IASP International Association of Science Parks and Areas of Innovation

35th IASP World Conference
on Science Parks and Areas of Innovation 2018
Isfahan, Iran

Lean Mentoring: Fitting external support to entrepreneur needs over the startup development cycle to make better use of mentorships

Plenary session 6:

Entrepreneurship for growth and sustainability in STPs and AOIs

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Hosted by:

ISFAHAN
SCIENCE & TECHNOLOGY TOWN
(ISTT)

ISBN: 978-84-09-17612-0

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ABSTRACT
Mentoring and coaching can play a crucial role in the growth and development of innovation-based ventures and are vastly adopted by Science and Technology Parks and Areas of Innovation, in order to better prepare entrepreneurs on their endeavors. Despite their relevance, few researches investigate the effectiveness of such practices. Based on this, we conducted an exploratory research by means of a focus group with agents from a Southern Brazilian innovation ecosystem. As main results, we could observe a blur on the definitions of mentoring and coaching, as well as opportunities for improvement in the implementation of mentoring processes. Finally, we propose a further investigation of a lean mentoring approach, delivering the right amount of knowledge to entrepreneurs at the right time.

INTRODUCTION
Finding successful and efficient ways to stimulate the formation, survival, and growth of new technology-based startups has been an increasingly important policy issue for most economies, given that companies created to exploit emerging technologies are frequently recognized for their high-growth potential and can play a key role in economic activity, job generation and knowledge advancements. Scientific and technological parks, alongside with incubators and/or accelerators, are widely recognized as playing a key role in promoting entrepreneurship, new business development and leaders' training (International Association of Science Parks and Innovation[1], 2017; Mian[2], 1997; Ratinho & Henriques[3], 2010; Squicciarini[4], 2009). Recent studies revealed that startups have greater chances of survival when installed in such environments, reaching discontinuity rates up to 3.45 times lower than ventures located externally to these agents (Arruda, Nogueira, Cozzi[5], & Costa, 2014; Díez-Vial & Fernández-Olmos[6], 2016).

These specialized actors of the innovation ecosystem play an important role in improving startups' innovative capacity by combining their internal knowledge with outside knowledge, provided by academics or successful and more mature entrepreneurs. One of the most traditional ways that parks and incubators mobilize external knowledge is via mentoring schemes.

Mentoring can have a very strong impact on budding startups. The exposure to more mature and experienced professionals can be a very powerful way to inspire and motivate young entrepreneurs to focus and mature. The contact with mentors help startup leaders to reflect upon, improve or even realign their views about theirs products, skills and business aims.

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[1] International Association of Science Parks and Innovation. (2017). Definitions – IASP https://www.iasp.ws/Our-industry/Definitions.

[2] Mian, S. A. (1997). Assessing and managing the university technology business incubator: An integrative framework. *Journal of Business Venturing*, *12*(4), 251–285. https://doi.org/10.1016/S0883-9026(96)00063-8

[3] Ratinho, T., & Henriques, E. (2010). The role of science parks and business incubators in converging countries: Evidence from Portugal. *Technovation*, *30*(4), 278–290. https://doi.org/10.1016/j.technovation.2009.09.002

[4] Squicciarini, M. (2009). Science parks, knowledge spillovers, and Firms' innovative performance. Evidence from Finland. Economics: The Open-Access, Open-Assessment E-Journal, 32, 0–29. Retrieved from http://www.economics-ejournal.org/economics/discussionpapers/2009-32%5CnScience

[5] Arruda, C., Nogueira, V., Cozzi, A., & Costa, V. (2014). Causas da Mortalidade de Startups Brasileiras. Fundação Dom Cabral: Núcleo de Inovação E Empreendedorismo, 1–18. Retrieved from http://www.fdc.org.br/blogespacodialogo/Documents/2014/causas_mortalidade_startups_brasileiras.pdf

[6] Díez-Vial, I., & Fernández-Olmos, M. (2016). The effect of science and technology parks on a firm's performance: a dynamic approach over time. Technology Analysis and Strategic Management, 1–14. https://doi.org/10.1080/09537325.2016.1274390

Adequate and efficient mentorship can therefore play a critical role not only to the consolidation and definition of the focus of young enterprises, but also can be vital to their organizational survival and development, as commented by Löfsten e Lindelöf[7,8] (2001; 2005). Sometimes, though, startups are not prepared to receive some kinds of mentorship or are immature to absorb the contributions of some mentors. In other cases, mentors ideas or personal traits do not fit well with the entrepreneurs. Given that mentorship may be a very demanding exercise and that the available time of mentors is a precious and relatively scarce resource, we should strive to make better use of this resource.

