

Delivering training strategies: the balanced scorecard at work

Stefano Baraldi and Antonella Cifalinò

Aligning the value of training to organizational goals is an emerging need in human resource management. This study, aiming at expanding the research on training evaluation from a strategic management perspective, examines whether the use of the Balanced Scorecard approach can enable an effective delivery of training strategies, thus strengthening the link between training and organizational goals. The research was based on action research methodology. Researchers worked for about 12 months with three healthcare organizations. The research findings indicate that the balanced scorecard: (1) allows visualization of a clearly focused and internally consistent map of cause-and-effect relationships, turning the functional training efforts into strategic results; (2) effectively supports the training function both in managing training processes and in delivering targeted organizational outcomes; (3) offers a specific set of critical measures for evaluating the training function's performance; and (4) permits the fostering of a sound alignment between training programme objectives and functional goals. Various theoretical and practical implications are discussed.

Introduction

Over the last decades, the relevance of human resources (HRs) as an essential source of business value has climbed up the management research agenda (e.g. Barney & Wright, 1998; Delery & Doty, 1996; Huselid & Becker, 2011; Mollick, 2012; Nyberg *et al.*, 2014; Quinn *et al.*, 1996; Ulrich, 1989, 1997, 2005; Fulmer & Ployhart, 2014). Most of this research has been guided by the resource-based view of the firm, arguing that sustained competitive advantage derives from the resources and capabilities a firm controls that are valuable, rare, imperfectly imitable and not substitutable (Barney, 1991; Barney *et al.*, 2001; Wright *et al.*, 1994).

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The diffusion of the resource-based perspective has made important contributions in the field of human resource management (HRM) (Wright & McMahan, 1992; Wright *et al.*, 2001). The emphasis on people as strategic resources has contributed to the interaction and convergence of strategy and HRM issues within the theoretical and empirical research literature (Barney *et al.*, 2001; Nyberg *et al.*, 2014). On the one hand, scholars have explained why and how organizations achieve their goals through the use of HRM systems (e.g. Huselid *et al.*, 2005; Jiang *et al.*, 2012; Paul & Anantharaman, 2003; Storey, 1995; Wall & Wood, 2005; Wright *et al.*, 2005). On the other hand, literature reviews highlight a burgeoning body of research testing various organizational outcomes associated with the use of HRM systems (e.g. Fulmer & Ployhart, 2014; Jiang *et al.*, 2012; Nyberg *et al.*, 2014; Patel *et al.*, 2013; Paul & Anantharaman, 2003; Wright *et al.*, 2001).

Despite these theoretical and empirical developments, important issues remain regarding the mechanisms through which HRM systems contribute to organizational effectiveness (Jiang *et al.*, 2012; Prowse & Prowse, 2010). First, one current conceptual trend concerns developing a more complete and comprehensive causal model linking HRM systems with firm performance than is usually explained within the literature (Huselid & Becker, 2011; Jiang *et al.*, 2012; Nyberg *et al.*, 2014; Wright *et al.*, 2001). Second, it remains unclear how HRM systems relate to different organizational outcomes that range from very proximal (i.e. HR outcomes such as employee engagement and commitment) to more distal (i.e. operational and financial outcomes) (Huselid & Becker, 2011; Jiang *et al.*, 2012; Paul & Anantharaman, 2003; Prowse & Prowse, 2010).

In an effort to bridge these gaps, some scholars have suggested the development of multilevel conceptual constructs considering the impact of HRM systems at both individual and collective levels of analysis (e.g. Fulmer & Ployhart, 2014; Nyberg *et al.*, 2014; Ployhart & Moliterno, 2011). According to Huselid and Becker (2011), this challenge would benefit from a fuller integration of the micro (focused on designing HRM systems as well as individual employee responses to those systems) and macro (focused on strategy formulation and implementation processes) domains of the HRM literature. Put differently, a clearer articulation of the 'black box' between HRM and firm performance requires a new emphasis on integrating strategy implementation as the central mediating variable in the HR-firm performance relationship (Becker & Huselid, 2006). Related to this point is Howell's field research (2006), arguing that strategy implementation requires development of a 'line of sight' among employees, conceptualized as an employee's understanding of an organization's objectives and how to contribute to those objectives.

More specific to training, a burgeoning body of research has analysed training effectiveness (for reviews, see Aguinis & Kraiger, 2009; Salas *et al.*, 2012; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992). As suggested by Saks and Burke-Smalley (2014), two streams of training research have addressed this topic, respectively labelled as macro- and micro-training research. The macro-training research can be found in the strategic human resource literature focusing on training outcomes at the organizational level of analysis. Scholars rooted in this discipline have developed theoretical and empirical research on the training – firm performance relationship (e.g. Aguinis & Kraiger, 2009; Aragón-Sánchez *et al.*, 2003; Becker *et al.*, 2001; Tharenou *et al.*, 2007). The micro-training research can be found mostly in the industrial/organizational psychology literature focusing on training outcomes at the individual level of analysis. Scholars rooted in this literature have investigated transfer of training issues in work organizations (for more recent reviews, see: Baldwin *et al.*, 2009; Blume *et al.*, 2010; Burke & Hutchins, 2008; Grossman & Salas, 2011).

Despite these theoretical and empirical developments, significant research gaps remain. First, the macro- and micro-training research streams are fragmented into two independent, even though related, perspectives. As argued by Saks and Burke-Smalley (2014, p. 105), 'because these two streams of research exist independently and involve different levels of analysis, there has been little attempt to integrate them'. Second, research regarding organizational-level benefits has not been as abundant as the literature on individual- and team-level benefits (Aguinis & Kraiger, 2009; Kozlowski

et al., 2000; Tharenou *et al.*, 2007). Third, in spite of a general support for a positive relationship between various indicators of training provision and firm performance at the organizational level of analysis, a research gap remains about the mechanisms that might explain or mediate the training – firm performance relationship (Aguinis & Kraiger, 2009; Aragón-Sánchez *et al.*, 2003; Saks & Burke-Smalley, 2014; Tharenou *et al.*, 2007).

