

Competence Development in the Workplace: Concepts, Strategies and Effects

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In spite of the expectations that exist regarding efforts to develop competence and in spite of the large amounts of resources devoted to it, there is a marked lack of empirically-based research on competence development in companies and other organizations. The purpose of this article is to present a review of research on strategies for competence development in organizations, their prerequisites and effects. More specifically, the following three questions will be addressed: (i) Why do organizations invest in competence development? (ii) What effects can realistically be achieved through competence development? (iii) What characterizes successful strategies for competence development in organizations? Before these questions are dealt with, different views of the meaning of the concepts of competence and competence development are presented and discussed.

Key words: competence, competence development, workplace learning, strategies, effects

There is today a widespread belief in the importance of devoting resources to education and other forms of competence development as a key factor behind productivity development, innovative capacity and competitiveness. This standpoint is not only an outflow of policy discussions about knowledge or learning economies, but has also received considerable support from research (e.g. Lorenz & Lundvall, 2006).

In line with this view on the importance of education for growth and competitiveness, companies have in recent years devoted substantial resources to competence

development. The principal arguments for these efforts stem from production economy considerations. These arguments concerns the altered and increased requirements on competence that are assumed to follow in the wake of increased internationalization, new production concepts, a wider use of information technology and an increasingly dominant role for knowledge-intensive production in many companies (Adler, 2004; Brown, Green, & Lauder, 2001).

Issues of competence development in working life can, however, also be discussed on the basis of political considerations concerning the distribution of welfare and issues of democracy. Insufficient opportunities for education and on-the-job learning for groups of employees with a limited basic education tend to widen the existing education gaps in society (Rubenson, 2006). A further perspective that can be applied in this context, could be derived from work environment research. Studies indicate that a work environment that permits and stimulates learning and competence development may also be of fundamental importance for the employees' health, well-being and

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This study was supported by grants from the Swedish Governmental Agency for Innovation Systems.

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personal development (Karasek & Theorell, 1990). What, then, do we know about education and other forms of competence development in companies and other types of organizations? In spite of the expectations that exist regarding efforts to develop competence and in spite of the large amounts of resources devoted to it, there is a marked lack of empirically-based research on competence development in companies and other organizations. The purpose of this article is to present a review of research on strategies for competence development in organizations, their prerequisites and effects. More specifically, the following three questions will be addressed: (i) Why do organizations invest in competence development? (ii) What effects can realistically be achieved through competence development? (iii) What characterizes successful strategies for competence development in organizations? However, before addressing these questions, it is appropriate to say something about the concepts of competence and competence development as used in this paper.

Three Views of Competence

The concept of competence is often poorly defined in the literature. In fact, a general consensus seems to be lacking concerning the meaning of this frequently used concept. One example may illustrate this point. According to one view, competence is considered as an attribute of the employee, that is, as a kind of human capital or a human resource that can be translated into a certain level of performance. According to another widely held view, competence is defined in terms of the requirements of the tasks that constitute a certain job. This is indeed an important distinction, and in the following we will use the term competence to refer to the former meaning, and the term qualification to refer to the latter meaning.

More specifically, the term competence will be used to refer to the capacity of an individual (or a collective) to successfully (according to certain formal or informal criteria, set by oneself or by somebody else) handle certain situations or complete a certain task or job (Ellström, 1997). This capacity may be defined in terms of: perceptual motor skills (e.g. dexterity); cognitive factors (different types of knowledge and intellectual skills); affective factors (e.g. attitudes, values, motivations); personality traits (e.g. self-

confidence); and social skills (e.g. communicative and co-operative skills). Using this definition as a point of departure, the notion of qualification may now be defined as the competence that is actually required by the task, and/or is implicitly or explicitly prescribed, for example, by the employer.

As implied by this distinction, an individual (or a collective) may possess a range of competencies that are not qualifications, that is, that are not required by the task(-s) at hand or prescribed by, for example, the employer. Conversely, a certain job may require qualifications that do not correspond to the actual competencies of the individual (or the collective). Thus, the concept of qualification focuses on competencies that for one reason or another are valued by an internal or external labour market, that is, competencies that have an exchange value.

In addition, it is in many situations necessary to make the following distinctions (for an extended discussion, see Ellström, 1997). First, given the view that competence is an attribute of an individual, a distinction can be made between: (i) formal competence, measured, for example, in terms of the years of schooling completed or by the credentials received by an individual and (ii) actual competence, i.e. as defined above: the capacity of an individual to successfully handle a certain situation or to perform a certain task. Although actual competence differs, by definition, from formal competence and it is, indeed, often the case that one possesses formal competence without actual competence and vice versa, measures of formal competence are often used as an indicator of actual competence (Warhurst & Thompson, 2007).

Second, focusing on job requirements, it is important to distinguish between prescribed or actual requirements, that is, between the official demand for competence (e.g. as a basis for recruitment or for the setting of wages) and the competence actually required by the job. Of course, the official demand for competence ideally corresponds to the actual competence requirements of a certain job. However, this correspondence may be disturbed by different factors. For example, official demands for competence are often affected by the demand and supply of qualified people in the external or internal labour market, but also by forces (e.g. professional interests) trying to raise or lower the status of a job.

