' entrepreneurship but rather to identify the types of EEPs that have the greatest impact.

Three main research questions were addressed in this review, namely:

1. What indicators are used in the literature to analyze the impact of EE on students' entrepreneurial orientation?
2. What are the pedagogical approaches that adopted in the various EEPs evaluated in the literature?
3. What is the overall dominant effect of these different approaches on the impact indicators studied?

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This article is divided into five main parts, namely: the theoretical background; the review methodology; the review findings; the vote counting analysis and the discussion.

THEORETICAL BACKGROUND AND PEDAGOGICAL PERSPECTIVES IN EE

Generally, there are two opposing pedagogical perspectives in EE, namely: theory-oriented and practice-oriented approaches. Theory-oriented approaches focus on teaching students the theoretical aspects of setting up and running a business. They originate from the behavioral theory, which considers teaching as a process of shaping learners' behavior. Thus, the behaviorist theory aims at transmitting pre-established knowledge. The instructor plays a central role in this paradigm. It is his or her responsibility to "*shape*" the students and gradually lead them towards the desired behaviors, that is, towards the acquisition of pre-established knowledge (Vienneau, 2004). To do so, instructors use stimuli and reinforcement contingencies or punitive contingencies in order to encourage or discourage some specific behavior among the students. Stimuli are used to generate a conditioned reaction or response (pre-established knowledge) while contingencies (consequences of these reactions) are used to keep students in the conditioned response. Thus, each time the instructor deploys the same stimulus, students will tend to passively adopt the associated response in order to benefit from a reinforcement contingency (positive consequence). This reinforcement contingency can be a good grade, a good comment or some kind of award in honour of the student. As for EE, curricula that draw on the behaviourist theory focus mainly on raising students' awareness of entrepreneurship as an alternative career choice. They appear as education programs "*about*" entrepreneurship (Sirelkhatim & Gangi, 2015). In these programs, emphasis is placed on the socio-economic benefits of entrepreneurship, which then serve as reinforcement contingencies to encourage students towards becoming entrepreneurs. Teaching is primarily teacher-centered with emphasis on theoretical aspects such as financial management and accounting, business plan writing, marketing, etc.

While theory-oriented approaches serve to impart procedural knowledge of business creation and management to students, they are less effective in awakening their sense of creativity and passion for entrepreneurship. Practice-oriented pedagogical approaches seek to overcome this shortcoming by opting for the creation of an environment that is conducive to learning by doing (Gielnik et al., 2015). These approaches are inspired by the constructivist theory which sees teaching as a process of knowledge construction that is, first and foremost, aimed at students' autonomy. Thus, in the constructivist paradigm, the student is at the heart of the learning process and is actively involved in the construction of his or her own knowledge. To this end, empirical experiment and interactions with the social environment are essential to facilitate discovery and self-learning by the students (Bruner, 1991). As for the context of EE, curricula inspired by the constructivist theory appear as education programs "*for*" entrepreneurship or "*through*" entrepreneurship (Sirelkhatim & Gangi, 2015). Education programs "*for*" entrepreneurship are practice-oriented and aim at developing certain entrepreneurial attitudes and skills such as creativity and innovation, risk-taking, pro-activeness, team spirit, networking, and business opportunities identification. Teaching is student-centered and often based on simulation. Education programs "*through*" entrepreneurship are quite like education programs "*for*" entrepreneurship in terms of content. However, they go beyond simple simulations where students play the role of an entrepreneur without being really engaged in the entrepreneurial process (Vincett & Farlow, 2008). Indeed, education programs "*through*"

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entrepreneurship focus on the real-life experience of the entrepreneur and facilitate students' integration into the market. They are thereby encouraged to find real opportunities in their environment formulate business ideas and present them to potential investors. Learning is achieved through real action and not through simulation.

REVIEW METHODOLOGY

The methodology used in this work is that of systematic reviews. We opted for this method because it follows a rigorous, transparent and replicable process that allows for an exhaustive review of the literature on a given topic (Becheikh et al., 2006; Tranfield et al., 2003). This method requires two main steps, namely: (i) formulating the criteria of inclusion and exclusion, (ii) establishing the strategy for locating and selecting articles

Inclusion and Exclusion Criteria

This work considers articles published in peer-reviewed academic journals. Thus, books, theses, dissertations, working reports as well as conference papers were not included. Furthermore, to ensure an acceptable level of quality, articles published in journals that are not classified in the ABDC (Australian Business Deans Council) or ABS (Association of Business Schools) rating lists were excluded. To be included, an article must focus on the impacts of EE on students' entrepreneurial orientation in DCs. In addition, these must be empirical studies published between 2003 and 2020. We chose the year 2003 as starting point with a view to continuing where Sluis et al., (2005) left off. Finally, included articles are those written in English.

