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Assessing the authenticity of cases, internships and problem-based learning as managerial learning experiences: Concepts, methods and lessons for practice

Andre Perusso *, Thomas Baaken

Science-to-Business Research Centre, Munster School of Business Münster University of Applied Sciences, Germany, Johann-Krane-Weg 23, 48149, Münster, Germany

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ABSTRACT

It has been long argued that business education must transform itself to support students' acquisition of twenty-first-century competencies, such as critical thinking, effective communication, and collaborative problem-solving. Recognising the limitations of the lecture model in fostering these competencies, scholars favour approaches that integrate theory with practice. However, the question of how to best introduce practice in the business curriculum remains unanswered. Are some methods for doing so better than others? This paper contributes to this discussion by analysing the three most common approaches currently used to introduce practice in the business curriculum: the case method, internships, and problem-based learning (PBL). Each of these methods is examined in relation to how it incorporates what scholars identify as the four building blocks of a management learning epistemology: (1) ill-defined problems where students (2) execute solutions in real-life (3) in close collaboration with a real organisation, with learning (4) supported by a process of reflection. Based on this appraisal, this paper suggests that none of these popular approaches adequately incorporate the four blocks, but PBL is the approach best suited to adaptation. An adapted version of PBL that incorporates these four building blocks is presented and illustrated with two real-life examples.

1. Introduction

The recent trajectory of business schools' curriculum development clearly shows that scientific and analytic components dominate over practice and experience (Glen et al., 2014; Raelin, 2009). Management-by-analysis, as Mintzberg (2004) describes the 'scientification' of management education, emerged out of the Ford and Carnegie reports from the 70s in the US. These reports maintained that research will produce general scientific knowledge that could be directly applied to managerial problems (Pierson, 1959). Supporters of this idea believed that managers should master scientific business theory so that they can transfer those theoretical models to the organisational world (Bennis & O'Toole, 2005).

The main outcome of this effort to connect management to science is a curriculum focused only on business functions (e.g. marketing, finance, and operations) that professors treated much like scientific disciplines (Pfeffer & Fong, 2002). Underlying these functions were abstract models and general strategies allegedly able to solve a variety of business problems in any organisation,

* Corresponding author.
E-mail addresses: perusso@fh-muenster.de (A. Perusso), baaken@fh-muenster.de (T. Baaken).

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independent of size or sector (Holman, 2000).

Concurrently, empirical studies on the nature of managerial work confronted this positivist view of management. Research conducted across different organisations and hierarchical levels have connected management less with science and more with a practice that is collective, situated, and provisional (Corradi et al., 2010; Graham, 2017; Kotter, 1982; Kurke & Aldrich, 1983; Mintzberg, 1973, 2011). It emphasises doing and involves the application of both explicit (tools, concepts, and models deriving from business theory) and tacit knowledge (intuitive action based on specific contexts), skills (e.g. communication) and attitudes (e.g. self-efficacy) (Allen & Simpson, 2019; McMurray et al., 2016). Central to the 'management as a practice' model is the acknowledgement that the social, historical, and structural context in which actions take place should shape how individuals learn and acquire competence (Raelin, 2007).

Recognising the crucial role of practice in management learning, educators have spent the past four decades searching for an epistemology of management practice that could help prepare better managers (Scott, 2015). Notably, this epistemology should rely on theory but also consider intrinsic connections with the social context, so it can replicate the way managers learn naturally at work (Raelin, 2016). Also, it should be a space where students learn by doing but are supported by reflective mechanisms that help them transform experience into learning (Nicol, 2010). To that end, literature offers compelling arguments for each of four building blocks: (1) ill-defined problems where students (2) execute solutions in real-life (3) in close collaboration with a real organisation, with learning (4) supported by a process of reflection. (Glen et al., 2014; Holman, 2000; Kayes, 2002; Kolb & Kolb, 2005; Mintzberg, 2004; Raelin, 2007; Revans, 2011; Reynolds & Vince, 2007; Schon, 1987; Scott, 2017).

While scholars rarely question the relevance of these four elements in the design of comprehensive learning experiences, few studies have looked into the extent to which these elements actually appear in practice-based learning (e.g. Holman, 2000; Korpiaho et al., 2007). Similarly, there is no clear concern on the part of educators to create learning experiences that explicitly incorporate all these four blocks (Raelin, 2009). But without this concern, it is hard to tell if students are being offered comprehensive managerial experiences or simply practical activities.

To address this issue, this paper explores how the three most common approaches currently used to introduce practice in the business curriculum—the case method, internships, and PBL (Farashahi & Tajeddin, 2018)—incorporate the four building blocks. Given the increasing number of educators that see in these approaches the solution to the lack of practice in the business curriculum, this evaluation may help clarify important issues in regards to management education pedagogy as it (1) shows the limitations of these three popular approaches in delivering comprehensive learning experiences to students and (2) informs on the extent to which cases, internships and PBL can be adapted to incorporate these four building blocks.

