



Improvisation in Higher Education Management: Coping with Complexity and Organizational Dynamics

Vera Lucia Telles Scaglione¹ · Victor Meyer Jr.¹ · Diógenes Falcão Mamédio²

Received: 20 March 2019 / Accepted: 2 July 2019 / Published online: 17 July 2019
© Global Institute of Flexible Systems Management 2019

Abstract This study aimed to analyze how improvisation activities take place within the management of a higher education organization, by examining practices and related constructs, such as innovation, intuition, bricolage and learning. This is a case study on a large private university, located in São Paulo, Brazil. Data were collected through in-depth interviews, non-participant observation and document analysis. The results showed that improvisation in academic management is characterized by constant pressures that challenge their managers toward adaptations, reorganization in crisis situations, the sense of urgency and coping with the unexpected. Minimal structures, flexibility and competence have proved to be essential elements for improvisation. Decisions and actions, practiced by academic managers, were characterized by spontaneity, creativity and managerial flexibility. Dynamic and complex environments make improvisational practices that emerge in the day-to-day of academic management. The existence of a culture favorable to experimentation, to the autonomy of managers, contributes to reviewing processes and disseminating practices of improvisation. The incorporation

of bricolage as a way to better use limited resources proved to be promising for managerial effectiveness. Originality is demonstrated in the relationship between the practices of improvisation and academic management, seen as a unique context in a flexible and complex system. This paper highlights suggestions for managerial practice related to improvisation practices as one of the ways to cope with organizational dynamics.

Keywords Complex systems · Flexibility · Higher education · Organizational dynamics · Organizational improvisation

Introduction

Dynamic, unpredictable and nonlinear environments characterize the field of organizational complexity, marked by constant adaptations and changes. In practice, managerial actions emerge and are sometimes more efficacious than those programmed. In this scenario, permeated by uncertainty and instability, organizational improvisation gains momentum as a possibility for a fast and adequate response to the challenges posed (Cunha et al. 1999; Cunha 2005; Batista 2008). The ability to improvise shows to be an essential competence of contemporary management, as a new way of reacting to changes (Leone 2010; Jena and Memon 2018).

Improvisation has been discussed as playing a role in strategic decision-making processes (Eisenhardt et al. 1997), organizational learning (Miner et al. 2001), the adoption of technology and innovation (Moorman and Miner 1998) and strategic renewal and adaptation (Crossan and Hurst 2003). In the context of organizational improvisation, the focus of this study can be defined as “the conception of action as it develops, based on available

✉ Diógenes Falcão Mamédio
diogenesfalcao@gmail.com

Vera Lucia Telles Scaglione
vera.fpa@terra.com.br

Victor Meyer Jr.
victormeyerjr@gmail.com

¹ Business School, Pontifícia Universidade Católica do Paraná, Rua Imaculada Conceição 1155, Prado Velho, Curitiba, PR 80215-901, Brazil

² Business School, Pontifícia Universidade Católica do Paraná, Rua José de Oliveira Franco, 100 Sobrado 03, Bairro Alto, Curitiba, PR 82840-000, Brazil



material, cognitive, affective and social resources” (Cunha et al. 1999, p. 302). By improvising, individuals respond flexibly to new circumstances, making exceptions to rules and the subconscious use of their intuition to generate rapid solutions (Crossan and Sorrenti 2005). Organizational practice presents improvisation as a phenomenon inherent to complex organizations, in which reality overlaps forecast and control attempts (Cunha 2005; Piansoongnern 2016).

This study examined organizational improvisation practices in academic management as a way of responding to the managerial challenge of dynamic and complex organizations such as universities. This is a case study at a Brazilian private higher education institution, located in São Paulo, Brazil, and recognized for its tradition. Currently, the university faces challenges such as competition, resource constraints and pressure for performance, which makes academic management of strategic importance.

Four main contributions to the field of research are presented. The first highlights the different manifestations of improvisation identified as from their constructs of innovation, bricolage, intuition and learning in professional practice, particularly in academic management. The second analyzes the influence of elements of the complex adaptive system, such as adaptation, self-organization and nonlinearity in higher education institution (HEI). The third explores the relationship between the autonomy of the agents (managers) and the informal relations arising from internal pressures for change and external pressures that influence organizational performance. The fourth more specifically represents a concrete contribution to the theory of university management under construction (Keller 1983; Meyer and Lopes 2015), which demands to further due to the challenges of academic management.

Theoretical Foundation

Managing Higher Education Organizations

Higher education institutions (HEI) are known as complex organizations, which have essential characteristics such as autonomy and self-management (Caldwell 2002, 2008), pluralism and diversity of public (Jarzabkowski and Fenton 2006; Meyer and Lopes 2015; Deepali et al. 2017) and aspects of interaction and cooperation among agents (Stacey et al. 2000; Ritter et al. 2004). It is organized as a loosely articulated system (Orton and Weick 1990), whose mission is essentially educational, social and cultural. HEIs are in a constant change due to increasing demand in contemporary society. This brings the necessity of reforming and restructuring the universities in order to become more responsive to the needs of the global knowledge-based society (Marginson 2010).

These characteristics reveal the complex and multifaceted nature of this type of organization and contribute to a better understanding of these organizations decision process and their management (Ellström 2007). The complexity of their structures, their nonlinearity, the fact of being open organizations, loosely articulated, in constant interaction with internal groups, as well as with the dynamic external environment, eventually generate conflicts (Cilliers 2002; McDaniel 2007), making these organizations management a major challenge. In this context, HEIs demand management models adequate to their characteristics and to the current context of changes. This will contribute to these organizations to meet the challenges, turning more competitive, sustainable and relevant to society.

Managerial amateurish also represents a great challenge to HEIs, considering that a number of academic managers do not have managerial qualifications or even experience, constituting an amateur managerial body (Wescott 2000). They are mostly professionals towed to management positions, who learn by trial and error, that is, learning derives from practice. Even if previous experiences are admitted to influence future behaviors and to generate learning, the dynamism of these complex systems inhibits the repetition of previous behaviors and high rationality in management (Richardson 2011). HEIs are representations of these systems.

