
Training Between Neighbors:
Can a Successful Training System
Be Developed Between Companies
Located in the Same Locality?

*La capacitación entre los vecinos:
¿es posible desarrollar un sistema de
capacitación exitoso entre empresas
ubicadas en la misma región?*

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Abstract

The article focuses on the question: Can you create a successful training system between companies located geographically close to each other? The topics are: the possibility of developing a training system within companies (or "intrafirm" training); the positive impact on performance of training derived from geographical proximity; the nature of the interfirm training group; the role in the training offer of foreign and multinational companies; and finally the role of training providers. There is a close analysis of technical and vocational education and training in developing countries, particularly in terms of such important topics as in-company training, interfirm and intrafirm training practices, and training provision as it is related to costs, results, wages and innovations. There is also a degree of focus on more specialized fields such as division of labor, upstream and downstream training, training appropriability, training cluster and spillovers, policies of local and international companies, the role of training providers, and tacit and codified training.

Keywords: *Technical and Vocational Education and Training, TVET, Developing Countries, Interfirm and Intrafirm Training, Training Spillovers.*

JEL Classification: *I21.*

Resumen

El artículo se centra en la pregunta: ¿se puede crear un sistema de formación exitoso entre empresas ubicadas geográficamente cerca unas de otras? Los temas son: la posibilidad de desarrollar un sistema de formación dentro de las empresas (o formación "intraempresa"), el impacto positivo en el rendimiento de la formación derivado de la proximidad geográfica, la naturaleza del grupo de formación entre empresas, el papel en cuanto a la oferta formativa de las empresas extranjeras y multinacionales y, por último, el papel de los proveedores de formación. Hay un análisis detallado de la educación y formación técnica y profesional en los países en desarrollo, particularmente en términos de temas tan importantes como la formación en la empresa, las prácticas de formación entre empresas y dentro de la empresa, y la oferta de formación en relación con los costos, los resultados, los salarios y las innovaciones. También hay un enfoque en campos más especializados como la división del trabajo, la capacitación previa y posterior, la apropiación de la capacitación, el agrupamiento de capacitación y los efectos indirectos, las políticas de las empresas locales e internacionales, el papel de los proveedores de capacitación, y la capacitación tácita y codificada.

Palabras clave: *educación y capacitación técnica y profesional (TVET por sus siglas en inglés); países en desarrollo; capacitación entre e intraempresas; beneficios de la capacitación.*

Clasificación JEL: *I21.*

1. Introduction

A training system may come into existence based on the co-localization of firms and institutes of vocational and technical learning (Dustmann & Schönberg, 2012). It is not necessarily based on similarities of activity or sectoral focus. However, if they are similar, then the range of skills catered for (or at least those offered at a good level) might be relatively narrow. The collaboration that may arise works on the basis of information concerning potential partners, ease of conducting business with them, a relationship of mutual trust and understanding, and exchange of reliable practical information (both tacit and codified). Naturally, for some, the ideal situation would involve the firm conducting all of its training activities under its own roof, with its own people managing, delivering, and assessing the training; and with no dependence on or interference from outside participants.

However, in reality, in light of limited capability and critical mass, and perhaps to reduce transaction costs, external collaboration might be the best option to identify, access, support, quality-control, and possibly create services and knowledge in this field (for very useful comments on this and related themes, see Stiglitz & Greenwald, 2014). It may also result in advantages of common ownership, incentives, and innovation, as well as economies of scale and other cost reductions. Maskell remarked on this point, “most of the advantages in relation to the skills developed in the local market might be just as big or small for 20 co-localized firms of a given size as for a single firm, 20 times bigger” (Maskell, 2001, p. 97; similar comments are made by Galbreath *et al.*, 2014).

2. Methodology

This study was undertaken using the following methods:

A. A review was carried out of the most pertinent literature on the topic of technical and vocational education and training (TVET)—with a focus on single firms or groups of firms—employed as a means of raising developing countries from a longstanding position of deep poverty, lack of skills, under-utilized natural resources, stunted growth within and among companies, and civic disorder.

B. A series of visits were made to institutes and companies participating in TVET, in order to identify their best practices through one-to-one interviews, questionnaires,

observation of activities and achievements, and collection and interpretation of results. An attempt was also made to interpret enterprise-based TVET using theories and perspectives applied successfully in other fields, as a means to achieve an original understanding using transferable and reliable methods of how TVET works, and why and where it is appropriate.

C. To analyze this research field, raw data were collected for all the published documents on TVET using bibliographic sources such as Scopus. The bibliometric tool was used in order to provide statistical analysis of the quantitative data derived from the scientific literature (Rongying & Limin, 2010).