In response to these issues, scholars have advocated multilevel research to gain a thorough insight into the integration of training evaluation at different levels of analysis (e.g. Fulmer & Ployhart, 2014; Kozlowski *et al.*, 2000; Ployhart & Moliterno, 2011; Saks & Burke-Smalley, 2014; Tharenou *et al.*, 2007). As such, a critical concern is about investigating the processes that facilitate a smooth vertical transfer of training, that is to say the processes by which learning outcomes at lower levels (e.g. individual-level outcomes) aggregate to influence post-training outcomes at higher levels of analysis (e.g. team- and organizational-level outcomes) (Aguinis & Kraiger, 2009; Chen & Klimoski, 2007; Kozlowski *et al.*, 2000; Saks & Burke-Smalley, 2014).

In the effort of bridging macro- and micro-training research, two strategic issues stand out. First, before training, scholars suggest an expansion of the traditional components of training needs analysis (e.g. job-task analysis and person analysis) and a focus on *strategic alignment* at the organizational level of analysis (Salas *et al.*, 2012). According to Tannenbaum (2002), aligning training with the organization's strategic direction involves examining key business objectives and challenges, identifying the functions and jobs that most influence organizational success, clarifying the most critical organizational competencies and establishing overall strategic learning imperatives.

Second, after training, scholars advocate the need to move beyond traditional evaluation methodologies in order to embed training interventions within organizational systems (Glaveli & Karassavidou, 2011; Kirkpatrick & Kirkpatrick, 2006; Kraiger, 2002; Kraiger *et al.*, 2004; Pangarkar & Kirkwood, 2008). As suggested by Brinkerhoff (2006), it needs to shift the focus from the training programme evaluation to the evaluation of how effectively the organization *uses* training systems and resources and leverages them into improved performance that in turn drives business results. As such, this shift points to the need of aligning training efforts within an organization's performance management systems (Aguinis, 2013; Brinkerhoff, 2006).

Despite the need to link training to the organization's strategic direction, research on training evaluation has mostly focused on an *operational* approach, aimed at improving the quality of the processes by which a training programme is decided, designed and delivered (namely, *to do things right*). In brief, conventional training evaluation can 'justify the financial input made, serve for quality management purposes, provide feedback to human resource departments and trainers for improving training courses and help to make more accurate decisions about the continuation of training courses' (Grohmann & Kauffeld, 2013, p. 137). Over the last 20 years, however, the rise of a new generation of performance measurement systems, such as the Balanced Scorecard (BSC; Kaplan & Norton, 1996), has paved the way for a *strategic* approach, aimed at achieving the greatest impact on organizational performance from training initiatives (namely, *to do the right things*). According to this approach, it is crucial to clearly identify and develop training initiatives leading to the availability of employee skills, talent and know-how required to support the organizational strategy (Kaplan & Norton, 2004, p. 49).

Given this premise, the action research (AR) project presented in this paper aims at finding out if the use of a strategic performance measurement (SPM) system, namely the BSC, can actually enable an effective delivery of training strategies, thus linking training with organizational goals. In our previous work on this subject (Baraldi & Cifalino, 2009), we referred to a specific set of training programmes (TPs) and addressed the issues related to the feasibility of the operational and strategic approaches to training evaluation as well as their mutual relationships. Our findings confirmed that both of them are actionable for measuring the performance of TPs and that their contextual use is mutually beneficial. Besides, we found that the BSC proved

to be very effective in that its structure adapted well to the specific features of TPs. Given the explorative nature of the study, however, we did not obtain any evidence about how the BSC could improve the evaluation of the function that is usually in charge of training.

This paper, therefore, aims at filling this gap by focusing on a different unit of analysis: not single TPs, but the whole set of initiatives or actions taken to deliver a training strategy. By assuming that training strategy is an essential part of the organizational strategy and that the training function is accountable for the training strategy, we address the following questions:

1. Is a *strategic* approach – namely, the use of the BSC – really feasible and helpful for an organization, helping to: (a) define and deliver its training strategy?; (b) evaluate the performance of the training function?
2. Is it possible to effectively link the BSC of the training function with the BSC of the TPs?

The paper develops the theoretical framework, copes with research methodology issues and presents the empirical findings. The last section discusses the findings and provides some final remarks about implications for researchers and practitioners, limitations of the study and directions for further research.

Theoretical framework

Training evaluation

Starting from the seminal work by Kirkpatrick (1959a, 1959b, 1960a, 1960b), the training literature includes many contributions on training evaluation based on hierarchical models (for overviews, see Aragón-Sánchez *et al.*, 2003; Arthur *et al.*, 2003; Salas *et al.*, 2012; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992). Basically, the hierarchical approach outlines four categories ('levels') to measure training effectiveness: (1) the reactions of trainees towards TPs, such as enjoyment, perceived usefulness and perceived difficulty (Warr & Bunce, 1995); (2) their learning, in terms of knowledge, skill and/or attitude; (3) the degree of learning transfer into on-the-job behavioural practices; and (4) the impact of this transfer on organizational results. Despite criticisms regarding the limitations of the hierarchical approach to training evaluation as a comprehensive model (Alliger & Janak, 1989; Alliger *et al.*, 1997; Bates, 2004), it has enjoyed a widespread and enduring popularity in both academic and professional contexts (e.g. Alvarez *et al.*, 2004; Kennedy *et al.*, 2014; Salas & Cannon-Bowers, 2001).

The most recent criticisms to the hierarchical approach are twofold. A first criticism is about the deepness of its application in both research and practice. On the one hand, even though the model suggests an evaluation framework at both individual and organizational levels of analysis, most empirical research has focused primarily, if not exclusively, on the former (Aguinis & Kraiger, 2009; Kozlowski *et al.*, 2000; Tharenou *et al.*, 2007). On the other hand, various studies have demonstrated that training professionals have acknowledged the relevance of conducting behaviour-based and results-based evaluations, yet organizations do not frequently conduct them (for an overview, see Kennedy *et al.*, 2014). This is alarming because it has been demonstrated that even though organizations are most likely to evaluate trainee reactions and learning, only behaviour and results criteria are significantly related to higher rates of training transfer (Saks & Burke, 2012).

A second criticism is the lack of a strategic perspective when the hierarchical approach is applied for managerial purposes. Indeed, hierarchical models are primarily focused on the measurement of training effectiveness, whereas the key issue is not only 'measuring' the results achieved by TPs, but also 'managing' the continuous alignment of individual and team behaviour with organizational goals (Brinkerhoff, 2006; Kirkpatrick & Kirkpatrick, 2005; Kraiger, 2002; Kraiger *et al.*, 2004; Robinson & Robinson, 1998; Salas *et al.*, 2012; Tannenbaum, 2002).