2. Methods

This paper examines the following research question (RQ):

> How the three most common methods used to introduce practice in the business curriculum (the case method, internships, and PBL) incorporate the four building blocks of a management learning epistemology (ill-defined problems, real-worldness, execution and reflection)?

From a methodological perspective, this investigation constitutes what Gilson and Goldberg (2015, p.127) have called a conceptual paper: "beyond summarizing recent research, conceptual papers provide integration of literature, offer an integrated framework, and highlight directions for future inquiry."

Within this definition, we followed what Jaakkolla (2020) describes as a theory synthesis approach, which aim is to structure a fragmented field by analyzing it through a particular theoretical lens. To do this, theory synthesis distinguishes between the *domain theory* and *method theory* (Jaakkolla, 2020). The domain theory is the set of knowledge that one seeks to advance— in our case, how well practice is introduced in the business curriculum. The method theory constitutes the theoretical lens used to investigate and provide new insights into the domain theory— here, the four building blocks which scholars believe to be the foundation of a management learning epistemology.

To construct the chain of evidence proposed by theory synthesis we followed Hirschheim's (2008) framework, which sustains that an argument has three necessary components: *claims, grounds*, and *warrants*.

Claims are the outcomes of the research in the form of explicit statements that the reader is being asked to accept as valid. As the following chapters will detail, the claim here is that none of the most common approaches to introduce practice in the business curriculum fully incorporates all of the four building blocks, but PBL is more susceptible to adaptation than cases and internships.

Grounds are the evidence and reasoning used to support the claim. Evidence sustaining the notion that a management learning epistemology is comprised of four building blocks arrives from experiential learning and socially-situated learning theories (Table 1 in section 3 details the relevant literature). Evidence to support the claim that PBL is more susceptible to adaptation than cases and internships comes from definitions, examples of implementation, and critique of cases, internships and PBL obtained from articles published between 2000 and 2020 in five journals that specialize in management education: Academy of Management Learning & Education, Journal of Management Education, Management Learning, Journal of Education for Business, and The International Journal of Management Education (Table 2 in section 4 details the relevant literature).

Warrants are the underlying assumptions that link grounds to claims. The warrant here is that, although the implementation of cases, internships and PBL differ from business school to business school, there are generally accepted characteristics of these approaches that allow us to speculate on how well they incorporate the four building blocks. Similarly, we are accepting that the four building blocks are important and necessary components of any comprehensive learning experience.

Last, as suggested by Gilson and Goldberg (2015), conceptual papers should offer a *bridge between theory and practice*. The present paper does that by providing a conceptual model for an adjusted version of PBL that, arguably, is best positioned to integrate the four building blocks (see Fig. 1 in section 5). This model is illustrated with two examples of programmes of study designed along its lines.

In the following sections, we introduce the method theory (the four building blocks), the domain theory (how practice is typically introduced into the business curricula) and discuss how to advance the domain theory in light of our analysis (by proposing a way forward for cases, internships and PBL).

3. The four building blocks of a managerial learning epistemology

To explore how well practice is introduced in the business curriculum, one needs first to define the theoretical lens used to examine it— or the method theory. The method theory suggests that practice should be introduced in the business curriculum through (1) ill-defined problems where students (2) execute solutions in real-life (3) in close collaboration with a real organisation, with learning (4) supported by a process of reflection. The following sections discuss why.

3.1. Ill-defined problems

Whereas managerial problems now and then lend themselves to technical solutions, most managerial issues are unstructured (Glen et al., 2014; Latham et al., 2004; Raelin, 2007; Schon, 1987). When confronting these problems, the manager's expertise does not entail applying a body of technical knowledge but rather identifying and framing the issue. Once framed, the problem might be subject to a technical solution. However, problem-framing itself is not a technical-scientific activity. Quite the contrary; problem-framing is what Schon (1987, p.236) calls the 'art' of managing.

Similarly, Revans (2011) noted that programmed knowledge is limited to solving problems where the answer is thought to be known. But because managerial problems often disrupt this logic and overstep the established borders of management theory, they require insightful solutions which theory alone cannot provide. Hence, to become skilled in the 'art' of managing, future managers need to work with challenges that require more than a straightforward application of theoretical models. They need ill-defined problems.

