Benefits of Training and Development for Individuals and Teams, Organizations, and Society

Herman Aguinis[1] and Kurt Kraiger[2]

[1]The Business School, University of Colorado Denver, Denver, Colorado 80217-3364; email: Herman.Aguinis@ucdenver.edu

[2]Department of Psychology, Colorado State University, Fort Collins, Colorado 80523-1876; email: Kurt.Kraiger@colostate.edu

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Key Words

training benefits, training design, training delivery, training evaluation

Abstract

This article provides a review of the training and development literature since the year 2000. We review the literature focusing on the benefits of training and development for individuals and teams, organizations, and society. We adopt a multidisciplinary, multilevel, and global perspective to demonstrate that training and development activities in work organizations can produce important benefits for each of these stakeholders. We also review the literature on needs assessment and pretraining states, training design and delivery, training evaluation, and transfer of training to identify the conditions under which the benefits of training and development are maximized. Finally, we identify research gaps and offer directions for future research.

Contents

INTRODUCTION

Training: the systematic approach to affecting individuals' knowledge, skills, and attitudes in order to improve individual, team, and organizational effectiveness

Development: systematic efforts affecting individuals' knowledge or skills for purposes of personal growth or future jobs and/or roles

As organizations strive to compete in the global economy, differentiation on the basis of the skills, knowledge, and motivation of their workforce takes on increasing importance. According to a recent industry report by the American Society for Training and Development (ASTD), U.S. organizations alone spend more than $126 billion annually on employee training and development (Paradise 2007). "Training" refers to a systematic approach to learning and development to improve individual, team, and organizational effectiveness (Goldstein & Ford 2002). Alternatively, development refers to activities leading to the acquisition of new knowledge or skills for purposes of personal growth. However, it is often difficult to ascertain whether a specific research study addresses training, development, or both. In the remainder of this review, we use the term "training" to refer to both training and development efforts.

The importance of and scholarly interest in training in work organizations is reflected by the regular publication of training reviews in the *Annual Review of Psychology* since 1971 (Campbell 1971, Goldstein 1980, Wexley 1984, Latham 1988, Tannenbaum & Yukl 1992, Salas & Cannon-Bowers 2001). The present review covers the training literature since January 2000. We provide a review that is comprehensive though not exhaustive. Also, in contrast to previously published *Annual Review of Psychology* articles, we readily acknowledge at the outset that we take a point of view that training in work organizations produces clear benefits for individuals and teams, organizations, and society. We believe that training in work organizations is an area of applied psychological research that is particularly well suited for making a clear contribution to the enhancement of human well-being and performance in organizational and work settings as well as in society in general. Thus, in this review we first describe the benefits of training for various stakeholders and then discuss how training can be designed, delivered, and evaluated so that these benefits are maximized.

We acknowledge three unique characteristics of the present review that also differentiate it from previous *Annual Review of Psychology* articles on the same topic. First, because the training field has grown exponentially in the past decade, we cannot rely on the psychological literature to be the only or even main source of knowledge that has been generated. In preparing to write this article, we reviewed about 600 articles, books, and chapters published in psychology as well as in related fields including human resource management, instructional design, human resource development, human factors, and knowledge management. We believe this multidisciplinary approach is needed given the increasing fragmentation of

knowledge generated by researchers in various training subfields. Second, although psychology research on training has been a topic traditionally studied at the individual level of analysis and more recently at the team level of analysis, this review also includes organization and society levels of analysis. The present article goes beyond the traditional levels of analysis because, as noted by Kaufman & Guerra (2001), "we have entered a new era in which both achieving useful results and proving that they add value to the organization and our shared society are required" (p. 319). Third, thanks in part to the availability of cheaper and faster ways to send and receive information using the Internet, human resource management interventions and training efforts in particular are taking place at a global level (Cascio & Aguinis 2008). Thus, a review of the training literature cannot limit itself to research conducted only in the United States. Accordingly, this review includes numerous studies conducted outside of North America. In short, we approached our literature review from a fundamentally necessary multidisciplinary, multilevel, and global perspective.

Organization and Overview

The present review is organized as follows. In the first section, we describe benefits of training activities. First, we focus on benefits for individuals and teams, separating these benefits into job performance and factors related to job performance (e.g., tacit skills, innovation, communication), and other benefits (e.g., empowerment, self-efficacy). Second, we describe benefits for organizations. We also separate these benefits into organizational performance, factors related to organizational performance (e.g., effectiveness, profitability, sales), and other benefits (e.g., employee and customer satisfaction, improved organizational reputation). Third, we describe benefits for society. Overall, a review of this body of literature leads to the conclusion that training activities provide benefits for individuals, teams, and organizations that improve a nation's human capital, which in turn contributes to a nation's economic growth.

The second section reviews research addressing how to maximize the benefits of training activities at the individual and team, organizational, and societal levels. First, we focus on the activities that take place before training is implemented—needs assessment and pretraining states. Then, we focus on training design and delivery, followed by a discussion of training evaluation. We review research regarding transfer of skills and knowledge acquired in training to work settings. In the third and final section, we address conclusions, including implications for practice, and suggestions for future research.

Human capital: the collective set of performance-relevant knowledge, skills, and attitudes within a workforce (at an organizational or societal level)

Training evaluation: the systematic investigation of whether a training program resulted in knowledge, skills, or affective changes in learners

BENEFITS OF TRAINING FOR INDIVIDUALS AND TEAMS

There is documented evidence that training activities have a positive impact on the performance of individuals and teams. Training activities can also be beneficial regarding other outcomes at both the individual and team level (e.g., attitudes, motivation, and empowerment). We first review performance-related benefits.

Benefits Related to Job Performance

Training-related changes should result in improved job performance and other positive changes (e.g., acquisition of new skills; Hill & Lent 2006, Satterfield & Hughes 2007) that serve as antecedents of job performance (Kraiger 2002). Reassuringly, Arthur et al. (2003) conducted a meta-analysis of 1152 effect sizes from 165 sources and ascertained that in comparison with no-training or pretraining states, training had an overall positive effect on job-related behaviors or performance (mean effect size or $d = 0.62$). However, although differences in terms of effect sizes were not large, the effectiveness of training varied depending on the training delivery method and the skill or task being trained. For example, the most effective training programs were those including both cognitive and interpersonal skills, followed by those including psychomotor skills or tasks. Next, we describe studies to exemplify,

as well as go beyond, the general findings reported by Arthur et al. (2003). We emphasize that results from meta-analytic reviews should generally be given more weight than individual (i.e., primary-level) studies because they are more reliable (Aguinis et al. 2008).