The BSC and training performance

Over the past two decades, performance measurement studies have evolved to encompass a more *strategic* approach (e.g. Berry *et al.*, 2009; Chua, 2007; Ittner *et al.*, 2003; Skærbæk & Tryggestad, 2010). Several authors, indeed, have recognized the need to pay more attention to the neglected elements of strategy and operations and paved the way for a new stream of literature about the so-called SPM systems (e.g. Bisbe & Malagueño, 2012; Burney *et al.*, 2009; Franco-Santos *et al.*, 2012; Kolehmainen, 2010; Micheli & Manzoni, 2010; Otley, 1999; Ferreira & Otley, 2009). SPM systems are aimed at enabling the translation of strategy into a set of financial and non-financial measures which are usually cascaded throughout the organization in order to enhance strategic alignment (e.g. Kolehmainen, 2010). Therefore, their distinctive features are (e.g. Chenhall, 2005; Franco-Santos *et al.*, 2012; Gimbert *et al.*, 2010) (1) the integration of long-term strategy and operational goals; (2) the presence of performance indicators covering different perspectives; (3) the provision of a sequence of goal-target-action plans; and (4) the presence of explicit cause-and-effect linkages between goals and/or performance indicators. Bento and White (2010) pointed out that the stream of literature related to SPM systems is likely to be in a mature phase, having progressed through: (1) an early analysis of the technical issues arising in the selection of customized performance measures (the *how-to* phase); (2) an investigation of the variables affecting the successful implementation of SPM systems (the *what-else* phase); and (3) an assessment of their impact on business performance (the *so-what* phase).

Among SPM systems, Kaplan and Norton's BSC construct (Kaplan & Norton, 1996, 2001) is 'an essentially multidimensional approach to performance measurement and management that is linked specifically to organizational strategy' (Otley, 1999, p. 374). When correctly understood and properly implemented, the BSC is supposed to improve organizational performance by translating strategy into specific objectives and measures along its four perspectives (financial, customer, internal business process, and learning and growth). Since its first appearance in 1992 (Kaplan & Norton, 1992), the BSC has gained a widespread acceptance by practitioners, has reached a well-entrenched position within the management accounting teaching literature and has attracted growing interest among academic researchers (for overviews, see: Hoque, 2014; Soderberg *et al.*, 2010). Even though its benefits and limits are still under scrutiny (e.g. Agostino & Arnaboldi, 2011; Chenhall, 2005; De Geuser *et al.*, 2009; Northcott & Taulapapa, 2012; Wiersma, 2009), the BSC is regarded as one of the most notable examples of SPM systems.

Aimed at creating organizational alignment and focus (Kaplan & Norton, 2001), the BSC emphasizes the role of HRs as a strategic lever. On the one hand, many strategic themes concerning human and organizational capital – skills, talents, knowledge, culture, leadership, alignment, teamwork, etc. – are 'mapped' and measured at an organizational level within the *learning and growth* perspective of the BSC (Kaplan & Norton, 2004).

On the other hand, much attention is paid to cascading the BSC throughout the organization, pointing out the contribution of the HR function to strategy implementation. By arguing that the field of HR assessment contains more promises than delivery, some authors call for the adoption of 'HR scorecards' in order to track how suitably HR initiatives are adapted to the organizational strategy and how much they actually contribute to its execution (Becker *et al.*, 2001; Huselid & Becker, 2011; Huselid *et al.*, 2005; Ulrich, 1997; Walker & MacDonald, 2001). Within these frameworks, however, training performance still remains scattered across the financial perspective (i.e. cost per trainee hour, percentage of payroll spent in training), the customer perspective (percentage and number of employees involved in training, employees' satisfaction with TPs) and the internal processes perspective (number of courses, number of training days and programmes, percentage of new materials in TPs, percentage of delivered training, percentage of training delivered on time). Therefore, the literature provides no conclusive evidence about the further cascading of the BSC *within* the HR function, whereas the feasibility of the BSC approach in evaluating TPs has been proved (Baraldi

& Cifalinò, 2009). As a consequence, we argue that this gap in the use of the BSC could hinder the organization's capability of getting its training strategy properly defined and executed.

Research methodology

The study presented in this paper is based on AR methodology. Deeply rooted in pragmatism, AR originated from the work of Kurt Lewin in the mid-1940s (Lewin, 1946, 1947), was later advocated by many prominent organizational scientists and has proved its potential in improving the practical pertinence of research (Argyris, 1993).

AR questions the capability of positivist science to cope with the complexity and the uniqueness of the empirical context in management studies and, thus, to deliver a 'general' theory. Positivist researchers usually show little inclination to carry out interdisciplinary studies and tend to leave the practitioners (and their problems) with no role other than that of willing subjects of their inquiries (Fendt & Kaminska-Labbé, 2011).

Conversely, AR emphasizes the role of a researcher actively involved – in some form of 'engaged scholarship' – with the situation being studied (van de Ven & Johnson, 2006). Practitioners and researchers work together to solve practical problems and generate scientific knowledge. Thus, the validation of the findings does not come from the consistency of prediction and control, but from the knowledge that can be applied and validated in action (Gummesson, 1991). Typically, AR studies lead scholars to get involved in practical organizational work and take action to stimulate change (French & Bell, 1984). The collaborative research for an applicable theory, its implementation and the assessment of its impact on the organizational environment allows action researchers to get back into the 'realm of academia' with an enriched research agenda and data set (French, 2009). On the one hand, this 'active' role has been criticized because of its potential lack of rigour. Closely involved with problem solving or change processes like a consultant, the researcher may lose his/her independence because of the need to satisfy clients' expectations. On the other hand, AR provides the opportunity to obtain very rich insights – otherwise not accessible – because practitioners are involved in things which actually matter to them (Eden & Huxham, 1996), and turn out to be more willing to share their ideas and information.