Complex organizations, such as higher education institutions, are considered complex adaptive systems (CAS) due to the diversity of independent and interconnected agents, whose interpretations and actions are based on mental models and presuppose the ability to change, to adapt and to evolve (McDaniel 2007; Richardson 2011; Stacey 2011). They are nonlinear systems, in which a small adjustment may lead to wide variations in results and culminate in unpredictable behavior (Zimmerman 1998; Chowdary 2001).

Stability, if any, is temporary and merely apparent since it is subject to constant small alterations which cause discrete changes, called incremental. CAS stability is a dynamic, uninterrupted process, which operates in a continuous change environment (Mitleton-Kelly 2011). They are structures with a large number of social agents with their own characteristics, the constituent elements of which continuously and dynamically interact, based on specific rules. Their levels of interaction are therefore very rich, even though these interactions are not linear (Cilliers 2002; Allen et al. 2011). Nonlinearity is a pre-condition for complexity, as are the aspects of self-organization, dynamic adaptation and evolution (Cilliers 2002; McDaniel 2007; Stacey 2011).

The external environment dynamics, marked by a highly unstable scenario and uncertain future, besides the internal

pressures, by planning rationality and ambiguity, pose massive challenges to academic managers with implications for their managerial practices. In uncertainty and unpredictability contexts, complex adaptive systems can organize and reorganize themselves internally, without the intervention of external agents (Stacey 2011). The order of the systems generates disorder, and the nonlinear *feedbacks* generate a wide range of behaviors, ordered and disordered, causing random and unpredictable behavior. Systems that succeed in keeping the self-organization movement can survive the strong variations they are exposed to (Lissack 2002; Stacey 2011).

Organizational Improvisation

Organizational improvisation is related to constructs that integrate aspects present in social practices. Constructs such as intuition, bricolage, learning and innovation contain fundamental elements for understanding the practices of improvisation, which contribute to the management of dynamic organizations. These elements are compiled in Table 1 so as to identify the major concepts and authors of each approach.

The combination of these improvisation constructs applied to the management of dynamic organizations has shown significant results, considering the role of improvisation. These organizational improvisational constructs help organizations co-evolve with their changing environments (Hollnagel et al. 2006; Hadida et al. 2015).

Intuition can be considered a part of improvisation, despite there being improvisation without the use of intuition (Miner et al. 2001). Hence, reason and intuition are two complementary mechanisms (Simon 1991). *Bricolage* is also associated with DPE—*Design-Precedes-Execution*—even with previous planning; bricolage is made necessary for execution (Backer et al. 2003).

Traditionally, the starting point of *learning* would be cognition, yet improvisation may provide a new circuit of learning in which action precedes cognition, that is, understanding about what occurs after the action (Crossan and Sorrenti 2005). This is the process by which mental models and behaviors of individuals undergo changes, which occur by discovery, retention, exploration, trial and error and using information (Argyris and Schon 1996; March 1999; March and Olsen 2010).

Innovation has been considered one of the major aspirations of contemporary organizations in times of changes. For O’Sullivan and Dooley (2009), innovation is more than creation, and it also includes exploration toward benefit, as a way of adding value to organizations. It is worth highlighting that not all improvisation is innovation (Batista 2008). Conversely, improvisation may be considered a special type of innovation (Miner et al. 2001).

Method

This study was characterized as a qualitative in-depth case study (Creswell 2013), with non-participant observation. Its purpose was to understand the manifestations of organizational improvisation and their implications in the practices of academic management. Case study was adopted focusing on a private higher education institution, with emphasis on procedural nature as follows: (1) field research; (2) understanding the world with a sensemaking orientation (sensework); (3) write case report and presentation of these understandings (textwork) (Stake 2010; Creswell 2013). The study covered the period of 2015–2016.

The higher education institution analyzed is located in São Paulo, Brazil. It is a private, confessional, not-for-profit, large-sized organization. It encompasses a total of

Table 1 Organizational improvisation constructs. *Source:* Prepared by the authors

Intuition	Bricolage	Learning	Innovation
Intuition refers to an unaware process, based on experiences and able to guide the action (Crossan and Sorrenti 2005)	“Do it yourself,” using the resources available (Backer et al. 2003)	Situations in which improvisation favors a systematic change in knowledge or in behavior (Miner et al. 2001)	Involves some level of creation or <i>design</i> , usually a creative action, out of the current plans (Moorman and Miner 1998)
Authors			
Simon (1991)	Weick (1995)	Argyris and Schon (1996)	Freeman and Soete (1997)
Miner et al. (2001)	Backer et al. (2003)	Miner et al. (2001)	Moorman and Miner (1998)
Dane and Pratt (2007)	Lévi-Strauss (2005)	March (1999)	Rogers (2003)
Flach and Antonello (2011)	Cunha (2005)	Crossan and Sorrenti (2005)	Batista (2008)
Barnard (2016)	Crossan and Sorrenti (2005)	Leone (2010)	O’Sullivan and Dooley (2009)



40,000 students and 1400 lecturers. Among the faculty members, 91% hold master and doctoral degrees. Ever since its foundation, the institution has been an agent of a series of pedagogical innovations, exerting a strong influence in the Brazilian Higher Education scenario. This organization was intentionally selected for this study because of its national tradition and influence in Brazilian Higher Education. The HEI scenario was considered adequate to carry out this study, considering the dynamics, flexibility and complexity of the management practices of its managers. The university's anonymity has been preserved.

The practices of academic management were evidenced through the lens of organizational improvisation constructs, such as innovation, intuition, bricolage and learning. The choice of this approach was justified by the relevance of these constructs applied to the management of dynamic and complex organizations, particularly in the context of universities. Some studies have demonstrated significant results, considering the role of improvisation (Hollnagel et al. 2006, Hadida et al. 2015) and systemic flexibility (Chowdary 2001; Sushil 2001; Gorod et al. 2017) in helping organizations co-evolve with their mutation environments. This approach is fundamental to managing dynamic organizations, particularly universities. Improvisation constructs can corroborate in the approach to flexible systems since the managerial challenge of this type of organization is to face the unexpected and unpredictable.