Third, it might be argued that competence is neither

primarily an attribute of an individual (or a collective), nor primarily an attribute of the job. Rather, the focus is on the interaction between the individual and the job, and on the competence that is actually used by the individual in performing the job. Thus, we can talk about this view of competence as the competence-in-use (Ellström, 1997). This third view is influenced partly by the competence that the individual brings to the task or the job, and partly by the characteristics of the task/job. Thus, competence-in-use might be seen as a dynamic process of learning mediating between the capacity of the individual and the requirements of the job. This means, among other things, that both factors related to the individual and factors related to the job may facilitate or limit the extent to which the individual may use and develop his or her actual competence. Concerning individual factors, previous experiences and factors like self-confidence are likely to be of importance (Colquitt & LePine, 2000; Illeris, 2006). Concerning job-related factors, the formal and informal organisation of the workplace with respect to worker autonomy, participation, task characteristics and feedback are likely to have a strong impact on the competence that an individual actually uses to perform his/her job (Ellström, 2006; Kock, Gill, & Ellström, 2007).

These three views of the concept of competence have different implications for competence development. Both from the perspective of the individual and from the perspective of the firm and society at large, the full use and development of the competencies of the employees in the performance of their jobs appear as a rational strategy to pursue. However, this strategy presupposes at least two things. First, that dominant actors in working life (primarily managers and union representatives at different levels) engage in efforts to redesign work content and work organisation in order to facilitate increased employee participation in planning, analysis, evaluation and development work. Secondly, that systems for vocational education and training (VET) and human resource development (HRD) take a more proactive role towards changes in working life. This means that their primary task is not only to adjust to actual or projected changes in competence requirements, but also to provide education and other forms of competence development that will empower employees to engage in developmental work, innovation and continuous improvements in the workplace. We will

deal with these issues more fully later in this article. Before that, however, we will, as a next step, ask how the meaning of competence development in the workplace may be conceived.

On the Concept of Competence Development

In this context, competence development is defined as an overall designation for the various measures that can be used to affect the supply of competence on the internal labour market (in individual employees, groups of employees or the whole personnel group). To be more specific, it may refer to measures regarding: (a) recruitment, promotion (e.g. career planning) and personnel mobility (internal and/or external); (b) education or training of personnel, for instance by means of internal or external courses; (c) planned changes of tasks or work organization through different types of measures (e.g. job development, job rotation, team organization) with the objective of furthering informal learning in work.

Competence development can thus refer to one or more of these measures. These measures may be planned, but attention should also be paid to unplanned or unintended functions that a certain action may have. In this regard, it should be pointed out that the term “competence development” sometimes takes upon another meaning, namely to denote the individual learning processes through which competence is acquired. A distinction can therefore be made between an organization-related and an individual-related meaning of the term “competence development”. With the definition given above, formal education is only one of several possible measures for competence development in the workplace. Furthermore, it should be emphasized that activities that do not have competence development as their primary objective may imply competence development for the individual as a secondary effect and can therefore be seen as educating/developing. Another important point to emphasize is that different strategies and methods for competence development can be combined. This is probably also often the case in practice. It might even be argued that one *ought to* strive for an integration between two or more of the strategies mentioned in order to facilitate qualified on-the-job learning. In fact, the latter argument received support from a recently-

Table 1

A conceptual model of strategies of workplace learning

Dimension	Individual	Organization
Curriculum based	School model	In-service training Continuing education
Practice based	On-the-job training(informal learning in work)	Organizational learning & development

conducted study of practices of competence development in the Nordic countries (Høyrum & Ellström, 2007). One result of this study was an analytical model for classifying strategies of workplace learning (see Table 1). The model underlines the fact that formal and informal aspects of learning, as well as individual and social aspects of learning, are fundamental and indispensable dimensions of learning.

When using the model to locate the different approaches of promising practices it was remarkable that no strategy could be located in one cell only. All the promising practices were located in two or more cells. This finding adds to our understanding of integration and wholeness as basic dimensions of learning opportunities and qualities of workplace learning.

Why Do Organizations Invest in Competence Development?

Why do organizations devote resources to education and other forms of competence development? Are the investments made mainly an expression of an analytic-rational strategy, or primarily an expression of opportunism and fashion trends? Various theoretical views of competence development give partly different answers to these questions. In the following, we will distinguish between two such views of competence development, namely what has been called a technological-functional view, and an institutional view, with the aim of distinguishing between two main answers to the question posed. We shall then try to shed some light on the question on the basis of available empirical research.

