

PILOT STUDY: ADMINISTRATIVE AND RESEARCH LEARNING IN ORGANIZATIONAL INTRAPRENEURSHIP

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Abstract

Professional training in management can be examined from two perspectives: what is proposed and carried out in educational institutions, and what the productive sector requires. Therefore, one of the challenges for educational institutions is to evaluate the relevance of learning outcomes. This study focuses on assessing the learning outcomes related to administrative training and formative research in management professionals, based on employers' perceptions, in order to determine their pertinence vis-à-vis organizational intrapreneurship needs.

This quantitative study yielded numerical results regarding the level of relevance of management graduates' professional training. Two key variables were examined: research and administration. The process began with faculty in each disciplinary area recognizing and formulating learning outcomes. A Likert-type instrument was then designed and administered to 385 supervisors who employ graduate students from a private university in Bogotá. Overall, the productive sector rated the relevance of the learning outcomes as high, reaching 78.2%.

Keywords: educational relevance, learning outcomes, training, intrapreneurship, competitiveness

INTRODUCTION

Training entrepreneurial professionals requires a solid integration of administrative and research skills, which are fundamental to developing the competences needed to face the challenges of today's business environment (Ovalles-Toledo et al., 2018). University graduates should be considered sources of sustainable competitive advantage and business renewal, as intrapreneurial activities are expected of them (Bedoya, Toro, & Arango, 2017). In this regard, intrapreneurship is understood as the capacity to innovate and generate new ideas within an organization, making it a generator of strategies for maintaining competitiveness in a dynamic business environment marked by changes in product introduction, market acceptance, and consumer behavior (Christensen et al., 2015). Tróchez et al. (2021) likewise underscore the need to train professionals who will launch initiatives within organizations, grounded in strong administrative and research skills to meet current business challenges.

Higher education plays a fundamental role in a country's sustainable development and competitiveness, given its significant impact on human capital—the most influential productive factor in terms of productivity (Ramos et al., 2021). Consequently, the productive sector regards professionals as a source of promise due to their skills to address organizational challenges appropriately (Castañeda, 2017). It is therefore necessary to pay close attention to actions undertaken by educational institutions with respect to knowledge formation and learning outcomes (Rodríguez, 2022), as these outcomes provide essential information for the continuous improvement of training programs (Pino-Loza & Granja, 2020). Professional knowledge presents a challenge for university programs because professional training can be viewed from two perspectives: what is proposed and enacted in training centers, and what the productive sector requires. The former emphasizes developing knowledge and

“knowing” (Merino, 2020), whereas firms expect professionals to demonstrate learning outcomes that contribute to organizational and social responsibilities.

The quality of higher education is directly linked to its relevance and impact on real-world contexts (Díaz, 2023). Thus, a central challenge is to assess the social relevance and pertinence of learning outcomes. Hernández (2018) highlights the importance of establishing synergy between the university and its surrounding environment to understand and address societal needs. Carrillo and Benavides (2022) stress the need to adapt disciplinary knowledge to changes in the business sector, considering economic, social, and human development, as well as the demands of globalization.

Accordingly, professional training must be compared with stakeholder expectations, particularly those of firms. Despite higher education’s concern with meeting contextual needs and narrowing the gap identified by the National Administrative Department of Statistics (2012)—namely, the low correspondence between human-capital training and social and economic needs in Colombia—higher education still faces the challenge of verifying this correspondence.

This chapter presents a pilot study aimed at evaluating the pertinence and relevance of these forms of learning in the educational process, in order to identify how they affect future professionals’ capacity to manage, innovate, and address real organizational needs. Through qualitative and quantitative analysis, it examines employers’ perceptions of the applicability of graduates’ knowledge. The study is proposed as a starting point for understanding the role of administrative and research learning in developing a comprehensive entrepreneurial profile, and how these elements can strengthen the competences required to generate a positive impact in the business world. It also explores opportunities for improvement in academic programs to better align higher education with current labor-market demands.

Pertinence and Relevance of Education in Society

The quality of higher education is related to its pertinence and relevance in real contexts (Hernández, 2015). The application of educational results determines whether there is a true correspondence between training provided in educational institutions and actual performance when addressing real-life situations. What, then, is the similarity or difference between these two characteristics? Martuscelli and Martínez (2002) define pertinence as the degree of correspondence with social and individual needs. Gago (2002) differs slightly, considering educational pertinence as relating solely to the social dimension, namely, the extent to which education responds to societal problems, demands, and expectations. Similarly, De la Orden (2007) frames educational quality as functionality or pertinence measured by the satisfaction of social expectations and needs. UNESCO (1998) aligns with these views, arguing that the pertinence of higher education should be assessed in terms of the fit between what society expects from institutions and what they actually do.