Localization and Selection of Articles

Articles were sourced from four databases (ABI/INFORM, EBSCO, ISI Web of Science and Emerald) using a keyword chain constructed from two main research terms, namely "*entrepreneurship education*" and "*entrepreneurial orientation*". We combined these main research terms with their thesauri to form a research chain that led to 440 articles in ABI/INFORM, 639 in EBSCO, 706 in ISI Web of Science and 1918 in Emerald. To select included articles, we proceeded to do a double sorting (Petticrew & Roberts, 2006). The first sorting consisted of checking the inclusion and exclusion criteria by focusing on articles' titles and abstracts. Articles selected at this level are read in their entirety at the second sorting stage. This double sorting allowed us to retain 95 articles which were re-examined a second time in order to ensure that all the criteria were verified. This final verification led us to the exclusion of 20 articles that dealt with the determinants of students' entrepreneurial intention without focusing on the impact of EE. The systematic search therefore resulted in 75 articles. This number was supplemented by seven (7) articles from the manual search conducted through Google Scholar, bibliographic references of some articles and the websites of some major journals in the fields of entrepreneurship and education. Consequently, 82 articles were selected for this literature review (Figure 1).

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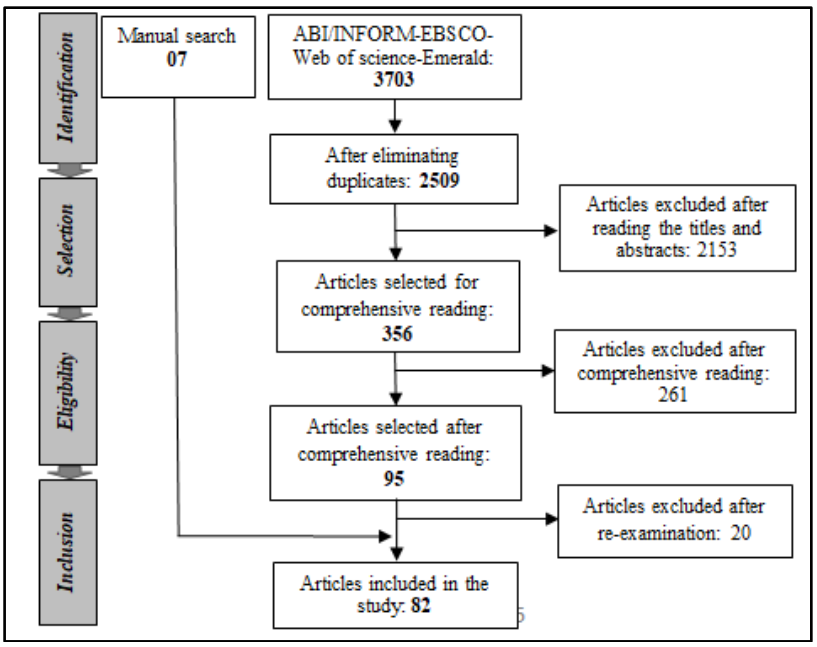

FIGURE 1
SYSTEMATIC REVIEW FLOW DIAGRAM

REVIEW FINDINGS

General Trends in the Literature

As shown in Figure 2, the number of publications is increasing over the period being studied (2003-2020). Majority of the articles were published between 2014 and 2020. This period accounted for 90% of the publications on the subject. This shows the growing interest of scholars in the impact of EE in DCs.

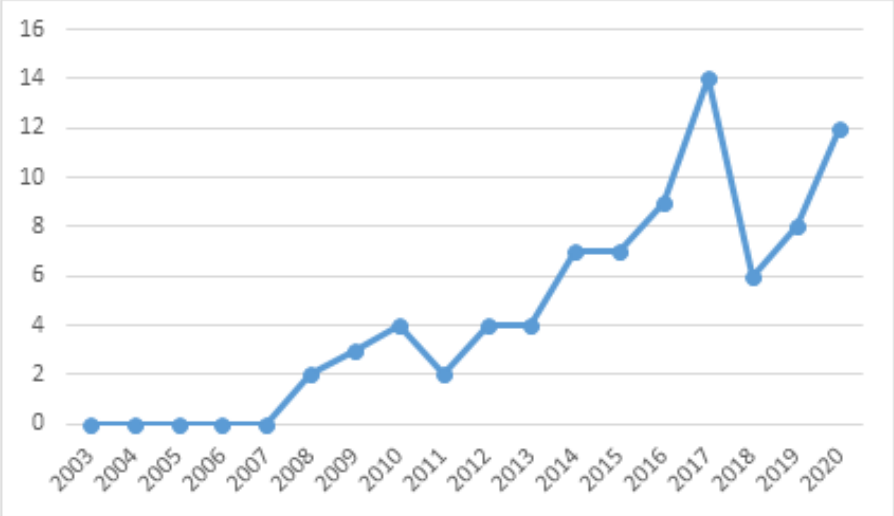

FIGURE 2
PUBLICATIONS' TREND

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Following Sirelkhatim & Gangi (2015) grouped the different EEPs evaluated in the literature into three (3) main categories namely:

1. Programs "*about*" entrepreneurship,
2. Programs "*for*" entrepreneurship, and
3. Programs "*through*" entrepreneurship.

In making this classification, we relied on the authors' descriptions of the curricula evaluated in theirarticles (Sirelkhatim & Gangi, 2015). The criteria considered are the objectives of the curricula, their contents and the teaching methods used. Thus, in the category of programs "about" entrepreneurship, we put together education programs whose main objective is to make students aware of the opportunity offered by entrepreneurship as a career. These programs are basically made up of theoretical courses in business plan writing, financial management, accounting, marketing, etc. Frequently used teaching methods are normal lectures by the teacher, presentations by guest speakers and case studies.

