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Entrepreneurial learning through mentoring: Does similarity in dyads matter?

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INTRODUCTION

Entrepreneurial mentoring is a practice that pairs a novice entrepreneur to a person with a greater experience in the business world in order to foster their personal and professional development (St-Jean, 2012; Wanberg et al., 2003). This practice is recognized to develop cognitive learnings (e.g. being better in opportunity identification, having a clearer "vision" for the future, etc.) as well as affective learnings (e.g. self-confidence, entrepreneurial self-efficacy, feeling more relaxed, breaking loneliness, etc.) (Barrett, 2006; Ozgen & Baron, 2007; St-Jean & Audet, 2012; Sullivan, 2000). Despite the recognition that learning may be the most important outcome of mentoring in many different contexts (organizational, higher education, youth, etc.), the conditions under which learning happens in entrepreneurial mentoring are not fully understood.

Theoretical foundation of mentoring suggests that mentoring functions are the main drivers of proximal outcomes like learning (Kram, 1985; Wanberg et al., 2003). Although they can all generate learning for the mentee, some functions may play a more important role in some specific kind of learning. For example, technical know-how type of learning would requires more of career-related functions to occur, while affective learnings like fostering motivation would be related to a greater extent to psychosocial functions (Hezlett, 2005; Lankau & Scandura, 2002). Previous research showed that mentor functions are important drivers of entrepreneurial learning in mentoring (El Hallam & St-Jean, 2016; St-Jean & Audet, 2012). However, the very specific learning in mentoring are not exposed, nor the condition under which they occur.

Research in organizational mentoring inform about the impact of similarity, real or perceived, in mentoring dyads (Hu et al., 2014; Lankau et al., 2005; Mitchell et al., 2015). While some highlighted that actual similarity based on demographics (eg. gender) is important (Sosik & Godshalk, 2005; Turban et al., 2002), others demonstrated that this is not important when perceived similarity is present (Hernandez et al., 2017a; Illies & Reiter-Palmon, 2018). Perceived similarity is particularly important in establishing a positive dynamic of exchange and respect, as a complement to trust in the relationship. It allows the mentee to open up more to the mentor and encourages learning. Real similarity, on the other hand, can support the establishment of this perceived similarity and enable more extensive exchanges. A dyad made up of women in business will find it easier to discuss certain issues specific to women, in the same way as a dyad from the same industry, who will understand the specific issues more quickly and be able to get to the bottom of them in their discussions. As for entrepreneurial mentoring, perceived similarity appears to be

important (St-Jean & Audet, 2012), but the impact of actual similarity on entrepreneurial learning seems to be overlooked.

Gender similarity is one of the important aspects to look at because of the stereotypes associated with female in entrepreneurship (Meyer et al., 2017). Career similarity could also be an important element that could interact in the learning process. Being supported by a mentor that is (or was) entrepreneur himself/herself, or that work in the same industry, could also impact the learning process. On one hand, being supported by a mentor with entrepreneurial experience could improve the role model function, which in turn could impact motivation (e.g. Lockwood et al., 2002; Lockwood & Kunda, 1997) and knowledge sharing, as mentors with entrepreneurial experience should have more expertise to share with their mentees. On the other hand, being in the same industry could also narrow the scope of learning possibilities or make the dyad to concentrate their discussion around the industry aspects. Actual similarity may be more important to certain kind of learning than for others, just like for perceived similarity.

LITERATURE REVIEW

Learning in entrepreneurial mentoring

Mentoring is defined as a relationship between a more experienced person (the mentor) and a less experienced person (the mentee), where the former provides the latter with career functions (sponsorship, exposure and visibility, coaching, protection, and challenging assignments), as well as psychosocial functions (acceptance and confirmation, counseling, role modeling and friendship (Kram, 1985). Learning is considered the most important outcome of a mentoring relationship (St-Jean & Audet, 2012). It is a proximal outcome, that is, to say that occurs immediately or very soon after the intervention, contrary to distal outcomes that develop through time based on learning (Wanberg et al., 2003).

Learning can be seen as a process (Carr & Gannon-Leary, 2007; Politis, 2005). There are four primary processes by which entrepreneurs enhance their knowledge: explorative learning process; exploitative learning process; experiential and contextual learning process; and intuitive and sensing learning process (Secundo et al., 2017). From the learning process perspective, previous works show how the entrepreneur learns to identify (or create) opportunities (Corbett, 2005; Sanz-Velasco, 2006), or explain the learning process that occurs when entrepreneurs mobilize their network when facing difficulties (Soetanto, 2017). The learning process naturally captures the "how", "when", and "from whom" the learning occurs, while learning content would address the "what" involved. As we are intent to understand the impact of mentor functions in learning throughout mentoring, we delimit the "how" (ie. through mentor functions and dyad configuration) and the "from whom" (ie. the mentor), leaving the necessity to delimit the "what" related to learning.

Based on the seminal work of Cope (2005), entrepreneurial learning content has been grouped within five broad areas of significance, namely: 1-Learning about oneself, 2-Learning about the business, 3-Learning about the environment and entrepreneurial networks, 4-Learning about small business management, and 5-Learning about the nature and management of relationships. On the

one hand, despite this important contribution to our understanding of entrepreneurial learning content, this requires further exploration based on the author himself. On the other hand, learning in mentoring may be more specific than these five areas, and therefore needs a specific investigation. However, researches related to learning in mentoring for entrepreneurs show very diverse learning content.