More recent studies have associated the ability to solve ill-defined problems with the notion of integrative thinking, "the capacity to take a cross-functional, multidisciplinary approach to the solution of unstructured business problems" (Latham et al., 2004, p.4). Integrative thinking is considered a central skill to meet the complex problems that characterise 21st-century business practice (Welsh & Dehler, 2012). In these problems, the solution is no longer connected to how well practitioners apply theoretical principles but to a flexible combination of analytical thinking and intuitive, insight-producing processes. While the scientific-analytic model assumes the problem conditions are known *a priori*, integrative thinking accepts that many iterations of the problem are needed before the issues are clarified (Glen et al., 2014).

3.2. Real-worldness

Past studies have shown that simulations can, to a certain extent, emulate the ill-defined nature of management (Sierra, 2020). However, the literature suggests that problems from real organisations bring additional benefits. Different from simulations, real problems carry elements of uncertainty, pressure, moral judgments, and risk— situations managers handle in real life (Baaken et al., 2015). Students also deem them more authentic, increasing their motivation (Tan & Vicente, 2019). But perhaps more importantly, reality offers students invaluable contact with the dynamics of the workplace.

Because much of the manager's job comprises running the daily activities of the organisation, a significant part of what business students need to learn is contextual: what companies are like and how they function (Smith, 2005). Therefore, management education should be concerned with developing students' situational awareness, what Lave and Wenger (1991) call the 'culture of the practice.' For Raelin (2007), only a close interaction with the work environment allows learners to acquire this culture. It is necessary to observe, first-hand, how practitioners go about their daily routines, moves, strategies, and manners. This close interaction should demonstrate to learners that (real) management goes beyond mastery of business theory, requiring a set of skills linked with how well the individual relates to his or her context.

3.3. Execution

Dewey long ago suggested that testing a hypothesis in practice is essential to learning, so one can compare the outcome to one's

initial suppositions (Miettinen, 2000). The same principle supports Argyris and Schon's (1974) differentiation between espoused theories and theories-in-use. Espoused theories develop under theoretical contexts, while theories-in-use emerge separately as learners cope with the pressures and demands of real practice (Harnett, 2012). Consequently, in order to learn, students should not only envisage solutions to ill-defined problems; they should execute their solution in real life. According to Raelin (2007), only the implementation of solutions can show the learner if his or her problem-resolution was insightful or if it merely swapped one misunderstanding for another.

Additionally, the ability to execute ideas in practice is a central part of any manager's job. Kotter's (1982) empirical studies on what managers do showed that the average manager spends more time implementing decisions than making them. Similarly, Revans (2011, p.68) argued that "managers are not employed to describe, to analyse nor to recommend: they are engaged to act". Hence, one should train future managers to take action and not just to stay informed on possible solutions. Despite the view held by the scientific school, managerial problems are highly contextual and provisional. Therefore, if one does not use issues open to a deliverable outcome and with observable consequences, one can hardly distinguish an insightful solution from simple nonsense (Blaylock et al., 2009; Scott, 2017).

3.4. Reflection

'Doing' does not unfold all layers of the learning offered by experience. To learn, one needs to consider what happened and how it happened (Di Stefano et al., 2015). Reflection, therefore, is as essential to learning as action. It helps learners to reconstruct meaning through the questioning of their actions and behaviours (Moon, 2004; Nicol, 2010).

Along these lines, Schon (1987) differentiated reflection-in-action from reflection-on-action. *Reflection-in-action* is a cognitive process that takes place amidst a complex activity; it is a procedure skilful practitioners can do (albeit rarely formalize) that revisits and reinvents assumptions 'on-the-spot' to solve a problem. *Reflection-on-action* implies stepping back from an experience to carefully review and draw lessons from it. Unlike its counterpart, it aims to make explicit what happened in action, foregrounding outcomes of the learning process that might have been overlooked during practice (Cajiao & Burke, 2016; Sadler, 2010).

Both instances of reflection are relevant in business education. Reflection-in-action supports managers in handling the complexity and uncertainty that characterise managerial practice. It is a process intrinsically connected with ill-defined problem-solving (Matthews & Wrigley, 2017; Schon, 1987). Reflection-on-action helps managers better assess their past actions and plan their future decision-making. It nurtures new ideas and improves one's solution database by including not only past practices but also new ones (Raelin, 2007).

Studies indicate that practitioners perform significantly better on subsequent tasks when they reflect *on* what they learned from the task they completed (Di Stefano et al., 2015; Perusso et al., 2019). Yet, research also shows that reflective awareness does not come naturally to managers, let alone students (Nicol, 2010). Individuals are born with natural pain avoidance. To remain in control and avoid pain, we often escape from confronting our own beliefs and rarely question our capabilities (Raelin, 2007). This means that reflectivity needs to be intentionally provoked via educational interventions (Ajjawi & Boud, 2018; Cajiao & Burke, 2016). To that end, Mintzberg (2004) emphasised the value of the university environment. Higher education is based on the premise of moving out of the here-and-now world of practice and entering a set-apart place of learning. Rather than just offering action to students, the business school should be a place where action is carefully examined through reflection (Hibbert, 2012).