A Technological-Functional Perspective

Starting from what we can term a technological-functional perspective (Collins, 1979), competence development is emphasized as a conscious and rationally-

planned strategy for meeting such things as new or increased competence requirements due to altered environmental conditions (e.g. new customer requirements) or changes in the organization. Of fundamental importance in this perspective is the view of education and other forms of competence development as means or tools for furthering competence-increasing learning in participating individuals, i.e. an instrumental and rationalistic view of education. This learning on the individual level in the form of increased knowledge, increased competence, etc. is seen in the next phase as a means of achieving objectives in the form of increased productivity, growth and developed welfare on the organizational or societal levels.

Further, competence development is seen as a rational means-ends process, which can be controlled without serious problems on the basis of research and other considerations. Starting from certain predefined objectives (e.g. the acquisition of certain knowledge and skills), it is assumed possible, on the basis of pedagogical and psychological knowledge, to design and implement the education process in such a way that it leads to the attainment of the goals set.

This view is represented in whole or in part in several areas of educational research, perhaps most clearly in those areas that are based on human capital theory (Becker, 1975).

Applied to competence development at work, a technological-functional perspective implies the following assumptions, among others: (a) Investments in the education of personnel and other forms of competence development in a company are to a large extent governed by a mismatch between the demand for and supply of qualifications in the company's internal labour market. Such a mismatch can arise through changes in the external or internal context of the company (e.g. an altered competition scenario, technical and organizational changes in the operations). (b) The planning of measures for competence development can be expected to be based on a consciously-designed and explicitly-formulated policy or strategy for competence

development, which in turn is assumed to stem from the company's high-level objectives and business concept. (c) The decision to invest in a certain form of competence development is assumed to be based on rational cost-effectiveness estimates in which the effect of the education is viewed in relation to the costs in the form of wages, loss of production, and the other costs which are associated with the education. (d) The implementation of personnel education and other forms of competence development calls for systematic planning based on analyses of the qualification requirements of the operations, the actual and utilized competence of the personnel and the development requirements derived from these. The measures put into practice are evaluated and revised in the light of the results achieved.

A Conflict-Control Perspective

The perspective presented above is based on the assumption that there is a consensus on fundamental values, norms and objectives in both society at large and individual organizations. On the basis of what is referred to here as a conflict-control perspective, this assumption is open to criticism. When applying this perspective, it is assumed instead that disagreements and conflicts between different parties and actors in a community or organization (e.g. between employers and employees or between the centre and the periphery) are fundamental to the way in which organizations work. Different actors/parties are assumed to represent different interests and the ideologies that arise from these interests.

Under these conditions, it has been assumed that the activities in an organisation can be better understood as political processes characterised by struggle, negotiation and compromise rather than as technical-rational planning and decision-making processes (see, for example, Pfeffer, 1981; Mintzberg, 1983). This means, among other things, that power and the ability to mobilise power become important resources in the organisation. It also means that the structure and orientation of the activities, their objectives and various programmes are not primarily the results of rational decision-making processes based on objective information but of negotiations and compromises whose outcome is determined by internal power relations. The organisation is thus seen as an arena in which different actors (individuals

and groups) struggle for power and limited resources with the aim of promoting their interests, demands and operational ideas.

From the point of view of a conflict-control perspective on education and other forms of competence development, it is assumed that these processes are determined to a greater degree by the management's or other actors' interest in control, internal disagreements and prevailing power relations in the organisation than by economic calculations or humanistic arguments. By extension, this means that personnel training and other forms of competence development can be seen as part of the management's (or another dominant actor's) efforts to control the operations concerned. In other words, competence development in this perspective can be seen as an instrument for ideological control and as a means of replacing or complementing other forms of control, that is, technological or bureaucratic forms of control (Offe, 1976; Edwards, 1979).

The power relations in an organisation in terms of the relative influence of the employer/management, the trade unions and the employees over education and competence development can, in this perspective, be assumed to be of importance with regard to both the content of personnel training (e.g. general versus job-specific competence) and its function (e.g. as an instrument for critical reflection, operational development and changes to unfavourable working conditions). One can therefore expect, in this perspective, all other things being equal, that companies with active and driving trade union organisations will invest more in various forms of competence development than companies where the position of the trade unions is weaker. It can also be expected that organisations with a high proportion of well-educated personnel will offer more competence development (Scott & Meyer, 1991).

An Institutional Perspective

If we start instead from an institutional perspective of competence development, the emphasis is rather on the non-rational processes that control investments in competence development (for general overviews of this theory tradition, see for example Powell & DiMaggio, 1991; Scott, 1995). Investments in competence development are, roughly, seen as being controlled not by rational means-ends considerations but by a striving towards increased legitimacy

(inwards or outwards) by adapting to more or less temporarily predominating ideas (in the form of, say, fashion trends) about rationality, efficiency or modernity in the environment where the organization does business. Putting it another way, one can say that the activities of the organization, in this view, are determined not primarily by rational analysis based on the goals/tasks of the organization, but by institutionalized ideas on what should characterize modern and efficient organizations. With this as our starting point, the organizational structures and operations often have symbolic functions.