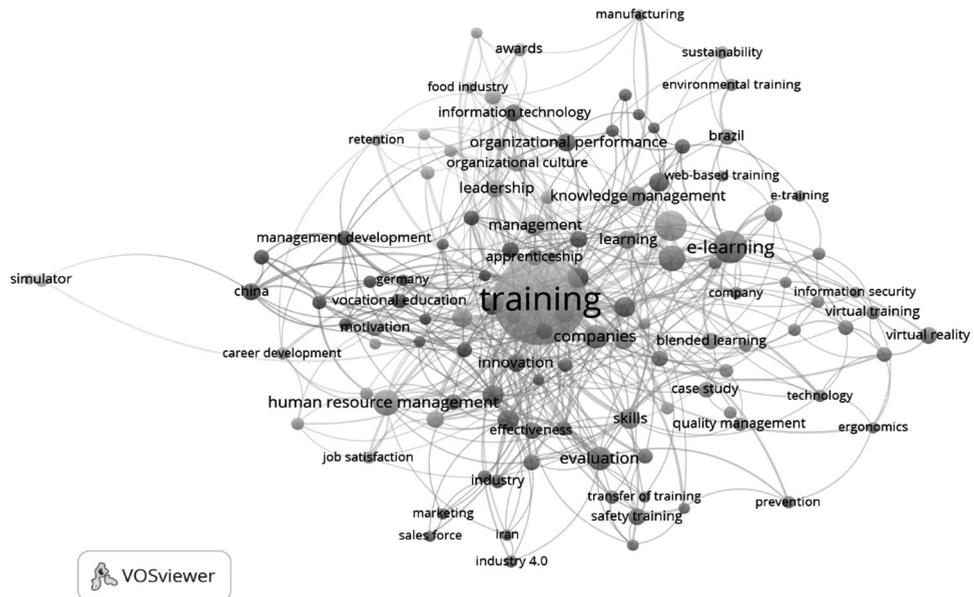
D. Methodological rigor was achieved by paying special attention to overall study design, outcomes evaluation, regional comparisons, analysis of the effects of individual intervention components, measurement of changes of attitudes, and the prestige of TVET. Further emphasis was placed on evaluation of such pivotal but overlooked issues as tacit and codified training, social and institutional cooperation, training spillovers, and others.

3. Results and Discussion

How Does an Interfirm or Co-Localized Training System Arise?

The subject of training carried out by, and offered to companies, is global and involves entities of all sizes in all industries and in all places on the planet where humans live and work. Not surprisingly, it is a topic that has resulted in an enormous research output: our bibliometric analysis produced 27,296 results. Of course, the research we have undertaken has by necessity imposed geographic and socioeconomic limits, among others. Some of the main concerns associated with this general field of research are on-line training in different forms, evaluation and effectiveness of training, human talent management (linked to issues such as job satisfaction and career paths), management development, leadership, and organizational culture (see figure 1). Several of these themes are not addressed in this paper as they lie outside our focus of attention.

Figure 1. Training between companies: results of 27,296 documents



Source: www.webofscience.com

The evolution of a local, sectoral, or regional training system often originates in particular firms which have identified weaknesses in the competence of employees and skills gaps which bar them from taking advantage of local resources and the equipment and techniques that are available to exploit them. At this juncture, there exist challenges which perhaps for participants who join the system later are less inhibitive: vaguely defined trajectories and learning curves, limited economies of scale and experience, constrained financial resources due to, among other reasons, a lack of precedent, and so on. In this sense, Schumpeterian patterns of training system development may occur (Karniouchina *et al.*, 2013), beginning with high uncertainty and low entry barriers, and the leadership of larger firms (Biais *et al.*, 2015), with the increasing participation of smaller firms exploiting opportunity conditions later on (Liedtka *et al.*, 2017).

There are bound to be firm-specific, idiosyncratic differences in terms of timeliness, comprehensiveness of utilization, and level of impact with regard to the shared training system evolved in the horizontal dimension among neighboring firms

and firms operating within the same industry, and in the vertical dimension among firms that engage in complementary activities. We may see this, for example, in the repercussions such a spillover might have on the horizontal plane compared with its impact on the vertical dimension of the chain. A situation may also exist in which firms with a similar operational focus have very different current skill levels or gaps. After all, the level of participation of a firm that, in terms of capacity building, is relatively immature, depends on its position in what could be termed the skills development lifecycle (similar to comments made by experts such as D'Este *et al.*, 2013, about the industry lifecycle).

As the firm matures in terms of its training commitments, there may be an increasing division of labor leading to a demand for additional training capabilities. Again, this will impact on internal provision, whether an interfirm training system exists, and on other institutions operating locally or regionally in the field. In this case, the firm or firms with the most advanced skills and training endowment may have more to give the weaker firm(s) without actually benefiting much from the relationship in such a process. As cooperation involves interfirm openness and willingness, the temptation might be to reduce or cease this interaction precisely because of this asymmetry and perhaps the anti-competitive nature of the activity. On the other hand, it is quite possible that, all parties being happy with the arrangement, the interaction continues to the extent that greater specialization and breadth of offer occur.

However, certain firms may consider it unwise to take this step into a more-specialized skills formation, electing instead to engage in enhancing organizational integration as an antidote to a fragmented group of now-skilled employees lacking a proper system of interdependence and feedback (Foss *et al.*, 2015). Once the process of integration has been completed, the system may have a greater capacity to change or expand into new areas in a timely way that is not detrimental to its structure, existing core training, or other competencies. It may also give new specialized providers the opportunity to emerge or for old ones to modify their operations in response to the changing circumstances demanded by what may be a major customer in the local skills development market (Sharma, 2014).