Moving from this pragmatism, AR has taken an increasingly wide range of forms inspired by different philosophical stances (Cassel & Johnson, 2006). In our study, we have followed an approach labelled as inductive AR. As argued by Cassel and Johnson (2006, p. 793), 'theory in this particular approach is generated from the data and concerns the development of thick descriptions of the patterns of subjective meanings that organizational actors use to make sense of their worlds, rather than entailing the testing of hypotheses deduced from a priori theory that causally explains what has been observed by the action researcher'. This usually occurs through interpretive understanding by seeking to inductively access research participants' cultures, in their natural contexts. As organizational change remains a key issue in this form of AR, the aim is to reflexively engender single and double loop learning through the involvement of organizational participants (Argyris & Schon, 1989). The action researcher retains a pivotal expert role, in providing advice about, and encouraging through processual interventions, the changes that necessarily need occur as an outcome of this interpretive, yet diagnostic, process (Cassel & Johnson, 2006).

As such, inductive AR is not used to test a well-defined theory, but rather to elaborate theory from practice (Coghlan, 2004; Jonsson & Lukka, 2006; Kaplan, 1998; Westbrook, 1995) when research aims at: (1) experimenting how different theoretical frameworks can be actually used in the same organization; (2) evaluating their feasibility; (3) understanding the relationships between them; and (4) identifying and building a so-called emergent theory.

Our study of training performance seems to fit quite well this setting. We have already experimented both *operational* and *SPM* frameworks and evaluated their feasibility at a programme level (Baraldi & Cifalinò, 2009), but we have not found any

evidence about their use at a functional level. Moreover, we are interested in exploring the relationships between the performance measurement processes which are focused both on the TPs and on the training function.

Following the comprehensive definition of AR suggested by Susman and Evered (1978), we structured our research process into five phases: (1) diagnosing (identifying or defining a problem); (2) action planning (considering alternative courses of action for solving a problem); (3) action taking (selecting a course of action); (4) evaluating (studying the consequences of an action); and (5) specifying learning (identifying general findings). Researchers and participants collaborated intensively in all the phases.

Participants

The study was carried out in the healthcare sector for several reasons. First, healthcare organizations (HCOs) are widely recognized as knowledge-intensive organizations where training is an essential driver of competency development. In developed countries, including Italy, health professionals are required to attend programmes of continuing medical education. Tian *et al.* (2007) offer a systematic review of evaluation in formal continuing education, pointing out that the effectiveness of TPs in the healthcare sector is not systematically evaluated, particularly in terms of behavioural changes in trainees and patient outcomes, and therefore underlined the importance of developing further research on this subject. Likewise, McAlearney (2010) argues that, in spite of the huge amount of money spent on training, HCOs are generally struggling in their attempts to evaluate the return on their investments. Hence, the measurement of training performance is growing critical in healthcare.

Second, HCOs are experiencing unprecedented pressure on their performance due to the challenging environment they must cope with, where growing competition, constraining regulations and resource scarcity require them to state proper goals and to assign clear responsibilities for results (Lapsley, 2004). Thus, a multi-dimensional system like the BSC seems to fit with the need to balance the relationships between costs, quality, access and consumer choices properly (Inamdar *et al.*, 2002). Indeed, the literature widely reported both the introduction of the BSC fundamentals in HCOs and its application in different healthcare settings such as hospitals, hospitals systems, long-term care facilities, psychiatric centres and university departments (e.g. Chan & Seaman, 2009; Chiang, 2009; Zelman *et al.*, 2003).

Finally, AR is certainly well known by HCOs, and received an additional boost from the extensive acceptance of the 'evidence-based medicine' principles (Bate, 2000).

As the theoretical framework and the research questions deal with the feasibility of a strategic approach to training function evaluation, we selected HCOs which explicitly recognized training as a strategic driver of performance. In particular, we focused on the scientific institutes for research and care (SIRCs) whose mission institutionally includes training in addition to research and clinical activity. We excluded public SIRCs because the literature cites many problems when performance measurement systems are implemented in public organizations (e.g. Bouckaert & Peters, 2002).

Relying on a systematic method of case selection, we contacted all the 13 private SIRCs located in Lombardy, an administrative region with almost 10 million inhabitants (more than 15 per cent of the overall Italian population). In the preparatory phase (Labro & Tuomela, 2003), we sent each HCO a written research proposal detailing the research objectives and methodology. Three HCOs accepted our proposal. We then carried out 2-h structured interviews with each training manager in order to verify whether: (1) the training function really played a strategic role for improving organizational performance; and (2) the HCO could actually share the purposes of our research and commit enough time to its delivery.

Research project

We worked for about 12 months with the three HCOs. The first phase of the project (*diagnosing*) took place through a plenary start-up meeting in order to: (1) share the

project's aims and structure; (2) gain a good understanding of the HCOs' approach to managing training (Jonsson & Lukka, 2006); and (3) define team composition – each HCO joined the project with an active team made up of its training manager and three assistants.

Four 1-day plenary meetings with participants were held to start up the *action planning* phase, aimed at constructing a theoretically well-grounded solution idea. During the meetings, a review of the literature was presented, and participants and researchers designed a common frame of the training function BSC. Eventually, teams recognized the logical validity of the BSC and planned how to apply it in each HCO.

In the next phase (*action taking*), the training function BSC was customized and implemented in each HCO. Different pairs of researchers worked within each HCO's team in order to mitigate the natural subjectivity of AR and reduce the personal bias in the onsite work (Westbrook, 1995). To cope with reliability and validity issues, we followed complementary research strategies (McKinnon, 1988): spending enough time in the research setting, using multiple methods and multiple observations, and appropriate social behaviour while in the setting. On the whole, researchers spent from 20 to 30 days in each HCO. Our multiple observations included the analysis of the organizational priorities and the subsequent training needs, the definition of the training plan, the training delivery, the training evaluation, and the delivery of support following the training. We used a participative approach in both defining and testing specific performance measures for the training function. Each team kept a detailed field diary (Jonsson & Lukka, 2006) and formalized its experience in a final report (Baxter & Chua, 2008).

Finally, during a closing 1-day plenary conference, the teams presented their findings, discussed the outcomes achieved, developed a comparative analysis of their experiences and fostered the incremental development of theory (*evaluating and specifying learning*).

Findings

The training scorecard

During the *action planning* phase, participants and researchers developed a common definition of the training scorecard. Following the BSC model (Kaplan & Norton, 2004), each team initially drew a strategy map emphasizing: (1) the link between organizational and training strategies (i.e. how can the training function actually contribute to organizational success?); and (2) the few critical issues (so-called key performance areas, KPAs) underlying the training strategy and their cause-and-effect relationships (i.e. how can the training function succeed in delivering its strategy?).