From the five broad areas of learning content (Cope, 2005), learning about oneself is one kind of learning often mentioned in research, as mentoring supports learning about setting goals (Deakins et al., 1998; Sullivan, 2000), learning to be self-confident (Barrett, 2006; Wilbanks, 2013) or self-efficacy (St-Jean et al., 2018), learning about mentee's strengths and weaknesses (St-Jean & Audet, 2012) or to have the right attitude to succeed (Kyrgidou & Petridou, 2013). For learnings related to the second area of Cope's learning content, namely learning about the business, some authors confirmed learning about strategic planning (Gravells, 2006) or areas for business development (Radu Lefebvre & Redien-Collot, 2013). For learning about the environment and entrepreneurial networks, some directly mentioned this learning (Kent et al., 2003; St-Jean & Audet, 2012). Learning about small business management has also important relatedness with past research, with learning human resources management, financial monitoring, or other similar tasks (Cull, 2006; Laukhuf & Malone, 2015; Sarri & Petridou, 2006). The last category, namely learning about the nature and management of relationships, was not directly mentioned, but some referred to developing the management capability (Kent et al., 2003).

Few researches used also learning as a proxy measure, not declining the types of learning (El Hallam & St-Jean, 2016; St-Jean, 2012). Of course, mentoring could have other outcomes caused by learning, for example, growth or improvement of profits (Crompton et al., 2012; Sullivan, 2000; Waters et al., 2002).

Mentor functions and learning

Research in mentoring shows the central importance of mentor functions, and its importance in developing learning in mentoring relationships (Kram & Ragins, 2007; Wanberg et al., 2003). There is a variety of mentor functions, but most of them are grouped into two broad categories, namely psychosocial (or psychological) functions, and career-related (or vocational) functions (Kram, 1985), but other suggest that role-model function be a distinct, and third broad category (Pellegrini & Scandura, 2005).

Psychosocial functions constitute one of the two main categories of mentor functions (Kram, 1985). St-Jean (2011) demonstrated that mentors provide four psychosocial functions: giving feedback (reflector), providing reassurance and support (reassurance), encouraging and motivating the mentee (motivation), and establishing a climate of trust and friendship (confidant). According to Ragins and Cotton (1999), psychosocial functions concern interpersonal aspects of the mentoring relationship, enable the mentee to develop a greater sense of competence, self-efficacy, and affect his personal and professional development.

There are several reasons to predict that psychosocial functions may influence learning in mentoring. First, typically, mentoring can be defined as a situation in which the mentor influences the mentee (Mullen, 1998). It is expected that a mentor who serves psychosocial functions may be

psychologically close to his mentee, s/he may create a conducive climate for the mentee's learning, making her/him confident and attentive to what s/he shares. Consequently, the mentee may learn more through the mentoring relationship. Second, psychosocial functions have been emphasized in work on life-career development (Levinson, 1978). High levels of psychosocial support, for example by providing emotional support, encouragement, and positive feed-back, mentees feel safe to ask questions, discuss their fears, anxieties, and disagreements (Lankau and Scandura, 2002). Such support may contribute to mentees' learning. Thus, we suggest the following hypothesis:

Hypothesis 1: Psychosocial functions will positively influence learning in mentoring

Mentors can also provide career-related functions for mentees (Banerjee-Batist et al., 2019). In an organizational context, these functions generally include sponsorship, coaching, protection, challenging assignments, and increasing the mentee's visibility and exposure (Kram, 1985). In entrepreneurship, career-related functions include integration (facilitating the integration of the mentee in the business community), information support (knowledge transfer), confrontation (enhancing mentee's reflection in a problem-solving context), and guidance (providing advice and suggestions to find a solution in a problem-solving dynamic) (St-Jean, 2011).

These functions should be supportive of entrepreneurial learning. Networking activities are related to entrepreneurial learning (Man, 2007; Prajapati & Biswas, 2011), as well as a source of information (Sanz-Velasco, 2006). As problem-solving is part of entrepreneurial career and entrepreneurship (Hsieh et al., 2007), guidance by a mentor in this process will be likely beneficial to many specific kinds of learning. We expect career development support to be related to the mentee's learning.

Hypothesis 2*:* Career-related functions will positively influence learning in mentoring

Mentors serve also as role models for their mentees. Although initially suggested as two main functions (psychosocial and career-related functions), further researches demonstrated the existence of a third one distinct: role-model function (Pellegrini & Scandura, 2005; St-Jean, 2011). This function focuses on the mentor as a person, as s/he provides lessons learned, and s/he is a source of inspiration, or at least of comparison. Mentees may see their mentors as more experienced, knowledgeable, good examples to follow, and a possible future version of themselves (Vinales, 2015).

Role models should affect learning through different processes. As role aspirants would adjust to reach higher goals (Morgenroth et al., 2015), this will provide a higher demand for learning in the mentoring relationship. Role model function will also provide vicarious learning, one of the main drivers of self-efficacy and a key concept in entrepreneurship (Bandura, 1997; Newman et al., 2019). In addition, mentors may provide learning opportunities through shared experiences in exerting the role model function. We expect that role-model function will increase the mentee's learning, thus this hypothesis:

Hypothesis 3: Role-model function will positively influence learning in mentoring

Role models may inspire potential entrepreneurs, especially when they show a high degree of resemblance between them (Bosma et al., 2012). Role identity theory (Randel et al., 2005; Stets & Burke, 2000) and similarity-attraction paradigm (Byrne, 1971) help to describe the role of similarity on entrepreneurial learning. In fact, research in mentoring shows that the more similar an individual perceives another person to be, the more that another person is liked, and the greater the learning that occurs (Allen & Eby, 2003; Lankau et al., 2005).