Regarding the relevance of system quality, Robles et al. (2012) argue that it is important due to the congruence that should exist between teaching objectives and the needs of the society in which the system operates. They emphasize that curricular objectives should focus on the learner and correspond to students’ particular needs. Taccari (2007) maintains that quality education reconciles individuals’ particular conditions (pertinence) with the developmental challenges they must face (relevance). Santos and Delgado (2011) similarly contend that pertinence is oriented toward individual needs and relevance toward societal needs. In this vein, UNESCO-OREALC (2007) maintains that relevance should be framed by the “four pillars of education,” in light of social needs—learning to be, to know, to do, and to live together—while pertinence is oriented by the diversity, flexibility, and adaptability of the educational offer to people’s particular conditions.

Together, pertinence and relevance shape student formation through curricular content and the subsequent insertion of future professionals into the labor market (Fresán, 1998). They constitute powerful diagnostic mechanisms for assessing the real role of Higher Education Institutions (HEIs) in meeting social needs. In line with public guidance, HEIs seeking quality education continuously evaluate, update, and adjust their educational offerings according to the requirements, expectations, and potential of the productive sector and its producers (ILO, 2006). To this end, they must also adapt pedagogical approaches and didactic materials and equipment to students’ characteristics, problems, needs, and expectations to ensure quality and pertinence in their actions (Sánchez et al., 2007). Today, aligning HEIs’ pertinence and relevance with the productive sector is a major challenge, as institutional actions cannot be isolated or temporary (Lopera, 2005); rather, they must become a source of systemic and permanent questioning of institutional roles, organization, and methodologies. This implies that, alongside study of theoretical elements, HEIs should assess program pertinence and generate evidence to improve and update study plans and curricula.

University–Enterprise Collaboration in Knowledge Production and Competitiveness

Historically, universities and educational/research institutions carried out basic research, while firms and the productive sector undertook more specialized applied research and technological development (Vega et al., 2012). Each actor pursued its own motivations and interests, enjoying autonomy; collaboration between them

was neither conceived of nor deemed pertinent, given their distinct tasks. However, following industrial development and the accompanying innovation processes, firms deemed it necessary to create development spaces with other agents and institutions, including HEIs (Porter & Kramer, 2011). Universities thus ceased to be isolated spaces and gained the capacity to work with their economic surroundings to develop innovations.

Today, university–industry relationships have acquired such prominence that they are considered complementary to the traditional missions of teaching and research, conferring on universities a relevant role in knowledge management, competitiveness, and consequently, economic growth (Etzkowitz & Leydesdorff, 1997). Knowledge management is presented as a systematic process of detecting, recognizing, locating, systematizing, and using information and knowledge within the organizational environment, with the goal of enhancing business competences and generating value. In strategic terms, this frames the role of knowledge in organizational growth within a globalized context, where constant change in regulations, products, and technologies is the norm (Acosta et al., 2013). This suggests that competitive advantages are tied to how firms leverage knowledge.

In the knowledge society, the business sector demands a skilled workforce—professionals trained in competences—prompting institutions to redesign learning processes to improve graduates’ professional performance (García, 2006). Consequently, the renewal of teaching–learning methodologies in HEIs in response to professional demands makes competence-based training imperative, assigning HEIs the responsibility to align with labor-market realities and requirements so their students perform better across organizational roles (UNESCO–UNDP, 1998).

The accumulation and management of knowledge are increasingly imperative, regardless of field. New knowledge spreads rapidly through new technologies and media, altering modes of production and related processes (Santillana, 1998). Building on this premise, “dynamic capabilities” should complement knowledge management, as firms acquire knowledge from the environment and connect it to R&D. “For this reason, the dynamic absorptive capacity represents an important component of a firm’s competences to create new knowledge, enabling better business results by incorporating new knowledge into existing knowledge” (Garzón, 2016, p. 98).

Foundational arguments by Porter (1990) and Krugman (1995) posit that firms—rather than nations—compete. A nation’s competitiveness depends on competitive firms producing within it; thus, firms are the basis of national competitiveness. For Rubio and Aragón (2006), business competitiveness is a firm’s capacity to vie with others, achieving performance superior to competitors. Lall et al. (2005) add that firms compete and gauge competitiveness by market share and profitability; competitiveness is therefore the foundation of organizational strategy to improve performance. Others contend that business competitiveness rests on a firm’s competitive advantage, achieved through production processes that differentiate it from competitors (Abdel & Romo, 2004). According to Cervantes (2005), competitiveness depends on factors at three levels: (1) national competitiveness—determined by variables such as macroeconomic stability, trade and capital openness, and sectoral regulations; (2) regional infrastructure; and (3) the firm level—reflecting internal dynamics that determine business competitiveness. These factors lead companies to develop the capacity to increase or maintain market share by continuously refining strategies, enabling participation in negotiations across organizations within policy environments and alliances forged by national governments and regional economic blocs (Solleiro & Castañón, 2005).