All teams then shared a common version of their strategy maps and recognized its general validity (see Figure 1). According to Kaplan and Norton (2004, p. 9), a strategy map is a visual representation of the cause-and-effect relationships among the components of a strategy, that is to say the few critical issues (namely, the KPAs) in the different (but interconnected) perspectives of evaluation. Moving from the top down, the following perspectives were identified:

- an *organizational* perspective (is training actually contributing to business results?);
- a *trainee* perspective (is training actually improving trainee performance?);
- an *internal process* perspective (is training flawlessly delivered to trainees?); and
- a *learning and growth* perspective (are the drivers for future training performance properly nurtured?).

For each perspective, participants and researchers identified the few critical issues (KPAs) to be addressed for a successful implementation of their training strategy, namely:

- Four KPAs were selected in the organizational perspective (i.e. clinical outcomes, innovation, quality and productivity).

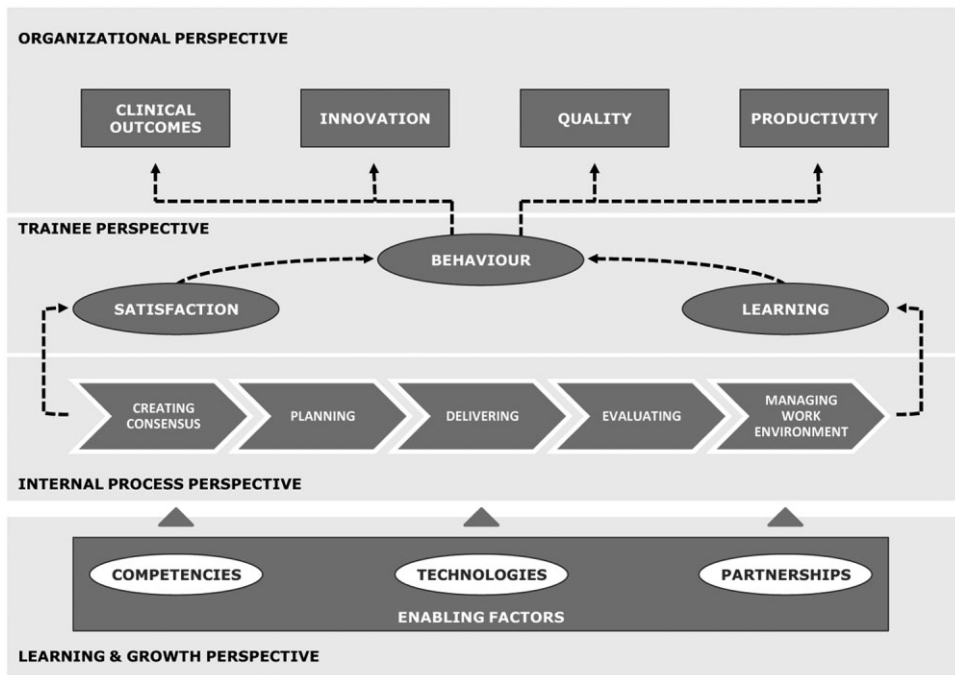


Figure 1: The functional strategy map.

- Three KPAs were identified in the trainee perspective (i.e. satisfaction, learning and behaviour).
- Five KPAs were focused in the *internal process* perspective (i.e. creating consensus, planning, delivering, evaluating and managing work environment).
- Three KPAs were defined, as enabling factors, in the *learning and growth* perspective (i.e. competencies, technologies and partnerships).

Organizational perspective

As training functions are internal units providing shared services, they have to be responsive to organizational strategies (Kaplan & Norton, 2001). Therefore, participants and researchers felt the need to provide evidence – within this perspective – of the organizational-level outcomes actually affected by TPs. HCOs identified four (notable) types of ‘business results’ concerning the organizational perspective:

- clinical outcomes: increasing the survival of emergency department patients, reducing hospital infections, controlling patients’ pain intensity, minimizing the prevalence and incidence of surgical complications, etc.;
- innovation: introducing new medical or surgical procedures, defining new clinical pathways, re-engineering critical administrative processes, etc.;
- quality: diffusing the treatment of hospital pains, applying clinical risk management procedures, adopting clinical audits, etc.; and
- productivity: improving the productivity of both clinical and administrative operations, etc.

Trainee perspective

Participants and researchers acknowledged that training is for improving trainee performance to fit the desired organizational goals. Three key performance areas were identified as critical issues for trainees:

- achieving a high level of satisfaction in terms of immediate reactions, such as enjoyment, perceived usefulness and perceived difficulty of training (satisfaction);
- improving their knowledge, skills and attitudes (learning); and
- influencing their actual on-the-job behaviour, such as applying new medical and surgical procedures, using hospital pain scores, attending clinical audits, etc. (behaviour).

Internal process perspective

Teams took on board the idea that an effective delivery of TPs relies upon a limited number of critical processes. Accordingly, their perspective of the training BSC is that it is meant to measure the performance – primarily in terms of quality, timeliness and costs – achieved in the following processes (Arthur *et al.*, 2003; Salas & Cannon-Bowers, 2001; Salas *et al.*, 2012; Tannenbaum & Yukl, 1992):

- creating an adequate level of consensus among the main stakeholders of TPs (Kraiger *et al.*, 2004): often enough, this process is vital in order to achieve desired outcomes at both the organizational and trainee levels – for example, in order to introduce a clinical pathway, all the clinical directors should be strongly committed to the TPs aimed at developing the competencies required to define, apply and diffuse the pathway;
- planning: effective training programme planning includes (Brinkerhoff, 2006; Kraiger *et al.*, 2004; Salas *et al.*, 2012): (1) convincingly targeting organizational outcomes; (2) carefully evaluating behavioural and learning objectives; and (3) consistently identifying target participants, learning contents and methodology;
- delivering the TPs according to plan;
- evaluating the TPs and fostering learning transfer, by identifying the barriers to be removed and the positive reinforcements to be provided; and
- creating a work environment which encourages the use of targeted behaviour once trainees come back to the workplace; in the teams' view, transfer climate (i.e. situational cues and consequences that largely determine whether or not learned competencies are applied in the workplace), supervisor and peer support, availability of resources, opportunities to apply new skills and abilities to the workplace, and additional learning support (follow-up) are the most powerful drivers for creating such a 'rich' work environment (Grossman & Salas, 2011).