Likewise, the firm may also do this because it has run up against the problem of the absence of competent external capabilities for which a substitute for internal resources does not exist. A very good reason to slow down the evolution of the training system would involve a change of policy away from directed skills formation

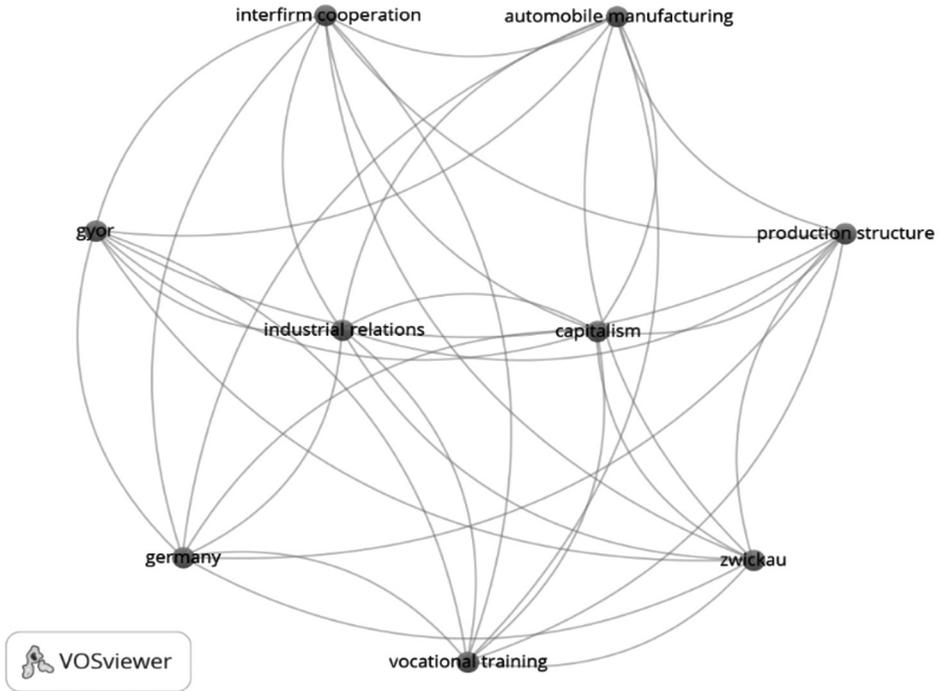
towards targeting skilled people to perform tasks immediately, in preference to waiting for the entire duration of a training program, which may indeed turn out to be a failure in terms of competency needs in the end. Competency-creation is a long-term commitment often without a guarantee of satisfactory results, while the transaction costs and recognized current abilities of a skilled recruit are clear and immediate. On the other hand, should the firm have a well-developed organization and be confident of its skills-formation trajectory, and if both internal and/or external training capabilities have the required range of competence, then a higher level of specialization may occur. The general skills level of current and incoming employees, and a reduction in the importance attached to relatively basic, general training, would also be important issues in this respect.

For the training cluster to function well, each firm should analyze how its internal capability is evolving so that the subsequent exchange of training knowledge between firms and other stakeholders can change appropriately over time. This requires long-term discipline, an adequate communication capability, and the right people and procedures. Another way to approach this theme is to recognize that, in effect, each firm has an “absorptive capacity” (Cohen & Levinthal 1989, p. 569; see also Ashford & Hall, 2011) that relates to its ability to identify, take on, and exploit knowledge and skills from both internal and external sources. So, again, while externally the local cluster training inputs and spillovers might be quite frequent and accessible, whether a firm can take advantage of this is a question related to its own personnel, management structure and main activities. In practical terms, the influence of the cluster organization itself on intrafirm learning, it appears, has not yet been well investigated.

Is there a positive impact on training performance derived from geographical proximity of neighboring firms and training providers?

We carried out a simple bibliometric analysis of this specific topic of interfirm training. We obtained the following results: that the main concepts (all very generic) connected with vocational training are industrial structure, capitalism, labor relations, production structure, and, of course, cooperation between companies (see figure 2).

Figure 2. Interfirm training: results of 21 documents



Source: www.webofscience.com

There may be a stock of skills-development knowledge in a particular locality, based on an agglomeration of firms, providers, and other related agents located close together (Malerba & Orsenigo, 2000; Halász, 2011). More specific approaches to analyzing this theme have been undertaken by Mukhopadhyay *et al.* (2014, on regional networks), Biao *et al.* (2013, on learning regions) and Arif (2012, on collective efficiency studies). They are characterized by their emphasis on joint action by collaborators, based on mutual trust and supporting institutions, leading to competitive advantage. Though it is only mentioned at most as one element of the mix, the collective evolution of a local training system is a significant part of this development. However, some provisions should be mentioned right from the start. The fact that this closeness of agents exists—with similar intrafirm learning mechanisms (Ibrahim *et al.*, 2019), capacity building activities, organizational system and shared needs—does not necessarily mean that the resulting learning pool or

system will be accessed if (i) the firm has limited capability to use it, (ii) it is not what the firm requires, or (iii) the firm itself has its own resources and internal system with which it is reasonably satisfied.