Training effects on performance may be subtle (though measurable). In a qualitative study involving mechanics in Northern India, Barber (2004) found that on-the-job training led to greater innovation and tacit skills. Tacit skills are behaviors acquired through informal learning that are useful for effective performance. Regarding innovation, trained mechanics learned to build two Jeep bodies using only a homemade hammer, chisel, and oxyacetylene welder. Regarding tacit skills, Barber noted that the job of a mechanic requires "feel" to be successful. Specifically, trained mechanics developed an intuitive feel when removing dents—a complex process particularly when the fender is badly crumpled. As a result of informal training, one of the mechanics had a "good feeling of how to hit the metal at the exact spot so the work progresses in a systematic fashion" (Barber 2004, p. 134). This type of tacit skill was particularly useful in the Indian context because, although most shops in developed nations would not even attempt to repair a fender that was damaged so badly, this type of repair is common practice in the developing world (Barber 2004).

Benefits of training are also documented for technical skills. For example, Davis & Yi (2004) conducted two experiments with nearly 300 participants using behavior-modeling training and were able to improve computer skills substantially. Although behavior-modeling training has a rich history of success (e.g., Decker & Nathan 1985, Robertson 1990), a unique aspect of this research was that training was found to affect changes in worker skills through a change in trainees' knowledge structures or mental models (see also Marks et al. 2002 for an examination of mental models at the team level). Specifically, mentally rehearsing tasks allowed trainees to increase declarative knowledge and task performance, each measured 10 days after the training was completed. More recently, Taylor et al. (2005) conducted a meta-analysis including 117 behavior-modeling training studies. They ascertained that the largest effects were for declarative and procedural knowledge (*d*s around 1.0 resulting from comparing training versus a no-training or pretest condition). Declarative knowledge is knowledge about "what" (e.g., facts, meaning of terms), whereas procedural knowledge is knowledge about "how" (i.e., how to perform skilled behavior) (see Aguinis 2009, Kraiger et al. 1993). The overall mean effect on changes in job behavior was $d = 0.27$. However, Taylor et al. (2005) reported substantial variance in the distribution of effect sizes, indicating the need to investigate moderators of the relationship between behavior-modeling training and outcomes. We address the issue of moderators below in the Suggestions for Future Research section.

Training not only may affect declarative knowledge or procedural knowledge, but also may enhance strategic knowledge, defined as knowing when to apply a specific knowledge or skill (Kozlowski et al. 2001, Kraiger et al. 1993). Smith et al. (1997) refer to this as training for adaptive expertise (see also Ford & Schmidt 2000). In addition, training may enable consistency in performance across conditions. For example, Driskell et al. (2001) conducted a study including 79 U.S. Navy technical school trainees who performed a computer-based task. Trainees participated in a stress-exposure training session. This training exposes trainees to information regarding stressors (e.g., noise, time urgency), to the stressors, and how these stressors are likely to affect performance. Results showed that training was beneficial in that trainees performed well under a novel stressor and when performing a novel task. Thus, stress training helps maintain performance consistency.

Performance consistency may also result from enhancing trainees' self-efficacy or self-management skills. Frayne & Geringer (2000) conducted a field experiment in which they administered self-management training (lectures, group discussions, and case studies) to 30 salespeople in the life insurance industry.

Results showed that salespeople who participated in the training program demonstrated higher self-efficacy, outcome expectancy (e.g., "I will increase my sense of accomplishment"), and objective outcomes (e.g., number of new policies sold) as well as subjective job performance (i.e., sales managers' ratings of each salesperson's performance). Training-related performance improvement was sustained over a 12-month period after training ended.

There are also documented benefits of training for managers and leaders. Collins & Holton (2004) conducted a meta-analysis of the benefits of managerial leadership development programs including 83 studies published between 1982 and 2001 (see also Cullen & Turnbull 2005). They found that mean *d*s (comparing training with no training) ranged from 0.96 to 1.37 for knowledge outcomes and from 0.35 to 1.01 for expertise/behavioral outcomes. Knowledge was defined as principles, facts, attitudes, and skills measured using both subjective (e.g., self-reports) and objective (e.g., standardized tests) measures. Expertise/behavioral outcomes were defined as changes in on-the-job behavior and were also assessed using both subjective (e.g., peer ratings) and objective (e.g., behavioral) measures.

A final illustration of training benefits related to performance is cross-cultural training, in which employees are trained to perform their jobs in a different culture and/or adjust psychologically to living in that culture (Bhawuk & Brislin 2000, Lievens et al. 2003). Morris & Robie (2001) conducted a meta-analysis of the effects of cross-cultural training on expatriate performance and adjustment. Their meta-analysis included 16 studies that investigated adjustment and 25 studies that investigated job performance as the focal dependent variable. The mean correlation for the relationship between training and adjustment was 0.12 ($p < 0.05$), and the correlation for the relationship between training and performance was 0.23 ($p < 0.05$). However, there was substantial variability in the distribution of effect sizes, suggesting that potential moderators existed (again, we discuss the issue of moderators in the Suggestions for Future Research section). More recently, Littrell et al. (2006) conducted a qualitative review of 25 years (1980–2005) of research addressing the effectiveness of cross-cultural training in preparing managers for an international assignment. Littrell et al. (2006) examined 29 prior conceptual reviews and 16 empirical studies. Overall, they concluded that cross-cultural training is effective at enhancing the expatriate's success on overseas assignments. They also identified many variables that moderate the effects of training on expatriate performance, including the timing of the training (e.g., predeparture, while on assignment, and postassignment), family issues (e.g., spouse's adjustment), attributes of the job (e.g., job discretion), and cultural differences between the home country and the assignment country.

Cross-cultural training: training conducted for improving individual effectiveness and/or adjustment while on assignment in a new culture

Other Benefits

Other research demonstrates the impact of training on outcomes other than job performance or on variables that serve as antecedents to job performance. However, we emphasize that these additional benefits of training are not necessarily unrelated to job performance. In fact, in many cases they are indirectly related to performance and, in others, they may be related to individual and team well-being, variables arguably also indirectly related to job performance. For example, there is a renewed interest in leadership training (Collins & Holton 2004, Day 2000). Dvir et al. (2002) implemented a longitudinal randomized field experiment, using cadets in the Israel Defense Forces, in which experimental group leaders received transformational leadership training. Transformational leaders exhibit charismatic behaviors, are able to motivate and provide intellectual stimulation among followers, and treat followers with individual consideration. Results showed that transformational leadership training enhanced followers' motivation (i.e., self-actualization needs and willingness to exert extra effort), morality (i.e., internationalization of their organization's moral values), and

empowerment (i.e., critical-independent approach, active engagement in the task, and specific self-efficacy). Towler (2003) provided 41 business students with (*a*) no training, (*b*) presentation skills training, or (*c*) charismatic influence training. Charismatic influence training included articulating a vision, appealing to followers' values, and using autobiography, metaphors, analogies, stories, and self-efficacy language. A sample of 102 undergraduates from a different university watched videotaped presentations by the 41 business students. Similar to results of Dvir et al. (2002), Towler (2003) found some evidence in support of the effectiveness of charismatic influence training on the performance and attitudes of the participants who watched the videotapes.