Table 1 summarizes the contribution of each of the four building blocks to managerial learning and the respective literature that supports it.

Table 1
Four building blocks of managerial learning.

Building block	Role	Main references
Ill-defined problems	Because real managerial problems are complex and unstructured, future managers need to work with challenges that require more than a straightforward application of theoretical models, or ill-defined problems.	Dehler and Welsh (2014); Glen et al. (2014); Raelin (2007, 2009); Reynolds and Vince (2007); Schon (1987); Scott (2017).
Real-worldness	Different from simulations or cases, real-world problems carry elements of uncertainty, pressure, moral judgments, and risk—situations managers handle in real life. Additionally, they offer contact with authentic work environments, allowing learners to acquire the 'culture of the practice'.	Baaken et al. (2015); Boud and Solomon (2001); Lave and Wenger (1991); Raelin (2007); Smith (2005); Tan and Vicente (2019).
Execution	Business solutions are not conceived neatly in the mind of managers but are the result of a process of adaptation. Therefore, is not enough to be informed about potential solutions. Students need to execute ideas in real life to capture the complexity of management.	Argyris and Schon (1974); Blaylock et al. (2009); Mintzberg (2004); Raelin (2007); Revans (2011); Scott (2017).
Reflection	Reflection supports the transformation of experience into learning. The literature distinguishes between reflection-in-action, or cognitive processes that take place amidst a complex activity, and reflection-on-action, or the process of stepping back from experience to review and draw lessons from it. Both are essential to learning.	Ajjawi and Boud (2018); Cajiao and Burke (2016); Hibbert (2012); Mintzberg (2004); Moon (2004); Nicol (2010); Sadler (2010); Schon (1987).

4. How practice is typically introduced in the business curriculum: cases, internships and PBL

This section explores how cases, internships and PBL typically incorporate the four building blocks. First, we provide a broad definition of each approach. Then, we explore the extent to which each approach incorporates the different blocks.

4.1. The case method

One way to introduce practice in the business curriculum is by discussing a relevant situation that occurred in a real company. This is the logic behind the case method, the most popular way to introduce practice in business education[1] (Bridgman et al., 2018). The original Harvard Case is an in-class activity where students take on the role of a particular decision-maker, normally a senior executive. Participants discuss concrete management situations and try to provide solutions or recommendations for the issues at stake (Farashahi & Tajeddin, 2018). Contrasting with lecture-based teaching, the case method emphasises discussion, interaction and to some extent problem-solving (Sachau & Naas, 2010). Supporters of this approach argue that students' active participation results in better learning, especially in the cognitive, affective, and practical domains (Bridgman et al., 2018). The cognitive domain features the ability to analyse, synthesize, and evaluate knowledge. The affective domain relates to the development of personal and interpersonal skills, while the practical domain relates to the capacity to 'do' certain actions closely associated with the manager's job, like communicate effectively, work well in teams, and motivate others.

4.1.1. The case method and the four building blocks

The case method adds some level of realism to the learning experience by basing each case on a real corporate problem (Theroux & Kilbane, 2004). But as realistic as a case might be, it does not offer students genuine contact with the work environment, as the case discussion almost always take place in the classroom (Druckman & Ebner, 2017; Gosling & Mintzberg, 2006). Similarly, though well-suited for developing analytical thinking, case method problems do not always capture the unstructured nature of real management problems (Carriger, 2015). While exceptions exist (e.g. Bridgman et al., 2018), typically the case method works with clearly defined goals selected by the instructor to help learners understand and synthesize business theory. They have clear answers and most of the materials needed to make decisions are embedded in the case (Ungaretti et al., 2015). In line with the scientific view of management, the case method often grounds itself in the application of business theory to rather generic situations (McCarthy & McCarthy, 2006). It assumes that if learners can solve a problem in a classroom, they can apply the same principles to solve any problem later in professional life (Bridgman et al., 2016).

Moreover, the case method does not give students the chance to implement solutions in practice: students' decisions have no impact beyond the classroom (Revans, 2011) and learners do not have the chance of seeing the consequence of their decisions (Farashahi & Tajeddin, 2018).

Last, while students reflect while solving the case (in line with the notion of reflection-in-action) and receive feedback from lectures on the merit of their solutions to the case, its pedagogy often lacks more structured reflection mechanisms (Gosling & Mintzberg, 2006). Particularly, a (collective) reflexive discussion that extends beyond the resolution of the case to include the process that leads to the solution, or a meta-reflection (Grey, 2004).