Real similarities based on the actual dyad configuration demographics (for example) may help in identifying with the mentor and thus, facilitating the learning. However, having similar demographics does not ensure the development of personal chemistry with the mentor. Thus, based on role-identity theory, perceived similarity may be a better predictor of the relationship functionality and outcome generation process from mentoring than real similarity.

The similarity in personality has also a positive effect on learning in mentoring (Egan, 2005; Menges, 2016), as well as values (Hernandez et al., 2017b; Lee et al., 1999). Some researches in mentoring for entrepreneurs mention the idea of "personal chemistry" that has a strong effect to foster outcomes from the relationship (El Hallam & St-Jean, 2016; Gravells, 2006). Resemblance helps entrepreneurial learning in a mentoring relationship, thus the following hypothesis:

Hypothesis 4: Perceived similarity will positively influence learning in mentoring

Lankau et al. (2005) distinguished actual similarity based on demographic characteristics (gender and race) from perceived similarity. They demonstrated that actual gender and race similarity are related significantly to mentors' reports of mentoring functions provided to their *protégé*[1]. Another reason why real similarity may be important over perceived similarity is that the latter is a blurred, general perception, referring to an overall assessment of how similar someone is to you. Real similarities provide factual differences that could directly impact the learning process. Perceived similarity provides a more indirect effect on learning, influencing the development of a functional and nurturing relationship which, in turn, would help in developing learning.

As peer-supportive activities such as mentoring are based on relationships between genders, they are therefore the subject of many stereotypes that deserve to be studied. Several works in the context of organizational mentoring illustrate that the mentor's functions are not identical depending on whether the mentor is male or female, or depending of *protégé's* gender (Allen & Eby, 2004; Fowler, 2002; Levesque et al., 2005; Scandura & Williams, 2001). The outcomes are also not the same depending on the gender configuration of the dyad (Faucett et al., 2017; Ismail et al., 2017; Kofoed & McGovney, 2019), with generally higher outcomes or functions when the dyad is of the same gender.

Another reason is the mentoring context that relies on partial access to the mentor's information, despite the mentor has access to information about the mentee's project and situation. This situation of information asymmetry amplifies the occurrence of stereotypes (Rubinstein et al., 2018), just like the asymmetry of status does (O'Brien et al., 2008). Furthermore, entrepreneurship is

embedded with gender stereotypes, with males being considered more fitted to this career (Gupta et al., 2009; Hancock et al., 2014; Meyer et al., 2017). Mixed-gender dyads would then be more likely to have stereotypes that could hinder mentoring given, or received, and therefore reduce learning. Thus, we posit the following hypothesis:

Hypothesis 5: Gender similarity positively influences learning in mentoring.

In many mentoring programs in large organizations, dyad members are in the same organization, but they may not share the same job or career. When a mentor has a supervisory status in the organization (but not necessarily being direct supervisor), the career mentoring received would be greater, influencing in turn career outcomes (Kao et al., 2014; Sosik & Godshalk, 2005). Mentor status has also a positive effect on *protégé* career outcomes (Dougherty et al., 2013).

In mentoring for entrepreneurs, as the mentee is at the top of the organization, the mentor comes from the community. If the mentor is also an entrepreneur or has been largely entrepreneur in his/her career, based on role expectation from role model theory (Gibson, 2004), the mentee would probably give more credibility to the advice given. Therefore, the career similarity in entrepreneurial mentoring, which implies that both members of the dyad are entrepreneurs, should probably generate more learning. In fact, learning would probably be greater for learning entrepreneurial tasks with an experienced mentor in entrepreneurship. Thus, the following hypothesis:

Hypothesis 6: Career similarity positively influences learning in mentoring.

If career similarity helps the protégé to trust the mentor and to learn how to deal with a new venture, the similarity in the industry could distract the mentee's attention from entrepreneurial learning. In fact, mentoring has more breadth and depth than consulting or coaching, in bringing especially psychosocial support or greater role modeling (D'Abate et al., 2003; Garvey, 2004; Parsloe & Wray, 2000).

A dyad in the same industry would probably reduce the scope of understanding entrepreneurial tasks in focussing on industry aspects instead of the way of dealing with a new business. Another problem that could be raised is the possible competition, and thus the potential opportunistic behaviors of mentors in the same industry. Mentor in the same industry could benefit from the confidential exchanges with the mentee, on one hand. Mentee would be probably worried that specific strategic information could be used against him/her by the mentor, on the other hand. In that context, interaction in the dyad would probably me more around "safe" thematic, thus vacating the depth associating with mentoring relationships and thus, reducing the potential learning that would have occurred. With this consideration in mind, we posit the following hypothesis:

Hypothesis 7: Industry similarity negatively influences learning in mentoring

METHODOLOGY

The Programme Studied

This work is based on a partnership with the *Réseau Mentorat*, the largest mentoring network in Québec (Canada) (www.reseaum.com). The network includes over 1,500 accredited active mentors and has supported nearly 10,000 mentees' entrepreneurs since its founding. Mentors from the *"Réseau Mentorat"* identify themselves as experienced entrepreneurs or "business owners" who want to share their experience and provide psychosocial and career-related support to their mentees. They voluntarily support novice entrepreneurs regularly over a period of at least one year, but for some dyads, the mentoring relationship is extended over many years. Entrepreneurs can thus benefit from the support of a mentor at a minimal cost: a few hundred Canadian dollars annually, and sometimes even free of charge. All data were collected via online questionnaires. An invitation was sent to 2,246 valid email addresses and 689 mentees answered at least part of the online questionnaire (30.7% response rate).