From August 2015 to July 2016, data were collected through twenty in-depth interviews, non-participant observation and institutional documents. The selection of the interviewees was made by non-probabilistic or purposive sampling, considering the interest in the managers directly involved in the academic practices under analysis. The profile of the interviewees was segmented by 04 Provosts, 07 Academic Directors and 09 Academic Program Coordinator. The interviews were recorded and fully transcribed for analysis, totaling 211 pages.

In parallel to the interviews, there was participation in department meetings, team meetings and lecturers' capacity building as a non-participant observer. The observations occurred during the prolonged visits and in the participation in the institution informal meetings. The observations were compiled in a field protocol, in which the notes were recorded, as well as the main perceptions and constitute the "written register of what the investigator hears, sees, experiences and thinks during collection and reflection about the data in a qualitative study" (Bogdan and Biklen 2010, p. 150).

Documental analysis also constitutes the data set, along with the researcher's field diary, notes, ideas, impressions or insights of life organizational evidenced. Contextual data were gathered in the form of documents related to the

institutional development plan, internal rules, summary of meetings, meeting deliberations, academic goals and outcomes.

The data were treated by the content analysis technique (Creswell 2013), which allowed selecting into categories the information collected about the theme investigated. The content analysis allowed organizing the data collected, aiming to identify what had been said regarding certain analysis categories. The data were processed using a three-step content analysis technique: (a) pre-analysis; (b) material exploration; (c) processing of the results and interpretation (Bardin 2010). The dimensions and categories are summarized in Table 2 as the structure of the research instrument.

Measures were taken to ensure the reliability and validity of this study, as (1) interview guiding questions were prepared based on the analytical framework, which was critically reviewed by the authors of this research and by the ethics committee of the university; (2) case study notes were taken from transcripts of interviews and documents; (3) transcripts were sent to university managers for review and acceptance of the description and analysis of the case study prior to the conclusions.

As a limitation of this study, given the complexity inherent in the phenomenon of organizational improvisation in the academic management, the great challenge was to identify what "improvisation" triggered in the minds of the managers interviewed. It was also noted the need to clarify the constructs addressed in this research, which could have generated some distortions or difficulties of understanding by the interviewees. Nevertheless, it can be stated that the experience acquired by the researchers during the interviews collaborated to minimize these issues and generate less interference in the research.

Findings

The diversity of manifestations of improvisation, demonstrated by the search for adaptation, reorganization and evolution, characteristic of complex adaptive systems, is marked by continuous changes in which previously planned actions showed to be insufficient or limited for solving managerial problems. In this context, improvisation gains momentum and interest due to its understanding of the organizational context (Cunha et al. 2003), especially in HEIs characterized by their organizational complexity and environmental dynamism.

Constructs of improvisation, such as intuition, innovation, bricolage and learning, were convergent in the HEI analyzed and frequently associated with crises and unexpected situations. The main manifestations of

Table 2 Dimensions and unfolding search questions. *Source:* Prepared by the authors

Dimensions	Categories	Authors	Unfolding search questions	Research procedures		
Academic management	Planned and emerging practices in academic management	Baldrige (1983)	What are the planning practices of this HEI?	Interviews with managers Documentary analysis		
		Cohen and March (1986)	Did you notice the implementation of the institutional development plan?			
		Clegg (1990)	Do you think that plan can handle all institutional demand?			
		McDaniel (2007)	How does this plan work in practice?			
		Pascucci et al. (2016)	Do you have autonomy to act out of planning?			
Organizational improvisation	Triggering factors	Cunha et al. (2003)	What kind of unexpected situations did you face in academic management?	Documentary analysis Interviews with managers Non-participant observation		
		Crossan and Sorrenti (2005)	In an unexpected situation, what kind of actions were taken?			
		Flach and Antonello (2011)				
		Giustiniano et al. (2016)				
	Manifestations	Moorman and Miner (1998)	In what context did you experience an unexpected situation?	Interviews with managers Non-participant observation		
		Crossan and Sorrenti (2005)	Have you noticed the time pressure for immediate action in unforeseen situations?			
		Giustiniano et al. (2016)				
		Intuition	Klein (1998)		Have you noticed the use of intuition in improvised actions?	Interviews with managers Non-participant observation
			Crossan and Sorrenti (2005)			
			Dane and Pratt (2007)			
Organizational improvisation constructs	Innovation	Barnard (2016)		Documentary analysis Interviews with managers Non-participant observation		
		Moorman and Miner (1998)	Were improvised actions incorporated into planning?			
		Weick (2002)	Could improvisation be considered a path to innovation?			
	Bricolage	Batista (2008)	How has something new been introduced in your institution?	Interviews with managers Non-participant observation		
		O'Sullivan and Dooley (2009)				
		Backer et al. (2003)	Have the improvisations been carried out with the resources that it possesses (material, affective and cognitive resources)?			
		Cunha (2005)	How were the improvisations performed in relation to the resources (material, affective and cognitive) that HEI possessed?			
	Learning	Lévi-Strauss (2005)		Non-participant observation		
		Backer et al. (2003)	How have improvisations contributed to organizational learning?			
		Crossan and Sorrenti (2005)				
		Leone (2010)		Non-participant observation		



Table 3 Manifestations of improvisation and triggering factors. *Source:* Prepared by the authors