Offering inefficient or unnecessary mentorship can be a very wasteful and unproductive activity for parks, incubators and other innovation-fostering actors. This may be especially important in some intensive technology-based ventures, where development cycles are longer due to material issues, not entrepreneurs' personal advancement and growth. This means that mentorship should be offered at the right time to have better effect and avoid the possibility of being inefficient because the enterprise is not ready to absorb it.

A quick survey of the literature indicates that while several researchers are investigating and documenting the importance of training/mentoring schemes in startup creation, development and sustainability, none are yet exploring misuse of this resource (Mian, 1997[9]; Ratinho & Henriques[10], 2010), a gap that needs addressing if we want to make better use of it in STPs, incubators or the like. Lean philosophy has been introduced to several fields in order to generate and deliver value, reducing losses; hence, the present paper postulates a new concept: the lean mentorship. We propose the organization and provision of mentoring using a lean mindset. The Lean Mentoring advocates that mentoring distributed to startups must be pulled (rather than pushed) from each ventures' needs, maximizing utilization, adding value to the startup and avoiding non-absorption of knowledge and information overload.

The idea is that as startups need adequate financial support at different stages of their development cycle, they would also need adequate mentoring, suitable and sufficient, but not excessive, at each stage. Based on this innovative approach, this paper introduces and describes the concept of Lean Mentorship and presents an exploratory study of existing mentoring schemes, mapping their roles in entrepreneurship development while trying to demonstrate that, to make better use of mentorship, a proper management is needed to ascertain that we are providing the right knowledge, in adequate amount, at the necessary moment in the startup development cycle.

THE LEAN STARTUP

The term Lean Manufacturing was originally coined in a reference to a revolutionary management approach developed by Toyota during post-World War II. According to Lean Enterprise Institute[11] (2017), the core idea of lean philosophy is to "maximize customer value while minimizing waste".

Inspired on the fundamental principle of Lean Manufacturing and based on agile management practices, Eric Ries proposed the Lean Startup methodology aiming at eliminating waste in product and business development processes in startups. The Lean Startup is a set of practices targeted at improving the way innovation-based business and products are launched, assisting entrepreneurs at validating their hypotheses and focusing on activities that create value for their customers (Frederiksen & Brem[12], 2017). The Lean Startup concept arose in an attempt to prevent inefficient

[7] Löfsten, H., & Lindelöf, P. (2001). Science parks in Sweden - industrial renewal and development? *R and D Management*, *31*(3), 309–322. https://doi.org/10.1111/1467-9310.00219

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[9] Mian, S. A. (1997). Assessing and managing the university technology business incubator: An integrative framework. *Journal of Business Venturing*, *12*(4), 251–285. https://doi.org/10.1016/S0883-9026(96)00063-8

[10] Ratinho, T., & Henriques, E. (2010). The role of science parks and business incubators in converging countries: Evidence from Portugal. *Technovation*, *30*(4), 278–290. https://doi.org/10.1016/j.technovation.2009.09.002

[11] Lean Enterprise Institute. (2017). What is Lean?

[12] Frederiksen, D. L., & Brem, A. (2017). How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. International Entrepreneurship and Management Journal, 13(1), 169–189.

investment many young organizations make in services and products that the customer/final user is not interested. Thus, Ries[13] (2011) proposes continuous and frequent experimentation rather than long-term planning.

The Lean Startup methodology is centered in a Build-Measure-Learn (BML) loop, as shown in Figure 1. The Build phase is triggered by the development of a minimum viable product (MVP), an initial version of the product with minimum effort that will allow the entrepreneur to assess market response, testing critical assumptions and getting feedbacks as quickly as possible. During BML loop, the entrepreneur must evaluate whether the product development efforts are being effective or not.