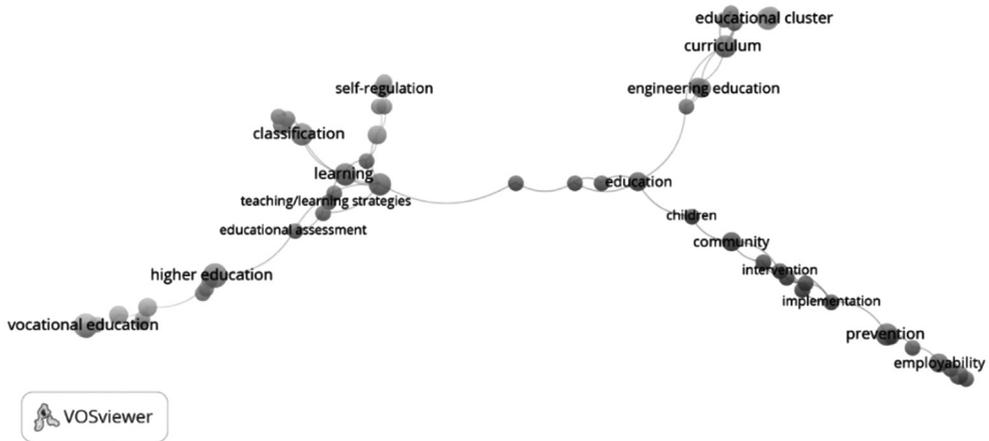
If, like organizational structures, skills are a relatively immobile resource, then the proximity of collaborators and providers, and their capabilities, are central to the development of the training offer to the firm itself (this runs parallel to the immobility of organizational structures, as discussed by Breschi and Malerba, 2001, p. 817; and Sheffi, 2012). It is therefore likely that a particular co-localization of dynamic, reasonably funded, and underskilled firms will facilitate a comparatively well-developed cluster of providers and even in-house training departments. Furthermore, as an alternative, it could also be the case that a lot of training can be transmitted in codified form over large geographical distances without interpersonal mediation and interfirm mobility of personnel (Shafaeddin, 2012). After all, upstream firms are often located in a particular place not for reasons of proximity to skills and the institutes which furnish their means of development but because of the natural resources that are found there. This is a situation that contrasts with the one in which a downstream firm is devoted to the production of innovations and is located in a place where essential knowledge inputs are available (as described in studies such as that of Tavassoli & Carbonara, 2014).

At another level, related to what firms learn from each other, some sort of organized or irregular association—resulting in such benefits as an exchange of best practices (for example)—may play a key part in the internal learning process involving training emphases and general performance in a given firm. The dynamics for this could be interfirm knowledge exchange and skills catch-up.

What is the nature of the interfirm training cluster?

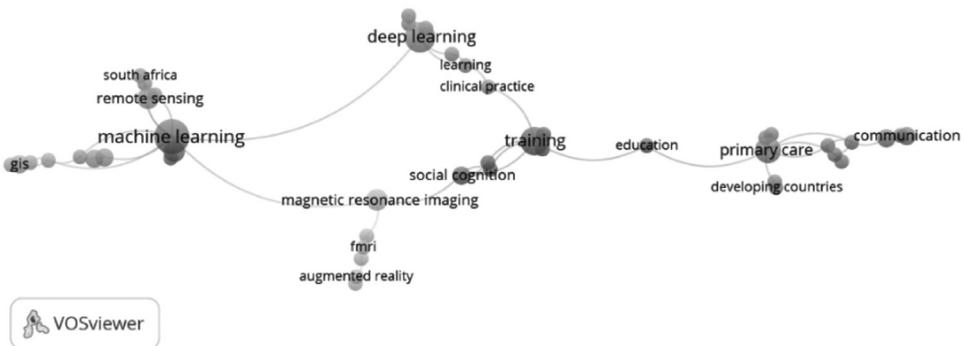
A cluster in this context is a situation among neighboring firms of mutual search or support for the provision of training. It is inevitably a very important research field: according to the bibliometric analysis that was carried out, we ended up with 15,216 results (see figure 3). The main themes include community, intervention and implementation; employability, educational cluster, curriculum, self-regulation, teaching and learning strategies, and classification. Another search—on training and proximity—yielded 1,963 results (see figure 4): the most interesting topics in the context of this current research are social cognition, deep learning and communication.

Figure 3. Training cluster: 15,216 document results



Source: www.webofscience.com

Figure 4. Training and Proximity: Results of 1,963 documents



Source: www.webofscience.com

A group of firms (even companies from the same industry) and other bodies, operating in the same region, might come together because the opportunities to innovate represent the optimum training system among themselves and because of the absence of strong competitive concerns. The commitment or embeddedness of each participant in this endeavor is a reflection of the perceived benefit that

they have already experienced or expect, but also the intervention of individuals in the decision-making process, favoring participation in the network sometimes in the face of objections. This rests on their belief in the advantages of working together rather than in isolation. Likewise, the firm's ability to avail of the local skills provision depends on good social links, effective communication, and often active sponsorship. Obviously, the greater the emphasis on face-to-face learning—involving classrooms, OTJ, simulators, etc.—and the lesser the use of digital training methods, means that the issue of geographical proximity and localization are fundamental in addressing the training model created and its development over the course of time.

In sum, once some degree of joint action happens in the geographical or sectoral agglomeration of companies, then firms are open to create collective advantages: decisions on training focus and level, “training the trainers,” better and more specialized providers, facilities, and infrastructure, access to information and exchange of experiences, openness to sources outside the cluster, and so on (Sheffi, 2012, pp. 209-236). In an ideal situation, these collective economies managed by joint efforts may lead to a “collective efficiency” (Schmitz & Nadvi, 1999; Newman *et al.* 2016) of the generation and diffusion of training knowledge, and its practical implementation.