Learning and growth perspective

The learning and growth perspective deals with the enabling factors needed to achieve excellent results in the previous perspectives. Three critical drivers were included by participants in the learning and growth perspective:

- developing the competencies of the training staff (training competencies);
- implementing new technologies, such as distance learning and simulation learning systems (training technologies);
- creating strong partnerships with key external and internal partners, such as medical associations, universities, the top management team and the clinical directorates (partnerships).

The teams acknowledged that the critical issues in the four perspectives are linked by cause-and-effect relationships (Kaplan & Norton, 2004, p. 32). Thus, organizational outcomes can be achieved only if trainees improve their performance. The internal perspective focuses on how to create and deliver valuable training processes for trainees. Finally, the learning and growth perspective shows how to support the internal processes, thus providing the foundation of the training strategy. Aligning objectives in these four perspectives is the key to defining and delivering a valuable and internally consistent training strategy.

During the *action-taking phase*, participants and researchers measured the results achieved in each KPA through a focused selection of key performance indicators (KPIs). Each team selected a list of KPIs and tested them in its HCO by defining targets

and evaluating the variances between targets and actual results. Table 1 reports the KPIs commonly selected by the HCOs involved in the project. For instance, as the KPA 'partnerships' included in the learning and growth perspective is about creating strong partnerships with key external and internal partners (i.e. medical associations, universities and HCO's managers), the following KPIs were selected:

- per cent of training hours delivered in partnership with medical associations;
- per cent of training hours delivered in partnership with universities; and
- per cent of managers involved in training planning.

Most KPIs were broken down by TPs and/or responsibility centres (see Table 1, drill-down column).

During the *evaluating* phase, the teams presented their findings, resulting from each HCO's implementation, and discussed the feasibility and usefulness of their training scorecards. First, it was recognized that the BSC can be applied effectively to the training function. One participant observed that 'even if the design of the training scorecard had required a conceptual effort and its testing turned out to be time-consuming, it is now a lean and necessary management tool'.

Second, the BSC was acknowledged as a useful tool for defining and delivering the HCO's training strategy. In particular, the teams agreed that the definition of the strategy map has helped them to:

- develop a better understanding of the training function's mission, balancing different perspectives;
- translate the mission of the training function into clear and specific objectives related to each KPA, thus focusing on the training priorities to be achieved; and
- align the different stakeholders involved in the training process (i.e. top management, clinical directorates, training manager, training assistants, external partners and so on).

Third, the BSC was deemed to be a helpful tool for evaluating the training function performance by:

- showing useful data supporting decision making in terms of resource allocation to training investments;
- offering a specific set of (a critical few) measures for evaluating if and how the training function is actually achieving its objectives, thus overcoming subjective and informal judgements.

Functional versus programme scorecards

During the evaluating phase, participants and researchers also discussed how to link the BSC of the training function with the BSC of the TPs (Baraldi & Cifalino, 2009). By comparing the structure of the functional scorecard with that of the programme scorecard (see Figure 2), the teams agreed that the use of the BSC could foster a sound alignment between functional goals and programme objectives.

In particular, the following findings emerged. First, it was recognized that the basic structure of the BSC (i.e. perspectives and KPAs) remains almost unchanged when moving from the programme to the functional level of analysis. As shown by the arrows in Figure 2, the training performances reported in the programme scorecard are linked with those of the functional scorecard. Various linkages between the two scorecards can be observed:

- The KPA 'organizational results' included in the performance perspective of the programme scorecard are linked with one or more of the four KPAs in the organizational perspective of the functional scorecard (i.e. clinical outcomes, innovation, quality, productivity).
- There is a linkage between the two KPA 'behaviour', respectively represented in the performance perspective of the programme scorecard and in the trainee perspective of the functional scorecard.

Table 1: Examples of key performance indicators

Perspectives	Key performance areas	Key performance indicators	Drill-down, if any
Organizational perspective	Clinical outcomes	Patients' pain intensity	TPs; RCs
		% of surgical complications	TPs; RCs
		% of new procedures implemented	TPs; RCs
	Innovation	% of hospital pain scores applied	TPs; RCs
		% of clinical risk management tools applied	TPs; RCs
		% of clinical audits applied	TPs; RCs
Trainee perspective	Productivity	Number of medical, surgical and administrative procedures per time unit	TPs; RCs
		Immediate reaction score	TPs; RCs
		Average attendance rate	TPs; RCs
	Learning	Postponed perceived usefulness	TPs; RCs
		Learning gain (pre-post test)	TPs; RCs
		% of people that received a pass grade	TPs; RCs
	Behaviour	Coach evaluation score	TPs; RCs
		Average number of CME (Continuing Medical Education) credits	TPs; RCs
		% of nurses applying hospital pain scores	TPs; RCs
		% of medical doctors attending clinical audits	TPs; RCs
		Average number of drugs and medications to treat pain prescribed by each medical doctor	TPs; RCs
		Average number of new surgical procedures applied by each medical doctor	TPs; RCs
Internal process perspectives	Creating consensus	Stakeholder commitment ratio	TPs; RCs
		% of training programs included in management by objectives plans	TPs; RCs
	Planning	% of responsibility centres receiving a training need assessment	RCs
		% of people receiving a training need assessment	RCs
		Compliance to standards of training planning	TPs
	Delivering	% training programs realized without being previously included in the training plan	TPs
		% of trained people	TPs; RCs
		% of training programs included in the training plan and not realized	TPs
		Compliance to standards of training delivery	TPs
		% of training programs ended on time	TPs
		Average hourly cost of training per trainee	TPs; RCs
		Average training program cost, net of revenues and charges of external participants	TPs
	Evaluating	% of training programs that received a behavioural evaluation	TPs; RCs
		% of training programs that received an organizational performance evaluation	TPs; RCs
	Managing work environment	% of training programs receiving a reinforcement, if needed	TPs; RCs
Learning and growth perspective	Competencies	Number of training hours for the training staff	TPs
		Training staff turnover	–
		Strategic skill coverage ratio for the training staff	–
	Technologies	Value of training technology investments	–
		Extent of distance learning use	RCs
	Partnerships	Extent of simulation learning use	RCs
		% of training hours delivered in partnership with medical associations	–
		% of training hours delivered in partnership with universities	–
		% of managers involved in training planning	TPs; RCs

TP = training programme; RC = responsibility centre.