Constructs of improvisation	Major manifestations de improvisation	Triggering factors
1. Learning	Development of new competencies as from the experience with unexpected situations	Inexperience in management Unexpected situation
	Conflict in informal relationships with a strong influence on professional development	Crisis situation Disorder
	Reorganization process in the preparation of ENADE (Brazilian Examination of Students' Performance)	Adaptation Pressure of time
2. Bricolage	Anticipation of institutional processes due to the need for emergency certification	Sense of urgency Pressure of time
	Restructuring of the Academic Program with the professionals available	Self-organization Adaptation Autonomy
	Unexpected replacement of professionals	Crisis situation Self-organization
	Restructuring of physical spaces, such as laboratories, with the resources available, yet limited	Crisis situation Adaptation
3. Innovation	Structuring a new academic program	Autonomy Adaptation Innovativity Meeting latent demands
	Breaking the current academic management model, forcing the experimentation of new possibilities	Adaptation Flexibility
	Solutions of emerging educational management	Crisis situation Self-organization
4. Intuition	Retrieval of previous experiences similar to those experienced in management practice	Autonomy Crisis situation
	Limited experience in complex situations.	Inexperience Managerial amateurship
	Inexistence of information to support decision-making	Inexperience in management Unexpected situation

improvisation, evidenced by these constructs, along with the triggering factors, are synthesized in Table 3.

The organizational improvisation was observed to be strongly related to breakage situations and, therefore, the deliberate fusion of conception and execution in a single action (Giustiniano et al. 2016). Pressure for the immediate solution of emerging problems, organizational complexity, the autonomy of the academic managers and pressure from internal and environmental forces were the factors evidenced in the HEI analyzed, which demanded a certain level of improvisation. “The role of the manager is to tackle the day-to-day, in which there is a daily surprise, [...] it is a necessary pressure,” highlighted an academic program coordinator.

Among the real duties of an educational manager, be it an academic program coordinator or a rector, is the competence of dealing with dynamic contexts, characterized by the diversity of agents, ambiguities, the divergence of interests and conflicts. Even though this ability is not always found in academic management professionals due to managerial amateurship (Wescott 2000), it is fundamental for dealing with organizational complexity and the dynamism of this type of organization. None of the managers interviewed had management qualifications. “We do not have administration qualifications, we have to learn from doing [...],” stated an academic program coordinator. They were lecturers without specific experience in management who took on managerial positions, being that these managers capacitation occurred in practice

(Mintzberg 2010). Hence, intuition was used as aspects of improvisation to “cope with” the attribution as a manager, highlighted in Table 3.

An academic director stated that “every day constitutes a new challenge and thus the need to improvise turns a daily occurrence,” corroborating the statement that the ability to improvise turns inherent to the position, hence attributing a much more practical characteristic to the manager function (Mintzberg 2010). The agents’ autonomy is configured as a factor of great relevance, seeing that the organization increases its capacity to respond to unexpected events (Cunha 2002).

The autonomy aspect was pointed out by an academic program coordinator: “I think that if I were not able to take quick decisions out of my routine, out of what has been previously organized, planned, the machine would stall. Any person in my place here has to have some level of flexibility to adjust things.” Autonomy is a relevant factor in academic management, leading to the understanding that they are more flexible structures, a characteristic also important to improvisation, in which experimentation is possible (Cunha 2002).

An experienced academic manager pointed out that, in practice, he cannot get “stuck” to that stated in bureaucratic standards or institutional levels. This interviewee affirmed: “[...] If there is nothing written, you can be sure I’ll find a way to satisfy the student.” Despite the apparent good intention contained in the manifestation of the manager, his posture, if taken to extremes, may pose a risk to the HEI, as it holds the potential negative effect of improvisation, also called “the dark side of improvisation” (Giustiniano et al. 2016) and, concurrently, lead to a breach in the institutional standards (Weick 1995).

Another academic manager, with 8-year experience in the position, showed concern about abiding by the institutional plans, mainly as regards the pedagogical program project (PPP). At the time, he highlighted that he resorts to this document whenever difficulties arise. From this perspective, a gap is verified between the PPP and the academic program, opening the way to sensemaking (Weick 1995). Improvisation practices were a creative response by the academic program management, faced with the new reality. The creative potential of improvisation is reflected when improvisation is used as a facilitator for performing the manager functions (Leone 2010).

Learning, understood as a potential result of improvisation, leads to the acquisition of new competencies and to the consolidation of new knowledge (Leone 2010). The focus on learning corroborates the statement of the academic manager, as a reaction to internal changes “[...] Can improvisation yield knowledge? Certainly, not only for me. Because other people will see and learn.” As an academic manager pointed out, “everyone learns individually and

also all those who participate.” In practice, the relationship of improvisation with individual and collective learning was perceived, as was the issue of their complementarity (Crossan and Sorrenti 2005), by means of acquiring new competencies, at a given time and a very specific context (Miner et al. 2001). Among these competencies are creativity, flexibility and adaptation.

We observed that the improvisation practices, through the interactions among the social agents, always took place in real time, in emergency situations requiring immediate responses. Faced with the unexpected, improvisation has turned into a facilitator, a way of reacting and trying to solve unpredictable situations. The managers’ competence, as from previous experiences, was verified to be indispensable for improvisation to be manifested. An evidence of collective learning, from the autonomy and interaction of academic managers in unexpected situations, is pointed out by an academic director, as a response to internal pressures “Whenever we are faced with a situation that moves us away from planning [...] there is always a collegiate to decide with me; this is thus a way, but a way I found over time.” Learning occurred in real time, which differs from the more usual type acquired by experience-based repetition.

The impact of experience in real time would be a specific characteristic of improvisation. Therefore, the experience amassed by the manager is concurrently the base and a factor limiting improvisation. There is here a paradox: the managers’ experience influences their managerial practice, but concurrently restrains or limits this practice.

Bricolage was observed to be always intensely present, triggered by the attempt of solving issues that emerged with the resources at hand. It is something inherent to academic organizations: relevant and altruistic goals and a shortage of means to implement them, which always challenge their managers. This approach was reinforced by the statement of a Vice President for Administrative Affairs, in response to the external pressures for adapting to the demands “[...] we receive external demands [...] we are managerially capable, it is an opportunity for us [...] this means you have a commitment with a different economic sustainability [...] you have to find a way.”