4.2. Internships

If paper-and-pencil cases do not provide the first-hand experiences students need, action is often suggested as the solution (Mintzberg, 2004). One alternative to introducing more action into the business curriculum is to send students to short periods of in-company work. In business education, this has been translated into a growing number of internships, work placements, or similar arrangements (D'Abate et al., 2009).

The pedagogical philosophy underpinning internships is the belief that managerial knowledge and skills are not merely acquired through academic learning but should be complemented through engagement with real-work situations (Raelin, 2007). But in practical terms, the connection between academic learning and learning in the workplace has grown out of a demand from employers and students to add practical value to the highly theoretical curriculum of higher education institutions (Holman, 2000). Employers value an education that prepares learners for future employment, enhancing their career skills and labour market readiness (Clark, 2003). Similarly, students see a business degree not just as learning for learning's sake but as an investment in their future lives in the labour market (Jackson, 2015).

Not finding this impetus in traditional academic programmes, work-integrated learning came as a natural alternative (Cook et al., 2015). It invites a closer partnership between higher education and industry (Narayanan et al., 2010). The success of such activities rely on a balance between theory and practice, where learners apply what they have learned in academia in the workplace (Clark, 2003). However, as identified later in this paper, research has recognised challenges in promoting successful examples of internships.

4.2.1. Internships and the four building blocks

Because students work in a real organisation it is clear that internships provide contact with the work environment. But the fact that

[1] Not to be confused with 'live' case studies. Similar to PBL, in live case studies participants work on a real business issue that an organisation is currently facing.

internships consist of real work experiences does not necessarily mean that they offer contact with the complex and unstructured nature of the managerial practice (Raelin, 2007).

Although designed to be authentic managerial experiences, internships often translate into a series of operating tasks based on the immediate needs of the organisations, where interns are treated much like regular but cheaper employees (Perlin, 2011; Scheuer & Mills, 2015). This can result in learning experiences which trap the learner into an employer-driven or instrumental agenda that does not care about solving ill-defined problems or performing critical reflection (Grey, 2004; Holman, 2000).

Instead of problem-solving skills, students gain specific technical knowledge that is rarely transferable to other contexts (D'Abate et al., 2009). Besides, the departmentalised nature of organisations often narrows interns' experience to one administrative function (e.g. marketing or finance), failing to offer the integrative view of management increasingly relevant for 21st-century practice (Latham et al., 2004; Welsh & Dehler, 2012).

Similarly, the principle that students can work under time pressure, focused on the task-at-hand but at the same time reflecting and learning from action, is disputed:

> Field activity combined with serious reflection creates a kind of laboratory to learn — a course in the world of work if you like. But treated as an excuse to gets things done, where action takes precedence over reflection, this is not management development at all, just more business as usual (Mintzberg, 2004, p.222).

Research describing attempts to introduce reflection in internships often talk about feedback questionnaires, log diaries, or written reports lecturers use as assessment tools (Helyer, 2015). While these reports are beneficial, studies show that they are mostly descriptive and often unexamined monologues (Ajjawi & Boud, 2018; Nicol, 2010). This differs from the notion of reflection given earlier, which considers discussion of the whole experience. That includes not only assessing learning outcomes but also (collectively) exploring how students make sense of their experience (Hibbert, 2012).

4.3. Problem-based learning

PBL's origins trace back to the medical school of McMaster University in the early 70s. It has since been adopted by schools of engineering, architecture, social work, and law. In the past two decades, PBL also became popular in management education (Garnjost & Brown, 2018).

In PBL, students learn by designing and constructing solutions to real-life problems, often from real organisations. PBL's defining characteristic is the collective learning structured around an ambiguous and complex problem. Here, the professor becomes a facilitator, supporting and guiding students in the problem-solving process (Smith, 2005).

Underlying PBL's popularity is the notion that the discovery-like approach students use to solve problems is more akin to how managers solve problems in real life (Goltz et al., 2008). Its pedagogy departs from the rational-analytical paradigm, replacing well-defined goals, objective measurement, and analytical planning with goals and constraints revealed during the problem-solving process, the use of both objective and subjective criteria, and collective exploration of the problem (Garnjost & Brown, 2018).

Allegedly, this adaptive approach to problem-solving addresses both the analytical and creative aspects of management (Glen et al., 2014). Also, because solutions draw on knowledge from multiple disciplines, it fosters more integrative thinking (Welsh & Dehler, 2012). Likewise, by having students work in teams, PBL develops collaborative skills (Ungaretti et al., 2015). Last, because students are the ones responsible for acquiring the knowledge needed to solve the problem, PBL fosters self-dependent learning (Carriger, 2015).

4.3.1. PBL and the four building blocks

Typically, a PBL activity looks like this: at the beginning of the module, students are briefed on an ongoing ill-defined problem, often from a real organisation. Supported by a facilitator, student-groups work for the next several weeks towards a solution to the client's problem. Activities often culminate with students presenting their potential solutions to senior management (Navarro, 2008; Sherwood, 2004; Ungaretti et al., 2015).