Another area that has received consistent attention is aviation human factors training. This is an important area of research because human error has been consistently identified as one of the main causes of air crashes since the late 1970s (Edkins 2002). Edkins (2002) conducted a qualitative review of the aviation human factor training literature and concluded that outcomes of safety and team-based training programs include (*a*) safety-related benefits, including a reduction in lost time related to injuries, and (*b*) teamwork-related benefits including improved team performance. Because safety-related errors in fields such as aviation and medical care are often the result of team coordination issues (e.g., Morey et al. 2002, Salas et al. 2001), team training emerges as an important intervention. Ellis et al. (2005) conducted an experiment including 65 four-person teams. Individuals participated in a dynamic command and control simulation in which participants monitor activity in a specific geographic region and defend it against invasion by ground or air. Training improved declarative knowledge within the team and, in comparison with untrained teams, trained teams demonstrated better planning and task coordination, collaborative problem solving, and communication in novel team and task environments.

The most common training intervention for improving team communication and team effectiveness is crew resource management (CRM) training. The overall goal of CRM training is to shape cockpit crew attitudes and behavior to enhance aviation safety. This type of training is usually conducted using sophisticated flight simulators, and it addresses communication, teamwork, decision-making, and awareness with respect to accidents and incidents and the role played by human error. Goeters (2002) delivered CRM training to aircrews from an eastern European airline. After participating in training, aircrews substantially improved nontechnical skills (e.g., team building) as well as situation awareness and decision-making, each of which contribute to air safety. There are two qualitative literature reviews of studies addressing CRM training: O'Connor et al. (2002) reviewed 48 studies, and Salas et al. (2001) reviewed 58 studies. Given that they included overlapping sets of primary studies, it is not surprising that the conclusions of these literature reviews converged and determined that most studies focused on the benefits regarding attitudes and knowledge at the individual and team levels of analysis. Documented benefits include positive reactions to training, knowledge of teamwork principles, and aircrew communication and performance. A more recent qualitative review by Salas et al. (2006) examined 28 studies published since the Salas et al. (2001) review and included CRM studies not only in cockpits but also in other contexts such as aircraft maintenance and health care. Salas et al. (2006) reported positive effects of CRM training on trainee reactions, but results were mixed in terms of trainee learning and on-the-job behaviors. For example, Jacobsen et al. (2001) found that trainees had high situational awareness and communicated frequently; however, trainees had difficulties diagnosing medical problems, and no team member assumed the lead or delegated tasks. In general, CRM training was more effective in aviation settings than in health care settings, where its application is more recent.

In summary, a considerable number of individual studies and meta-analytic reviews provide support for the many benefits of training

for individuals and teams. These benefits include performance as well as variables that relate to performance directly (e.g., innovation and tacit skills, adaptive expertise, technical skills, self-management skills, cross-cultural adjustment) or indirectly (e.g., empowerment; communication, planning, and task coordination in teams). In the following section, we review evidence regarding benefits produced by training activities at the organizational level.

BENEFITS OF TRAINING FOR ORGANIZATIONS

Fewer than 5% of all training programs are assessed in terms of their financial benefits to the organization (Swanson 2001). The picture changes among companies recognized for their commitment to training. Specifically, the majority of organizations recognized by ASTD for innovative training programs measure training impact at some level of organizational effectiveness (Paradise 2007, Rivera & Paradise 2006). Typical organizational performance measures in this latter sample include productivity improvement, sales or revenue, and overall profitability. Overall, research regarding organizational-level benefits is not nearly as abundant as the literature on individual- and team-level benefits. Not only have there been relatively few empirical studies showing organizational-level impact, but those studies that have been done typically use self-report data and unclear causal link back to training activities (Tharenou et al. 2007). Nevertheless, we review this literature organized into two areas: benefits related to organizational performance and other benefits.

Benefits Related to Organizational Performance

Several studies conducted in European countries have documented the impact of training on organizational performance. Aragón-Sánchez et al. (2003) investigated the relationship between training and organizational performance by distributing a survey to 457 small and medium-size businesses in the United Kingdom, the Netherlands, Portugal, Finland, and Spain. Organizational performance was operationalized as (*a*) effectiveness (i.e., employee involvement, human resource indicators, and quality), and (*b*) profitability (i.e., sales volume, benefits before interest and taxes, and a ratio of benefit before taxes/sales). Results indicated that some types of training activities, including on-the-job training and training inside the organization using in-house trainers, were positively related to most dimensions of effectiveness and profitability. Ubeda García (2005) conducted a study including 78 Spanish firms with more than 100 employees. This study related organizations' training policies (e.g., functions assumed by the training unit, goals of the training unit, nature of training, and how training is evaluated) with four types of organizational-level benefits: employee satisfaction, customer satisfaction, owner/shareholder satisfaction, and workforce productivity (i.e., sales per employee). Results suggested that training programs oriented toward human capital development were directly related to employee, customer, and owner/shareholder satisfaction as well as an objective measure of business performance (i.e., sales per employee). Guerrero & Barraud-Didier (2004) administered a questionnaire to 1530 human resource directors working in large companies in France and collected financial information from the companies' financial directors or through databases approximately one year later. Five questions in the survey addressed the extent to which the company implemented training practices. The survey also included questions about social and organizational performance including work climate, employee attendance, quality of products and services, and employee productivity. Results showed that 4.6% of the variance in financial performance was explained by training (via the mediating role of social and organizational performance). Finally, Mabey & Ramirez (2005) conducted a study including 179 firms in the United Kingdom, Denmark, France, Germany, Norway, and Spain. Human resource managers or equivalent and line managers completed a

survey on training practices. Financial data were gathered from the Amadeus database; a two-factor measure of financial performance was computed based on (*a*) operating revenue per employee and (*b*) cost of employees as a percentage of operating revenues. Results indicated that the manner in which management development was implemented accounted for substantive variance in the financial performance measure. Specifically, firms with line managers reporting that management development programs are valued were more likely to have a positive relationship between management development and financial performance.