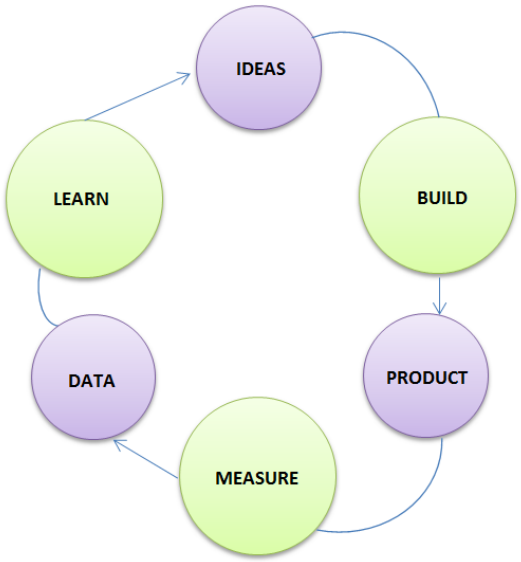

Figure 1. Build-Measure-Learn loop. Adapted from Ries (2011)

By the end of the BML loop, the entrepreneur must decide whether to persevere on his/her original strategy or to "pivot". A pivot is a change in one or more business model elements, shifting small features of the product or executing significant changes in the whole project (Ries[14], 2011).

The Lean Startup is a hypothesis-driven methodology that maximizes information gathered and mitigates uncertainty inherent to entrepreneurship (Eisenmann, Ries, & Dillard[15], 2011). The methodology advocates development of innovation-based products and business by means of quick and continuous interactions with customers since early stages of the venture, providing the entrepreneur validated learning experience, which will support the following challenges of the organization.

ENTREPRENEURIAL MENTORING

In the new context of turbulent and dynamic career environment there has been a radical shift specifically in firm's characterization. Large companies are turning into startups, downsizing, outsourcing and also shifting employment paradigm, appreciating employment mobility rather than stability, focusing on flexibility and adaptability to bolster innovation (Ensher, Murphy, & Vance[16], 2000; Euchner[17], 2016). According to the Brazilian Micro and Small Business Support Agency, there

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[13] Ries, E. (2011). *The Lean Startup*. New York: Crown Business.
[14] Ries, E. (2011). *The Lean Startup*. New York: Crown Business.
[15] Eisenmann, T., Ries, E., & Dillard, S. (2011). Hypothesis-Driven Entrepreneurship: The Lean Startup. Harvard Business School Background Note 812-095.
[16] Ensher, E., Murphy, S., & Vance, C. (2000). Mentoring and self-management career strategies for entrepreneurs. The International Journal of Entrepreneurship and Innovation, 1(2), 99–108. https://doi.org/papers://BA75DBD3-74D3-4A2D-AAAC-910414082C6C/Paper/p11811
[17] Euchner, J. (2016). Business model innovation. Research Technology Management, 59(3), 10–11. https://doi.org/10.1080/08956308.2016.1161396

were 8.9 million SMEs in Brazil generating 27% of GDP and providing more than half of formal jobs (SEBRAE[18,19], 2014, 2015). This means that entrepreneurs are more important than ever and this paradigm shift can provide opportunities for would-be entrepreneurs.

However, novice entrepreneurs are not always well-prepared, which leads to the major cause of bankruptcy in nascent businesses: lack of experience and/or skills, also observed in poor business vision and the inability to find a growth niche for their new business (Gurdon & Samsom[20], 2010; Hansford, Tennent, & Ehrich[21], 2002; E. St-Jean & Audet[22], 2013). On the other hand, the development of an entrepreneur's knowledge and skills during first years of the business is determinant to its survival (Gartner & Starr[23], 1998). In order to increase their chances of succeeding, entrepreneurs must quickly develop fundamental competencies. Thus, an increasing number of entrepreneurs seek the assistance of a mentor (E. St-Jean & Audet[24], 2013), since mentoring is considered an effective way to transfer entrepreneurial knowledge, skills, and attributes (Moore & Wang[25], 2017; É. St-Jean & Mathieu[26], 2015), which has great influence over entrepreneurial success (Waters, McCabe, Kiellerup, & Kiellerup[27], 2002).

There is not a unique definition of mentoring (El Hallam & ST-Jean[28], 2016; Hansford et al.[29], 2002; Moore & Wang[30], 2017; E. St-Jean & Audet[31], 2013). Herein, we adopted the concept stated by St-Jean & Mathieu[32] (2015), in which "mentoring is a support relationship between a novice entrepreneur (where lack of experience is key), named mentee, and an experienced businessperson, named mentor, where the latter helps the former to develop as a person. Trust and perceived similarity are needed in order to build a strong relationship in the dyad" (p. 2).