In terms of this perspective, then, a company's investments in competence development can be analyzed as symbolic arrangements with the function of exemplifying and communicating, inwards and outwards, conformity with the values with which the organization wants to be associated with the objective of strengthening its legitimacy. In the same way, an increase in the education requirements for a given post can be assumed to have a symbolic-legitimizing function (cf. Collins, 1979). The demand for qualifications in an activity is seen largely as a social construction and relatively independent of the "objective" requirements regarding qualification. With this view, the investments made in competence development can be expected to be reactive, ad hoc in nature and justified by short-term considerations rather than a result of a conscious strategy for competence development.

A series of more specific assumptions regarding the driving forces and prerequisites for an organization's investment in education can be formulated on the basis of an institutional view (cf. Scott & Meyer, 1991): (a) Organizations in which a large proportion of the employees have a professional affiliation (e.g. health care) can be expected to invest more in various forms of competence development than organizations with fewer professional people. (b) The stronger and more complex the institutional environment of an organization, the more extensive can the investments in competence development be expected to be. (c) With the increased legitimacy of investments in education and other forms of competence development more types of organizations will invest in competence development, and a weaker coupling is to be expected between the investments made (as regards, for instance, extent and form) and various factors such as job complexity, work organization and competence requirements. (d) With

an increased legitimacy of investments in education and other forms of competence development as a means of handling changes in the external or internal context of the organization, it is to be expected that there will follow investments in more general qualifications, and at the same time fewer efforts at systematically evaluating the effects of the investments made.

Empirical Research Results

What answer can, then, on the basis of available empirical research, be given to the question of why organizations invest in competence development? In an influential article, Tichy (1983) directs our attention to the importance of the environment for the strategy development of companies and authorities, including strategies for competence development. The important factors that Tichy points out are: (a) the technical-economic environment (e.g. automation of tasks, increased importance of information technology, diminishing productivity); (b) the political environment (e.g. increased international dependency, increased demands for influence from various personnel categories); (c) the cultural-social environment (e.g. demographic changes, higher proportion of professionals in the work force, increasing demands and expectations towards the employers).

Extensive studies of companies' investments in competence development have been conducted by Hendry, Pettigrew, and Sparrow (1988); Pettigrew, Hendry, and Sparrow (1988) and by Hendry et al. (1991). One of the main conclusions from these studies is that different external contextual factors can be seen as necessary but not sufficient for companies' investments in education and other forms of competence development. In most cases, the basis for the investments made is increased pressure from the competition, which has led to business-associated (e.g. product development) or technical changes.

In a typical case, these changes have created a skill-performance gap. This gap is usually the factor which can, through fairly complex processes, lead to investment in some form of competence development. Whether or not this is done is decided by the interplay between a large variety of factors in the company's external or internal context. Examples of factors that facilitate investment in personnel training and other forms of competence development

include: First, the company's business concept/strategy as regards such things as the extent of technological and product-related changes, and the importance attached to long-term survival. Second, a marked positive educational culture, expressed among other things by the presence of internal actors who push educational questions (e.g. management), the existence of a training/personnel department with sufficient resources and a good reputation, and union organizations that actively participate in the work of change and that push questions concerned with competence development. Third, external demands and support and stimulation for investments in competence development as well as customers' demands for improved quality.

The conclusion drawn by Pettigrew, Hendry, and Sparrow (1988) from their data is that the above-mentioned types of factors must be present if competition pressure, no matter how strong, or other external factors are to lead to investments in competence development. Is there, then, no mutual ranking order between all these facilitating factors? If there is such a factor, then according to Pettigrew et al. (1988), it is probably the prevalent educational culture in the community and within the company. According to these writers, the most important thing is that the company, so to speak, gets competence development into its bloodstream. However, this can only come about if competence development is seen by all the affected parties in the company as an effective and legitimate way of handling the company's problems.

Several of the results reported by Pettigrew, Hendry, and Sparrow (1988) are supported by other empirical research and theory development in the field. A case study of competence development in seven small and medium-sized companies, Ellström and Nilsson (1997), shows that various external factors, and in particular the recession, were important driving forces as regards investments in education. In a typical case, a reduced order intake, with its associated economic problems and risk of lay-offs or shutdown, initiated a search for various ways to maintain and develop the business. In several of the companies, increased demands for profitability, increased customer requirements regarding quality and delivery times or increased requirements concerning the competence of the personnel were among the motives for the investments made in training. Likewise, based on a case study of companies in

the business sector, Ram (2000) emphasizes that the nature of the market context and the engagement with key customers are important to the firm's willingness to participate in a programme for competence development.

The importance of internal contextual conditions in the form of a supportive culture is underlined by Spicer and Sadler-Smith (2003), and the authors underline the fact that risk-taking and experimentation are important behaviours among managers in order to support learning within the firm. The importance of how managers of small firms view and evaluate competence development is reported in several studies. Bell et al. (2002) show that managers of (small) firms may decide to enter programmes for competence development in order to "badge", i.e. to imitate high-profile companies. Similar conclusions are reached by Ram (2000) as several firms used competence development as a marketing device or were under pressure from larger companies to train their staff.