Also, for the analysis, we selected only those mentees who had a relationship that was sufficiently established to allow outcomes to occur. The reason is very simple: Mentoring relationships need a certain amount of time for learning to be developed (Bouquillon et al., 2005; Kram, 1985). We selected six (6) months as a sufficient period to have substantial functions and outcomes. By subtracting the incomplete questionnaires on at least one question, we selected 412 respondents as the basis of the analysis, but some models could have fewer respondents than this. These dyads are distributed as follows: same-gender "male" (n = 184), same-gender "female" (n = 78), male mentee with female mentor (n = 17) and female mentee with male mentor (n = 133).

Before sending the questionnaire, we organized focus groups with mentees to better understand the specificity of the program, and most importantly, the learning that occurred in the relationship. A specialized firm had been given the mandate of organizing these meetings and 40 novice entrepreneurs participated. The research team also ran two more focus groups, adding 11 more mentees. Based on this inductive process, and also on our literature review, we were able to develop a list of 11 items that can capture the distinct content of learning in mentoring. This was used to develop a specific scale for this research.

Measures

Learning in mentoring

As previously mentioned, learning in the mentoring relationship was measured based on a list of 11 learnings that can be made with the mentor, developed through our extensive literature review (St-Jean, 2008) and our focus groups (n=51). We asked the mentees to what extent they agree or disagree (Likert 7, from 1-Totally disagree to 7-Totally agree) with the items, all starting with: "With my mentor, I learned to…1-identify business opportunities, 2-clarify my project's vision, etc. (see Table 1 for the items). We then made an exploratory factorial analysis (EFA) with principal component analysis, Varimax rotation. Three factors emerged, representing 65.9% of the explained variance[2]. Cronbach alphas are all above the 0.70 threshold (Tabachnick & Fidell, 2007). Main results are shown at Table 1.

We have therefore created three distinct variables representing different learning categories: Learning to manage oneself, Learning entrepreneurial tasks, and Learning to manage SME development. These categories are not rooted in any *a priori* theoretical framework, but some of

them echo prior research on this theme. 'Learning entrepreneurial tasks' and 'Learning to manage SME development' are very similar to the cognitive learnings in entrepreneurial mentoring, and 'Learning to manage oneself' refers to affective learning found elsewhere (St-Jean & Audet, 2012).

Our empirical analysis suggests that two different cognitive types of learning through mentoring seem to exist. With such a variety of specific cognitive learnings developed through mentoring and mentioned in previous research, such as learning to plan the SME development (Kent et al., 2003; McGregor & Tweed, 2002), learning to develop sales (Bisk, 2002; Gravells, 2006), or learning to internationalize (Wikholm et al., 2005), our categorization provides a more comprehensive and parsimonious distinction for the cognitive-type of learnings from mentoring. Furthermore, this is in line with the inherent dialogic of the entrepreneurial career, which implies person and organization dimensions (Bruyat & Julien, 2001; Fonrouge, 2002). Our categorization makes echo to this consideration.

Trust in mentor

We used the tool proposed by St-Jean (2012) to measure the trust toward mentor: 1-I can trust my mentor, 2-My mentor is a reliable person on whom I can rely, and 3-My mentor behaves predictably. Cronbach's alpha is 0.705. The exploratory factor analysis (maximum likelihood) suggests the construct is one dimensional (a factor representing 69.3% of the explained variance). Subsequently we created a variable with the average of these items.

Table 1. Scale measuring entrepreneurial learning throughout mentoring

	Learning to manage oneself	Learning entrepreneurial tasks	Learning to manage SME devel.
Manage my stress and put into perspective the problems experienced	0.778		
Trust my abilities as an entrepreneur	0.727		
Reconciling work and personal life	0.660		
Manage human resource in my business and exercise my leadership	0.664		
Identify business opportunities		0.783	
Clarify the vision of my business project		0.711	
Better plan, manage my priorities and set specific goals		0.581	
Develop internationally (sales, partnership)			0.770
Manage the production of my business' goods or services			0.701
Manage my business's finances			0.662
Innovate in my business (products or processes)			0.568
Alpha Cronbach	0.761	0.771	0.766

Perceived similarity

We also used the tool proposed by St-Jean (2012) to measure the perceived similarity towards the mentor in four items: 1- I have the same values as my mentor, 2- My personal interests match those of my mentor, 3- My mentor's personality is similar to min, and 4- My mentor and I see things the same way. Cronbach's alpha is 0,843. The exploratory factor analysis (maximum likelihood) suggests the construct is one dimensional (a factor representing 68,7% of the explained variance). We therefore created a variable with the average of these items for the analysis.

Real similarity

We calculated different variables to see if some real similarities in the dyad could influence learning. *Gender interaction* has been calculated in multiplying the mentee's gender (Male=0; Female=1) by the mentor's gender (Male=0; Female=1). This takes into consideration the different combinations of genders in the dyad and thus, brings any significant difference into the light. *Career similarity* is a dichotomous variable which indicates "0" if the mentor is not an entrepreneur (dissimilar), and "1" if the mentor is an entrepreneur (similar). *Industry similarity* is also a dichotomous variable created from this question: "Does your mentor has been working in the same industry as yours in his/her career?". We coded "0" for a different industry and "1" for the same industry.

Mentor functions

Mentor functions were measured to understand psychosocial (or psychological) functions (4 items), career-related functions (4 items), and role-model function (2 items) (adapted from St-Jean, 2011). The Cronbach's alphas are 0.84, 0.75 and 0.75, respectively. The list of items is s is indicated below (adapted from St-Jean (2011)).