Because of the paucity of primary-level studies examining the benefits of training at the organizational level, the meta-analytic reviews published to date include only a small number of studies. In the meta-analysis by Arthur et al. (2003), the researchers also examined the impact of training on organizational-level results. Only 26 studies ($N = 1748$) examined the benefits of training at the organizational level. Results showed that the benefits of training vary depending on the type of training delivery method, the skill or task being trained, and the measure used to assess effectiveness. However, the mean *d* for organizational results was 0.62, precisely the same effect size found for the impact of training on job-related behaviors and performance at the individual level of analysis. Similarly, the Collins & Holton (2004) meta-analysis of managerial leadership development programs included only seven studies (of 83) that included information regarding the relationship between training and tangible organizational-level benefits (e.g., reduced costs, improved quality and quantity). The total sample size in these seven studies was 418 and the overall mean *d* was 0.39, favoring training compared to control groups.

Other Benefits

Benefits of training have been documented for variables other than organizational performance. Again, many of these additional outcomes are related to performance indirectly. For example, Sirianni & Frey (2001) evaluated the effectiveness of a nine-month leadership development program at a financial services company with presence in Canada, Europe, Latin America, and Asia. Participants included 29 service and operations market managers, district managers, and a regional president. The 13 training modules (e.g., managing conflict, motivating others, priority setting) were delivered in three-hour sessions every two weeks. Measures of program effectiveness included ratings offered by participants as well as other objective measures including regional scorecard results, which were collected on a monthly basis and used to determine service quality. Data collected approximately at the beginning and end of the training program suggested that, at a regional level, there were improvements on six of the seven scorecard components: overall teller errors, teller out of balance, number of deposit slips left in envelopes, business retention, teller secret shopper ratings, and new account secret shopper surveys.

Benson et al. (2004) collected data from each of the 9439 permanent, salaried employees of a large high-technology manufacturing firm to assess the effects on employee turnover of the organization's investment in employee development via a tuition reimbursement program. Investment in training via tuition reimbursement decreased turnover while employees were still taking classes. However, turnover increased once employees obtained their degrees if they were not promoted. This study points to the need to offer development opportunities on an ongoing basis and to align training efforts within an organization's performance management system (Aguinis 2009).

The nature of an organization's reputation influences how customers (and potential customers), competitors, and even employees interact with the organization. Thus, an organization's reputation can have important financial consequences. Clardy (2005) noted that an organization's reputation can be affected by its training practices. Organizations such as the SEALs (special operations force of the U.S. Navy) are legendary for their rigorous and

extensive training programs. One of the goals of the SEAL training, as frequently shown on television and other media, is to "construct a reputation of SEALs as totally dedicated, ruthless, and lethally skilled operators who would be a totally invincible foe" (Clardy 2005, p. 291). Similarly, although not empirically documented yet, another possible benefit of training could be *social capital*, via relationship building, norm development, and institutional trust (Brown & Van Buren 2007). In other words, training has the potential to affect important social processes that in turn are likely to affect organizational-level outcomes.

Darch & Lucas (2002) conducted interviews with 20 small and medium-size business owners in the food industry in Queensland (Australia). These companies dealt with products such as meat, fruit, vegetables, seafood, and grains. The main goals of this study were to understand business owners' barriers to their uptake of e-commerce and to identify strategies enabling them to engage in e-commerce initiatives. Results showed that of several barriers to e-commerce, an important one was the lack of training. Study participants noted that training would be a key strategy by which they could address their need to acquire the necessary knowledge and technological skills. In short, training was seen as an important enabler for e-commerce, a key strategic direction for the success of many of these small and medium-size businesses.

In summary, many studies have gathered support for the benefits of training for organizations as a whole. These benefits include improved organizational performance (e.g., profitability, effectiveness, productivity, operating revenue per employee) as well as other outcomes that relate directly (e.g., reduced costs, improved quality and quantity) or indirectly (e.g., employee turnover, organization's reputation, social capital) to performance. In the next section, we review evidence regarding benefits produced by training activities at the societal level.

BENEFITS OF TRAINING FOR SOCIETY

Most of the research on the relationship between training activities and their benefits for society has been conducted by economists; the focal dependent variable is national economic performance. Overall, this body of literature leads to the conclusion that training efforts produce improvements in the quality of the labor force, which in turn is one of the most important contributors to national economic growth (e.g., Becker 1962, 1964). Economists coined the terms "human capital" and "capital formation in people" in referring mainly to schooling and on-the-job training (Wang et al. 2002).

An illustration of this type of analysis is a study by van Leeuwen & van Praag (2002), who calculated the costs associated with on-the-job training and the impact of such training on country-level macroeconomic variables. These researchers concluded that if employers receive a tax credit of €115 per employee trained, the total expense for the country would be €11 million, but €114 million would be generated in increased revenue resulting from the new skills acquired.

In addition to economic growth and other related financial outcomes, training activities have the potential to produce benefits such as the inclusion of the country in powerful economic blocks (e.g., European Union). This is because some of the requirements imposed on countries to be part of these blocks include human capital development. Accordingly, in recognition of the benefits of training at the societal level, many countries encourage national-scale training and development projects as a matter of national policy (Cho & McLean 2004). Consider the following selective evidence.

In the Pacific Islands, a region of Oceania with more than 10,000 islands in the South Pacific Ocean, the population is dispersed over large distances and is vulnerable to numerous environmental threats and natural disasters (Bartlett & Rodgers 2004). These islands

constitute 22 different political entities, most of the economies are small, education is generally good at the elementary level but not the secondary level, and in-company training is limited. The area is very diverse economically, socially, and culturally. However, the Pacific Islands, led by the regional intergovernmental Secretariat of the Pacific Community and the Pacific Islands Forum Secretariat, have developed a common and unique vision of people as "the most important building block for economic, social, and cultural development" (Bartlett & Rodgers 2004, p. 311). This people-centered approach assumes that investment in human capital is fundamental for achieving societal prosperity.

In the United Kingdom, the government wishes to improve the skills of the workforce and encourages the development of lifelong learning practices through a variety of organizations and initiatives (Lee 2004). Although the government leads these initiatives, they give a strong voice to employers, trade unions, professional bodies, and other stakeholders in the business sector. For example, the organization Investors in People gives awards to organizations that implement excellent practices in the training of individuals to achieve business goals. Different organizations can use different means to achieve success through their people, so Investors in People does not prescribe any one method but instead provides a framework to help organizations find the most suitable means for achieving success through people (Investors in People Standard 2006).

The recognition of the importance of training activities led India in 1985 to become the first nation in the Asia-Pacific region to create a Ministry of Human Resource Development (Rao 2004). This ministry was created by then Prime Minister Rajiv Ghandi, who had a vision that investment in human capital would be an essential tool for the country's development. Accordingly, the public sector, which had traditionally been the largest employer in India, assisted in the creation of corporate training departments. Examples of organizations with such departments include Hindustan Machine Tools, Bharat Heavy Electricals, Hindustan Aeronautics, State Bank of India, Steel Authority of India, and Coal India.