In the case of strong interfirm relations—good examples would be the case of a major firm and supplier/subcontractor firms, or a cluster engaged in interconnected activities within a trade association (Bramoullé *et al.*, 2014; Lundvall, 2016)—there certainly could exist an incremental learning process, by example or dictate, to develop the training activities among them, based on the clear understanding that the collective organization of human capital formation enhances the skills within a shared skills-base and labor market; indeed this is part of the thinking that also sees shared knowledge and norms as working to everyone's benefit (Kapunda, 2017). This effort can be accomplished if there already exists a high-trust culture and legal regulation (Shafaeddin, 2012). There might exist a certain level of agreed, formal development of this situation or (perhaps harder to appreciate) this process may lead to an informal growth and routinized coordination of the shared training system—a phenomenon that could arise, for example, in the absence of a more supportive system in a developing country or a larger agglomeration of firms and providers.

The more non-competitive and non-rival the character of the relationship between firms, the better the opportunity of some degree of informal/random or formal/

organized participation in the local training system. However, it would be naive to expect that this will happen inevitably, or achieve the best possible results without other interventions, since such issues as the combination of tacit spillover and geographical distance in the transmission of a training culture, and even the establishment of physically close skills operations may not be sufficient to bring this about (Breschi & Lissoni, 2001, pp. 979, 988; Ottaviano & Peri, 2011; Qian & Acs, 2013). Spatial proximity is important but of equal significance are the interplay of training knowledge codification, labor market weaknesses and strengths, the economics of knowledge transmission (as described for example by Rallet & Torre, 2000, and Taylor, 2009), and enterprise strategies that consciously or inadvertently result in a collective participation in the local training system.

The cluster could evolve a selective/adoptive/innovative mechanism that creates the common training system by a process of selection, imitation, variation, and monitoring of identified solutions (Maskell, 2001, p. 930; Galbreath *et al.*, 2014). At the same time, this process cannot abandon an individual perspective: the training offer must be aligned with the self-defined objectives of each enterprise, facilitated or delimited as this may be by a specific institutional endowment. Thus, the activities undertaken by the firms in the group will define what is learned, while the individual firms themselves will dictate specialized focuses and how these will be learned (Lundvall, 2016). What prevents inertia from setting in among a group of firms thus engaged in training is their specific in-house demands/needs and developments pushing for new training answers—the sometimes “competing visions” that, when well-managed, maintain the dynamism of the shared capacity-building project (Loasby, 2001; Piazza, 2010). Another antidote to stagnation is the regular entry of new stakeholders into the network.

The external training environment may well change in a very dynamic way, evolving in response to market forces (e.g., a firm may now want management courses rather than programs for electricians), government support and structures, the participation of individual local trainers or agencies of training provision, and so on. Simply put, the situation may progress from the initial formation of an immature training system, to growth and stabilization of a more mature system, and end in similar stages of expansion/stability, replacement or decline. The changing patterns of agent dominance and dependency, training market entry/participation/departure, and business volatility will all have a say in this. Depending on capabilities and needs internal to the firm and the interfirm grouping, the “mature” scenario could be one of relative inertness in a configuration involving non-dynamic firm(s) and its agents,

limited dynamism between a growing firm(s) and its collaborators, and innovative dynamism in the relationship of a booming firm(s) and its necessarily highly responsive agents (an interpretation partly modelled on Coombs *et al.*, 2003, pp. 1131–32; and Baglioni and Sinclair, 2018). Regarding long-term, external ramifications, the latter could be seen as the one with the greatest potential to push the range and scale of the training provision. However, the question concerning its efficacy would have to be addressed as there is no guarantee that sheer advancement is a matter of real best practices and benefit maximization.

The training provision that arises in the context of one single industry dominating a region or cluster is bound to be specialized and therefore limited in scope. This occurs because of demand-led forces dictating what is offered both within firms and outside them. On the other hand, if a broader range of industries are present, the provision should have a greater variety. This consideration is no small matter: in terms of capacity building, the influence of a cluster or co-localized firms can be very powerful (as Maskell concludes, clusters are “the territorial configuration most likely to enhance learning processes”; Maskell 2001, p. 922). In this sense, localized learning involving skills enhancement can create an oasis of provision that may or may not enrich the local skills pool and its specific skills gaps. However, it is not clearly efficient to supply a lot of human capital formation (as governments and NGOs have done) in the hope that the commercial and industrial activities of the locality will then inevitably be upskilled and diversify (Draxler, 2014).

A given cluster of firms engaged in training might be more dynamic if there exists among them a knowledge leader or gatekeeper, certainly by comparison to more haphazardly organized clusters. It is a fact that a situation of reasonably active collective training efficiency could arise, based on structured collaboration that facilitates and stimulates better performance of capacity building.