Aligning experience and improvisation by combining existing elements to find new uses or new combinations for the elements at hand and, from this, managing to attain new results, can even generate some competitive advantage. Bricolage, as a construct of improvisation, revealed to be part of the managerial practice dependent on the managers’ previous experiences and sensitivity. Examining the experience of HEI, as well as the limitations of resources, managers sought solutions with available resources (Cunha 2005), from the conceptual perspective of “Do it yourself.”



Regarding innovation, the academic managers of this study were observed to be seeking innovations by the traditional planning ways, but they realized this innovation would effectively materialize by informal ways, besides personal and collective initiatives by means of improvisation. These academic managers considered that the moments of “chaos” showed to be great opportunities to improvise and, consequently, to innovate. A Provost commented, as a reaction to internal pressures for changes “[...] one only normally innovates in education when faced with chaos. The innovation I mean is that transformed into practice. [...] educational management solutions as a whole are eventually a result of crises; crisis is thus the best moment to innovate.”

Incremental innovations, of lower value, were observed to process innovations. This also meant an association with the positive effect of improvisation, understood as a potentiality in the search for continuous institutional growth and development and could even induce innovations (Dehlin 2008). The highest point of the innovations that occurred was the issue of breaking with the current model, forcing the experimentation of new possibilities. The managers pointed out these innovations as derived from the improvisations made, all of incremental nature and not as radical innovations as already indicated by the literature on higher education (Moorman and Miner 1998; Cunha 2002; Dehlin 2008).

During the meetings and interviews, the HEI managers were observed to consider innovation essential, longed for and necessary for building knowledge. In these managers’ perception, improvisation can lead to innovation. One institution manager stated the need to improvise, with flexibility and adaptation, to attain innovation, affirming that “The only way to innovate [improvisation], I think. Since what we have today is standard. It is the syllabus, and we follow this plan. However, sometimes there is an occurrence in between that interferes with the syllabus, and you have to change.”

In turn, we verified that the intuition was understood as an experience of the past, which was incorporated in the academic management, with relevant contributions to managerial practice. Although improvisation may occur independently of the intuition benefit, a culture that supports and stimulates the experimentation practiced (present in this HEI), favored improvisation and the emergence of the combination of creativity and innovation. A Provost thus manifested his perception as regards intuition “[...] When the President invited me, I told him ‘Look, I think I’d better get prepared. Give me some 6 months and I’ll look for a course, I’ll try to get qualified’, and he made some fun ‘I’ve been on this road for over 30 years; no course will be able to give you a response to what will come on your way ahead.’ After all, what would be the

fundamental competence for academic managers to cope with the complexity and organizational dynamic, especially in unexpected situations?

Intuition has a relevant role to meet the demand of the unexpected, the urgency, the chaos and the organizational complexity. Intuition showed to be very close to improvisation once the managers manifested the facility in associating both themes. In this sense, they reported that they always improvised, based on the memory represented by the experience previously had. Reinforcing this understanding, an academic program coordinator said “I believe any manager [...] has a diffuse intelligence that gradually learns these sets of information and experiences along with a career and, at the moment it is made necessary, his/her subconscious goes, gets that information and brings it back.”

The managers recognized that the HEI had specific characteristics, with ambiguous and diffuse goals, undefined and fragmented technology, students with individual needs (Baldrige 1983) and loosely articulated relationships (Orton and Weick 1990), yet they appeared not to take into account these characteristics when seeking business management models.

Discussion

Higher education institutions, in their efforts to adapt to a context of uncertainties and surprises, adopt a number of managerial actions, of emergent characters, such as the practices of improvisation. These improvisations do not refer to the absence of planning, seeing that they are practices that foster the support to minimal structures, focused on ensuring the plan in dynamic and unpredictable contexts.

The manifestation of improvisation in academic management, characterized as complex, professional and loosely articulated, occurred mainly when faced with unexpected situations, before the pressure of time, and having the sense of urgency as a scenario. Actions and behaviors emerged before what was predicted, identified along with the plan execution, or even for what had no sort of planning.

Improvisations made by the managers, in general, were essential to face some difficulty and unexpected events, or even to promote adaptation to unexpected situations. The managers improvised with a relative frequency in their day-to-day and recognized the need for some pre-conditions for the occurrence of improvisation, such as minimal structures, flexibility and managerial competence.

Five main points identified in the improvisation practices of the academic management were highlighted, essential to a dynamic organization, with significant

results. First, *there is a minimal structure showed to be fundamental to prevent improvisation from being transformed into random actions*. This minimal structure (Kamoche and Cunha 2001) is represented by visions and missions, along with existing protocols and rules (Weick 1995; Kamoche and Cunha 2001). Flexibility and adaptation, as from the minimal structure, are crucial for bricolage and innovation to occur in the managerial practice of dynamic organizations. In turbulent and dynamic environments, with an intense pace of changes, bricolage should be more stressed, aiming to promote fast responses, which can be very valuable (Cunha 2005).

Secondly, *the role and the qualification of the academic manager in the practice of improvisation as a means to support planning are fundamental in a dynamic context*. The importance of autonomy is detached to meet the challenges of managerial practice, especially when taking decision amidst uncertainties and unpredictability. Hence, permeating through the elements of intuition, bricolage, learning and innovation turn determinant to yield significant results due to the organizational complexity. Managers' autonomy constitutes a factor of great relevance, seeing that the organization increases the ability to respond to unexpected events (Cunha 2002).

It was also possible to recognize the competence of the professionals as another pre-condition to be able to improvise. Attention was called to that, whenever the subjects of the research improvised based on previous experiences (Weick 1998) and admitted they learned from practising improvisation. Predominantly constituted by professionals with adequate qualifications, titles and excellent prestige in their respective areas, several academic managers do not have qualifications or even experiences in management, which corroborates the paradigm that higher education institutions form professionals, yet have an amateur managerial body (Wescott 2000).