Poland is an additional interesting illustration given its transition from a centralized economy under Soviet control to a member of the European Union in May 2004. Under Soviet control with a command economy, and virtually full state ownership in all sectors, a typical Polish employee was "chronically suspicious, full of sour demand, unable to take responsibility or to commit himself, ever ready to wallow in his own misery and misfortune" (Tischner 1992 as cited in Szalkowski & Jankowicz 2004, p. 347). To say the least, the majority of employees did not possess the attitudes and skills needed to meet the demands of a market economy. In addition, that thousands of employees were on the country's payroll without making value-added contributions became obvious as several industries shrunk their workforces. For example, the coal mining industry went from about 500,000 employees in the mid-1990s to about 100,000 employees a decade later (Szalkowski & Jankowicz 2004). Thus, in Poland now there is a general feeling that "further progress in the commercial sphere can only come through engagement in the process of globalization and through the development of national human resources via training, education, and research" (Szalkowski & Jankowicz 2004, p. 350).

In summary, the recognition of the benefits of training activities for society has led many countries around the world to adopt national policies to encourage the design and delivery of training programs at the national level. These policies have the goal to improve a nation's human capital, which in turn is related to greater economic prosperity.

HOW TO MAXIMIZE THE BENEFITS OF TRAINING

In the next section, we summarize recent theory and research oriented toward improving the effectiveness and impact of training. Roughly following the instructional design model (Goldstein & Ford 2002), we organize this

review around stages of needs assessment and pretraining states, training design and delivery, training evaluation, and transfer of training.

Needs Assessment and Pretraining States

Conducting a thorough needs assessment before training is designed and delivered helps set appropriate goals for training and ensure that trainees are ready to participate (Blanchard & Thacker 2007). However, there continues to be little theoretical or empirical work on needs assessment (Kraiger 2003). One exception is a study by Baranzini et al. (2001), who developed and validated a needs assessment tool for the aviation maintenance industry. A second example of a theory-based approach to conducting a needs assessment is a study by Fowlkes et al. (2000), who evaluated an event-based knowledge-elicitation technique in which subject matter experts (SMEs) are asked about team situational awareness factors in response to a military helicopter operation. Results showed that more experienced experts identified a richer database of cues and were more likely to identify response strategies, supporting the conclusion that using SMEs during a needs assessment maximizes the benefits of training. The finding that expertise affects the quality of needs assessment data is consistent with the conclusions of Morgeson & Campion (1997), who reported that the accuracy of job analysis data may be compromised by up to 16 different systematic sources of error. These include social influence and self-presentation influences and limitations in information processing (cf. Ford & Kraiger 1995). More empirical research is necessary to understand how the quality of training design and delivery is affected by systematic and random influences on the quality of needs assessment data.

Consideration of the pretraining states or individual characteristics of trainees also enhances the benefits of training. Tracey et al. (2001) collected data from 420 hotel managers who attended a two-and-a-half-day managerial knowledge and skills training program. Results showed that managers' job involvement, organizational commitment, and perceptions of the work environment (i.e., perceived support and recognition) were predictive of pretraining self-efficacy, which in turn was related to pretraining motivation. Pretraining motivation was related to posttraining measures of utility reactions, affective reactions, declarative knowledge scores, and procedural knowledge scores. Pretraining motivation has also been shown to be related to trainee personality (Rowold 2007), trainee self-efficacy and training reputation (Switzer et al. 2005), as well as reactions to prior training courses (Sitzmann et al. 2007). In a field study of learners in a traditional classroom or blended learning course, Klein et al. (2006) found that learners had a higher motivation to learn when they had a high learning goal orientation (rather than a lower learning goal orientation) and when they perceived environmental conditions (e.g., time, Internet access) as learning enablers (rather than as barriers). Motivation to learn, in turn, was related to learner satisfaction, metacognition, and course grade. Kozlowski et al. (2001) showed that trait and manipulated learning orientation had independent effects on participants' self-efficacy and structural knowledge.

More generally, Colquitt et al. (2000) summarized 20 years of research on factors affecting trainee motivation. Their meta-analysis showed that training motivation was significantly predicted by individual characteristics (e.g., locus of control, conscientiousness, anxiety, age, cognitive ability, self-efficacy, valence of training, and job involvement) as well as by situational characteristics (e.g., organizational climate).

In summary, two ways to maximize the benefits of training is to conduct a needs assessment using experienced SMEs and to make sure trainees are ready and motivated for training. For example, training readiness can be enhanced by lowering trainees' anxiety about training, demonstrating the value of training before training begins, and making sure employees are highly involved and engaged with their jobs.

Transfer of training: the extent to which new knowledge and skills learned during training are applied on the job

Pretraining motivation: individual attitudes, expectancies, and self-beliefs likely to influence willingness to attend training and learning during training

Training Design and Training Delivery

Research on training design and delivery can be categorized into two general themes: research on new approaches to engage learners in meaningful learning processes and research on specific training methods. Several studies in each of these two domains provide information on how to maximize the benefits of training.

Linou & Kontogiannis (2004) compared immediate recall and follow-up retention levels (after six weeks) in four groups. Trainees were production engineering undergraduates. The primary objective of training was to help participants develop diagnostic strategies to identify symptoms and problems given a set of fault scenarios. One group received systemic training (focusing on structural, functional, and physical relationships among subsystems), two groups received either low-level or high-level diagnostic information, and one group received general training on theories related to manufacturing plants. The theory group and both diagnostic groups performed better on the immediate recall measures, whereas the systemic group performed better on the retention measure, presumably because group members built a more stable organization (mental model) of the training content. Similarly, Holladay & Quiñones (2003) showed that adding variability to practice trials resulted in better long-term retention, presumably because trainees had to exert greater effort during skill acquisition.

Researchers continued to explore error training as a strategy for increasing performance and maintaining performance under changing environmental demands. In contrast to traditional training design approaches that focus on teaching correct methods (and avoiding errors), error management training encourages trainees to make errors and engage in reflection to understand the causes of errors and strategies to avoid making them in the future. Heimbeck et al. (2003) implemented error training using a sample of undergraduate students. The task consisted of learning how to use spreadsheet software (i.e., Excel). Performance was assessed by raters who reviewed videotaped sessions and rated whether discrete tasks such as entering data correctly or formatting a table were performed correctly. Trainees who were provided the opportunity to make errors (together with explicit instructions encouraging them to learn from these errors) performed significantly higher than those in error-avoidant conditions. In a follow-up experiment, participants learning how to use presentations software (i.e., PowerPoint) performed better in the error training with metacognition prompting (i.e., instructions encouraging trainees to think explicitly about what the problem is, what they are trying to achieve, and so forth) compared to the error-avoidant condition (Keith & Frese 2005). A recent meta-analysis by Keith & Frese (2008) reported that overall, error management training was superior to either proceduralized error-avoidant training or exploratory training without error encouragement ($d = 0.44$). Effect sizes were moderated by two important factors: Effect sizes were greater for posttransfer measures compared to within-training performance, and for adaptive transfer tasks (as opposed to tasks structurally similar to training). Thus, error training may be appropriate for developing a deeper task understanding that facilitates transfer to novel tasks.