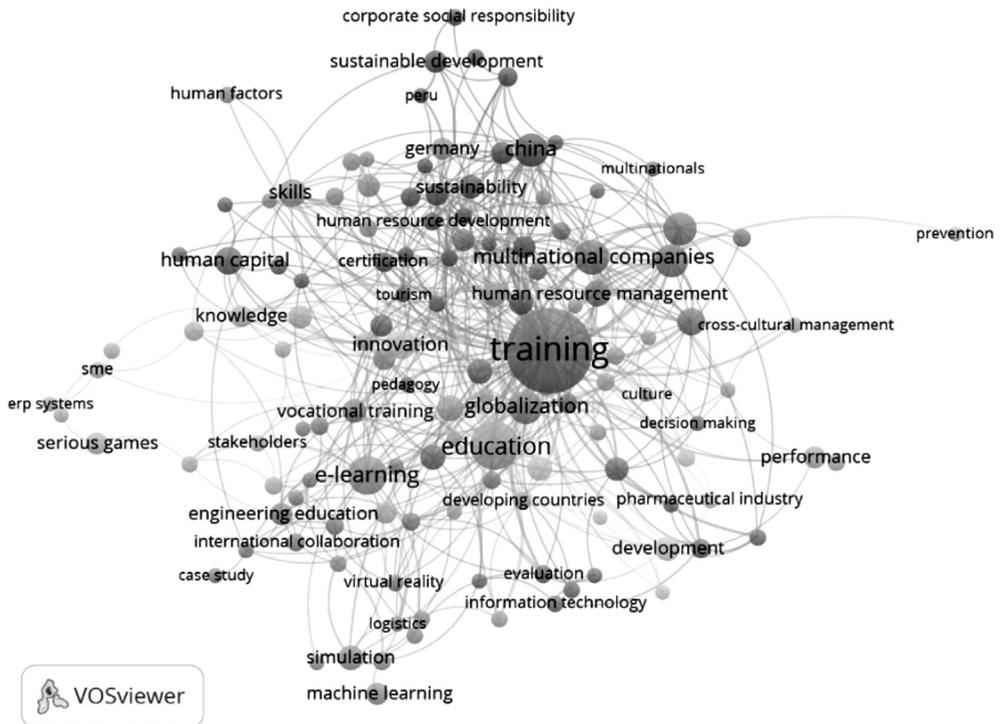
What is the role played by foreign firms and multi-nationals?

Over the years, a large number of multinational companies have developed a culture of training their current staff or new recruits to achieve different efficiencies, stability of standards, harmony and retention of staff, capacity for managed and timely response to change, among other concerns. At best, this will mean that companies have the openness, if not the active ability, to diagnose what

training is required to expand existing operations or launch new ones. In turn, this means that their example of cultural and practical training, whether in-house or provided by outside or local training suppliers, might have a positive effect on the locality or even the region, as long as everything works well.

Through a bibliometric method it was discovered that a large number of publications have dealt with this general field, with our search producing 2,955 results (see figure 5). Topics include: human resource management and intercultural management; certification, sustainability and corporate social responsibility; innovation; various aspects of virtual learning; and, of course, globalization and developing countries.

Figure 5. International companies and training: results of 2,955 documents



Source: www.webofscience.com

It has been argued that, since linkages with local companies are often weak, the main impact of foreign firms on their local equivalents in terms of skills competency is achieved through internal human capital formation, enabling their own employees and trainees to operate new machines and participate in modern working practices, and from there indirectly influence other nearby firms (Blomström & Kokko, 2003; Makki & Somwaru, 2004; Goedhuys, 2007, pp. 287–288). All this does not rule out the possibility that an improved training regime may appear locally, at least partly as a result of the close presence of a developed training system within a large and dynamic firm. No firm is totally self-sufficient when it comes to the creation of a training regime and its subsequent operation and evolution: interaction and collaboration take place with stakeholders ranging from trainers and government supervisors to local community leaders (Edquist, 2006; Lundvall, 2016). There is also no denying the strong influence a firm (whether foreign or otherwise) might have on its suppliers and subcontractors (Javorcik, 2004; Malik, 2015), in terms of its role as a model of the benefits of a solid training culture and skills-level expectations of its partners.

Similarly, there also exists the question of a skills development spillover between the foreign firm and its local neighbors, with some authors arguing that there seems to be little evidence that it occurs effectively, particularly if the gaps in organizational sophistication, processes, institutional policy, and technological advance are considerable. A spillover could be expected to be easier if these gaps were closer. In this regard, it is part of the brief of this study to examine if certain authors are correct to argue that there seems to be little evidence that this occurs effectively (Ibrahim *et al.*, 2009; Buch *et al.*, 2014; Chen *et al.*, 2015).

The provision of training may be path-dependent (Sood *et al.*, 2012) if the firm is a subsidiary of a block of enterprises (e.g., part of a multinational) and is thus endowed with a ready-made and previously proven system; if the local context has a reasonably well-developed training provision and much use is made of it; or if the internal training system is established with relatively fixed ideas concerning how provision should be created. But neither Sood *et al.* (2012) nor Malerba (2002) devote enough discussion to how certain firms and indeed sectors may be quite rigid in this regard (as a reflection of such considerations as the high costs and risks involved as well as training habituation), while others, particularly “evolving” sectors, may be more open to innovation and trial-and-error experimentation. Of course, a major factor behind the evolving nature of the training provision is the firm-wide dynamism of innovation that is permitted to take place (these remarks

were developed from some conclusions made by Coombs *et al.* (2003, p. 1126) and Baglioni and Sinclair (2018). In short, how the training is developed is a question of the given conditions and the challenges they present, the capabilities (of funds, analytical capacity, personnel, structure, confidence in training, etc.) inherent within the firm, the competence and the nature of the relationship between the participating agents (e.g., whether this is cooperative or competitive), and the regularly assessed success or failure of the endeavor.

A parent firm might find that a subsidiary has enacted successful training processes and routines: in fact, the smaller company has been a laboratory for experiments in human training, on a scale that is definable, scalable, and reasonably credible. However, replication might not be easy to achieve. Not only is it hard to put together a single operation and discrete pieces of knowledge on paper in a systematic/unified (codified) way, but the parent company often fails to replicate successful experiments, not taking into account the importance of organizational knowledge and structure (Szulanski & Winter, 2002, pp. 62-63).