Thirdly, *the existence of internal political forces in the organization*, such as the groups of interests, ambiguities of goals and divergences in discussions, is factors that influence the practices of improvisation. Informal relationships can also be highlighted in the way academic managers are selected, by means of internal election processes or appointments by the high HEI management. Very often, academic managers are lecturers that discontinue, or even give up on their teaching career, in which they are experts, to act in academic management, being transformed into amateur managers without previous experience in this area of activity.

No greater concern was perceived regarding specific qualifications for managing the institution or even previous experience. The election becomes guided by political issues and ratio of interests. This factor can certainly influence the practices of improvisation. This also meant

that the qualification of these professionals predominantly occurred along with the practice of their functions (Mintzberg 2010).

Fourthly, *the difficulty in evidencing improvisation in the results of dynamic organizations*. For being loosely articulated systems, the adoption of managerial models deriving from more rational contexts, like those observed in organizations characterized by being strongly articulated systems, leads to a number of difficulties and failures. Although academic managers are firmly resolved to behave within this rationality and to be limited to doing it, when absolutely necessary, in practice they improvise, in search for better results and innovation faced with the limitations of the bureaucratic rationality practiced and of the unexpected events challenging them.

Mainly observed are the incremental innovations, of smaller value, which would be the process innovations. This also meant the association with a positive effect of improvisation, understood as a potentiality in the search for continuous institutional growth and development, can also induce innovations (Dehlin 2008). Time appears as another fundamental variable for improvisation, both in the sense of pressure for action, and also linked to the fact that improvisation always occurs in real time, in emergency situations requiring immediate responses (Crossan and Sorrenti 2005).

Finally, the fifth point, *the urgency for action*. Things keep changing, planning starts “shrinking,” and the external dynamic can change. In many cases of improvisation practices, the pressure of time may be perceived as the urgency for action. There is no time, in a number of situations, to re-make routines and planning or even to consult the higher spheres before acting; therefore, improvisation is manifested. The sense of urgency can be evidenced in most manifestations as one of the major factors fostering the practice, as a mean of providing immediate and efficient responses by the managers. The manifestations of improvisation are followed by a strong need to act, of taking an attitude.

Previously, well-established routines reduce the occurrence of improvisation (Cunha et al. 2003). Conversely, clearly defined routines may facilitate improvisation since the agents involved in conducting them at a given moment perceived they could make new combinations with what had been established and feel confident about that. This managers' confidence in improvising allows routines to be adapted, adequately meeting the requirements of a dynamic organization.

As practical implications, improvisation practices proved to be an important resource of managerial practice, particularly at moments when planned actions were impotent or inapplicable before problems that emerged and required solutions. The importance of improvisation for



managers of academic organizations is grouped into the following areas:

1. The contribution of improvisation was made clear, as a counterpoint to the limitations of planning. A dynamic and complex environment makes improvisational practices arise in academic management day-to-day. Unexpected factors impose on academic managers the need to improvise to meet challenges.
2. Improvisation is a social action. This requires from academic managers the capacity to deal with the different segments with power and influence in the organization. Complex relationships with lecturers and students, the plurality of institutional, educational and social interests make it a challenge for academic managers to conduct their work and to meet challenges without resorting to practices of improvisation;
3. Improvisation tends to be more often practiced by managers with greater experience in management. The managers' autonomy also contributes to these new initiatives of improvisation. Since improvisation is a process that allows new insights and findings, it contributes to a greater knowledge of the improvisational practice and its limitations;
4. The existence of a culture favorable to experimentation, to the autonomy of managers, contributes to the revision of processes and to relationships in a system loosely articulated, thus contributing to disseminating improvisational practices in the academic environment. The incorporation of bricolage as a way of solving problems and of better using the resources available showed to be promising, through new combinations of the elements at hand and, thereby, some competitive advantage.

Conclusions

The study concretely contributed to examining the different manifestations of improvisation in the professional practice of academic management. It demonstrated the influence of elements, such as autonomy, adaptation, self-organization and nonlinearity at the university studied, as critical elements for practicing improvisation and for more efficacious management. It explored the influence of autonomy on the academic managers in the informal relationships deriving from internal and external pressures affecting the performance of the organization.

As regards, the constructs related to improvisation, such as intuition, bricolage, learning and innovation, all were strongly evidenced and associated with the manifestations of improvisation. The creative potential of improvisation,

particularly in complex and dynamic contexts, has been still little explored.

As implications in managerial practice, it was highlighted that unexpected factors impose on academic managers the need to improvise to face challenges. In this context, improvisation tends to be more practiced by managers with greater management experience. In addition, the existence of a culture conducive to experimentation, to the autonomy of managers, contributes to the review of processes and relationships in a flexible and loosely coupled system.

As well as limits to managerial practice in any organization, there are also limitations to practices of improvisation on the part of academic managers. A complex context as the academic environment makes the management of the system be always open and able to deal with uncertainties, policies, groups of interest and limited reasonability, which makes of critical improvisation and management more of an art than a science.

As a limitation of this study, some interviewees addressed prejudice or restrictions with the phenomenon of organizational improvisation, since some managers thought of management with bureaucratic foundations. This rational perspective may have influenced the results, although the context of the managers is in a dynamic and complex organization. For some interviewees, the research brought some concerns, some preferred not to be recorded, which denoted discomfort with political issues involved in the institution, which may have influenced the obtaining of information. The case study method was considered adequate for this study because it is a strategy used for the research of contemporary events in contextual conditions. In this way, it was possible to identify improvisation practices in an academic management context and related the constructs of intuition, bricolage, innovation and learning, presenting significant results for higher education institution.

After all, for further reflection, (1) are managers prepared, technically and emotionally, to improvise for better results? (2) What kind of skills does the manager need to develop to achieve meaningful improvisation practices? (3) How can improvisation practices of HEI managers be improved?

Acknowledgements This study was supported by CAPES (Grant No. 88881.188947/2018-01).

References

- Allen, P., Maguire, S., & Mckelvey, B. (2011). *Handbook of complexity and management*. London: Sage Publications.
- Argyris, C., & Schon, D. (1996). *Organizational learning II*. Reading, MA: Addison-Wesley.