Mentor Functions Scale:

Psychosocial function

• He enables me to have a clear image of myself and my business.
• He reassures me.
• He believes I can succeed as an entrepreneur.
• I consider him a friend.

Career-related function

• He connects me with people he knows.
• He gives me information about the business world.
• He wouldn't hesitate to contradict me if he disagreed.
• He proposes other perspectives.

Role-model function

• He shares his success and failures.
• He is a model for me.

Analysis

In order to explain the learning with a mentor, we used a hierarchical linear regression for each type of learning (learning to manage oneself, learning to manage entrepreneurial tasks, and learning to manage SME development). We first entered control variables (mentor gender, mentee gender, education, and age, as well as trust in mentor). At model 2, we entered mentor functions. From models 3 to 6, we entered gender similarity (calculated with gender interaction) (model 3), perceived similarity (model 4), career similarity (model 5), and industry similarity (model 6) respectively.

RESULTS

Table 2 presents means, standard-deviations and correlations across the variables.

For Learning to manage oneself (Table .3), once the control variables have been entered (model 1) and seeing that mentee's age reduce this specific learning in mentoring (β=-0.130, *p*=0.005) just as trusting the mentor is fundamental as well (β=0.375, *p*=0.000), mentor functions are entered. From model 2, we can see the strong impact of psychosocial functions (β=0.493, *p*=0.000), but not career-related functions (β=0.030, *p*=0.576) nor role-model function (β=0.074, *p*=0.178). In model 3, we do not see gender interaction to be significant (β=0.152, *p*=0.104), but perceived similarity is slightly significant in model 4 (β=0.084, *p*=0.079). Finally, career similarity is not significant at all (β=-0.002, *p*=0.955), and neither is being in the same industry (β=-0.037, *p*=0.355).

Table 2. Mean, standard deviation and correlations [d] amongst the variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1-Mentee's age	40.84	9.07	1.000													
2-Education	5.44	1.37	-0.022	1.000												
3-Mentee's gender[a]	0.51	0.50	0.070	0.162	1.000											
4-Mentor's gender[a]	0.21	0.41	0.074	0.030	0.315	1.000										
5-Trust in mentor	5.72	1.44	-0.030	0.025	0.044	0.071	1.000									
6-Psychosocial Functions	5.33	1.47	-0.052	-0.102	0.045	0.096	0.599	1.000								
7-Career-related Functions	4.96	1.47	-0.058	-0.005	-0.005	0.067	0.524	0.677	1.000							
8-Role Model Function	5.22	1.73	-0.127	-0.046	0.005	0.071	0.476	0.667	0.662	1.000						
9-Gender interaction	0.16	0.37	0.059	0.090	0.451	0.882	0.063	0.105	0.048	0.046	1.000					
10-Perceived similarity	4.77	1.55	-0.053	-0.024	0.061	0.106	0.484	0.607	0.487	0.539	0.098	1.000				
11-Career similarity[b]	0.61	0.49	-0.094	-0.057	0.009	0.063	0.121	0.151	0.161	0.295	0.076	0.170	1.000			
12-Industry similarity[c]	0.13	0.34	0.014	0.008	-0.093	-0.101	-0.001	-0.054	0.037	-0.020	-0.083	0.065	0.035	1.000		
13-Learning to manage oneself	4.84	1.76	-0.165	-0.074	-0.011	0.025	0.409	0.591	0.426	0.449	0.057	0.420	0.126	-0.046	1.000	
14-Learning entr. task	3.57	1.67	-0.087	-0.108	-0.098	-0.003	0.305	0.477	0.434	0.377	0.027	0.331	0.077	-0.072	0.705	1.000
15-Learning to man. SME dev.	5.13	1.61	-0.002	-0.088	0.014	0.064	0.439	0.594	0.480	0.455	0.050	0.405	0.114	-0.024	0.595	0.579

[a] Male=0; Female=1
[b] 0=Mentor not entrepreneur; 1=Mentor entrepreneur
[c] 0=Different industry; 1=Same industry
[d] Correlation ≥ 0.09 are significant at $p \leq 0.05$

Table 3. Regression analysis on Learning to manage oneself

	Model 1		Model 2		Model 3		Model 4	
	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig
Mentee's age	-0.130	0.005	-0.117	0.003	-0.114	0.004	-0,117	0,00
Education	-0.044	0.351	0.034	0.403	0.026	0.520	0,032	0,42
Mentee's gender[a]	-0.006	0.900	-0.027	0.533	-0.053	0.241	-0,027	0,51
Mentor's gender[a]	-0.036	0.465	-0.070	0.098	-0.195	0.027	-0,073	0,08
Trust in mentor	0.375	0.000	0.095	0.041	0.101	0.030	0,083	0,07
Psychosocial Functions			0.493	0.000	0.481	0.000	0,469	0,00
Career-related Functions			0.030	0.576	0.032	0.558	0,026	0,63
Role Model Function			0.074	0.178	0.080	0.144	0,057	0,30
Gender interaction					0.152	0.104		
Perceived similarity							0,084	0,07
Career similarity[b]								
Industry similarity[c]								
N	406		406		406		406	
Adj.R^2	0.153		0.380		0.382		0.383	

[a] Male=0; Female=1

[b] 0=Mentor not entrepreneur; 1=Mentor entrepreneur

[c] 0=Different industry; 1=Same industry

Results for Learning entrepreneurial tasks (Table 4) show control variables (model 1), where we still see the importance of trusting the mentor (β=0.264, *p*=0.000). We can also see that being a female mentee appears to be much beneficial for this learning (β=-0.113, *p*=0.029) then being a male. At model 2, we still see the strong importance of psychosocial functions to foster learnings in entrepreneurial tasks (β=0.341, *p*=0.000), and also the importance of career-related functions (β=0.236, *p*=0.000), but not role-model function (β=0.021, *p*=0.723). From model 3, we see a slightly significant gender interaction for this learning (β=0.194, *p*=0.055). Model 4 informs us that perceived similarity is not important (β=0.074, *p*=0.150), nor career similarity (β=-0.043, *p*=0.340). However, being from the same industry reduce learning entrepreneurial tasks (model 6, β=-0.082, *p*=0.056), as it is slightly significant. Figure 1 is illustrative of the gender interaction effect. As we can see, male mentees have the most stronger learning effect when paired with male mentors, while having less learning when paired with female mentors. For female mentees, female mentors bring slightly less learning than male mentors.