In the programs "*for*" entrepreneurship, we included programs that aim at developing entrepreneurial skills such as pro-activeness, creativity and innovation, ability to set up a business project, to network, to take risks and seize business opportunities, etc. The teaching methods used in these programs are often in form of simulations, networking with entrepreneurs and business plan competitions.

Finally, in the category of programs "*through*" entrepreneurship, we included EEPs where learning is accomplished through real action and where students develop real business projects. In these programs, incubators are often used to provide students with personalized coaching in developing their concepts, financing their activities and getting integrated into the market.

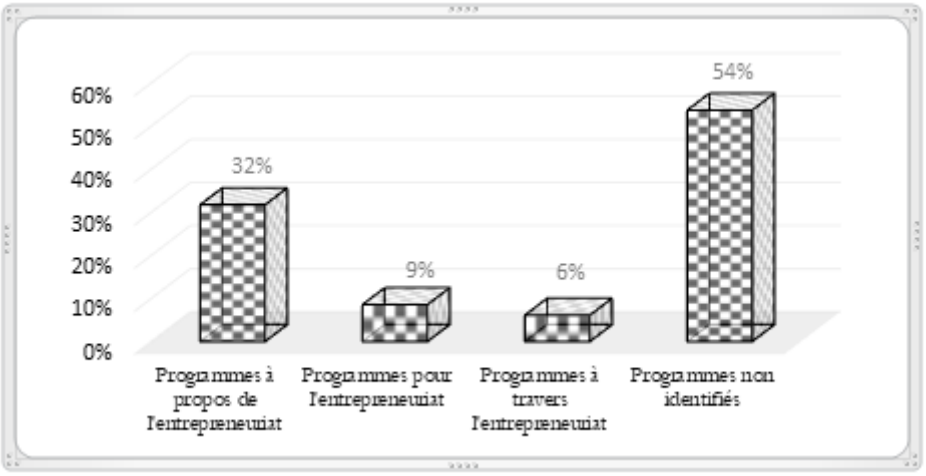

FIGURE 3
TYPE OF EEPS

Figure 3 shows the distribution of articles around the different types of EEPs evaluated in the literature. The "*unidentified programs*" represent those articles that did not provide enough information for us to identify the type of EEP they evaluated. It is surprising to note that in most cases (54%), the authors did not provide details (objective, content, methods) on the EEPs whose impact they are evaluating in their articles. These details are important in the sense that they can

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be used as a comparison to identify the types of training that have a greater impact on students' entrepreneurship in DCs. As shown in Figure 3, programs "*about*" entrepreneurship, are the most studied in the literature (31%) followed by programs "*for*" entrepreneurship (9%), and "*through*" entrepreneurship (6%).

With regard to the methodological trends in the included articles, quantitative methods are by far the most widely used by the authors. They were adopted in 90% of the articles included in this review while only 7% and 3% of the authors used qualitative and mixed methods respectively.

According to the geographical distribution of the included articles, Asia is the most studied region (36 articles), followed by Africa (15 articles), Europe (12 articles) and Latin America (7 articles). The enthusiasm of scholars for Asia could be justified by the economic dynamics and the emergence of an entrepreneurial culture that distinguish this continent from other developing regions.

Impacts of EEPs on Students' Entrepreneurial Orientation in DCS

Two main types of impacts are studied in the literature to analyse the effect of EEPs in DCs. They are psycho-cognitive impacts and impacts on entrepreneurial action. The psycho-cognitive impacts were evaluated using indicators that we grouped into 3 categories, namely:

1. Students' entrepreneurial skills, which include indicators such as proactiveness, creativity, innovation, ability to create business networks and identify business opportunities, etc.
2. Students' perception and attitude towards entrepreneurship, which includes perceived desirability and feasibility of entrepreneurship, acceptance of risk, tolerance of ambiguity, etc.
3. Students' entrepreneurial intention.

Regarding the impacts on entrepreneurial action, these were assessed using indicators such as entrepreneurial engagement and business creation. Entrepreneurial engagement refers to the involvement of students in actions that can prepare them for business creation such as market survey, meeting potential partners, developing prototypes, etc.

Figure 4 shows that, entrepreneurial intention is the most studied impact indicator followed by attitude and perception towards entrepreneurship, entrepreneurial skills development, entrepreneurial engagement and business creation.