In a recent study based on 17 SMEs, it was possible to demonstrate that external organisational conditions (e.g. competitive pressure, demands from customers) and internal organisational conditions (e.g. educational "culture", leadership style) were important factors in determining a firm's willingness to take on competence development (Gill, Kock, & Ellström, 2005). How managers and employees perceived the nature and strength of external and internal organisational conditions were important and these organisational conditions operated as driving forces for the firm's decision to engage in competence development. Moreover, these results also demonstrated that external and internal organisational conditions were related to the strategies for competence development used by the firms. The firms that experienced lower levels of pressure to change in terms of external/internal organisational conditions, used a traditional strategy for competence development – a formal strategy mainly based on internal/external courses for the employees, while the firms that experienced higher levels of pressure to change in terms of external/internal organisational conditions used a more elaborated strategy (an "integrated" strategy), mainly characterized by an integration between courses and other important ongoing changes within the workplace, for example, a change of the work organization. The results underline the fact that both external and internal organisational conditions are important in understanding

why small businesses undertake competence development. However, the importance of external and internal organisational conditions is not limited to *why* the companies participate in a programme for competence development, the results indicate that these conditions also are important for *how* they participate, i.e. the strategies used for competence development.

However, as in the studies presented above, the external factors alone were not sufficient to explain the decisions on, and the direction of, the investments made in competence development. Instead, the results underline the necessity of taking into account not only environmental factors but also the conceptions and interests held by the owner/management and other actors within the company, and which determine what is seen as the suitable, possible and desirable way to run the company's business, including the investments made in competence development.

Summary and Conclusions

To sum up, one can conclude that the research results reported above are fairly unanimous in underlining the importance of various environmental factors for how organizations work with education and competence development. At the same time, it can be seen that no single factor or group of factors (e.g. technology development) can be designated as the most important or, in the final analysis, the deciding factor for the investments made in competence development.

The investments made in competence development can instead seemingly best be understood as a complex interplay between external factors and the various "logics" internal to the company that various actors represent. There is also much to indicate that external factors (e.g. increased customer demands or reduced order intake) should be seen as necessary but not sufficient conditions for companies' investments in competence development. It is probably also necessary that there exists within the company a good climate for such investments. Not least in importance among such factors is the existence in the company of a good "educational culture" or "learning culture". It can be assumed that such a culture can result from the opinions of management and the union organizations regarding the value of education, but also from the employees' experienced need of competence development and

motivation to participate in education. Against this background, it appears that an important task for continuing research is to study in more detail the interplay between the external contextual factors and internal "logic" with regard to decisions concerning investment in competence development, and especially to pursue empirical studies of the "learning culture(s)" existing within a company.

If we examine the reported results in relation to the theoretical views presented by way of introduction, there is no doubt that the technical-functional view with its market-related, technical-economic driving forces for investment in education has fairly strong support (most of the research also takes this view as its starting point). At the same time, several of the results appear open to alternative interpretation, for instance from an institutional point of view (cf. Gooderham, Nordhaug, & Ringdal, 1999).

What Effects Can One Realistically Hope to Achieve through Competence Development in Organizations?

Research into the effects of education and other forms of competence development in organizations is rather underdeveloped, both theoretically and empirically. As pointed out 15 years ago by Tannenbaum and Yukl (1992), there is a marked lack of research regarding effects that go beyond measurements of the participants' attitudes. Although more recent research (e.g. Alvarez et al., 2004; Salas & Cannon-Bowers, 2001) indicates that a number of advancements have been made during recent years, the conclusion made by Tannenbaum and Yukl (1992) is in many respects still valid. Specifically, little progress has been made with respect to the measurement of learning outcomes of competence development.

What Is Meant by "Effects" and How Can They Be Measured?

The effects of education are taken here to mean a change at an individual, group, or organizational level as a result of participation in some form of educational program. The changes may apply to knowledge, skills, values, behaviour or some other aspect of human competence. This general and widespread definition of educational effects is

based on a view of education as an objective, goal-steered process with certain external, causally determined effects for the participants. Such effects may arise in the long or short term, be general or more task-specific, intended or unintentional, desirable or undesirable.

How, then, can we define and measure the effects of competence development in a reasonable way? A classification of effects, that is still widely used, was proposed by Kirkpatrick (1959; see also Kirkpatrick, 1996) and has been further developed by Holton (1996) and Kraiger (2002). This classification is based on the distinction between four effects or levels of results, namely: (a) participants' attitudes to and evaluation of, for instance, an education and its results; (b) effects on the individual level in the form of acquired knowledge or skills, but also, for instance, in the form of changed attitudes (e.g. attitude to the use of new technology); (c) effects meaning that the individual becomes better at carrying out certain tasks (job performance); (d) effects in the form of improved performance at the business level, e.g. a work team's performance or performance at the organizational level.