Table 4. Regression analysis on Learning entrepreneurial tasks

	Model 1		Model 2		Model 3		Model 4	
	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig
Mentee's age	-0.041	0.389	-0.034	0.432	-0.031	0.474	-0,034	0,43
Education	-0.055	0.264	0.005	0.910	-0.005	0.913	0,003	0,93
Mentee's gender[a]	-0.113	0.029	-0.128	0.006	-0.162	0.001	-0,129	0,00
Mentor's gender[a]	-0.007	0.892	-0.035	0.443	-0.195	0.040	-0,038	0,40
Trust in mentor	0.264	0.000	-0.013	0.794	-0.005	0.912	-0,023	0,64
Psychosocial Functions			0.341	0.000	0.326	0.000	0,320	0,00
Career-related Functions			0.236	0.000	0.237	0.000	0,232	0,00
Role Model Function			0.021	0.723	0.029	0.625	0,006	0,92
Gender interaction					0.194	0.055		
Perceived similarity							0,074	0,15
Career similarity[b]								
Industry similarity[c]								
N	406		406		406		406	
Adj.R^2	0.076		0.275		0.280		0.277	

[a] Male=0; Female=1

[b] 0=Mentor not entrepreneur; 1=Mentor entrepreneur

[c] 0=Different industry; 1=Same industry

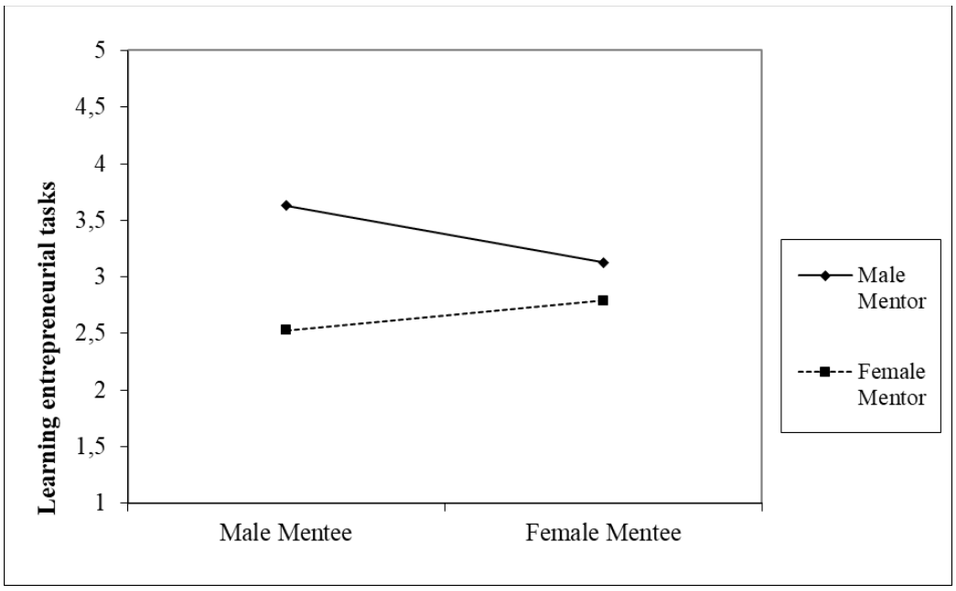

Figure 1. Interaction effect of gender dyad characteristics on learning entrepreneurial tasks

Finally, for Learning to manage SME development (Table 5), control variables (model 1) inform us that education reduces this specific learning (β=-0.137, *p*=0.004), just as trust in mentor (β=0.378, *p*=0.000). Model 2 tests the impact of mentor functions, showing that psychosocial functions are having the strongest effect on learning (β=0.431, *p*=0.000), followed by role-model function (β=0.125, *p*=0.022) and career-related functions (β=0.103, *p*=0.056), the latter being slightly significant. The other variables of the next models are not significant: gender interaction (β=-0.120, *p*=0.194), perceived similarity (β=0.043, *p*=0.357), career similarity (β=-0.005, *p*=0.909), and industry similarity (β=-0.005, *p*=0.893).

Table 6 summarizes the results and the hypotheses tested.