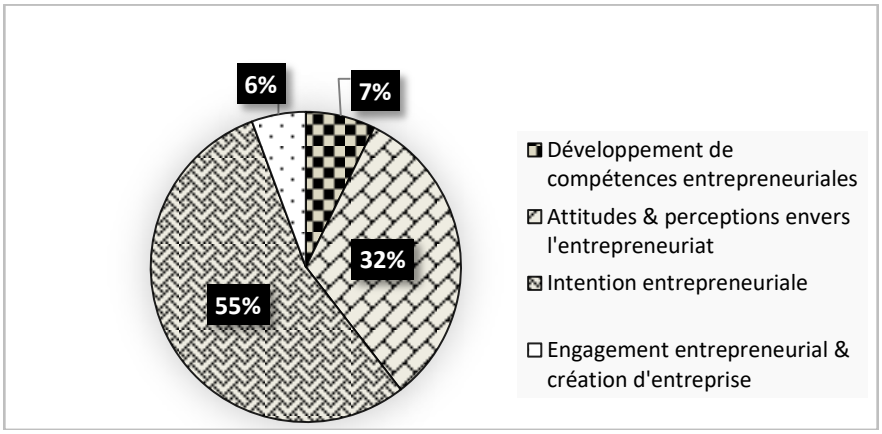

FIGURE 4
IMPACT INDICATORS STUDIED IN THE LITERATURE

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Psycho-Cognitive Impacts of EEPs in DCS

Several authors have studied the psycho-cognitive impacts of EEPs by analyzing their contribution to the development of entrepreneurial skills, changing perception and attitude towards entrepreneurship and developing entrepreneurial intention (Saeed et al., 2014; Boukamcha, 2015; Saeed et al., 2015). The majority of these studies show that EE is a key factor in building students' entrepreneurial skills and capacities (Muñoz et al., 2020). EE also positively influence students' perception about the desirability and feasibility of entrepreneurship (Byabashaija & Katono, 2011). The concept of entrepreneurial desirability refers to the degree of attraction felt by an individual towards entrepreneurial activities (Boukamcha, 2015). Concerning the perceived feasibility of entrepreneurship, it is related to the perception of an individual about his or her capacity and the resources at their disposal to meet the challenges involved in the entrepreneurial process (Vazquez et al., 2009). In this sense, EEPs are likely to provide the necessary resources in terms of knowledge and skills to make students feel more empowered and develop optimism about the feasibility of starting a business. Thus, as part of his evaluation of the CEFE (Création d'Entreprises et Formation des Entrepreneurs) training program implemented in Tunisia, Boukamcha (2015) reveals that EE positively affects the perceived desirability and perceived feasibility of entrepreneurship. This result confirms that of Roxas (2014) who shows in a study conducted in the Philippines that EE enhances the desirability of entrepreneurship among students. Using a quasi-experimental design, the author states that this is due to the knowledge acquired by students during entrepreneurship education sessions. Indeed, this knowledge about entrepreneurial process helps in reinforcing students perceived self-efficacy (Pfeifer et al., 2016), and to make entrepreneurial career desirable and feasible for them. EE also encourages students to adopt certain attitudes that are conducive to the development of entrepreneurship, such as acceptance of risk, tolerance of ambiguity, and the development of a locus of internal control (Pedrini et al., 2017).

Wu & Wu (2008) show that EE can also strengthen students' entrepreneurial intention. Their study also found that engineering students exhibit stronger entrepreneurial intention than those in other disciplines. This result is congruent with the observations made by Zhang et al., (2014) who show that EE has a positive effect on students' entrepreneurial intention and that this effect is higher in the technical fields. The aforementioned is explained by the practical nature of training in these fields and the operational autonomy it affords students. The magnitude of the impact of EE also varies based on gender. For example, in a comparative study conducted in Ukraine, Westhead & Solesvik (2016) indicate that the impact of EE on students' entrepreneurial intention is lower for girls than for boys. Thus, under the same learning conditions, girls develop a lower entrepreneurial intention than boys. This could be due to some stereotypes that tend to present the business community as the exclusive playground for men. However, despite the relative weakness of girls' entrepreneurial intention compared to boys, it is nevertheless interesting to see that girls are being positively impacted by EE in DCs.

However, some studies have shown that EEPs are not always sufficiently adapted to encourage students to consider a career as an entrepreneur (Lao, 2017; Martinez et al., 2018). Sometimes, these programs even constitute a source of demotivation for students. The aforementioned is confirmed by Aloulou (2016b) and Lima et al. (2015) who show that EE has a negative effect on students' entrepreneurial intention. This counter-intuitive result is explained by the mismatch between the training being offered and students' expectations. In fact, theory-based course modules are likely to discourage students who are initially endowed with a certain

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entrepreneurial intention, and who are looking for practical training that could equip them to effectively handle the challenges of self-employment.

Impacts of EEPs on Entrepreneurial Action in DCs

The study on psychological impacts largely dominates the literature on the impacts of EEPs in DCs. Nevertheless, a few studies have focused on the contribution of EEPs to students' engagement in entrepreneurial actions and the creation of new businesses. In this vein, Mamun et al. (2017) state that EE positively affects students' engagement in start-up preparation activities such as developing a business plan, contact potential partners, developing prototypes, etc. This finding corroborates the observations of Gielnik et al. (2015) who, in a study conducted in Uganda, reveal that EE increases students' engagement in starting a new business. The training program evaluated in that study was based on the principle of learning by doing. Thus, the students were encouraged to form teams of four to six people in which micro-enterprises were set up. The objective of these teams was to start and operate the micro-enterprises in such a way that they should yield profits over the 12-week training period. To this end, each team received an initial capital of US$100 which they were expected to pay back at the end of the training. With this sum of money, the teams were able to acquire the equipment and inputs needed to run their micro-enterprises. The experience afforded the students an opportunity to go through the different stages of entrepreneurial process in a real-life situation. That way, they have had to turn a business idea into reality, negotiate partnerships with suppliers, meet with customers and make sales on the market. Gielnik et al. (2015) indicate that this type of learning allows students to become familiar with the entrepreneurial process, acquire knowledge through practice and engage them in creating their own business.