While this design successfully incorporates the unstructured nature of managerial problems, critics argue it lacks execution. As shown earlier, a significant part of the manager job comprises not just envisaging solutions but implementing them. Real solutions do not conceive themselves neatly in the minds of managers. Instead, they come from a process of adaptation to which familiarity with the process of implementation is vital— but missing in PBL (Gosling & Mintzberg, 2006). Take Navarro's (2008, p.116) examination of the curriculum of the top-50 US business schools as an example. It shows that, in all situations where PBL was adopted, activities culminate with "students analysing business processes, recommending improvements, and then presenting results to senior management". Similar examples are found in Brownell and Jameson (2004), Fitch (2011), Tan and Vicente (2019), Lycko and Galanakis (2019), to name a few.

Moreover, like the case method, PBL lacks genuine contact with a real work environment. With rare exceptions (e.g Sherwood, 2004), problems are briefed to students on the first day of class and solutions presented in the last. Critics argue that this meagre contact with the organisations is insufficient for students to absorb the socially constructed nature of management and the political realities of organisational life (Sherwood, 2004). As Fenwick (1998, p.22) put it: "a difficulty with the authenticity of PBL cases is that the problem's context is necessarily relegated to the shadows of background".

Last, reflection does not receive explicit research attention in PBL literature. While it is implied that students need to reflect-in-action to find solutions to the problems, reflection at a meta-cognitive level is often absent (Scott, 2017).

Table 2 reflects the observations discussed above, including contrasts between the four building blocks and how each teaching method incorporates them.

Table 2
How the three teaching methods incorporate the four building blocks.

References	Bridgman et al. (2018, 2016); Culpid & Scott (2011) ; Druckman and Ebner (2017); Farashahi and Tajeddin (2018); Gosling and Mintzberg (2006); Sachau and Naas (2010); Theroux and Kilbane (2004).	Clark (2003); Cook et al. (2015); D'Abate et al. (2009); Holman (2000); Latham et al. (2004); Narayanan et al. (2010); Raelin (2007, 2016); Scheuer & Mills (2015).	Brownell and Jameson (2004); Carriger (2015); Garnjost and Brown (2018); Glen et al. (2014); Goltz et al. (2008); Sherwood (2004); Smith (2005); Ungaretti et al. (2015); Welsh and Dehler (2012).
Reflection	Students reflect as they design solutions to the problems (reflection-in-action). Reflection as a meta-cognitive process (reflection-on-action) does not receive explicit attention.	Students report on their internship experience via feedback forms, logbooks, or reports. Yet outcomes of these reports are rarely discussed by students or teachers.	Students reflect as they design solutions to the problems (reflection-in-action). Reflection as a meta-cognitive process (reflection-on-action) does not receive explicit attention.
Execution	Solutions are hypothetical, never tested in practice.	Students execute tasks assigned to them but rarely execute solutions they designed themselves.	Solutions are hypothetical, rarely tested in practice.
Real-worldness	While cases discuss a situation that occurred in a real organisation, students do not have the first-hand contact with this organisation.	There is continuous contact with workplace dynamics and the 'culture of the practice'.	Problems are based on a real-world situation. However, students do not always have close interaction with the organisation originating the problem.
Ill-defined problems	Problems are mostly well-defined and solutions arrive from the application of objective and analytic principles.	Problems are mostly well-defined (operational) and often confined to a business function.	Problems are ill-defined. Solutions are collectively designed based both on business theory and experimentation.
	The case method	**Internships**	**PBL**

5. The way forward for cases, internships and PBL

Grounded on the analysis of how cases, internships and PBL incorporate the four building blocks, how can these popular approaches be adapted to fill the gaps? In what constitutes the main contribution of this paper, we suggest that PBL is the approach that is most suitable for adaptation, with cases and internships suffering from pedagogical and practical limitations. We then propose an adjusted version of PBL , whose implementation is illustrated with two real-life examples.

5.1. A case against cases

Despite attempts to rejuvenate the case method (e.g. Theroux & Kilbane, 2004), its central didactical component — the use of a case — does not allow students to execute their ideas in real life nor provides a close interaction with the company where the case originates from. To incorporate these elements, activities performed by students would have to stretch beyond the boundaries of the case, de-characterizing the case method. Notwithstanding, the case method could be improved with the introduction of ill-defined problems and reflexive sessions. Particularly, a reflection that encompasses not only the discussion of the case but also a collective evaluation of the skills and attitudes students developed during the problem-solving process (e.g. teamwork, communication, leadership, etc.).