The relations between these levels are complex and of an interactional character. An obvious and rather logical conclusion would be that a positive evaluation of, for instance, an education or its effects on the participants does not really tell us anything about the effects on different levels. Another possible, albeit more general reflection, is that it is of course much easier to achieve positive effects on the first level than on the second, just as it is much more difficult to achieve effects on the third or fourth level than on the second. In general, one must of course issue a strong warning against interpreting effects on the first level (or on any other level) as an indicator that effects also exist on a "higher" level.

Another more meta-theoretical warning is also appropriate here. The general definition of educational effects discussed here, has its roots in what we above called a technological-functional view of education, and can be questioned and problematized both from a conflict-control and from an institutional perspective. Viewed from the latter perspective, it is for instance important to study what an education means and how it is defined by its various actors (management, union organizations, participants), that is, to take into account the character of the education as a social construction and an ideological-cultural system. Thus, as

argued by e.g. Meyer (1977), the notion of educational effects is both conceptually and empirically linked to education as an institution founded upon socially-defined beliefs about the functions of education.

Types of Effects of Education

What are the effects of participating in competence development? A Norwegian study by Nordhaug (1991), reports varying results of competence development on the individual level. This investigation was based on a sample of individuals (n=299). The focus of the analysis is on the benefit to the individual of various forms of education. On the basis of a factorial analysis of the replies to the questionnaire, it was possible in this study to distinguish between three different effect dimensions, namely that participation in the training had provided: (a) motivation for further learning (e.g. increased interest in continued education, increased interest in learning, increased interest in a certain subject); (b) opportunities for career development (mainly promotion, a more interesting job, more independence); (c) opportunities for psycho-social development (mainly increased self-confidence, self-fulfilment, new friends).

As Nordhaug notes, these three factors are interesting, not least with respect to the conventional view of competence development in organizations as a conveyor of more specific, job-related knowledge and skills. This can also be said to be the predominant conception starting from a human capital view (Becker, 1975). Education, as a path to career development, as Nordhaug points out, is also interesting in the discussion of education as a sorting mechanism for selection to higher positions or other, more qualified tasks.

Largely consistent with these results, Kock, Gill, and Ellström (2007), in a study of competence development in small and medium-sized companies, could distinguish the following types of individual effects:

- increased skill in terms of being better able to handle the present tasks;
- increased interest in learning something new in the job, i.e. increased motivation for learning;
- a better overall view of the job;
- greater responsibility;
- greater job satisfaction.

These results show that, besides various types of cognitive effects in the form of increased knowledge and skills, one can expect various types of effects related to motivation, interest and satisfaction. These last-mentioned effects are interesting, not least in view of the reasoning about education as an instrument for ideological control. An interesting study from this perspective is reported by Tuomisto (1986). In this study, three main types of non-cognitive effects are distinguished, namely: (a) to increase the legitimacy of the job in the eyes of the employees as regards its goals, fundamental ideology and power structure; (b) to increase the motivation of the employees and thus improve their job performance without having to increase their task-related qualifications; and (c) to improve the solidarity, climate and organizational culture of the organization in order to create a spirit of affinity and better support for the goals and values of the business.

This also indicates an intrinsic contradiction in competence development. Personnel education can on the one hand be seen as an instrument for controlling and adapting the employees to the prevailing conditions in the workplace or in the organization. On the other hand, education can at the same time be seen as an instrument for increasing the employees' interest in and preparedness for further learning. These two interpretations of the (latent) functions of personnel education may of course be both correct and fully compatible. An important task for continued research is, however, to clarify these functions and their mutual relations.

Traditionally, the effects of education have been discussed mainly on the individual level. Nordhaug (1991) discusses the effects that personnel education may have at the organizational level. Personnel education can lead to both functional and dysfunctional effects at the organizational level. As an example of the former category, education is assumed to act as a mechanism for such things as:

- selection and mobility on the internal labour market in the company;
- socializing and social control of employees;
- legitimization of goals and decisions;
- improved decision-making ability in the organization;
- development of participative decision-making and work environment;
- development of the organization's readiness for

change;

- better motivation and learning environment.

Examples of possible dysfunctional effects that are cited include a mismatch between the individual's competence development and organizational requirements (e.g. wrong education, inadequate education, excessive education, brain drain and the development of knowledge monopolies within the organization). This reasoning indicates the importance of also paying attention to unintentional and unplanned effects when trying to measure the results of personnel education. Nordhaug (1991) does not, however, report any empirical data regarding the effects on the organizational level but looks for indirect support for his reasoning in other research. Some empirical support for the occurrence of effects on the organizational level is to be found in Ellström and Nilsson (1997), who report effects such as the following on the organizational level: (a) economic effects (retain personnel, retain customers, improved quality); (b) symbolic effects (inwards: increased motivation, participative spirit; outwards: increased trust by customers or management); (c) effects in the form of organizational learning ("competence development comes on the agenda", improved climate for future investments).

What Characterizes Successful Strategies for Competence Development in Organizations?

Few studies have attempted to explore the question of what characterizes successful strategies for competence development. Another way of formulating this question is: Under what conditions can programmes for competence development in organizations be expected to lead to the intended effects? With the exception of a few survey studies (e.g. Mulder, 1998), most of the evidence on this question comes from different kinds of multiple case studies.