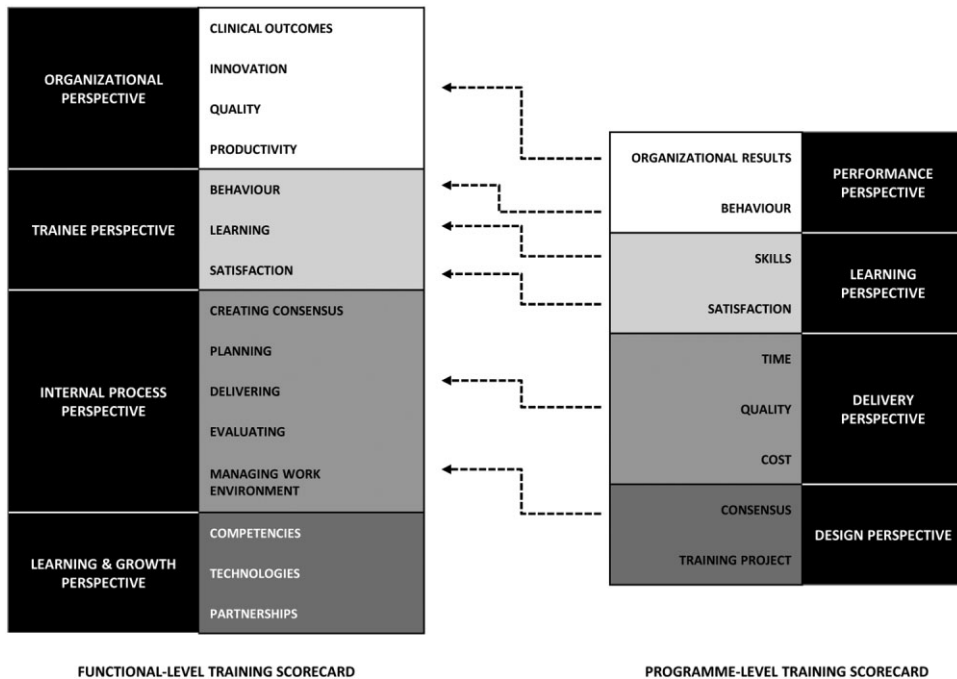


Figure 2: Functional-level versus programme-level training scorecards.

- Similarly, the KPA 'skills' in the learning perspective of the programme scorecard are linked with the KPA 'learning' in the trainee perspective of the functional scorecard.
- There is another linkage between the two KPAs labelled as 'satisfaction', respectively represented in the learning perspective of the programme scorecard and in the trainee perspective of the functional scorecard.
- Finally, the KPAs in the delivery and design perspectives of the programme scorecard (i.e. time, quality, cost, consensus and training project) flow into the KPAs in the internal process perspective of the functional scorecard (i.e. creating consensus, planning, delivering, evaluating, managing work environment).

As a result, the programme scorecard turned out to be a sort of sub-system of the functional scorecard, focusing on the strategic contribution of a given programme to the successful implementation of the whole training strategy. Of course, the BSC at the functional level copes with critical issues that go well beyond programme management (for instance, developing innovation in terms of training competencies, technologies and partnerships) and, not surprisingly, reflects a greater level of complexity. As such, the learning and growth perspective of the functional scorecard is not linked with any perspective of the programme scorecard.

Second, participants observed that many KPIs used to measure the performances achieved over the various KPAs and perspectives of the functional scorecard can be broken down by TPs (see Table 1, drill-down column). Said differently, as a same KPI can be used to evaluate training at both the functional and programme levels of analysis, many KPIs collected for evaluating TPs can be easily aggregated and adopted in the functional scorecard. For instance, the immediate reaction score used to evaluate the KPA 'satisfaction' in the trainee perspective of the functional scorecard can be obtained by aggregating the specific immediate reaction score reported for each training programme.

Finally, participants agreed that, to be effective, the BSC should focus just on a selection of TPs that may flow into the functional scorecard. Many selection criteria

were discussed. From a quantitative point of view, participants agreed to focus on those programmes that are most time-consuming (in terms of number of training hours) and costly (in terms of external teaching costs, organizational costs and opportunity costs). From a qualitative point of view, participants agreed to prioritize to the most strategic programmes (i.e. addressed to change agents, sponsored by top management commitment, aimed at achieving breakthrough and ambitious results) and/or innovative ones (i.e. programmes relying on a new faculty, using new training methods or technologies, developing new subjects, etc.).

Discussion and conclusions

The findings of this study extend the research on training evaluation according to a strategic management perspective (Brinkerhoff, 2006; Kraiger, 2002; Kraiger *et al.*, 2004; Salas *et al.*, 2012; Tannenbaum, 2002). To our knowledge, this is the first field study arguing that the BSC is a feasible and actionable approach to evaluating the contribution of the training function to the achievement of organizational goals from a strategic management perspective. Indeed, the research findings indicate that the BSC allows to evaluate if and how a training function is actually performing in terms of both defining and executing its strategy, thus strengthening the link of training with organizational goals. More in particular, four findings can be discussed as follows.

First, our findings show that the BSC approach allows us to visualize a functional training strategy, that is to say a clearly focused and internal consistent map of cause-and-effect relationships turning the functional training efforts into strategic results. This study indicates that the functional scorecard describes in a meaningful and actionable way how desired outcomes from the organizational and trainee perspectives depend on the outstanding performance achieved in delivering a limited number of critical internal processes that, in turn, are enabled by a limited set of learning and growth factors. As such, it could be argued that our findings expand the existing literature in two ways. On the one hand, they offer a feasible model for the design and delivery of training strategies, thus indicating how to perform the principle of strategic alignment of training (Salas *et al.*, 2012; Tannenbaum, 2002). On the other hand, they offer a focused and internal consistent view that clarifies, from a strategic perspective, how to facilitate a smooth vertical transfer of training (Aguinis & Kraiger, 2009; Chen & Klimoski, 2007; Kozlowski *et al.*, 2000; Saks & Burke-Smalley, 2014).