Business competitiveness derives from competitive advantages stemming from strategies and methods of production, management, and organization—dimensions that reflect product quality and pertinence in competitive environments. Hence, a firm’s competitiveness results from productivity, domestic and international market share, profitability, relations with the business sector, and regional infrastructure (Abdel & Romo, 2004). As Porter (1990) reflects, comparative advantages are inherited, whereas competitive advantages are created; sustained growth rarely arises purely from comparative advantage and instead requires factors such as corporate strategies and the structure of the industrial environment. Thus, firm-level competitiveness relates to the capacity to grow in the areas cited above—human resources, R&D, technology upgrades, market adaptation, flexible management, sustained profitability, and financial leverage—ensuring sustainability and permanence in the market.

METHODOLOGY

This study employs a descriptive quantitative design to evaluate management graduates’ learning in relation to formative research and administrative competences, drawing on the productive sector’s perceptions. The methodology provides an up-to-date view of the business environment’s requirements and needs for professionals who implement intrapreneurial actions to solve problems, following Cajavilca and Sulca (2007), who emphasize that such research captures valuable information to understand phenomena at a given point in

time. Hernández et al. (2014) likewise argue that this approach is key to obtaining current, in-depth knowledge of the phenomena under study.

The research focused on a sample of 385 contracting supervisors who employ graduates from management postgraduate programs at a private university in Bogotá. The study group included both public and private firms of various sizes (small, medium, and large). Because students serve as intermediaries with companies and, especially, their direct supervisors, a census approach was adopted, allowing all contractors to participate, as recommended by Bernal (2016).

Two main variables were analyzed: formative research and administrative training. Both proved reliable, with Cronbach's alpha coefficients of 0.861 and 0.936, respectively, ensuring the instrument's reliability. Data were collected using a Likert-type questionnaire with 25 items: 5 for characterization and 20 for the recognition of learning outcomes (LOs). Data collection took place during the first semester of 2022.

Data analysis used three levels—high, medium, and low—to describe the study variables, with the 33rd and 66th percentiles establishing the intervals. The process began with disciplinary faculty recognition of LOs, followed by item formulation based on these LOs, instrument design and validation, data systematization and analysis, and culminated in report preparation.

This study not only offers a clear picture of the productive sector's perception of graduates' research and administrative competences relative to organizational intrapreneurship needs, but also provides key information for improving future professional training. The instrument's reliability and the census approach reinforce methodological rigor and support meaningful conclusions about the pertinence of these forms of learning in the workplace.

RESULTS

From the instrument, organizations were identified as 79.5% private, 17.4% public, and 3.1% mixed. Likewise, 30.4% were large firms; the remainder were medium and small (26.8% and 42.9%, respectively). Some 61.8% had been operating for more than 16 years; 40.5% operated locally, 56.4% nationally, and 3.1% internationally. Regarding research pertinence, the correspondence level was high for 73%, medium for 24.4%, and low for 2.6%. Disaggregating this variable showed that at least 75.6% of employers agree that productivity and competitiveness in the work of those who support managerial actions with their learning should include the capacity to identify problems or opportunities in their work context and reflect on possible solutions; of this group, 30.6% strongly agree.

Similarly, 25.5% strongly agree—and 50.9% agree—that communicating one's own and others' ideas, orally and in writing, to express personal positions is a significant need. In sum, there is 76.4% agreement with the need for these LOs.

Some 84.2% of employers provide evidence of reciprocity regarding classifying information according to supervisors' requirements to facilitate decision-making. Additionally, 82.9% agree on using tools such as charts and tables (among other systematization alternatives) to disseminate business results, and 82.3% agree on formulating improvement proposals based on workplace needs.

Furthermore, 76.4% agree that graduates should be able to present, orally and in writing, information germane to their duties to communicate results. Meanwhile, 79.2% agree on presenting results supported by body language, oral expression, organized ideas, and argumentation to make presentations more engaging. Some 79% agree on applying techniques and procedures to obtain data from information sources to support decision-making. A total of 84% agree on using Word, PowerPoint, and Excel to prepare information. Finally, 58.7% agree that graduates should be able to manage, participate in, and create contacts through networks to enhance workplace capacity.