- Backer, T., Miner, A. S., & Eesley, D. T. (2003). Improvising firms: Bricolage, account giving and improvisational competencies in the founding process. *Research Policy*, 32(2), 255–276.
- Baldrige, J. V. (1983). *Strategic planning in higher education: Does the emperor have any clothes? The dynamics of organizational change in education*. Berkeley: McCutchan Publishing Corporation.
- Bardin, L. (2010). *Análise de conteúdo* (Vol. 70). Lisboa: Edições.
- Barnard, C. I. (2016). *The functions of the executive*. Cambridge, MA: Harvard University Press, Ed. Especial.
- Batista, M. G. C. (2008). *Sob a Superfície: o papel da improvisação no contexto organizacional*. Programa de Doutorado do Instituto Superior de Economia e Gestão, Universidade Técnica de Lisboa, Lisboa.
- Bogdan, R. C., & Biklen, S. K. (2010). *Investigação qualitativa em educação*. Porto: Porto Editora.
- Caldwell, B. (2002). Autonomy and self-management: Concepts and evidence. In T. Bush & L. Bell (Eds.), *The principles and practice of educational management*. London: SAGE.
- Caldwell, B. (2008). Reconceptualising the self-managing school. *Educational Management, Administration and Leadership*, 36(2), 235–252.
- Chowdary, B. V. (2001). Flexibility and related issues in evaluation and selection of technological systems. *Global Journal of Flexible Systems Management*, 2(2), 11–20.
- Cilliers, P. (2002). Why we cannot know complex things completely. *Emergence*, 4(1), 77–84.
- Clegg, S. R. (1990). *Frameworks of power*. London: Sage Publications.
- Cohen, M. D., & March, J. G. (1986). *Leadership and ambiguity. The American College President*. New York: McGraw-Hill.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Crossan, M., & Hurst, D. (2003). *Strategic renewal as improvisation: Reconciling the tension between exploration and exploitation*. Working paper. University of Western Ontario, Richard Ivey Business School.
- Crossan, M., & Sorrenti, M. (2005). Making sense of improvisation. In H. N. Kamoche, M. P. Cunha, & J. V. Cunha (Eds.), *Organization improvisation*. London and New York: Routledge.
- Cunha, M. P. (2002). All That Jazz: Três Aplicações do Conceito de Improvisação Organizacional. *RAE-Revista de Administração de Empresas*, 42(3), 36–42.
- Cunha, M. P. (2005). *Bricolage in organizations*. London: Blackwell.
- Cunha, M. P., Cunha, J. V., & Kamoche, K. (1999). Organizational improvisation: What, when, how and why. *International Journal of Management Reviews*, Hoboken, 1(3), 299–341.
- Cunha, J. V., Cunha, M. P., & Kamoche, K. (2003). Organizational improvisation: A contextual approach. *International Review of Sociology*, 13(3), 567–589.
- Dane, E., & Pratt, M. G. (2007). Exploring intuition and its role in managerial decision making. *Academy of Management Review*, 32(1), 33–54.
- Dehlin, E. (2008). *The flesh and blood of improvisation. A Study of everyday organization*. Trondheim: NTNU.
- Deepali, Jain, S. K., & Chaudhary, H. (2017). Quest for effective mentors: a way of mentoring potential entrepreneurs successfully. *Global Journal of Flexible Systems Management*, 18(2), 99–109.
- Eisenhardt, K. M., Kahwajy, J. L., & Bourgeois, L. J. (1997). Conflict and strategic choice. *California Management Review*, 39(2), 42–62.
- Ellström, P. E. (2007). Quatro faces das organizações educacionais. *Revista Brasileira de Política e Administração da Educação*, 23(3), 449–461.
- Flach, L., & Antonello, C. S. (2011). Improvisação e aprendizagem nas organizações: reflexões a partir da metáfora da improvisação no teatro e na música. *BASE - Revista de Administração e Contabilidade da UNISINOS*, 8(2), 173–188.
- Freeman, C., & Soete, L. (1997). *The economics of industrial innovation* (3rd ed.). London: Routledge.
- Giustiniano, L., Cunha, M. P., & Clegg, S. (2016). The dark side of organizational improvisation: Lessons from the sinking of Costa Concordia. *Business Horizons*, 59(2), 223–232.
- Gorod, A., Gandhi, J., Sauser, B., & Boardman, J. (2017). Flexibility of system of systems. *Global Journal of Flexible Systems Management*, 9(4), 21–31.
- Hadida, A. L., Tavainen, W., & Rose, J. (2015). Organizational improvisation: A consolidating review and framework. *International Journal of Management Reviews*, 17(4), 437–459.
- Hollnagel, E., Woods, D. D., & Leveson, N. (2006). *Resilience engineering: Concepts and precepts*. Basingstoke: Taylor & Francis.
- Jarzabkowski, P., & Fenton, E. (2006). Strategizing and organizing in pluralistic contexts. *Long Range Planning*, 39(6), 631–648.
- Jena, L. K., & Memon, N. Z. (2018). Does workplace flexibility usher innovation? A moderated mediation model on the enablers of innovative workplace behavior. *Global Journal of Flexible Systems Management*, 19(1), 5–17.
- Kamoche, K., & Cunha, M. P. (2001). Minimal structures: From jazz improvisation to product innovation. *Organization Studies*, 22(5), 733–764.
- Keller, G. (1983). *Academic strategy: The management revolution in American higher education*. Baltimore: The Johns Hopkins University Press.
- Klein, G. (1998). *Fontes do poder: o modo como as pessoas tomam decisões*. Lisboa: Instituto Piaget.
- Leone, L. (2010). A critical review of improvisation in organizations: Open issues and future research directions. In *Summer conference 2010 on “opening up innovation: strategy, organization and technology”*. Imperial College London Business School.
- Lévi-Strauss, C. (2005). *O pensamento selvagem*. São Paulo: Companhia Editora Nacional.
- Lissack, M. R. (2002). *The interaction of complexity and management*. Westport, CT: Greenwood Publishing Group.
- March, J. G. (1999). *The pursuit of organization intelligence*. Malden, MA: Blackwell.
- March, J. G., & Olsen, J. P. (2010). *Rediscovering institutions—The organizations of politics*. New York: Simon and Schuster.
- Marginson, S. (2010). Higher education in the global knowledge economy. *Procedia-Social and Behavioral Sciences*, 2(5), 6962–6980.
- McDaniel, R. (2007). Management strategies for complex adaptive systems. *Performance Improvement Quarterly*, 20(2), 21–42.
- Meyer, V., & Lopes, M. C. B. (2015). Administering the immeasurable: A critique of academic organizations. *Cadernos EBAPE. BR, Rio de Janeiro*, 13(1), 40–51.
- Miner, A. S., Bassoff, P., & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly*, 46(2), 304–337.
- Mintzberg, H. (2010). *Managing: desvendando o dia a dia da gestão. Tradução de Francisco Araújo da Costa. Revisão Técnica: Roberto Fachin*. Porto Alegre: Bookman.
- Mitleton-Kelly, E. (2011). A complexity theory approach to sustainability: A longitudinal study in two London NHS hospitals. *The Learning Organization*, 18(1), 45–53.
- Moorman, C., & Miner, A. S. (1998). Organizational improvisation and organizational memory. *Academy of Management Review*, Briarcliff Manor, 23(4), 698–723.
- O’Sullivan, D., & Dooley, L. (2009). *Applying the innovation*. Thousand Oaks, CA: Sage Publications.

