

# **A LEARNING AT WORK-MATRIX: ANALYZING LEARNING AT WORK IN TERMS OF TASKS PERFORMED, REQUIRED KNOWLEDGE AND PERSONS INVOLVED IN THE WORK EXPERIENCE**

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## **ABSTRACT**

There has during the last couple of decades been a wave of theoretical advances focused on job quality and workplace learning respectively. However, there is within the job quality discourse a notable lack of explicit reference to the ongoing parallel discussion on workplace (lifelong) learning, except for some references to the importance of skill and literacy. In this paper I make an attempt at presenting a review and synthesis, resulting in a “learning at work matrix” which to some extent integrates aspects within the two discourses for the purpose of further discussion and analyses.

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# 1. INTRODUCTION

## Background

With the advent of knowledge-based “learning economies” (Lundvall, 2009) there has been an increased interest in how to balance economic growth and social cohesion. Education, training and learning have been identified as key levers to enhance both economic growth and social cohesion by way of supporting employability as well as mobility and flexibility in the labor market (Leney & Green, 2005). The new and changing role of learning is partly due to the fact that a large number of jobs and occupational profiles are becoming increasingly knowledge intensive. As the number of people who occupy positions that require formal qualifications and credentials grows, employers, employees and policy makers alike recognize the need for the continuing updating of employees’ skills and professional knowledge, while at the same time the continuing up-dating of knowledge, skills and competences is the basis for developing and sustaining knowledge-intensive economies (Brown et al., 2010). The anticipated connection between “good jobs” on the one hand and outputs in the form of growth, innovation and individual well-being on the other hand, has for some time been recognized within academic research (Green, 2006; Kalleberg, 2008; Kenworthy, 2003), and in a recent European report it was reaffirmed that:

“Stronger efforts need to be made to raise quality in work. Rather than a trade-off between quality and quantity of employment, evidence shows that overall high levels of job quality tend to be associated with high levels of labour productivity and participation in employment” (EC, 2010).

However, while lifelong learning (LLL) strategies have turned into a key policy area, the implementation of the strategies and mechanisms has by and large not been very successful at the national level, particularly in terms of adult learning and continuing vocational education and training (Keogh, 2009). The relatively meager success is partly due to a common dilemma: where on the one hand some policies related to LLL are conceived of as being universally applicable with common targets, there persist on the other hand regional and national differences regarding institutional arrangements and cultural traits. These differences remain despite the fact that globalizing forces increasingly act upon nation states especially in the economic sphere, but also in the area of education and learning e.g. through the development of common learning aims and the diffusion of information technologies. As long as different employment patterns persist, enacting and putting universal LLL approaches and policies into practice, becomes hugely challenging.

## Character and structure of the paper

It is to such a context that this paper attempts to contribute: If LLL connected to the work situation should be a more explicit and integrated part of a new quality of work concept, what should the criteria or principles be? Methodologically, a simple merger between job quality and LLL indicators is difficult to achieve, both due to a lack of an internal consensus in the first place within each of the topic areas, and also due to the different objectives and perspectives of the topic areas. This paper nevertheless glances towards the possibility of seeing the two concepts in relation, if not constituting an attempt at an outright merger. The paper starts out (and ends) with a broad guiding definition: Learning as an integrated part of job quality means that there is secured correlation between an individual’s current work situation and future prospects on the one hand, and opportunities for workplace formal or informal learning of the cognitive or social kind on the other hand. In order to operationalize such a guiding definition the

paper aims to compare and synthesize the two conceptual realms by developing and applying a relatively strict heuristic device. A heuristic device is not a theory or hypothesis in itself, but is an analytical device which contributes to reduction when searching for a solution (Newell, Shaw, & Simon, 1959). Our heuristic device consists in selectively reducing parts of the job quality plus LLL-problem by way of envisioning three typical forms of work relationships, and, in extension of these relationships, possible forms of learning. The basic relations are: the worker's (or employment seeking person's) relationship to, firstly, the tasks at hand, secondly to required and optional relevant knowledge, and thirdly the relationship to other persons (Fig. 1).

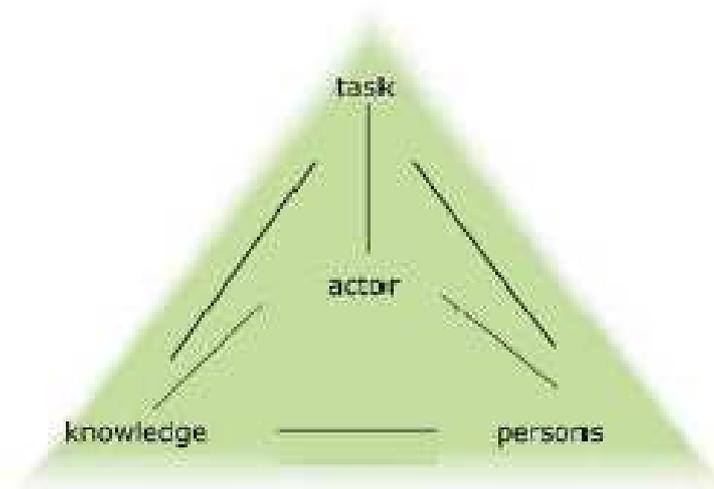


Fig. 1. Basic relations of a Learning at work-matrix. Source: Author's construct.