Two years later, these results were confirmed in a similar study conducted in Kenya by Gielnik et al. (2017). The study found that EE based on learning by doing enhances creation of new business by students. This positive impact on enterprise development can be observed in both the short and long terms. Gielnik et al. (2017) further show that the effect is transmitted through students' passion for entrepreneurship. Thus, operating a micro-enterprise during training allows students to discover their passion for entrepreneurship and engages them in the creation of their own business.

STUDY OF DOMINANT EFFECTS OF THE VARIOUS EEPS EVALUATED IN THE LITERATURE

The method of vote counting was used to analyze EE's dominant effects on the various impact indicators identified in this review. Through a comparative approach, the analysis of the dominant effects was conducted according to the different types of EEPs evaluated in the literature. Tables 1a and 1b show the distribution of the included articles according to the types of EEPs evaluated and the impact indicators studied.

Table 1a
DISTRIBUTION OF SELECTED ARTICLES

Type of EEPs evaluated	Impact indicators studied			
	Entrepreneurial skills development	Perception & Attitude towards entrepreneurship	Entrepreneurial intention	Entrepreneurial engagement & Business creation

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Programs about entrepreneurship	Mamun et al. (2017)	Roxas (2014)	Solesvik (2013)	Kolade (2018)
	Anosike (2017)	Uddin & Bose (2012)	Roxas (2014)	
		Puni et al. (2018)	Gerba (2012)	
		Solesvik (2013)	Solesvik et al. (2013)	
		Westhead & Solesvik (2016)	Puni et al. (2018)	
		Mamun et al. (2017)	Olomi & Sinyamule (2009)	
		Zhang et al. (2019)	Mustafa et al. (2016)	
		Hamzah et al. (2016)	Solesvik (2013)	
		Pfeifer et al. (2016)	Westhead & Solesvik (2016)	
		Ahmed et al. (2017)	Ismail et al. (2018)	
		Karimi et al. (2016)	Mamun et al. (2017)	
		Saeed et al. (2015)	Zhang et al. (2019)	
		Muñoz et al. (2020)	Hamzah et al. (2016)	
			Roman & Maxim (2017)	
			Kirby & Humayun (2013)	
			Pfeifer (2016)	
			Ahmed et al. (2017)	
			Karimi et al. (2016)	
			Saeed et al. (2015)	
			Anosike (2017)	
			Sirelkhatim & Gangi (2015)	
			Muñoz et al. (2020)	
			Hamzah et al. (2016)	
Programs for entrepreneurship	Jurburg et al. (2017)		Boukamcha (2015)	
	Muñoz et al., (2020)	Jurburg et al. (2017)	Dou et al. (2019)	
		Boukamcha (2015)	Muñoz et al. (2020)	
		Dou et al. (2019)	Ahmed et al. (2010)	
		Muñoz et al. (2020)		
		Wegner (2019)		
Programs through entrepreneurship	Gielnik et al., (2015)	Gielnik et al. (2015)	Gielnik et al. (2015)	Gielnik et al. (2015)
		Gielnik et al. (2017)	Martínez et al. (2017)	Gielnik et al. (2017)
		Martínez et al. (2017)	Sirelkhatim & Gangi (2015)	Guerrero et al. (2018)
		Sirelkhatim & Gangi (2015)		

Table 1b
DISTRIBUTION OF SELECTED ARTICLES

Type of EEPs evaluated	Impact indicators studied			
	Entrepreneurial skills development	Perception & Attitude towards entrepreneurship	Entrepreneurial intention	Entrepreneurial engagement & Business creation

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Unidentified programs	Farashah (2013)	Feder & Nitu-Antonie (2017)	Saeed et al. (2014)	
	Choi et al. (2018)	Trivedi (2016)	Nabi et al. (2017)	Choi et al. (2018)
	Coelho et al. (2018)	Mamun et al. (2017)	Feder & Nițu-Antonie (2017)	
	Rhaiem (2017)	Hattab (2014)	Uddin & Bose (2012)	
		Gerba (2012)	Popescu et al. (2014)	
		Lima et al. (2015)	Ahmed et al. (2010)	
		Aloulou (a) (2016)	Mustafa et al. (2016)	
		Saeed et al. (2015)	Trivedi (2016)	
		Matlay et al. (2015)	Anosike (2017)	
		Murugesan & Jayavelu (2015)	Sandhu et al. (2010)	
		Byabashaija & Katono (2011)	Ismail et al. (2009)	Mamun et al. (2017)
		Sun et al. (2017)	Mamun et al. (2017)	
		Nowiński et al. (2017)	Adcroft (2004)	
		Wu & Wu (2008)	Aidis (2005)	
		Farashah (2013)	Matlay et al. (2015)	
			Shahab et al. (2019)	
			Adekiya & Ibrahim (2016)	
			Mohamad et al. (2015)	
			Hattab (2014)	
			Gerba (2012)	
			Lima et al. (2015)	
			Aloulou (a) (2016)	
			Aloulou (b) (2016)	
			Saeed et al. (2015)	
			Murugesan & Jayavelu (2015)	
			Byabashaija & Katono (2011)	
			Sun et al. (2017)	
			Nowiński et al. (2017)	
			Wu & Wu (2008)	
			Farashah (2013)	
			Zhang et al. (2014)	
			Daneshjoovash & Hosseini (2019)	
			Hyder (2011)	
			Hattab (2014)	
			Gelaidan & Abdullateef (2017)	