Second, this study shows that the BSC effectively supports the training function both in managing the training processes and in delivering targeted organizational outcomes, thus bridging the gap between an operational and a strategic approach to training evaluation (Baraldi & Cifalinò, 2009). On the one hand, the operational approach to training evaluation, rooted in the hierarchical perspective, allows to dispose of a wide and well-known range of methods aimed at improving the quality of TPs (namely, it focuses on *how to do training right*) (for overviews, see Aragón-Sánchez *et al.*, 2003; Arthur *et al.*, 2003; Salas *et al.*, 2012; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992). On the other hand, this study shows that the BSC approach focuses on a limited set of training priorities leading to targeted organizational and behavioural outcomes, thus proving a strategic frame to training evaluation (namely, it focuses on *how to do the right training*). Of course, some of the KPIs included in the functional training scorecard are selected within the measures suggested by hierarchical models of training evaluation. Therefore, it can be confirmed that the contextual use of the hierarchical approach and the BSC approach is mutually beneficial not only to evaluate a training programme (Baraldi & Cifalinò, 2009), but also to evaluate a training function.

Third, our findings show that the BSC offers a specific set of strategic (critical few) measures for evaluating the training function performance. As a result, this study contributes to the literature advocating the need to move beyond traditional evaluation methodologies in order to embed training interventions within organizational systems (Brinkerhoff, 2006; Glaveli & Karassavidou, 2011; Kirkpatrick & Kirkpatrick, 2006; Kraiger, 2002; Kraiger *et al.*, 2004; Pangarkar & Kirkwood, 2008). Indeed, basing on our

findings, it could be argued that the BSC approach allows to shift the focus from the training programme evaluation to the evaluation of how effectively the organization frames and uses training systems and resources and leverages them into improved performance that in turn drives business results.

Fourth, this study indicates that the BSC approach fosters a sound alignment between training programme objectives and functional goals. According to our findings, as the functional scorecard can be linked effectively with the programme scorecard, the BSC approach can provide an insightful view of (1) why certain TPs are selected and how they are managed; and (2) how they actually contribute to the successful execution of a given training strategy. As such, these findings allow to expand our previous explorative research suggesting the use of the BSC approach to evaluate the performance of a given set of TPs (Baraldi & Cifalinò, 2009).

From a multidisciplinary research perspective, this study has various theoretical implications. First, it offers an actionable approach to developing multilevel research in training evaluation, bridging the individual and organizational levels of analysis (Aguinis & Kraiger, 2009; Chen & Klimoski, 2007; Fulmer & Ployhart, 2014; Kozlowski *et al.*, 2000; Ployhart & Moliterno, 2011; Saks & Burke-Smalley, 2014; Tharenou *et al.*, 2007). In particular, if a functional training scorecard allows those involved to focus on the most critical issues around which a training strategy is actually defined and executed from different (but interconnected) perspectives of evaluation, including the organizational and the trainee ones, it could be argued that the BSC approach contributes to integrate training evaluation at the organizational and individual levels of analysis.

Second, our findings also contribute to linking the micro- and macro-training research streams, respectively rooted in the industrial/organizational psychology literature and in the strategic HRM literature (Saks & Burke-Smalley, 2014). On the one hand, the design of training scorecards incorporates many issues developed in the micro-training research (for overviews, see Aragón-Sánchez *et al.*, 2003; Arthur *et al.*, 2003; Salas *et al.*, 2012; Salas & Cannon-Bowers, 2001; Tannenbaum & Yukl, 1992). On the other hand, training scorecards can also be viewed as one of the strategic HRM practices intended to enable an organization to achieve its goals (Nyberg *et al.*, 2014; Storey, 1995; Wall & Wood, 2005; Wright & McMahan, 1992; Wright *et al.*, 2001).

Third, from a performance measurement and management perspective, our findings extend the research on the cascading of the BSC throughout the organization. Whereas previous studies have focused on the overall HR function (Becker *et al.*, 2001; Huselid & Becker, 2011; Huselid *et al.*, 2005; Walker & MacDonald, 2001), this study specifically focuses on the training function and points out how a successful delivery of the training strategy actually contributes to the attainment of organizational goals.

This study may have different implications for practitioners too. Training managers may replicate the use of the BSC, as we have found that it is a feasible and affordable approach to training evaluation. Many practical benefits may be derived from the design and the use of training scorecards. During its design, the functional scorecard clarifies the mission of training function and translates it into operational terms. Once designed, functional scorecards can be used to manage the execution of the training strategy, communicating the trainee and organizational outcomes and creating stakeholder consensus. Finally, a good balance between leading and lagging indicators can help training managers to properly differentiate short- and long-term objectives and receive prompt feedback on the soundness of the hypotheses their strategy is based on (e.g. do investments in learning and growth factors actually lead to better performance in training processes? To what extent do excellent processes really improve trainees' competencies and behaviour? etc.).

The limitations of this research concern the explorative nature, the focus on a single sector and the specific geography. We tested the feasibility and usefulness of using the BSC approach to evaluate the training function performance in three Italian private HCOs only. Further research from a more international and cross-sectional perspective is needed. Moreover, research could be devoted to investigating the organizational factors facilitating and/or inhibiting an effective use of the BSC approach in training

evaluation. This analysis may take advantage of two existing literature streams: first, the studies that address the issues arising in BSC implementation and use (e.g. Agostino & Arnaboldi, 2011); second, the literature that focuses on the facilitating factors and/or obstructing barriers to conducting behaviour-based and results-based evaluations of training in organizations (e.g. Kennedy *et al.*, 2014). For instance, we would expect that the use of training scorecards is more effective in organizations that have already introduced (and cascaded) the BSC and use it properly as a performance management system (e.g. for allocating resources, setting objectives and rewarding).

Finally, our research has focused on the implementation of the training scorecard, whereas we have obtained no evidence on its use and effectiveness in the long-term. Further research might benefit from a longitudinal approach in order to gain a better understanding of the real impact generated by a systematic use of training scorecards, not only from an organizational perspective, but also from a training manager one. For instance, it could be interesting to investigate if the adoption of the BSC approach increases the accountability of the training function and/or the integration of the training manager within the organizational strategic management process. This latter analysis may take advantage of the existing studies suggesting that critical issues in strategy implementation are the understanding of and the consensus on organizational objectives and how to contribute to them (e.g. Boswell, 2006; Bowman & Ambrosini, 1997; Chenhall, 2005; Ho *et al.*, 2014; Walter *et al.*, 2013).

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