Despite these potential improvements, critics still argue that the lack of first-hand contact with the real world and the view of management as a scientific-analytical activity puts the case method at odds with the contextual nature of management practice. This not only undermines its capacity to provide students with the broad array of tacit competencies they need in practice (Mesny, 2013), but also gives learners an elusive impression of managerial work— one that is narrow, instrumental, amoral, and containing a flawed logic of transferability (Bridgman et al., 2018; Gosling & Mintzberg, 2006; Grey, 2004). While fine to compliment more active approaches, the use of cases as a *central* method to teach management becomes problematic.

5.2. Action at the expense of learning

By recognising the importance of hands-on experience and close contact with the organisational context, internships avoid most of the criticism laid on the case method. However, they ended up suffering from the opposite critique: emphasising action at the expense of learning.

Despite rare exceptions, interns are typically responsible for operating tasks, performed under time pressure, where they can hardly reflect on the action. Consequently, internships miss two important elements of management learning— ill-defined problem-solving and reflection. Recent large-scale studies investigating internship provision have stressed these issues. While endorsing internships' value to graduates' employability and acquisition of practical experience, they recommend incorporating: (1) better integration between learning outcomes and the tasks performed by interns, (2) that experts and mentors from both universities and workplaces support learners, (3) a reflective review that articulates and documents interns' experiences, (4) theory and practice integration through complex and relevant problem-solving and not operational work, and (5) a close collaboration between higher education and organisations in the design of better learning activities (Schmidt & Gibbs, 2009; HAPHE, 2016; WBLIC, 2016).

Although the world of work has the resources to meet these goals, as in elaborated trainee programmes offer by large organisations, many business schools lack the capacity to offer high-quality internships to all their students. Take, for instance, an undergraduate business programme with twenty students. Incorporating the five points above would require, first, access to a network of organisations with the will, the time, and the resources to provide such well-elaborated experiences to students. Second, it would require complex mechanisms to coordinate and support the different activities happening at the same time in (twenty) different companies (Cook et al., 2015). Can the school ensure that, in all partner organisations, students work with relevant business problems, accompanied by mentors, and supported by reflective mechanisms? And even if such coordination of efforts were possible, there is still the problem that internships are often confined to a single management function (e.g. marketing), offering students a narrow managerial experience.

For that, scholars from the critical management school have loudly objected to internships as the way forward in what they call a strictly vocational approach (Holman, 2000). They argue that, in giving away control over essential parts of the learning process to organisations, the university undermines its central role (Grey, 2004). Instead of being a place for the emancipation of the individual, higher education merely provides the relevant skills the market needs (Reynolds & Vince, 2004).

5.3. An adjusted version of PBL

Despite its growing popularity, evidenced marshalled throughout this paper suggests that PBL still falls short of providing realistic managerial experiences to students. It is not sufficient to design solutions to unstructured problems. Students should implement their ideas in the real world (Blaylock et al., 2009; Revans, 2011). Moreover, it is not enough to work with a problem *from* the real world. Students should have genuine engagement with the work environment to develop the so-called culture of the practice (Jackson, 2015; Raelin, 2016). Last, reflection should support the learning process at a meta-cognitive level and not only as a mechanism to facilitate problem-solving (Ajjawi & Boud, 2018; Nicol, 2010).

But despite these limitations, a growing number of scholars believe that PBL (and similar approaches such as project-based learning and action learning) offers the greatest potential for developing managers (Raelin, 2007, 2016; Reynolds & Vince, 2007; Schon, 1987; Scott, 2017). Unlike the case method, PBL recognises that problem-solving does not necessarily follow a rational-analytical approach but is an adaptive process of experimentation. In this, it "enables the complex and non-mechanical nature of managerial practice to be

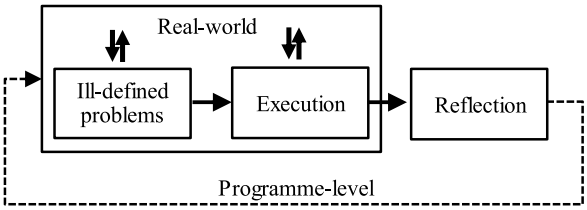

Fig. 1. An adjusted version of PBL.

fully addressed" (Holman, 2000, p. 209). Similarly, by stepping out of the frenzied action of the workplace and entering a set-apart space for learning, PBL avoids most of the problems attributed to internships, as it affords educators the space to introduce practice in a way that is not exclusively vocational but in line with the critical nature of academic education and its part in the emancipation of the individual (Holman, 2000).