Research on error training highlights the importance of understanding and affecting learner states and answers long-standing calls to engage in research on how individuals learn, not in just the latest training fads (e.g., Campbell 1971, Kraiger et al. 1993). For example, Schmidt & Ford (2003) reported that levels of meta-cognitive activity mediated the effects of a computer-based training program on declarative knowledge, task performance, and participants' self-efficacy. An increasing amount of evidence suggests that trainees' self-regulatory processes mediate the training–learning relationship. Self-regulation refers to the extent to which executive-level cognitive systems in the learner monitor and exert control on the learner's attention and active engagement of training content (Vancouver & Day 2005). Chen et al. (2005) trained 156

individuals in 78 teams on a flight simulator task and examined adaptive performance on subsequent performance trials. Training participants' self-regulation processes mediated the effects of training on task self-efficacy and their adaptive performance across trials. Two studies reported by Sitzmann et al. (2008) used repeated trials to demonstrate that while engaging in self-regulatory processes facilitates learning, the effects improve over time.

Technology-delivered instruction (TDI) continues to become increasingly popular in industry (Paradise 2007), although researchers have been slow to study factors that facilitate or limit its effectiveness (Brown 2001, Welsh et al. 2003). TDI includes Web-based training and instruction on single workstations, PDAs and MP3 players, as well as embedded just-in-training in work-related software (Aguinis et al. 2009). One potential drawback of TDI is that it transfers more control to learners to make decisions about what and how to learn (Noe 2008). A recent meta-analysis by Kraiger & Jerden (2007) indicated that high learner control has only marginally beneficial effects on learning, and in many studies, high control has a negative effect. Low-ability or inexperienced learners under high learner-control conditions may make poor decisions about what and how to learn (DeRouin et al. 2004). One promising technique for coupling learner-driven instruction with technology is to supplement learner control with adaptive guidance. Specifically, Bell & Kozlowski (2002) concluded that providing adaptive guidance in a computer-based training environment substantively improved trainees' study and practice effort, knowledge acquired, and performance.

Better hardware and software capabilities have allowed for improvements in the delivery of various forms of remote training. Zhao et al. (2005) conducted a meta-analysis comparing face-to-face and distance education courses and found no significant differences between formats. A meta-analysis by Sitzmann et al. (2006) examined the relative effectiveness of Web-based instruction over classroom instruction. In an analysis of 96 published and unpublished studies involving 19,331 trainees, the researchers found that Web-based instruction was 6% more effective than classroom instruction for teaching declarative knowledge but was equally effective for teaching procedural knowledge. However, when the same instructional methods were used in both forms of instruction, there were no differences in the relative effectiveness of either media. Thus, the small advantage of Web-based instruction over classroom training may be due more to the use of novel (and effective) training strategies than to the medium per se.

Adaptive guidance: providing trainees with diagnostic, future-oriented information to aid decisions about what and how much to study and practice in training

Researchers are also exploring the impact of novel training technologies on outcomes other than learning. For example, Wesson & Gogus (2005) compared two different methods for delivering socialization training to new employees: a group social-based program and an individual computer-based program. This quasi-experiment included 261 new employees from a large technology-based consulting firm. The social-based program was substantially more successful in socializing new employees regarding people, politics, and organizational goals and values.

In summary, the application of appropriate training design and delivery methods can help maximize the benefits of training. In terms of design, recent research suggests that the benefits of training are enhanced by applying theory-based learning principles such as encouraging trainees to organize the training content, making sure trainees expend effort in the acquisition of new skills, and providing trainees with an opportunity to make errors together with explicit instructions to encourage them to learn from these errors. In terms of training delivery, recent research indicates that the benefits of using technology can be enhanced by providing trainees with adaptive guidance.

Training Evaluation

The Kirkpatrick four-levels approach to training evaluation continues to be the most widely used training evaluation model among practitioners (e.g., Sugrue & Rivera 2005, Twitchell

Training effectiveness: the study of individual-, group-, or organizational-level factors that influence learning in training and transfer after training

et al. 2000), although the approach continues to be criticized by researchers (e.g., Holton 2005, Kraiger 2002, Spitzer 2005). There has been little empirical work in the twenty-first century on designing and validating new evaluation measures, although there have been several conceptual contributions to frameworks guiding evaluation decisions (Holton 2005, Kraiger 2002, Spitzer 2005, Wang & Wilcox 2006).

Kraiger (2002) proposed a decision-based evaluation model. The model frames decisions about how to measure training impact around the intended purpose for evaluation—purposes of decision making, marketing, and providing feedback to participants, instructors, or instructional designers. The model also emphasizes tailoring evaluation measures to the needs and sophistication of the intended audience(s). It proposes a comprehensive taxonomy for evaluation, including assessing the training program, changes in the learner, and changes in the organization. Notably, a number of authors have criticized the lack of rigor in training evaluation designs (e.g., Edkins 2002, Littrell et al. 2006, O'Connor et al. 2002, Wang 2002). Although Kraiger's model emphasizes the importance of solid designs (as compared to more or better measures), he argued that meaningful evaluation can be done with incomplete research designs, a point raised earlier by Sackett & Mullen (1993) and Tannenbaum & Woods (1992), and later echoed by Kraiger et al. (2004). The internal referencing strategy, in which effect sizes for trained behavior (or knowledge) are compared to effect sizes for nontrained behaviors (or knowledge), was used in several studies as an alternative to more rigorous designs with a control group (Aguinis & Branstetter 2007, Frese et al. 2003).

How people react to training has continued to receive attention in the literature, particularly around the question of how best to use reactions for improving training design and delivery. Morgan & Casper (2000) factor analyzed a set of training reaction items from 9128 government employees and found evidence of two underlying factors: overall affect toward training and perceived utility of the training. Aguinis & Branstetter (2007) also discussed the need to discriminate between affective and utility reactions because utility reactions are more strongly related to learning than are affective reactions. K.G. Brown (2005) proposed a theoretical structure with distinct factors (enjoyment, relevance, and technology satisfaction) as well as a second-order factor of overall satisfaction, related in part to trainee affect. Data from two studies reported by K.G. Brown (2005) supported this model. In a study of 181 Korean workers, Lim & Morris (2006) showed that the relationship between perceived applicability (training utility) and perceived application (transfer) decreased as the time between training and measurement increased.