- Orton, J. D., & Weick, L. E. (1990). Loosely coupled systems: A reconceptualization. *The Academy of Management Review*, 15(2), 203–223.
- Pascucci, L., Meyer, V., Jr., Magioni, B., & Sena, R. (2016). Managerialism na gestão universitária: implicações do planejamento estratégico segundo a percepção de gestores de uma universidade pública. *Revista Gestão Universitária na América Latina - GUAL, Florianópolis*, 9(1), 37–59.
- Piansongnern, O. (2016). Chinese Leadership and Its Impacts on Innovative Work Behavior of the Thai Employees. *Global Journal of Flexible Systems Management*, 17(1), 15–27.
- Richardson, K. A. (2011). Complexity and management: a pluralistic view. In P. Allen, S. Maguire, & B. McKelvey (Eds.), *The SAGE handbook of complexity and management* (pp. 366–382). London: Sage Publications Ltd.
- Ritter, T., Wilkinson, I. F., & Johnston, W. J. (2004). Managing in complex business networks. *Industrial Marketing Management*, 33(3), 175–183.
- Rogers, E. (2003). *Difusion of innovation*. New York: The Free Press.
- Simon, H. A. (1991). Bounded rationality and organizational learning. *Organization Science, Pittsburg*, 2(1), 125–134.
- Stacey, R. (2011). *Strategic management and organisational dynamics: The challenge of complexity*. London: Prentice Hall.
- Stacey, R. D., Griffin, D., & Shaw, P. (2000). *Complexity and management: Fad or radical challenge to systems thinking?*. Abingdon: Routledge.
- Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York: Guilford Press.
- Sushil, (2001). Enterprise flexibility. *Global Journal of Flexible Systems Management*, 2(4), 53–58.
- Weick, K. (1995). *Sensemaking in organizations*. London: Sage Publications.
- Weick, K. (1998). Improvisation as a mindset for organizational analysis. *Organization Science Catonsville*, 9(5), 543–555.
- Weick, K. (2002). A estética da imperfeição em orquestras e organizações. *RAE - Revista de Administração de Empresas*, 42(3), 6–18.
- Wescott, J. W. (2000). Perspectives from a new department chair. *The Journal of Technology stud Universities*, 26(2), 1–5.
- Zimmerman, B. (1998). *Edgware: Insights from complexity science of health care leaders*. Washington, DC: Veterans Health Affairs.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Key Questions

- (1) Are managers prepared, technically and emotionally, to improvise for better results?
- (2) What kind of skills does the manager need to develop to achieve meaningful improvisation practices?
- (3) How can improvisation practices of HEI managers be improved?



Vera Lucia Telles Scaglione Psychologist from Pontifícia Universidade Católica de São Paulo (PUC-SP). Ph.D. from the Business School of PUCPR in Business Administration (2017). Master in Business Administration from the FEI-SP University Center for Innovation Management (2012). MBA in Academic Management with an emphasis on Institutional Evaluation by the São

Camilo University Center. Professor of undergraduate and postgraduate courses, General Director and Coordinator of Lato Sensu Postgraduate courses at the Paulista Faculty of Arts—FPA, in São Paulo. Experience in the area of Administration, with emphasis on Academic Management.



Victor Meyer Jr Bachelor of Science in Economics at Universidade Federal de Santa Catarina, MS and Ph.D. in Administration from the University of Houston and postdoctoral degree from the University of Michigan, USA. He is currently Professor of the Postgraduate Program (Master's and Doctoral Degree) in Administration at Pontifícia Universidade Católica do Paraná—

PUCPR. His main focus of research and professional performance comprises: strategic management in complex organizations and the Third Sector, with special interest in managerial practices, managerialism and improvisation in academic and hospital organizations.



Diórgenes Falcão Mamédio PhD in Administration from the Pontifical Catholic University of Paraná - PUCPR, Brazil, to be concluded in December, 2019. Ph.D. Sandwich experience in the NOVA School of Business and Economics in Lisbon, Portugal. Has developed research in the field of Organizational Complexity, Improvisation and Management of Innovation Projects in Higher

Education. Master in Administration, with emphasis in Strategy, by PUCPR, developed research in Complexity and Project Management in dynamic contexts, such as hospitals. Postgraduate in Project Management from the Faculty of Administration and Economics—FAE Business School. Graduation in Design from the Federal Technological University of Parana, Brazil.