From a practical perspective, PBL is also the approach that can be best adapted to incorporate the four blocks. Because learners remain together, only one organisation needs to be contacted at a given time. Also, when students are together it is easier to ensure that *every* learner designs and executes solutions to problems that are relevant, complex and ill-defined under the close support of an experienced tutor. PBL also facilitates the introduction of reflection. As students work together, the tutor knows how each student fared in the task. This also eases the organisation of group reflective sections. Finally, if one implements PBL at a programme-level, learners could work with different problems, from different organisations and different business areas. This would provide a far broader understanding of management than an internship in a single company.

But as stressed earlier, to fit with the four building blocks PBL needs further adaptation. Fig. 1 provides a conceptual model for an 'adjusted' version of PBL. Like in PBL, activities should be based on (1) ill-structured problems that reflect management's provisional nature. But extending on PBL, any conceptualized solution ultimately requires the test of (2) execution. Similarly, design and execution take place in close interaction with a (3) real-work environment. This shall allow the learner to absorb the socially constructed nature of management and the political realities of organisational life. Last, tacit experience is supported by (4) reflection to translate itself into learning. If introduced as a programme, learners could work with different problems, from different business areas.

These adjustments to PBL are both empirically and theoretically relevant. Empirically because it introduces a design that not only allows the incorporation of the four blocks but does so in a *single experience*. Unlike cases, internships and 'traditional' PBL, where learners design a solution but do not execute it (cases and PBL), or execute a solution that they did not necessarily design (internships), here students design *and* execute their own solution in real life. Similarly, students can reflect on the whole managerial experience (the design and implementation of a solution to a real-world unstructured problem) and not just on parts of it. Theoretically because it refines concepts proposed by Holman (2000), Mintzberg (2004) and Raelin (2007) on the importance of the four building blocks with a more tangible and replicable model that educators can use to design learning experiences.

Below are two examples of adjusted PBL being implemented in two different business programmes. In line with the model proposed in Fig. 1, students design and implement solutions to complex, unstructured problems in close connection with real organisations. Reflective sessions support learning at problem-level and meta-level.

5.4. Adjusted PBL in practice

The first example is the Management Experience Programme (MEP). MEP is a four-year undergraduate programme established in 2008 by a Brazilian university. It combines traditional lectures on business theory in the morning with a series of so-called 'real-world practices' in the afternoon. In each real-world practice, students design and execute a solution to real, complex problems from different organisations. A series of individual and group reflective activities help students make sense of what happens in action. MEP engages with four real-world practices, each lasting two semesters. In the first year, student-groups take part in a social project where they design, organise and implement fund-raising events to support a children's hospital. Two 'company projects' follow in the second and third year. Students identify, develop, and implement improvements to a series of constraints faced by local organisations. Also in the third year, students take part in the asset management practice, where they buy and sell stock on behalf of a corporate investor and using real money (Perusso et al., 2019).

A second example is the Team Academy, a three-and-a-half-year business undergraduate programme offered by a university of applied sciences in Finland. In the programme, students run their own cooperative businesses supported by coaches, with real money and real customers. Students answer for all elements of these projects, including setting up a legal entity, acquiring customers, planning marketing and sales activities, financial management and reporting, etc. There are no classrooms, lectures, or exams. Classrooms were replaced with open offices, teachers with team coaches, and instead of formal classes, student teams must search for knowledge based on their content demand. During the programme, student teams attend two 4-h coaching sessions per week to brainstorming, address current issues, reflect on past performance, and support collaborative skills development (Tosey et al., 2015).

6. Conclusion

This paper has looked into how the three most common approaches currently used to introduce practice in the business curriculum

(cases, internships, and PBL) incorporate the four building blocks of a management learning epistemology (ill-defined problems, execution, real-worldness and reflection). It concludes that, while cases and internships could be (and sometimes are) adapted to include two or more of the four building blocks (e.g. ill-defined case studies), their design prevents (or makes it very difficult) for them to incorporate *all* four blocks. Either because doing so would de-characterise the method or due to practical constraints. But because PBL is set in an intermediate place between the tension of the real world and the hermetically closed world of academia, it is uniquely positioned to incorporate the four blocks. In bringing live, complex problems from the real world to the university, PBL introduces students to the unstructured nature of management that the case method often lacks. At the same time, it replaces the often narrow and operational experiences offered by internships with one where *all* students can work with complex and relevant problems under the close support of a tutor or mentor.

However, PBL still needs change to incorporate all four blocks. Students should not only envisage but execute their solutions in real life and in close collaboration with the organisations where the problem originates from. Likewise, action needs to be supported by a careful process of reflection. We have called this 'adjusted PBL'. As the two examples introduced here suggest, this design provides students with a learning experience that reflects the complexity of real managerial practice but is also concerned with learning, as should be in higher education.

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CRediT authorship contribution statement

Andre Perusso: Conceptualization, Methodology, Writing - original draft, Writing - review & editing. **Thomas Baaken:** Conceptualization, Visualization.

Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijme.2020.100425.

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