There continues to be calls for establishing the return on investment for training, particularly as training continues to be outsourced and new forms of TDI are marketed as cost effective. Although the tools and strategies for showing return on investment are well known (e.g., Kraiger 2002, Phillips & Phillips 2007, Spitzer 2005), as the above review of organizational-level outcomes indicated, there remain few published studies of return on investment.

In summary, it is important not only that the benefits of training be maximized, but also that these benefits are documented. Recently proposed conceptualizations and measures of training effectiveness can enhance the perceived benefits of training from the perspective of the various stakeholders in the process, including those who participate in training, those who deliver it, and those who fund it (e.g., organizations). It is important that training evaluation include a consideration of the intended purpose of the evaluation, the needs and sophistication of the intended audience, and the variables related to various types of utility reactions (i.e., affective versus utility).

Transfer of Training

Evidence described in the previous sections forcefully makes the point that training works, in the sense that it has an impact on individuals and teams and on the organizations and

the societies in which they function. However, training efforts will not yield the anticipated effects if knowledge, attitudes, and skills acquired in training are not fully and appropriately transferred to job-related activities. Thus, the study of transfer of training focuses on variables that affect the impact of training on transfer of training as well as on interventions intended to enhance transfer.

Research on moderators of the training-transfer relationship has focused primarily on workgroup factors—supervisory and peer support—as well as on organizational-level factors. Holton et al. (2003) used the Learning Transfer System Inventory (Holton et al. 2001) to examine differences in transfer characteristics across eight different organizations, three organization types, and three training types. The Learning Transfer System Inventory includes 68 items encompassing 16 conceptual constructs that in turn are organized in to four major groups: trainee characteristics (learner readiness and self-efficacy), trainee motivation (motivation to transfer, transfer effort to performance expectations, and performance to outcome expectations), work environment (performance coaching, supervisor support, supervisor sanctions, peer support, resistance-openness to change, positive personal outcomes, and negative personal outcomes), and ability (perceived content validity, personal capacity for transfer, transfer design, and opportunity to use). Analyses showed that scale scores differed across individual organizations, organization types, and training types, indicating that transfer environments are probably unique to each training application.

Regarding organizational-level factors, Kontoghiorghes (2004) emphasized the importance of both transfer climate and the work environment in facilitating transfer. Transfer climate includes a number of factors including supervisory and peer support, but also task cues, training accountability, opportunities to practice, opportunities to use new knowledge and skills, and intrinsic and extrinsic rewards for using new knowledge. Work environment factors include sociotechnical system design variables (e.g., fostering job involvement, employee involvement, information sharing), job design variables (e.g., fostering task autonomy, job match), quality management variables (e.g., employee commitment to quality work, customer focus), and continuous learning variables (e.g., continuous learning as a priority, rewards for learning). With a sample of 300 employees in the information technology division of a large U.S. automaker, Kontoghiorghes (2004) found support for both climate and work environment factors as predictors of transfer motivation and performance.

Although there continue to be claims that the transfer climate is critical to transfer of training, empirical studies of transfer climate have yielded mixed results. Richman-Hirsch (2001) found that posttraining transfer enhancement interventions were more successful in supportive work environments. Chiaburu & Marinova (2005) found no effects for supervisory support but positive results for peer support in a study of 186 trained employees. van der Klink et al. (2001) also found no effect for supervisory support on two studies involving bank tellers. An important study for understanding these mixed results may be that of Pidd (2004), which examined the role of peer and supervisory support for transfer of training on workplace drug and alcohol awareness. Pidd reported that the influence of workplace support on transfer was moderated by the extent to which trainees identified with the groups that provided support.

A number of studies have investigated in-training strategies for improving transfer, with little or mixed success. T.C. Brown (2005) examined goal setting at the end of training by comparing three conditions: setting distal goals, setting proximal plus distal goals, and telling participants to do their best. Contrary to expectations, participants instructed to do their best out-performed trainees told to set distal goals, and did as well as participants told to set proximal plus distal goals. In contrast, Richman-Hirsch (2001) reported positive effects for a posttraining goal-setting intervention, particularly in supportive work environments.

Gaudine & Saks (2004) found no differences between a relapse prevention and transfer enhancement intervention for nurses attending a two-day training program. The researchers suggested that transfer climate and support were likely more potent determinants of transfer than were posttraining interventions. Huint & Saks (2003) examined managers' reactions to either a relapse prevention intervention or one emphasizing supervisor support. For a sample of 174 managers and students, there was no significant difference in preferences for either intervention, although there was a slight tendency to prefer the supervisor support intervention.

In summary, recent research has reported on how to ensure that the changes that take place during training are transferred back to the job environment. Taken together, this body of research points to the importance of considering interpersonal factors such as supervisory and peer support as moderators of the training-transfer of training relationship. More distal organizational-level factors such as transfer climate have not received consistent support as important moderators.

CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

We take the point of view that training leads to important benefits for individuals and teams, organizations, and society. The present review suggests that these benefits range from individual and team performance to the economic prosperity of a nation. To understand these benefits of training, we adopted a multilevel, multidisciplinary, and global perspective. We also included a discussion of how to maximize the benefits of training. These factors include paying attention to needs assessment and pretraining states of trainees (e.g., trainee motivation), training design and delivery (e.g., advantages of using error training), training evaluation (e.g., documenting training success differently depending on the stakeholder in question), and transfer of training (i.e., the importance of interpersonal factors).

Implications for Practice

The organizations that are able to realize the benefits of training that are documented in this review are able to move away from viewing the training function as an operational function or cost center to one that is value driven (Fox 2003). For example, the consulting company PricewaterhouseCoopers has cut costs in many areas but increased its investment in employee training to about $120 million per year. Another leading consulting firm, Booz Allen Hamilton, believes in developing workers as a long-term competitive advantage and manages its learning functions as revenue centers (Fox 2003). Managers and other decision makers in these organizations prefer information and data on business-related results to make decisions about how to allocate resources, including resources for training activities (Mattson 2005). Training for the sake of training, an approach that focuses on developmental ideals and supportive organizational environments, is not aligned with today's business realities, including compressed career progression pathways, budgetary cuts and constraints, highly competitive environments, and market-driven economic philosophies (McGuire et al. 2005). Designing, delivering, evaluating, and clearly documenting the benefits of training using the information included in this review will allow the human resource management function to be a strategic organizational player and to move away from the negative connotations (e.g., "welfare secretaries") associated with this function in the twentieth century (Hammonds 2005, Jacoby 2004, Kraiger et al. 2004).