Regarding administrative learning, the correspondence level was high for 81.8%, medium for 16.1%, and low for 0.8%. For the ten LOs evaluated, results were as follows: 86.8% of supervisors agree that graduates should manage, analyze, and report organizational costs; 86.8% agree on managing or supporting the management of organizational budgets (sales, costs, expenses) to guide sound economic performance; 86% agree on planning, organizing, executing, and controlling the use of organizational financial resources; and 87.5% agree on managing, analyzing, and reporting organizational cash flows.

Additionally, 85.7% agree on formulating or supporting the formulation of the organization's strategic plan; 86% agree on formulating and applying strategies to maintain and support the achievement of organizational objectives; 86.8% agree on formulating and presenting business ideas that support competitiveness; 83.3% agree on managing or supporting the management of the organization's human talent development process; 82.9% agree on explaining different events in the firm's economic environment supported by economic theory; and 85.5% agree on interpreting and communicating national and global economic phenomena and their implications for the organization.

Overall, the productive sector's perception of the convenience/fit of LOs taught in management programs—in research and administration—was high (78.2%). Individually, research and administration were rated 73% and 81.8%, respectively.

Table 1. Perception level by variable

Level	Research	Administrative	Overall
Low	2.6%	2.1%	0.8%
Medium	24.4%	16.1%	21.0%
High	73.0%	81.8%	78.2%

Note. Author's calculations (2023), based on instrument data.

Correspondence between productive-sector needs and LOs in commercial, labor, and tax regulations was high at 67%, 32%, and 46%, respectively; medium at 31%, 63%, and 50%, respectively. For research LOs, 41% strongly agree and 47% agree. For regulatory LOs, 31% strongly agree and 44% agree. Research predominates: high by 10 percentage points and medium by 3. On average, high is 62% and medium 36%. In sum, there is meaningful correspondence between management training and productive-sector needs.

DISCUSSION

Regarding the pertinence and relevance of training, results show a high perceived pertinence in administrative training and a favorable perception of research training vis-à-vis the needs of professionals who enact intrapreneurship within organizations, with averages of 81.8% and 73%, respectively. This difference suggests that, while administrative training is seen as more salient, research training is also valued, though it may require actions to increase its visibility. The literature indicates that relevance and pertinence are critical to educational quality (Hernández, 2015; Robles et al., 2012). Thus, strong administrative training may indicate that institutions are effectively meeting productive-sector expectations in practical areas. The challenge remains to strengthen professional training practices related to research competences in line with market demands.

As to university–industry relations and the historical division between basic and applied research (Vega et al., 2012), the results point to growing interdependence, with universities playing a crucial role in knowledge management and competitiveness (Etzkowitz & Leydesdorff, 1997). In light of these references—and the productive sector's high perception of administrative training pertinence—universities appear to be aligning their programs with industry needs. Of course, the comparatively lower perception of research training underscores the need to mitigate the disconnect between academic research and business demands, strengthening this relationship to improve knowledge transfer and innovation characteristic of organizational intrapreneurship.

Regarding challenges in implementing competences in the workplace, the study reveals a high proportion of employers who value graduates' research-related competences for applying specific tools and techniques—such as Word, PowerPoint, and Excel—and for communicating ideas effectively, as well as the ability to manage networks (even if this last item is less valued). This challenges educational institutions to include, within their programs, both the soft and technical skills necessary to face current labor-market demands, thereby aligning more closely with the competences employers value.

Finally, on correspondence between training and productive-sector needs, the results show high overall alignment between LOs and productive-sector needs (78.2%). Nonetheless, there is a gap between high perceptions of administrative training and medium perceptions of research training. HEIs should continue strengthening best practices in higher education by adapting curricula to close these gaps and ensure that training keeps pace with evolving industry needs. Such adaptation will not only improve program relevance but also enhance graduates' ability to contribute effectively in their workplaces.

CONCLUSIONS

From the productive sector's standpoint, the overall level of fit between management-program learning outcomes—both research and administrative—and workplace needs is high (76%); considered separately, research and administrative training are rated 80% and 68%, respectively. With respect to management training, the evidence reported by employers suggests that academia has the elements needed to meet societal challenges successfully. However, continuous improvement within educational institutions is necessary to reduce the medium and low levels—averaging 23% and 1%, respectively—and to further study firms' needs regarding graduates' learning.

Employers' evaluations of management professionals' learning—specifically formative research and administrative training—reveal significant correspondence between LOs and business needs. Evidence from the productive sector underscores the importance and pertinence of research and regulation in professional practice. Even so, continuous improvement is needed to narrow the gap between high and medium/low levels, which average 23% and 1%, respectively.

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