A research into mentoring has linked mentoring to a wide range of benefits and obstacles for both mentees and mentors (Hansford et al.[33], 2002). As positive outcomes they mentioned career satisfaction, motivation, ideas, feedbacks, strategies, improved skills/performance. As problems they highlighted mentor lacks time/availability, mentor ineffective, etc. Previous researches reinforce the relevance of entrepreneurial mentoring to entrepreneurship and entrepreneurs' development arguing that it can assume a critical role to the business' sustainability (E. St-Jean[34],

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[18] SEBRAE. (2014). Micro e pequenas empresas geram 27% do PIB do Brasil. Retrieved from http://www.sebrae.com.br/sites/PortalSebrae/ufs/mt/noticias/micro-e-pequenas-empresas-geram-27-do-pib-do-brasil,ad0fc70646467410VgnVCM2000003c74010aRCRD

[19] SEBRAE. (2015). *Participação das Micro e Pequenas Empresas na Economia Brasileira*.

[20] Gurdon, M. A., & Samsom, K. J. (2010). A longitudinal study of success and failure among scientist-started ventures. Technovation, 30(3), 207–214. https://doi.org/10.1016/j.technovation.2009.10.004

[21] Hansford, B., Tennent, L., & Ehrich, L. C. (2002). Business Mentoring: Help or hindrance? Mentoring & Tutoring: Partnership in Learning, 10(2), 101–115. https://doi.org/10.1080/1361126022000002428

[22] St-Jean, E., & Audet, J. (2013). The Effect of Mentor Intervention Style in Novice Entrepreneur Mentoring Relationships. *Mentoring and Tutoring: Partnership in Learning*, *21*(1), 96–119. https://doi.org/10.1080/13611267.2013.784061

[23] Gartner, W. B., & Starr, J. A. (1998). Predicting New Venture Survival: An Analysis of `Anatomy of a Start-up.' Cases From Inc. Magazine. Journal of Business Venturing, 14(2), 215. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=1353703&site=ehost-live

[24] St-Jean, E., & Audet, J. (2013). The Effect of Mentor Intervention Style in Novice Entrepreneur Mentoring Relationships. *Mentoring and Tutoring: Partnership in Learning*, *21*(1), 96–119. https://doi.org/10.1080/13611267.2013.784061

[25] Moore, J. H., & Wang, Z. (2017). Mentoring top leadership promotes organizational innovativeness through psychological safety and is moderated by cognitive adaptability. *Frontiers in Psychology*, *8*(MAR), 1–10. https://doi.org/10.3389/fpsyg.2017.00318

[26] St-Jean, É., & Mathieu, C. (2015). Developing Attitudes Toward an Entrepreneurial Career Through Mentoring. *Journal of Career Development*, *42*(4), 325–338. https://doi.org/10.1177/0894845314568190

[27] Waters, L., McCabe, M., Kiellerup, D., & Kiellerup, S. (2002). The Role of Formal Mentoring on Business Success and Self-Esteem in Participantes of a New Start-Up Program. *Journal of Business and Psychology*, *17*(1), 107–121. https://doi.org/10.1023/A:1016252301072

[28] El Hallam, H., & ST-Jean, É. (2016). Nurturing Entrepreneurial Learning Through Mentoring. *Journal of Developmental Entrepreneurship*, *21*(2), 1–18. https://doi.org/10.1142/S1084946716500126

[29] Hansford, B., Tennent, L., & Ehrich, L. C. (2002). Business Mentoring: Help or hindrance? *Mentoring & Tutoring: Partnership in Learning*, *10*(2), 101–115. https://doi.org/10.1080/1361126022000002428

[30] Moore, J. H., & Wang, Z. (2017). Mentoring top leadership promotes organizational innovativeness through psychological safety and is moderated by cognitive adaptability. *Frontiers in Psychology*, *8*(MAR), 1–10. https://doi.org/10.3389/fpsyg.2017.00318

[31] St-Jean, E., & Audet, J. (2013). The Effect of Mentor Intervention Style in Novice Entrepreneur Mentoring Relationships. *Mentoring and Tutoring: Partnership in Learning*, *21*(1), 96–119. https://doi.org/10.1080/13611267.2013.784061