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			Muñoz et al. (2020)	

The effect of these EEPs on each of the indicators can be positive, negative or neutral. Following Rhaiem (2017), we consider that a type of EEP has a dominant overall effect in a given direction when this effect is significant and oriented in that direction in a proportion of at least 60%. For example, the impact of programs "*about*" entrepreneurship on students' entrepreneurial intention was studied 24 times in the included articles. Of these 24 cases, 21 indicate a significantly positive impact and 3 indicate a non-significant impact. We then conclude that programs "*about*" entrepreneurship have an overall positive dominant effect (21/24=0.87>60%) on students' entrepreneurial intention. Table 2 presents the results of the vote counting.

Table 2
VOTE COUNTING

Education programs	Occurrence of impact indicators	Recurrence of the significant impacts			Presence of a dominant overall effect (DOE)
		(+)	(-)	(NS)	
Entrepreneurial skills development					
About entrepreneurship	2	1	-	1	DOE?
For entrepreneurship	5	5	-	-	DOE +
Through entrepreneurship	1	1	-	-	DOE +
Unidentified	4	3	1	-	DOE +
Perception & Attitude towards entrepreneurship					
About entrepreneurship	26	21	-	5	DOE +
For entrepreneurship	12	11	-	1	DOE +
Through entrepreneurship	8	7	-	1	DOE +
Unidentified	39	25	5	9	DOE +
Entrepreneurial intention					
About entrepreneurship	24	21	-	3	DOE +
For entrepreneurship	4	4	-	-	DOE +
Through entrepreneurship	3	3	-	-	DOE +
Unidentified	37	29	4	4	DOE +
Entrepreneurial engagement & Business creation					
About entrepreneurship	1	1	-	-	DOE +
For entrepreneurship	-	-	-	-	DOE?
Through entrepreneurship	4	4	-	-	DOE +
Unidentified	2	2	-	-	DOE +

The vote counting analysis reveals that the EEPs evaluated in the literature have a positive effect on students' entrepreneurship. Indeed, the results show that the overall dominant effect of the various types of EEPs on all the impact indicators studied in the literature is positive, except in two cases where the results did not allow us to draw a conclusion on the nature of the effect. These two cases include the effect of programs "*about*" entrepreneurship on entrepreneurial skills and the effect of programs "*for*" entrepreneurship on entrepreneurial engagement and business creation. With the exception of these two cases, the overall dominant

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effect is positive in all other cases identified in the vote counting. Even for those articles that did not provide sufficient information to enable us to identify the type of program evaluated, the results indicate that the overall effect of EE is positive on all the impact indicators studied. We could therefore say that, EEPs have a dominant positive effect on students' entrepreneurial orientation. This means that EE is an effective way of fostering entrepreneurial culture among students. It enables them to strengthen their entrepreneurial skills, have a positive perception and attitude towards entrepreneurship, have greater entrepreneurial intention and engage in the creation of their own business.

DISCUSSION

Do EEPs Really Train Future Entrepreneurs in DCs?

The analysis of the included articles is expected to provide an answer to this kind of question. The articles that studied the psycho-cognitive impacts could not really provide answer to the question. Nevertheless, they do provide insights into how EEPs contribute to acquiring entrepreneurial skills, changing mindsets and stimulating entrepreneurial intention. As Rideout & Gray (2013) argued, although psycho-cognitive impacts are not likely to show whether or not EEPs create future entrepreneurs, they nonetheless allow us to answer the question "*how*?" Thus, if we assume that EEPs create future entrepreneurs, research on psycho-cognitive impacts allow us to answer the question "*how does it work?*" Majority of these research show that EEPs have a positive impact on the psycho-cognitive predisposition of students to lean towards self-employment. The vote counting analysis shows that EE has a positive dominant overall effect on entrepreneurial skills, perceptions and attitudes towards entrepreneurship, and entrepreneurial intention. So, assuming that EEPs train future entrepreneurs in DCs, we could say that it works by enhancing students' entrepreneurial skills, self-efficacy, perceptions and attitudes (risk acceptance, ambiguity tolerance, perceived desirability and feasibility of entrepreneurship) and entrepreneurial intention.

Concerning the articles that studied the impacts on entrepreneurial action, they could potentially enable us to answer the question posed above. Indeed, these articles have focused on the impacts of EEPs on the actual engagement of students in entrepreneurial process. The vote counting analysis shows that EEPs have a positive overall dominant effect on entrepreneurial engagement and business creation. Based on that, one might be tempted to say that EEPs create future entrepreneurs in DCs. But this still remains a risky and difficult affirmation. Indeed, although the articles that studied the impacts of EEPs on entrepreneurial action all reveal a positive effect, they represent only 8.5% of the articles included in this review. Out of the 70 papers reviewed, only 6 focused on the effect of EEPs on students' actual engagement in entrepreneurial action. In our opinion, this small number does not seem representative enough to be able to draw a valid conclusion. Finally, based on the articles included in this review, the only possible answer to the question "*Do EEPs really train future entrepreneurs in DCs?*" would be "*we really do not know yet*". In other words, the current state of the literature does not able us to know whether EEPs really promote the emergence of new entrepreneurs in DCs.