Suggestions for Future Research

We also identify future directions for research. First, we suggest that the benefits of training may have a cascading effect such that individual-level benefits (e.g., individual performance) affect team-level benefits (i.e., team performance), which in turn affect organizational (i.e., profitability) and societal (i.e., human capital) outcomes. However, research is needed to

understand the factors that facilitate a smooth cross-level transfer of benefits. Of special interest is the question of vertical transfer: how effects of training on individuals (increased knowledge and skills) translate directly into better functioning at the team and organizational level. Although good conceptual models of this process exist (e.g., Kozlowski & Salas 1997, Kozlowski et al. 2000), there has been little empirical research. Conceptual work on such cross-level transfers in other areas of applied psychology may prove useful in this regard (e.g., Fiol et al. 2001).

Second, a gap exists between the applied and scholarly literatures regarding the use of cycle time as a variable to assess training effectiveness (Holton 2003). Effect sizes for the quality of performance may not be the same as those for the speed at which individuals, teams, and organizations identify and implement solutions to new problems. Given competition and market-related pressures, organizations need to realize the benefits of training faster and faster. Research on this issue is lacking in the scholarly literature; work is needed regarding the factors that can accelerate the realization of the benefits of training at various levels of analysis. This research may profit from initial studies on the effects of training on innovation and performance adaptability.

Third, although the role of affect has been acknowledged in the measurement of reactions to training, affect could play a more central role in the training process in general. Prior research has focused on the relationship between liking a training program (positive reactions) and employee learning or subsequent performance (Alliger et al. 1997), but has paid less attention to relationships between affective states during training and learning. Offering employees training opportunities can be seen as a message that the organization cares for its employees (Aguinis 2009). This perception may in turn produce benefits even though training design and delivery may not be optimal. In short, future research could investigate the extent to which training opportunities are seen as a message that the organization cares, which could be a powerful and important message in today's corporate world plagued by downsizing and employee layoffs.

Fourth, we identified the need to study moderators in several areas. Moderators explain the conditions under which an effect or relationship is likely to be present and likely to be stronger (Aguinis 2004, Aguinis et al. 2005). Training research has consistently found support for both individual and situational moderators on relationships among training interventions, trainee learning, and workplace performance (Kraiger & Aguinis 2001). For example, in this review we highlighted the importance of moderators in the study of the relationship between behavior modeling and training outcomes, the relationship between cross-cultural training and expatriate adjustment, the relationship between training and transfer. However, additional research is needed to understand fully the range and impact of these moderators. Ideally, this research would be driven by better theory on how proposed situational and individual moderators operate to effect learning and transfer. For example, how do organizational systems for accountability influence trainee motivation or cognitive effort during training? How does cognitive ability influence both the rate and depth of learning during training?

We close by emphasizing the overwhelming evidence in favor of the benefits that training produces for individuals and teams, organizations, and society. An important challenge for the practice of training is to integrate the training function with employee selection, performance management, rewards, and other human resource management practices (Aguinis 2009, Aguinis & Pierce 2008, Cascio & Aguinis 2005). Training alone may not be able to realize its benefits if it is disconnected from other human resource management functions or the organization is dysfunctional in other areas (e.g., interpersonal relationships). Training will have the greatest impact when it is bundled together with other human resource management practices and these practices are also implemented following sound principles and empirical research.

SUMMARY POINTS

1. The current review differs from previous *Annual Review of Psychology* articles on the topic of training and development because its approach is fundamentally multidisciplinary, multilevel, and global.
2. There is considerable support for the many benefits of training for individuals and teams. These benefits include performance as well as variables that relate directly (e.g., innovation and tacit skills, adaptive expertise, technical skills, self-management skills, cross-cultural adjustment) or indirectly (e.g., empowerment; communication, planning, and task coordination in teams) to performance.
3. Many studies have gathered support for the benefits of training for organizations as a whole. These benefits include improved organizational performance (e.g., profitability, effectiveness, productivity, operating revenue per employee) as well as other outcomes that relate directly (e.g., reduced costs, improved quality and quantity) or indirectly (e.g., employee turnover, organization's reputation, social capital) to performance.
4. The recognition of the benefits of training activities for society has led many countries around the world to adopt national policies to encourage the design and delivery of training programs at the national level. The goal of these policies is to improve a nation's human capital, which in turn is related to greater economic prosperity.
5. Several interventions are effective at enhancing the benefits of training. First, organizations should conduct a needs assessment using experienced subject matter experts to make sure trainees are ready and motivated for training. Second, in terms of design, organizations should apply theory-based learning principles such as encouraging trainees to organize the training content, making sure trainees expend effort in the acquisition of new skills, and providing trainees with an opportunity to make errors together with explicit instructions to encourage them to learn from these errors enhances the benefits of training. Third, in terms of training delivery, the benefits of using technology for training delivery can be enhanced by providing trainees with adaptive guidance. Fourth, it is important not only that the benefits of training be maximized, but also that these benefits are documented. Recently proposed conceptualizations and measures of training effectiveness can enhance the perceived benefits of training from the perspective of the various stakeholders in the process, including those who participate in training, those who deliver it, and those who fund it (e.g., organizations). Finally, recent research points to the importance of considering interpersonal factors such as supervisory and peer support as moderators of the relationship between training and transfer of training back to the work environment.
6. Designing, delivering, evaluating, and clearly documenting the benefits of training using the information included in this review will allow the human resource management function to be a strategic organizational player and to move away from the negative connotations (e.g., "welfare secretaries") associated with this function in the twentieth century.
7. Future research is needed in several areas. For example, the benefits of training may have a cascading effect such that individual-level benefits (e.g., individual performance) affect team-level benefits (i.e., team performance), which in turn affect organizational (i.e., profitability) and societal (i.e., human capital) outcomes. However, future research is needed

to understand the factors that facilitate a smooth cross-level transfer of benefits. Second, a gap exists between the applied and scholarly literatures regarding the use of cycle time as a variable to assess training effectiveness. Third, although the role of affect has been acknowledged in the measurement of reactions to training, affect has the potential to play a more central role in the training process in general. Finally, this review identifies the need to study moderators, including moderators of the relationship between behavior modeling and training outcomes, the relationship between cross-cultural training and expatriate adjustment, and the relationship between training and transfer.

8. Training alone may not be able to realize its benefits if it is disconnected from other human resource management functions or if the organization is dysfunctional in other areas (e.g., interpersonal relationships). Training will have the greatest impact when it is bundled together with other human resource management practices and these practices are also implemented following sound principles and practices based on empirical research.

DISCLOSURE STATEMENT

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