In the context of this study, the participation of multinational corporations in making localized decisions (possibly over the heads of local management and training coordinators) is an important issue. We should keep in mind that inward foreign direct investment (FDI) is responsible for a very sizable part of gross fixed capital formation in less developed countries (LDCs) and in all developing countries; as such, it has a very strong influence on all types of learning and capability accumulation. In one sense, the perspective at the multinational level might lead the firm to view collaboration with other firms as a breach of self-interested policy, while at the local level, the view might be that there are few competitive reasons against collaborating in this and other areas, and many others in favor. This develops arguments presented by Breschi and Malerba (2001, p. 822). The top-down intervention might then be classified as under-informed and biased. Of course, the practices involved in globalization can support and reinforce local ways of doing things, just as the activities and knowledge originating in and tested at the local level may feedback very positively into the “globalized” training knowledge pool, facilitated as it may be by very direct communication links as exist in a multinational enterprise (Breschi & Malerba, 2001, speak along these lines, as do Wheelahan & Moodie, 2016).

Studies have been conducted that support the argument that foreign firms have stronger vertical links with other enterprises, and that they tend to invest more in

human and physical capital (e.g., Goedhuys, 2007, p. 281). Local firms tend to substitute in-house alternatives and have less formal connectivity with other local firms (Newman *et al.*, 2016). The reason for the higher prevalence of training among foreign companies can be explained by the transfer of equipment and working practices (and its demands on skills) from the parent company, the existence of manuals and other sources of information, the institutional training policy; and the availability of a training culture, transferable and adaptable system, funds and highly mobile training personnel. The question here relates to the possible higher provision and quality of the training offer among foreign firms, versus the perhaps better training fit that a firm can achieve through being more locally embedded.

Of course, lacking a sense of local loyalty and adequate local knowledge, a foreign firm might calculate that expatriate labor complies with its pressing needs. However, the presence of skilled workers imported from outside and the desire to have new colleagues meet their standards in an effort to reduce productive inefficiencies and human resource weaknesses due to a lack of uniformity in capability, might be a good lesson to engage in skills development, not to mention the corporate policy demanding a uniform high-skills level, quality production and focus on comparatively more demanding foreign markets.

What is the role of training providers?

Naturally, it is not possible to address the general topic of this paper without talking about training providers. The number of publications on this topic confirms its importance (this research found 24,617 references), and there is also a great abundance of sub-topics related to the role of providers from different locations, training approaches, levels of competence, teaching practices and evaluation methods/techniques, types of clients and of students/trainees/graduates, and so on (see figure 6). Again, it should be mentioned that a large part of the results of the bibliometric analysis is not directly related to the topics on which this study focuses. However, it does show the magnitude of interest in this field. Then, among the results, the elements that seem to be of greatest interest in the context of this work are simulation, evidence-based practice, competencies and curriculum, collaboration, implementation, review, quality improvement, attitudes, training for providers, quality and evaluation, and adult education.

The key element in the long term is persistence in this feedback or intervention, as providers will tend to be relatively passive if training knowledge input and formation path management through demand-pull forces are not very active. A contrary situation is one in which the firm or group of firms create their own in-house provision, independent of outside institutes (though sometimes with their participation); or decide to cancel or reduce their activities with external providers and resort to the type of in-company skills development that furnishes them with more control of their vocational and technical training (Arif, 2012). Yet another scenario shows the possibility that a large firm or a group decides to establish a more or less autonomous institute that is directly and collectively funded and managed by them, perhaps with some involvement of a government ministry, semi-state organization, or NGO.

Let us look briefly at the competence level of the providers themselves, without getting involved at this juncture in their particular public or private nature. Some will have experience in the field of the firm; others will be experienced in other fields and perhaps, because of this experience, are ready to make the transition to respond to the requirements of their new customers; and lastly, others will have experience in a completely unrelated field and be unwilling or incapable of making the transition, or once the transition is made, be poorly prepared. Newly created training providers comprise yet another category and these should carry out their surveys and target their capabilities. One important point to be made about both established and new providers is that they may have to co-locate to sometimes very challenging places (e.g., mining firms). The absence of basic elements such as an existing infrastructure, combined with company guidance if not also active support, should inspire them to be innovative. This is a theme that needs to be better investigated in terms of location studies and agglomeration effects.

The emergence of more numerous providers, many of whom could be expected to be specialized and of higher relative quality than before, should make for wider provision that is easier to access, possibly enabling a more secure training investment and development experience, and incrementally improved training/learning trajectory; there is even a chance that prices would go down (Caniels & Romijn, 2003, p. 1266; Van Long *et al.*, 2014). The specialization that may emerge could be due to two factors. The first one is obvious: employees have basic skills and now require intermediate and advanced training that is by definition more specialized. The other factor relates to firm-level idiosyncrasies: the training that

corresponds to a particular enterprise may be, for that very reason, firm-specific, addressing core competences and their associated skills and routines (Leahy, 2012, looks at this in terms of a firm's competitive capacities and sustainable advantage). There is reason to assume that, given enough training market volume and continuity, and a lack of firm-level provision, a cluster of training providers would not come into existence to form a collective, preferred option for the firm cluster. However, this would depend on local business culture, a sense of comfort in group linkages, and the discipline not to give in too readily to temptation and disintegrate the training group. The momentum for this could come from a dominant firm or the cluster itself, or a government agency recognizing the scale advantages and perhaps the benefits to public agents participating in the provider group.