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Integrative Conceptual Framework of EE's Impact and Research Agenda

Most of the included articles reveal that different forms of EE ("*about*", "*for*" and "*through*" entrepreneurship) enable students to acquire entrepreneurial skills that help build their confidence, positively change their perception and attitude towards entrepreneurship, and lead them to develop the intention to become entrepreneurs. The realization of this intention involves engaging in start-up preparation activities such as developing a product prototype, conducting market survey, etc. These different actions constitute a transition towards the creation of a new business. Based on these findings and the vote counting analysis, we propose an integrative framework providing a comprehensive characterization of the state of knowledge in EE's impact study in DCs. To advance knowledge, we include the moderating effect of the socio-institutional environment in the conceptual framework. Indeed, beyond factors such as gender and field of study, the nature and magnitude of the impact of EE may also depend on the socio-institutional environment in which students find themselves. Unfortunately, the current state of the literature does not allow us to understand the nature of this influence (Figure 5).

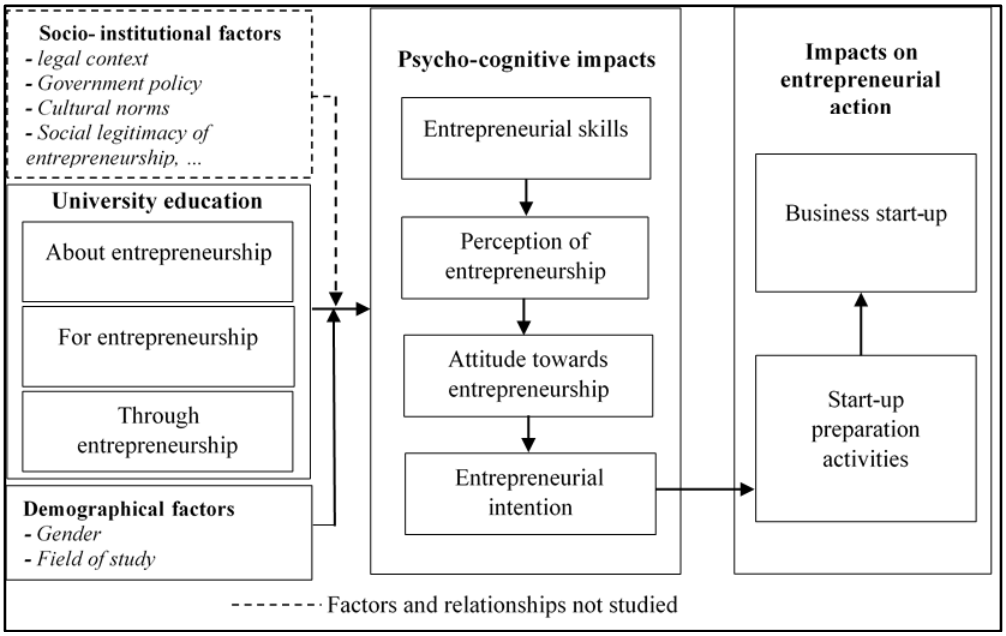

FIGURE 5
INTEGRATIVE CONCEPTUAL FRAMEWORK OF EE'S IMPACT

In the majority of the papers reviewed, the impact indicators used to assess the effect of EEPs are psycho-cognitive factors, especially, entrepreneurial intention which was studied in 53% of the articles. The attention given to these psycho-cognitive factors in the literature can be understood by the fact that entrepreneurial culture is still pretty much weak in several DCs. Therefore, seeking to analyze the contribution of EE to changing students' mindsets and entrepreneurial intention in these countries seems to be quite useful. But cognitive changes do not necessarily result in entrepreneurial actions. Thus, entrepreneurial intention does not always make students to actually engage in entrepreneurship. It would therefore be more appropriate for research to focus more on how EE contributes to translating intention into action. Indeed, the gap between intention and action could be substantial given the hostile environment in some DCs.

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Moreover, getting students to actually enter into entrepreneurship is the ultimate goal of EEPs. In order to evaluate the success of these programs, attention should therefore be paid to their impact in terms of business creation or at least, their effects on students' engagement in start-up preparation activities. Indeed, these preparatory activities (developing a product prototype, drawing up a business plan, meeting potential customers and suppliers, etc.) are the transition phase between entrepreneurial intention and business creation. Students who have begun these steps can be truly considered to be engaged in entrepreneurial process.