[32] St-Jean, É., & Mathieu, C. (2015). Developing Attitudes Toward an Entrepreneurial Career Through Mentoring. *Journal of Career Development*, *42*(4), 325–338. https://doi.org/10.1177/0894845314568190

[33] Hansford, B., Tennent, L., & Ehrich, L. C. (2002). Business Mentoring: Help or hindrance? *Mentoring & Tutoring: Partnership in Learning*, *10*(2), 101–115. https://doi.org/10.1080/1361126022000002428

[34] St-Jean, E. (2012). Mentoring as professional development for novice entrepreneurs: Maximizing the learning. *International Journal of Training and Development*, *16*(3), 200–216.https://doi.org/10.1111/j.1468-2419.2012.00404.x

2012; E. St-Jean & Audet[35], 2013; Waters et al.[36], 2002). Additionally, both mentees' learning ability and absorptive capacity were revealed to be fundamental elements for successful mentoring (Szulanski[37], 1996).

METHODOLOGY

This study is based on a qualitative descriptive research. The paper comprehends a discussion of mentoring provision inspired by lean philosophy aiming at maximizing knowledge absorption and reducing economic and value perception waste.

The study also presents a literature review with the purpose of identifying key practices related to knowledge management in STPs and AOIs, and investigate research opportunities, as well as be conducive to future researches on the field (Merriam & Tisdell[38], 2009; Yin[39], 2011). Furthermore, it discusses research gaps and reflections on how Lean Mentoring could be applied in practice, based on data gathered from focus group, organized to present the issue to academics and innovation managers from the south of Brazil.

Based on the literature, we structured a questionnaire (APPENDIX A) and conducted a focus group discussion with participants from Porto Alegre, Brazil. Porto Alegre is the capital of Rio Grande do Sul state, Southern Brazil, and its region houses STPs relevant on both regional and national contexts with research centers of global-leading-companies like SAP, HP and Huawei. The focus group was comprised by seven academics and innovation managers. The participants' names will be kept classified and herein they will be identified as "P1", "P2", "P3" … "P7". Table 1 displays all focus group members' profiles and background.

PARTICIPANT	EDUCATION	EXPERIENCE	MENTOR/MENTEE
P1	Undergraduate in Physics	18 years	Mentor
P2	Doctor in Energy	18 years	Mentor (1 year) and Mentee (4 years)
P3	Publicity Specialist	30 years	Mentor
P4	Electrical Engineer	30 years	Mentor
P5	Computer Scientist	25 years	Mentor
P6	Master in Business	25 years	Mentor
P7	MBA in Strategy Management	19 years	Mentor/Coaching and Consultant

Table 1. Participants' Characteristics. Elaborated by the authors.

The focus group discussion lasted 2 hours and was then transcribed, indexed and analyzed, as suggested by Bloor and Frankland[40] (2001). The main topics will be discussed in the following section.

[35] St-Jean, E., & Audet, J. (2013). The Effect of Mentor Intervention Style in Novice Entrepreneur Mentoring Relationships. *Mentoring and Tutoring: Partnership in Learning*, *21*(1), 96–119. https://doi.org/10.1080/13611267.2013.784061

[36] Waters, L., McCabe, M., Kiellerup, D., & Kiellerup, S. (2002). The Role of Formal Mentoring on Business Success and Self-Esteem in Participantes of a New Start-Up Program. *Journal of Business and Psychology*, *17*(1), 107–121. https://doi.org/10.1023/A:1016252301072

[37] Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, *17*(S2), 27–43. https://doi.org/10.1002/smj.4250171105

[38] Merriam, S. B., & Tisdell, E. J. (2009). *Qualitative Research: A Guide do Design and Implementation* (4th ed.).

[39] Yin, R. K. (2011). *Qualitative Research from Start to Finish*. https://doi.org/10.1007/s13398-014-0173-7.2

[40] Bloor, M., & Frankland, J. (2001). *Focus Groups in Social Research*. *Sage Publications*. https://doi.org/10.4135/9781849209175

ANALYSIS AND DISCUSSIONS

During the focus group, three main topics emerged (mentoring *versus* coaching, key roles of mentorship and ideal mentorship moment). Each one generated a subtopic which will be forward discussed.