The practice already exists in industry, in general, for a few decades to outsource productive activities to reliable outside contractors. For reasons now of tradition and satisfaction with this generic activity, a firm might be emboldened to do the same when it comes to training. Likewise, smaller firms with currently limited in-house capabilities and without plans to change this in the near future, may also contract outside providers. Their inability to design and manage projects dealing with training systems, coinciding with a clear present need to develop core competences that resolve current weaknesses and facilitate effective business partnering with other firms of a higher skills level, makes this practice a good alternative. The downsizing of public provision in certain regions, and the ineptness of much of the rest, could also help in the growth of private provision led to some extent by related outsourcing.

4. Conclusions

In this study, the reason why a firm is located in a particular place might not be due primarily to the availability of training provision, skilled labor or other "knowledge externalities" (as might be the case of an industry cluster close to a university), but to the location of natural resources (Michaels *et al.*, 2012). Under these circumstances, the place where the firms are located may have populations of at best semi-skilled workers and devoid of training or educational services. These factors also contribute to the quantifiable effect of training and local spillovers could stand out very clearly in what is in formal knowledge terms virgin territory.

In a situation in which a firm is literally on its own—in the context of the title of this study, it has no *neighborhood* of support firms and training agents, and so on, but instead its geographical position is dictated by the location of the natural resources it wishes to extract—it is therefore not capable of entering the same localized training system that springs up among clustered firms and providers, and as such it is left to its own devices. In response to its physical and systemic isolation, the lack of external alternatives, time limitations, and so on, it would appear to have three options, namely: import staff from outside the locality; establish its own in-company, or company-sponsored outsourced, training system; or of course a combination of both: e.g., import instructors and training packages to install an instantaneous in-company operation. A further option is to arrange for selected personnel to travel to reliable providers, but this may be problematic in terms of expense and disruption to labor and productive routines.

It has been argued that local networks endure for relatively long periods of time (Calvó-Armengol & Beltran, 2009), can be very active and well-coordinated, meet the challenge of relatively costly provision by pooling resources, share program and assessment design, shoulder the risk in training innovations, support continuity of demand, and facilitate interfirm labor mobility and the formal/informal spreading of ideas and technologies (changes in attitude and motivation, application of better know-how, etc.; Bernstein & Winter, 2012). In the case where the training objective has priority, another very positive consequence is the consolidation of trust and reciprocity through these training interactions. All of this can occur efficiently if competitive imperatives are not so strong, and knowledge and staff retention (often one and the same thing) are not of paramount concern.

Among the firms that make up a cluster, some may be training-dormant, others more training-emulative or even training-innovative, so ideally the idea of their coming-together should be productive. However, some will thus be training leaders while others will be pulled by the capacity-building system, though the effect of all this would depend on the connectedness/embeddedness, and the relative size and training volume, of the firms within the local training system. If we just look at individual agents and their role in distinct areas of the training activity and its dynamic evolution, we might be failing to credit some of these same agents as systems anchors, liaison and gatekeepers; and to analyze how this occurs and for what reasons—indeed, why these specific agents do what they do and not others.

Likewise, if an effort is made to measure the inputs/outputs of a local training system as a group (e.g., in an attempt to clarify averages), this might be unrepresentative of the more dynamic firms, and the timescales and investments they have made to reach their current positions (Van Long *et al.*, 2014). At the other end of the scale, there is a danger for firms which take more from the training system than they put in: it might be argued that the greater the emphasis or dependence on external sources of training knowledge and provision, the lesser the relevance it might have to internal needs, if there is not sufficient input or adaptation of the input, or if selection of training inputs has not been done in the first place with sufficient care based on clear criteria.

It is quite possible that the training strategy managed by a given firm will be affected by the prevailing dynamics of the other enterprises and institutions in the local training system. This interfirm coordination will inevitably be buffeted by different emphases and appreciations specific to each agent, and perhaps work against the firm's own concerns. This will be a stronger consideration if the firm depends on the group system, less so if it is more self-sufficient in terms of training capabilities that are internal to it. Even so, decisions arrived at collectively may involve the lowest common denominator and result in a failure to achieve the sort of best option that can only be secured through a group structure and shared resources (Riley & Young, 2007).

The role of government as a reliable source of training models, and of the identification of specific elements that make these models successful, can be very important. The same could be achieved by an interfirm or sectoral association, or by internal corporate mechanisms. But often this is considered the government's role, for which levies and other contributions have been made (Diego *et al.*, 2017). The key actions subsequently relate to how well this is articulated; how much support there is to start and sustain the developments required; and how capable and indeed confident each particular firm feels in recognizing elements that work, jettisoning or adapting those that do not, and innovating or introducing new ones. A recent phenomenon is the situation in which a relatively dominant firm or group of firms have converged on their training objectives and used this alliance to leverage greater support from the government, especially in terms of the establishment of qualifications and standards bodies, and improved services from both public and private providers (Education International, 2011).

One challenge for future development of training in poorer countries is the fact that responsibility for managing this system is often dispersed among sectors and ministries, which—in the context of their organizational, legislative and financial clout, as well as their frequent underperformance and rivalries—may dilute the positive impact of a major player or cluster system. Their competence to interact effectively with leader-firm and interfirm activities, donors and even intergovernmental projects is often not as good as it could be. However, the establishment of skills standards/qualifications systems that perform adequately at an international level is a good support for in-company capacity-building ambitions (Lundvall, 2016).



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