Research Proposal 1: Future research should assess the contribution of EE to the creation of new ventures by students in DCs. Such a study could provide an empirical answer to the question "*Do students who take entrepreneurship courses really become entrepreneurs?*"

Research Proposal 2: Researchers should analyze the effect of EE on the level of students' engagement in entrepreneurial process in DCs. Such a study could use the entrepreneurial ladder developed by van der Zwan et al. (2010) and would make it possible to determine whether EE promotes the transition of students from low levels to higher levels of entrepreneurial engagement. Indeed, the entrepreneurial ladder proposed by van der Zwan et al., (2010) distinguishes four basic levels of entrepreneurial engagement ranging from the lowest to the highest: "*have never thought about starting a business*", "*have thought about starting a business*", "*have taken concrete steps towards starting a business*", "*have started a new business*".

Research Proposal 3: Scholars should investigate and come up with new understandings on how the psycho-cognitive impacts of EE translate into long-term entrepreneurial actions in DCs. For example, future research could use chronological data to examine the mediating role played by entrepreneurial intention in the relationship between EE and business creation. In concrete terms, this means looking at how the entrepreneurial intention induced by EE at one point in time (T1) translates into business creation at another point in time (T2).

This review also shows that the effect of teaching methods on students' entrepreneurial orientation has not attracted special attention in the literature; whereas students' entrepreneurial efficacy and their inclination towards self-employment may depend on the pedagogical approach adopted by the teacher. Thus, theory-based and practice-based teaching pedagogies will not necessarily have the same impact on students' entrepreneurship. Unfortunately, the literature has not accorded sufficient importance to these differences despite the fact that they are key in identifying the most appropriate pedagogical approaches for the development of students' entrepreneurship.

Research Proposal 4: Researchers should conduct comparative analysis of the impact of different types of pedagogy: theoretical approaches (education about entrepreneurship) vs. practical approaches (education for or through entrepreneurship) on students' entrepreneurial inclination in DCs.

Research Proposal 5: Future research should analyze the impact of para-academic activities dedicated to entrepreneurship (business plan competitions, conferences & seminars, networking with entrepreneurs, internships, etc.) on the entrepreneurial inclination of students in DCs.

Research Proposal 6: Scholars should analyze the moderating effect of teachers' entrepreneurial experience on the relationship between EE and students' entrepreneurial intention in DCs.

Research Proposal 7: Future research should analyze the synergistic effect of EE courses, university support for concept development (generating business ideas) and university

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support for business development (facilitating access to finance and markets) on students' engagement in entrepreneurship**.**

Research Proposal 8: The included articles also reveal that regions such as Latin America and Africa have received little attention from scholars. Particularly, in the case of Africa, we were surprised to note that not a single study has been carried out in sub-Saharan francophone countries. Given the high rate of unemployment recorded by these countries and the potential role that entrepreneurship could play, we suggest that scholars extend research on the EE's impact to these under-studied regions.

This review also shows that scholars did not consider the importance of the socio-institutional environment in studying the impact of EE in DCs. Socio-institutional context varies from one country to another and is likely to moderate the impact of EE on students' entrepreneurial interest. Future research should focus on this moderating effect in order to identify the socio-institutional factors that explain the fact that students with similar EE do not always show the same interest in self-employment. These factors could serve as leverages for policy makers in order to increase students' entrepreneurial engagement.

Research Proposal 9: Scholars should analyze the dual influence of academic and socio-institutional environment on students' entrepreneurial engagement in DCs**.**

Research Proposal 10: Future research should analyze the moderating effect of culture on the relationship between EE and students' entrepreneurial intention by comparing several countries in different developing regions**.**

CONCLUSION, IMPLICATIONS AND LIMITATIONS

The aim of this study was to produce a critical review of the literature on the impacts of EE in DCs. The articles reviewed show that three main forms of EE have been evaluated in the literature, namely education programs "*about*", "*for*" and "*through*" entrepreneurship. The impacts of these programs both on students' psycho-cognitive predisposition and entrepreneurial action have been examined. The vote counting analysis that was conducted shows that EE has a positive overall dominant effect on the different impact indicators studied. However, the low representativeness of studies devoted to the impacts on entrepreneurial action does not enable us to know whether EEPs really promote the emergence of new entrepreneurs in DCs**.**

This review has a number of implications for universities as well as scholars. Using a vote counting analysis, this study enhances a better understanding of the impact of different types of pedagogies on students' entrepreneurship. Universities could make use of it to strengthen their training curricula and offer programs that are more likely to encourage real student engagement in entrepreneurship. The paper also contributes to the literature by suggesting new avenues for future research and by proposing an integrative conceptual framework which provides a comprehensive characterization of EE's impact. Scholars could test this framework in future empirical research**.**

Some limitations could be associated with our research. Firstly, this work did not take cognizance of the impacts of EE on students' entrepreneurial performance. We limited ourselves to the impacts of EE on students' entrepreneurial inclination (entrepreneurial intention, entrepreneurship entry, etc.) without considering the post business creation impacts. This offers an avenue for further review on the impacts of EE on students' entrepreneurial performance. Secondly, this review focused only on EE in higher education, without considering EEPs that take place at the secondary school level. EE within the secondary school also requires sustained

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attention since it has the potential to foster early entrepreneurial development among students. However, considering the fact that higher education is more geared towards preparing students for the labour market, we have chosen to focus on the impacts of EE at the university level. Thirdly, our research strategy process was done according to the database system with peer-reviewed published articles written in English. There may be more empirical studies published in other languages that would complement or contradict some findings drawn from this review**.**

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