Mentoring versus Coaching

Entrepreneurship is considered a highly relevant skill, to be developed through lifelong learning. The fostering of entrepreneurial mindsets and provision of training contributes greatly to economic growth (Klofsten & Öberg[41], 2008). The promotion of entrepreneurship can be done in various ways, one of them is to make use of training processes such as coaching and/or mentoring.

Mentors provide young entrepreneurs with sponsorship, coaching, visibility and preparation for advancement, offering role modeling, counseling and friendship, assisting in the development of professional identity and competence (Kram & Isabella[42], 1985). On the other hand, according to the International Coach Federation[43] (2018), coaching relates to the maximization of personal and professional potential by means of partnering with clients in thought-provoking and creative processes.

During the discussion about mentor's and coach's definitions, P7 classified mentoring into two groups: customer demand mentoring and modeling mentoring. In the former, "customer brings the demand to improve an indicator, the initial step is to make a diagnosis, find alternatives that are feasible and take action". Next, modeling mentoring consists in shaping people's behavior based on the behavior of someone who is reference doing a great job", while coaching brings deeper reflection on various aspects of life, assuming that everyone has strengths and for some reason people don't develop it by themselves. Continuing, P7 asserted "The coach applies scientifically proven tools and brings encouragement to new experiences and consequently new behaviors. It is a complete process, affecting emotional issues and behavior generating mindset change".

In the literature, the definitions of coaching are not very different from the ones assigned to mentoring. Not rarely, in accordance with researchers preference or practice, mentoring and coaching definitions become intertwined and confused, so; in this case, one may find difficulty in characterizing the limits between the processes of mentoring and coaching (Ernesto da Silva[44], 2010).

When it comes to the differences between mentoring and coaching, P4 stated that "*Mentors use his/her experience to make entrepreneurs grow as professionals and persons, without a systematic methodology". According to before,* mentors need to know about mentees' business and use previous experience to assist them, whereas coaches are qualified professionals in tools and techniques, but not necessary having business experience.

When questioned about the boundaries between the terms mentoring and coaching, P5 asserted that "*It is not unusual for a single person to assume both roles of mentoring and coaching*". In P5 statement, mentors' role extrapolates business development, he/she will also assist the entrepreneur in personal development and behavioral transformation. P4, giving a practical example, said that an accelerators' business has to develop persons. *"If the accelerator doesn't develop the entrepreneur, his/her venture will be doomed to fail*. So a good mentor is someone who can broaden entrepreneurs' horizons and assist them to take [good] decisions". Hence, mentors are not supposed to just deliver solutions.

Key Roles of Mentorship

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[41] Klofsten, M., & Öberg, S. (2008). Coaching versus Mentoring: Are There Any Differences? In *High technology Small Firms Conference* (pp. 1–9). Enschede, Netherlands. https://doi.org/10.1108/S1876-0228(2012)0000009006

[42] Kram, K. E., & Isabella, L. A. (1985). Mentoring Alternatives: the Role of Peer Relationships in Career Development. *Academy of Management Journal*, *28*(1), 110–132. https://doi.org/10.2307/256064

[43] International Coach Federation. (2018). ICF Definition of Coaching. Retrieved from http://www.coachfederation.org/about/

[44] International Coach Federation. (2018). ICF Definition of Coaching. Retrieved from http://www.coachfederation.org/about/

Evidences from classical studies show that mentors perform a number of functions within a mentoring relationship (Kram & Isabella[45], 1985; Schockett & Haring-Hidore[46], 1985). According to Schockett and Haring-Hidore[47] (1985), mentors execute eight different functions: as role model, motivator, counsellor, friend/colleague, educator, consultant, sponsor and protector. Kram and Isabella[48] (1985) highlighted nine mentoring functions: sponsorship, coaching, exposure and visibility, protection, challenging work assignments, acceptance and confirmation, counselling, role modeling and friendship.

When questioned about the mentor's role, the discussion was consistent with literature. P6 asserted that "*mentor is the one who assumes the figure of a sponsor, guiding and joining the entrepreneur for a time being… He is almost a friend" while* P2 stated that "*Mentors motivate through their experience and makes the mentees evolve"*. Lastly, P7 said that "The *mentor must have technical and emotional qualifications to take entrepreneurs out of the comfort zone, provoking them to take actions and achieve the expected results*".