Successful results of investments made in education and other forms of competence development in companies depend not only on the strategy and methods used. This is of course an important aspect, but it must not be allowed to obscure the fact that the research in the field indicates rather unambiguously that the effects achieved by means of competence development depend on an interplay between the following factors (cf. Burke & Hutchins, 2007):

- prior experiences of the participants (previous

experience of education, self-confidence, motivation, competence);

- the planning, content, design and implementation of the programme;
- conditions related to the internal context of the organization, i.e. management, work organization, company culture, etc.
- conditions related to the external context of the organization, i.e. factors such as the complexity and stability of the environment, the competitive situation, the labour market and the rate of technological development in the field.

The latter group of factors – external context – can be assumed to be related mainly indirectly to the effects of investments made in competence development. This group of factors has also been treated fairly exhaustively above, and will therefore not be addressed in what follows.

Prior Experiences of the Participants

The prerequisites for the participation of adults in education constitute an area that in the past two decades has been in the forefront of adult education research. Preparedness to participate and actual participation in various forms of adult education are very unevenly divided in the community and are strongly linked to living conditions, family background, earlier schooling and present working conditions. It is, for instance, a well-known fact that the readiness to participate in various forms of adult education is related to previous educational level: the higher the educational level, the greater is the readiness to participate in and take advantage of possibilities for further education. It has also proved difficult to affect or compensate for this pattern, other than marginally, by various types of reform (Rubenson, 2006).

As specifically regards participation in competence development in organizations, there are a number of studies that show that the more qualified the employee's position in working life, the more usual it is for him/her to participate in various forms of competence development (Rubenson & Willms, 1993). This is probably in part, but not entirely, due to the employer offering education mainly to personnel holding key positions in the organization. As shown by Larsson et al. (1986), workers without specialist training and with a short formal educational background and jobs

that place no requirements on professional competence have a very narrow and instrumental view of education. To a large degree, they lack the motivation to take part in education unless it is directly coupled to job requirements. As a result, there is no demand for education, and the readiness to participate in the education that is offered is probably low in large groups of employees with a limited education and unskilled jobs. In line with these findings, Illeris (2004, 2007) discuss recurrent observations of the basic ambivalence towards participation in educational activities exhibited by people with a short formal educational background. These groups of participants typically have a low degree of motivation for participation in educational activities that do not appear meaningful from their subjective perspective. These findings underline the importance of how an education is introduced and designed.

What, then, can be said more specifically about the factors that affect the motivation of individuals to take part in education? Important factors, which have been emphasized not least in adult education research (Rubenson, 2006) and psychological research on training motivation (Colquitt & LePine, 2000), include: (a) the participants view of learning and individual development; (b) expected benefits of efforts made; and (c) self-confidence in the sense of belief in one's own ability to learn. These factors are in turn closely related to social background, educational level, previous experience of various types of learning situations, working conditions and economic, political and cultural factors in the community.

Programme-related Factors

As regards programme-related factors, one can, on the basis of previous research (see e.g. Burke & Hutchins, 2007; Ellström & Nilsson, 1997; Illeris, 2005; Kock et al., 2007; Mulder, 1998), point to a range of important conditions connected with the planning, design and implementation of the programme. If we look first at the planning of the programme it appears important that: (a) the motives for investment are problem-oriented rather than opportunistic, that is, that the competence development is seen as part of a strategy, for instance to support an altered work organization or planned new production, and not primarily as a means of getting a share of certain support resources or because, say, competence development is generally "in

fashion”; (b) the personnel participate in some sense directly or indirectly, for instance through union or other representatives, in the planning of the programme at company level (here, of course, different degrees and types of participation can be distinguished).

As regards the design and implementation of the programme, significant factors include:

- the way the participants are recruited to the programme – it is important that the recruitment takes place on a personal basis and through a contact person that makes the potential participant feel safe and secure;
- personal counseling based on a dialogue with the participants, and taking the subjective perspective of the participant as a point of departure ;
- that the design of the education being based on integration between formal education (course sessions) and on-the-job learning, for instance by alternating courses with practical applications and planning them so that they support on-the-job learning;
- that the programme is job-oriented, that is, aimed at deepening or widening the employees’ competence as a conscious phase in a more farsighted business or job development (e.g. introduction of goal-steered groups), rather than purely individual-oriented (e.g. aimed at increasing the competence of the employees, but with little or no link to development of the business);
- that the education cover a substantial period of time (a month or more) and a large proportion of the personnel (not just key employees);
- that the participants having access to competent teachers/supervisors, who in practice have the ability to balance structuring/steering and support for participative working forms on the basis of the participants’ needs and qualifications.