Table 5. Regression analysis on Learning to manage SME development

	Model 1		Model 2		Model 3		Model 4	
	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig.)	Std β	(Sig
Mentee's age	0.005	0.918	0.023	0.558	0.021	0.591	0,023	0,55
Education	-0.137	0.004	-0.061	0.129	-0.055	0.174	-0,062	0,12
Mentee's gender[a]	0.029	0.563	0.011	0.786	0.033	0.469	0,011	0,79
Mentor's gender[a]	-0.005	0.915	-0.041	0.324	0.058	0.502	-0,042	0,30
Trust in mentor	0.378	0.000	0.075	0.098	0.071	0.122	0,069	0,13
Psychosocial Functions			0.431	0.000	0.441	0.000	0,419	0,00
Career-related Functions			0.103	0.056	0.102	0.058	0,101	0,06
Role Model Function			0.125	0.022	0.120	0.028	0,116	0,03
Gender interaction					-0.120	0.194		
Perceived similarity							0,043	0,35
Career similarity[b]								
Industry similarity[c]								
N	406		406		406		406	
Adj.R^2	0.151		0.397		0.398		0.397	

[a] Male=0; Female=1

[b] 0=Mentor not entrepreneur; 1=Mentor entrepreneur

[c] 0=Different industry; 1=Same industry

Table 6. Results summary

	Learning to manage oneself	Learning entrepreneurial tasks	Learning to manage SME development
H1: Psychosocial functions	Yes, strongly	Yes, strongly	Yes, strongly
H2: Career-related functions	No	Yes, strongly	Yes, slightly
H3: Role-model functions	No	No	Yes, strongly
H4: Perceived similarity	Yes, slightly	No	No
H5: Gender similarity (interaction)	No	Yes, slightly	No
H6: Career similarity	No	No	No
H7: Industry similarity	No	Yes, slightly	No

DISCUSSION

This research contributes to our understanding of entrepreneurial learning in mentoring in several ways. Firstly, based on our inductive research and extensive literature review on entrepreneurial learning in mentoring, we suggest a list of 11 learning contents related to mentoring and grouped empirically into three categories: Learning to manage oneself, learning entrepreneurial tasks, and learning to manage SME development. Knowledge related to learning in mentoring is fragmented; some researchers suggested a list of outcomes with implicit (e.g. Cull, 2006; Kunaka & Moos, 2019; Laukhuf & Malone, 2015) or explicit learnings (e.g. St-Jean & Audet, 2012), others selected specific learning like self-efficacy (Baluku et al., 2019; St-Jean & Tremblay, 2020), entrepreneurial identity (Ahsan et al., 2018), opportunity identification (St-Jean et al., 2017), etc.

We contribute to offering a new categorization of learnings through mentoring for entrepreneurs, on one hand, and suggesting a potential scale to measure them, on the other hand. The categorization is partly aligned with the seminal work of Cope (2005) on entrepreneurial learning, with learning to manage oneself to be identical. We suggest two other broad categories empirically supported, namely *Learning entrepreneurial tasks* and *Learning to manage SME development*. The former refers to core entrepreneurial tasks: identify opportunity, establishing a vision of the entrepreneurial business, and to plan, manage priorities, and set goals; the latter refers to SME management and development: develop internationally, manage the production, the business's finances, and innovate. To some extent, this reaches the suggested classification of entrepreneurial tasks: exploration and exploitation (Trevelyan, 2011).

Secondly, we demonstrate the strong impact of mentor functions to foster learning in entrepreneurial mentoring. We specifically show that psychosocial (or psychological) functions are fundamental to support every type of learning. While previous researches showed a stronger impact of career-related functions to foster learning in large organizations (e.g. Chao et al., 1992; Chun et al., 2012) and in entrepreneurial settings (St-Jean, 2012), we show to be of lesser importance than psychosocial functions. Using specific types of learning instead of a general assessment of learning with the mentor (e.g. Allen & Eby, 2003; El Hallam & St-Jean, 2016; St-Jean, 2012) offers a fine-grained assessment of the impact of each mentor functions on specific learnings. Psychosocial functions relate to self-image, reassurance, motivation, and being a confidant/friend (St-Jean, 2011). As Nabi et al. (2021) demonstrated, psychosocial functions (named socio-emotional functions) support entrepreneurial maturity especially in relation to knowledge development of university students that are trying to start a business. Our findings are aligned with this line of reasoning, but they contribute to showing this importance for novice (and established) entrepreneurs.

We also contribute to showing that career-related functions only support learning entrepreneurial tasks and learning to manage SME development. Exploration and exploitation entrepreneurial tasks (Trevelyan, 2011) may be the core of entrepreneurship as a career, and they are strongly related to our two broad categories of learning (i.e. entrepreneurial tasks and to manage

SME development). This is not surprising to see a strong impact of career-related functions to foster these learnings.

Furthermore, we also demonstrate that role-model functions are only important to support learning to manage SME development. While it would be expected that role modeling will impact learning to manage oneself and learning entrepreneurial tasks, we did not find this relationship. For learning to manage oneself, it appears that perceived similarity may be of better help to support this learning and, to some extent, may replace the role-model functions. For learning entrepreneurial tasks, it appears to be more impacted by career-related functions (and psychosocial functions) than role-model functions. This confirms the importance of using specific learnings to understand the role of mentoring in learning, as career-related functions do not develop the learning to manage oneself, or role-model functions are only related to learning to manage SME development.

Thirdly, our results contribute to showing that for learnings to develop in entrepreneurial mentoring, what the mentor does is more important than what s/he is. We found very few impacts of real (demographic) similarity in our analyses, even for perceived similarity. Despite some significant results for perceived similarity, gender similarity, or industry similarity, the explanatory power remains very low. We demonstrate that as long as mentoring functions are comprehensive and extensive, the mentor demographic profile has little effect on learning.

Many researches in organizational setting showed the impact of gender or racial similarity in the dyad to support mentoring outcomes. However, one should note that many formal mentoring programs are designed to offer support marginalized people (Hansman, 2002; Headlam-Wells, 2004; Lindwall, 2017), which is not the case for the studied program. This would not suggest that real similarity does not have any impact in formal entrepreneurial mentoring, as we found the impact of gender similarity. Nevertheless, this seems to be of lesser importance. Humberd and Rouse (2016) suggest that identification to the mentor should be not too much, not too less, in order to develop a fully nurturing mentoring relationship. Our results seem to confirm this.