During the discussion, other characteristics concerning mentoring emerged, such as: mentor experience, openness to same-level conversation, humbleness, being a good listener and provocative, empathy and trust. These characteristics can reduce the main challenges of mentoring process that includes the issues of poor quality of mentors, arbitrary supervision and unavailability of incentive mechanisms (Ting, Feng, & Qin[49], 2017).

Ideal Mentorship Moment

A new venture's survival lies in the development of key skills and competencies, which may be improved by means of properly designed support. However, the needs of new entrepreneurs do not appear to be adequately considered in the design of their support programs (E. St-Jean & Audet[50], 2012). Many mentees complain that the training they receive is not tailored to their needs, suggesting that a more personalized learning process may be appropriate (Morrison & Bergin-Seers[51], 2002).

When questioned about offering mentorship at the right time and amount, P1 and P3 believe mentors are far from being great; despite the issues concerning the improvement of mentorship process, they are doing the best they can. According to P4, the main challenge of innovation players like accelerators and incubators is to potentialize mentors' capabilities, so as to take the most from them and enhance entrepreneurs' skills. P6, discussing about startup context, said "there are some tools we use a lot, one of them is the experimentation". The main propose of experimenting is to test hypothesis and analyze whether it does or does not work. Hence, some agents of innovation ecosystems can incorporate this mindset and realize the best timing to implement mentorship by means of experimentation. In addition to experimentation, P7 declared that mentees' openness to behavioral change may influence the result.

The mentors discussions in the focus group were in line with mentees' perceptions brought by Morrison and Bergin-Seers[52] (2002). Finally, P6 stated that mentors should be submitted to training programs, in which they would improve mentorship processes, developing more systematized and standardized methodologies.

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[45] Kram, K. E., & Isabella, L. A. (1985). Mentoring Alternatives: the Role of Peer Relationships in Career Development. *Academy of Management Journal*, *28*(1), 110–132. https://doi.org/10.2307/256064

[46] Schockett, M. R., & Haring-Hidore, M. (1985). Factor analytic support for psychosocial and vocational mentoring functions. *Psychological Reports*, *57*(1983), 627–630. https://doi.org/10.2466/pr0.1985.57.2.627

[47] Schockett, M. R., & Haring-Hidore, M. (1985). Factor analytic support for psychosocial and vocational mentoring functions. *Psychological Reports*, *57*(1983), 627–630. https://doi.org/10.2466/pr0.1985.57.2.627=

[48] Kram, K. E., & Isabella, L. A. (1985). Mentoring Alternatives: the Role of Peer Relationships in Career Development. *Academy of Management Journal*, *28*(1), 110–132. https://doi.org/10.2307/256064

[49] Ting, S. X., Feng, L., & Qin, W. (2017). The effect of entrepreneur mentoring and its determinants in the Chinese context. *Management Decision*, *55*(7), 1410–1425. https://doi.org/10.1108/MD-07-2016-0477

[50] St-Jean, E., & Audet, J. (2012). The role of mentoring in the learning development of the novice entrepreneur. *International Entrepreneurship and Management Journal*, *8*(1), 119–140. https://doi.org/10.1007/s11365-009-0130-7

[51] Morrison, A., & Bergin-Seers, S. (2002). Pro-growth small businesses: learning "architecture." *Journal of Management Development*, *21*(5), 388–400. https://doi.org/10.1108/02621710210426871

[52] Morrison, A., & Bergin-Seers, S. (2002). Pro-growth small businesses: learning "architecture." *Journal of Management Development*, *21*(5), 388–400. https://doi.org/10.1108/02621710210426871

FURTHER DISCUSSIONS

Two other subjects emerged during the focus group discussion and deserve an additional analysis. the first concerns about mentors' rewards, and the second regards the measurement of results from mentoring processes.

Financial rewards remain the most criticized subject in mentoring (Moberg and Velasquez[53], 2004). Some researchers found rewards motivating for mentoring while others believe they are insignificant (Mishra, Jain, & Chaudhary[54], 2016). Self-motivated mentors do not seek rewards out of mentoring, but some prefer rewards as the source of financial benefits (Cholakova & Clarysse[55], 2015). Prior investigations have also argued that mentoring is a philanthropic activity that requires passion (Kram and Isabella[56], 1985; Lester et al.[57], 2008). Thus, the preference for financial rewards has largely been suppressed and remained unexplored and undervalued in the literature (Mishra et al.[58], 2016).