Conditions Related to the Internal Context of the Company

The term “internal context” means as used here various factors related to production organization, nature of tasks, management, etc. This group of factors is also treated in a fair amount of detail above. It can therefore suffice to

indicate briefly some factors that, on the basis of previous research (Burke & Hutchins, 2007; Ellström & Nilsson, 1997; Kock et al., 2007; Pettigrew et al., 1988; Skule & Reichborn, 2002), seem to be of special importance for achieving the intended effects of investments in competence development in organizations. First, companies that report good effects of education have also to a greater extent than other companies activities characterized by: (a) more time being allotted to various educational activities; (b) educational activities are integrated to other planned changes at the workplace (e.g. changes concerning the work organization); (c) important actors within the company, primarily management and union representatives, seeing education and learning as a both effective and legitimate means of handling the company’s problems/challenges, that is, the company is permeated by a strong belief in and real commitment to education and learning as being important for the company’s development and survival; (d) the existence of “idea champions”, that is, agents of change (e.g. line managers, foremen, personnel managers or union representatives) who keep the ideas alive, carry them forward and mobilize others to change and develop them.

Second, there are strong indications that the effects of competence development efforts seem to be related to the possibilities for on-the-job learning. In companies that are characterized by a “good” learning environment (e.g. because the complexity of the tasks calls for continuous learning) effects are reported to a greater extent than in companies where the conditions for on-the-job learning do not appear so favourable (Billett, 2001; Ellström, 1997; Høyrup & Ellström, 2007). The importance of the learning environment is, for example, demonstrated in a recent study on competence development in SMEs (Kock et al., 2007). In this study, a distinction was made between two types of learning environments, that is, learning environments that are characterized as constraining and enabling. An enabling learning environment was defined in terms of high qualification requirements, stimulating potentials for learning at work, a supportive management for learning and a higher degree of cooperation within and between working teams. In contrast to this, a constraining learning environment was characterized by lower qualification requirements, less stimulating potential for learning at work, a less supportive management and a lower degree of cooperation within and between working teams. The results

showed that the character of the learning environment was important, as the SMEs classified as having an enabling learning environment reported systematically higher learning outcomes compared to the SMEs classified as having a constraining learning environment.

Concluding Remarks

As indicated by a number of studies cited above, investments in competence development in organizations can be understood as a result of a complex interplay between external forces and various internal “logics” represented by various actors within the organization. Furthermore, it seems as if external contextual factors (e.g. increased customer demands or decreased order intake) are necessary, but not sufficient conditions for companies’ investments in competence development. In addition, it is, among other things, required that there is a “good climate” for such investments within the company. Not least important in this context is, as has been shown in the studies cited above, the existence of a good “educational and learning culture” within the organization. Such a culture can be assumed to be formed by such things as the opinions of management and the union organizations on the value of education, but also by the employees’ subjective need of competence development and their motivation for participating in education. Against this background, it appears that an important task for future research is to study more closely the interplay between external contextual factors and internal “logics” when it comes to deciding on investments in competence development, and in particular to carry out empirical studies of the meaning and importance of the various “learning cultures” there may be within an organization.

As regards the effects of competence development in organizations, we have, among other things, been able to observe that they are not limited to various types of cognitive effects, for example, increased knowledge and skills. What have been called “ideological-normative effects” (e.g. increased motivation, increased interest and increased self-confidence) seem likely to be at least as important. This and other tentative conclusions on the effects of competence development formulated above do, however, call for further research in order to be

substantiated. What is needed is increased knowledge about the various types of effect that can be achieved, both on an individual level and on an organizational level (cf. Salas & Cannon-Bowers, 2001). In both cases, it is important to study both positive/functional and any negative/dysfunctional effects of competence development.

However, what also seems to be required is better knowledge of the circumstances under which it is possible to achieve positive educational effects. In this connection, it is important to study prior subjective experience of the participants (e.g. motivation, expectations and experienced benefit from the education), but also factors related to the programme and to the internal context of the organization.

We may also conclude that a series of conditions seems to be related to the possibilities of organizations to achieve significant effects from the investments made in competence development, but it is far from obvious how these relations should be interpreted. As discussed earlier, one can from both a technological-functional and an institutional perspective give quite different meanings to the concept of “effect”, and the prerequisites for achieving educational effects. From an institutional perspective, the predominant view of education as an activity limited in time and space with certain external and objective effects is also fundamentally called into question. The emphasis is instead on competence development being achieved by means of continuous on-the-job learning, learning that can be encouraged or obstructed by the design of the organization (e.g. the nature of the tasks), by the time available and, not least, by the conceptions of learning and education that guide various actors within the company (personnel, union representatives, management).

Thus, interest is to a great extent directed towards the social and cultural context of the education, including the educational culture existing within the company, but also towards the societal level and the policy-related conditions for investments in education in companies. Against this background, it appears important both to further problematize and analyze what can be meant by the “effects” of education in companies (and also more generally), and to deepen the analysis of the learning that takes place individually and collectively in a company during and after the implementation of an educational effort. In this connection, it is also important to try to gain a better understanding of the interplay between education as an

activity and education as a social institution, or, expressed in theoretical terms: the relations between a technological-functional and an institutional perspective on education in companies.

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Received January 3, 2008

Revision received February 3, 2008

Accepted February 21, 2008