Fourthly, despite being of a lesser effect, we found that gender similarity is important to learning entrepreneurial tasks. We expected to see this impact stronger on learning to manage oneself, as it relates to leadership aspect, reconciling work and personal life, or trusting one's abilities as an entrepreneur, challenges more often associated with female entrepreneurs (Agarwal & Lenka, 2015; Rehman & Roomi, 2012). However, these differences may be less relevant for the new generation for which work-life balance seems to be similar across gender (Smith, 2010).

Nevertheless, the difference in learning entrepreneurial tasks shows two things. First, gender similarity is supporting this learning; Second, non-similar gender dyads are much worst for male mentees paired with female mentors. We consider those female mentors paired with mentees should be as competent as those paired with male, and the same for the opposite as well. As a result, there is no reason to observe less learning among male mentees other than be caused by gender stereotypes associated with the businesswomen mentor they are paired with.

Previous research in an organizational setting found the exact same result: male *protégés* having fewer outcomes with a female mentor (Armstrong et al., 2002). In light of previous work on the gender stereotypes associated with entrepreneurship, these results are not very surprising (Ahl &

Marlow, 2012; Meyer et al., 2017). However, these gender stereotypes may reflect beliefs about the lesser skills of female mentors who would find a historical and cultural explanation for assigning gender-specific professional roles. This research path for a potential differential perception of skills based on gender stereotypes is to follow, as a female mentor provides less learning for a female mentee as well, but in a much less proportion. In the end, gender stereotypes probably explain why there are very few pairings of male mentees with female mentors, who probably prefer to be paired with another male because of the stereotypes. Female entrepreneurs as a mentee, as they are themselves in business, do not seem to consider female mentors to be worse than a male.

PRACTICAL IMPLICATIONS

This research has several managerial contributions with practical implications as well. From program managers, we highlight major learnings that would potentially occur through mentoring, and they are grouped into three broad categories: Learning to manage oneself, learning entrepreneurial tasks, and learning to manage SME development. This offers a comprehensive understanding of learning in mentoring for entrepreneurs and thus provide specific knowledge for recruitment purpose.

Also, in showing the major impact of psychosocial (or psychological) mentoring functions for every learning, but also the impact of career-related functions on learning entrepreneurial tasks and learning to manage SME development, we provide practical training tools for mentors. Specifically, in being aware of their role and the different aspects of mentoring functions, training mentors would improve learning depth and breadth of mentoring for entrepreneurs. Globally, this research provides practical guidance to mentors facing particular learning needs from novice entrepreneurs.

Potential gender stereotypes in mentoring suggest other recommendations. For mentoring programs, this might suggest valuing male (mentees) – female (mentors) dyads who work well and make them testify about the positive impact of female mentors, to break the gender stereotypes in male mentees in business. Previous research showed that if women initially feel being less competent to handle entrepreneurial tasks because of stereotypes, the message they receive from the surrounding could neutralize, or worsen the gender differences whether it is gender-neutral, or male stereotyped (Gupta et al., 2014). Based on that, mentoring programs should be aware of the stereotype threat that could negatively impact the learning perception through mentoring. Therefore, an advertisement about mentoring, or in showing mentoring dyads for recruitment purposes, should be gender-neutral.

RESEARCH LIMITATIONS

Firstly, we only investigated mentoring dyads through the mentees' side. Of course, every mentee knows specific characteristic of their mentor (gender, career, industry experience) and are better placed to testify about mentor functions as they are considered as mentoring received. However, we could not count on any insights from the mentor's perspective. Secondly, we use cross-sectional data, and thus we cannot demonstrate the causality of learning. Despite that we rely

extensively on theories that suggest this causal link, we cannot prove it without any doubt. Thirdly, there may be partly self-selection at play because, for some dyads, the mentee or mentor has chosen the other member of the dyad. This would probably improve the perceived similarity. In having also a few dyads of male mentees paired with female mentors, we may have less explanatory power and then, being more prone to type II errors. While this not repeal our findings related to gender stereotype, this could reduce the strength of the relationship, or make other results non-significant (e.g. Gender interaction for the two other types of learning).

CONCLUSION

This research investigated the impact of mentoring on entrepreneurial learning. We found three broad categories of learning in mentoring: Learning to manage oneself, learning entrepreneurial tasks, and learning to manage SME development. Learning in mentoring develops through mentor functions, also divided into three categories: psychosocial functions, career-related functions, and role-model function. We found that psychosocial functions are the most important aspect to foster any kind of learning in entrepreneurial mentoring relationships. Career-related functions are also very important for two kinds of learning, namely learning entrepreneurial tasks, and learning to manage SME development. The role-model function is only relevant to support the latter learning.

Our results highlighted potential gender stereotypes that could be at play, as male mentees show less learning for entrepreneurial tasks when paired with a female mentor. However, the effect size is small overall, and most of the other demographic similarities do not have any significant impact on any kind of learning. At most, perceived similarity may be important to support learning to manage oneself, but still with small effect size. Overall, we found that what mentors do (through mentor functions) is the most important aspect to support entrepreneurial learning, and what they are (in demographic term) is not really much. This brings important practical implications for pairing and training mentors to improve novice entrepreneurs learning and opens up new research avenues in understanding the way entrepreneurs learn through their journey.

NOTES

1. The word “protégé” is often used in organizational mentoring.
2. Further information about the procedure can be provided on request.

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