The focus group was asked on the main encouraging factors for being mentors. According to P1, the value lies in their own learning process. P4 stated four main reasons: (1) learning, (2) networking, (3) the will of becoming angel investors, and (4) a sense of fulfillment by giving back to society. Although P1 declared not having money involved in this process, P4 affirmed eventually having equity payment. Lastly, P3 presented two groups of mentors: "the ones who are mentors for a living, charging for the service; and the ones doing for philanthropic reasons".

The literature comprises researches over evaluation means of the entrepreneurial mentoring effect, but most of these studies are *ad hoc* qualitative description (Ensher et al.[59], 2000), whereas others use financial performance indicators, such as sales growth and market share (Kurtulmuş & Warner[60], 2015), and non-financial indicators, like employee satisfaction (Antoncic & Hisrich[61], 2003). However, in practice, it is difficult to measure the mentoring effect quantitatively, veritably and objectively (Ting et al.[62], 2017).

When it comes to difficulty to measure entrepreneurial mentoring, P4 declared have no idea how to measure it. Additionally, P1 pointed to a dearth of academic and practical studies, providing guidelines on this matter. Both P1 and P6 reported using personal feedbacks from mentees to analyze whether the mentoring results were either positive or negative. According to P6, overall, the mentor succeeds when gives the entrepreneur a new key reference that widens his/her perspective of the business.

Even though the participants revealed difficulty regarding the measurement of entrepreneurial mentoring process, it's benefits are perceptible. As stated by P1, when he first started mentoring, there was a problem, "only those ventures who succeeded were able to evolve, and there were very few new entrants [entrepreneurs], making the ecosystem restricted and weak". According to him, the ecosystem naturally matured as new entrepreneurs emerged, also raising mentors' demand and

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offer, and giving life and dynamism to the ecosystem. As P1 concluded, “the ecosystem evolves as more people get engaged. Previous mentees become mentors and everyone grows”.

CONCLUSIONS

One of the major challenges of professionals involved in entrepreneurial development is to create means to guide individuals to outline a career and life project compatible with their competencies, interests and values (Ernesto da Silva[63], 2010). In this scenario, mentoring and coaching processes are presented by companies and professionals as an alternative to overcome such challenges. However, few studies seek to evaluate the actual effectiveness of these processes (Morrison & Bergin-Seers[64], 2002; E. St-Jean & Audet[65], 2012), and there is an evident blur concerning the definitions of such processes by both academic and professionals, as also observed in the focus group discussion presented.

This paper aimed at contributing to the literature by conducting an exploratory research and collecting perceptions over startup mentoring. Thus, we conducted a focus group comprised by key players within Porto Alegre's innovation ecosystem and discussed their experiences as mentors and mentees, analyzing opportunities to improve the mentoring process.

The findings are of more than academic interest. Practitioners, leaders and innovation managers behind innovation-based businesses must be aware of the new training practices such as mentoring and coaching. As main contributions, we identified difficulties in the definition of the best moment for a startup receive a mentoring process, as well as a dearth of guidelines to assist mentors in the measuring of results. Additionally, respondents agreed there are improvement opportunities in the mentoring process, which would be critically benefited by future research agenda.

Unlike coaching, in which there are processes and techniques, mentoring lacks systematization. Along with a statement in which one participant declared making use of experimentation to identify a best moment to propose mentoring, the need to improve the mentoring process naturally arose in different moments of the discussion, endorsing the necessity of considering lean mentoring proposal. Lean mentoring would offer to mentors a proper management tool to ascertain that they are providing the right knowledge, in adequate amount, at the necessary moment of the startup.

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APPENDIX A

Questionnaire

1) How entrepreneurial mentoring contribute to entrepreneurship? And to the entrepreneur?
2) Can we consider mentoring as a learning resource for technical and interpersonal skills?
3) What are mentorship's advantages to entrepreneurs? And to others agents in the ecosystem? (parks, accelerators, incubators and etc.)
4) What are mentorship's disadvantages to entrepreneurs? And to others agents in the ecosystem? (parks, accelerators, incubators and etc.)
5) Do you think novice entrepreneurs are able to absorb all the information needed to guarantee firm's success?
6) Is it possible to improve the mentoring process based on this new turbulent and dynamic context? How?
7) Do you think knowledge transfer provided by mentorship is a key to success/sustainability more than experience itself?