Any individual worker or job seeker, the actor, will face relations of these three types, be they simple or complex, singular or multiple/overlapping. Differences are more a matter of degrees and types. The learning matrix itself is to see how the basic relations perform in view of two different types of learning, cognitive and social learning, and two different forms of learning, formal and informal learning. In other words. this kind of approach can be used in order to investigate whether and how there in the case of fit versus misfit occurs some kind of adjustment activities in the form of cognitive or social, as well as formal and informal, learning when it comes to the tasks, knowledge, or persons-related relations, including describing the role of workers as well as those supporting adjustment, such as trainers.

This learning at work matrix can also be applied to issues at a second order, more precisely for example the nature of workplace learning regulation. This issue is crucial within job quality research, and although not being part of the basic learning at work matrix the inclusion of such a second order issue is indispensable when applying the learning at work matrix to the assessment of job quality aspects.

The paper is structured as a narrative review of selected contributions within the fields of job quality and workplace learning, then a more in-depth presentation of the heuristic device.

## **2. JOB QUALITY AND WORKPLACE LEARNING IN THE LITERATURE**

It is not the intention here to provide for a comprehensive review of this rich literature here. Rather the purpose is to examine a selection of the literature in order to identify the treatment of the learning and job quality relationship within the literature.

The paper does, however, not aspire to challenge or address all the competing perspectives, rather it tries to circumvent the seemingly irreconcilable positions by way of focusing on some methodological issues which, assumedly, are of common concern. The paper aspires to contribute to the field by way of suggesting a heuristic device rather than a distinctive theory, and argue that applied to for example comparative material such a heuristic device may reveal differences in degree between cognitive and socio-cultural traits of learning at work experiences.

### **Job quality**

Job quality is a concept where the role of learning is somewhat difficult to discern, despite job quality being the focus of several policy measures as well as research initiatives throughout recent years (Morley, 2007). Being skilled at a job may be regarded as a quality aspect of the job itself, as there may be such intrinsic aspects of the job resulting in a sense of reward (Dahl, Nesheim, & Olsen, 2009; Gallie, 2003; Green, 2006).<sup>1</sup>

There has thus in recent years been a number of perspectives treating job quality and related issues or concepts within research and policy alike. One overall issue has been the prospect of arriving at some kind of objective criteria at all when it comes to job quality, since the perception of what constitutes job quality indeed may vary between individuals. An intermediate compromise and summary of the situation is to distinguish between subjective and objective criteria or indicators. Within the latter we find payment levels and types of fringe benefits, as well as the opportunity for advancement (Kalleberg & Vaisey, 2005). In addition, job security in view of the external labor market conditions may be included within this group of criteria (ibid.). Within this paper opportunity for advancement is a very relevant criterion, but we will otherwise concentrate on “subjective” criteria for the measurement of so called intrinsic job quality: Firstly, the extent of variety in the job; secondly, the job requiring the person to learn new things; thirdly, the extent and form of having something to say about what happens on the job; and fourthly, the ability of taking part in decisions (Gallie, 2003). This list is similar to Green’s, who firstly distinguishes between the skill involved in a job is important, since skill is an end in itself and has thus got intrinsic value; secondly, work effort; thirdly, the level of personal discretion over work tasks and participation; fourthly, pay; fifthly, the risks of a worker as well as job insecurity; and finally well-being at work (Green, 2006). Kalleberg and Vaisey (2005) use as good job characteristics apart from economic benefits, non-economic benefits such as the degree of autonomy and control one has over one’s work and the extent to which one receives intrinsic rewards from the job. In addition they too highlight perceived job security as well as the extent to which the worker is satisfied with the opportunities for advancement. A fourth and recent synthesis work regroups the intrinsic criteria under headings which will be utilized also here: Work intensity; intrinsic job rewards; skill; and autonomy and control.

Work intensity or work effort is defined by Green (2006) as “the rate of physical and/or mental input to work tasks during the working day” (Green, 2006: 48). It should thus be treated separately from performance or productivity. It is, however, not clear how one may measure for example mandatory learning as part of the work effort.

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<sup>1</sup> This sub-section relies heavily on Green (2006) and a recent contribution by Dahl et.al. (2009)

Intrinsic job rewards is by Green (2006) and several others (Brown et al., 2010) associated with Sen's ideas about possessing capabilities as constituting a basic part of an individual's well-being (Sen, 1999). "High quality jobs" have inherently elements which generate capabilities, which in turn allow "workers to achieve well-being and to achieve a range of personal goals" (Dahl et al., 2009; Green, 2006). Indeed, such capability achievement is derived also from the "objective" indicators of wages and other rewards, since these entail an influence on future prospects (pensions and security). A certain degree of job control (i.e. the ability to choose one's job) is also important. However, continuing the concentration on intrinsic aspects, since a "high quality job" may be defined as a job that: "[A]ffords the worker a certain capability – the ability and the flexibility to perform a range of tasks (including the necessary sense of personal control), to draw on the comradeship of others working in cooperation, to choose from and pursue a range of agency goals and to command an income that delivers high capability for consumption" (Green 2006: 14-15).

Skill thus becomes important as an indispensable aspect of job quality, since the utilization of skill is an end in itself. High skill requirements may for example be in the form of involving both the conception and the execution of tasks. Being able to utilize one's skills is one of the bases for achieving self-fulfilment. According to Green (2006), skill may be measured as qualifications, length of education, occupation, scores from literacy and numeracy tests, self assessment and more informal job requirements. It is hypothesized that a decreasing match between a worker's skill and the requirements of the job, i.e. over- or under-qualification, may be one factor behind job-dissatisfaction and alienation (Green, 2006).

Autonomy and control issues are sometimes operationalized as the extent to which an employee is able to exercise discretion and initiative over what happens on the job (Dahl et al., 2009). This autonomy or some degree thereof is determined by the organization of work (for example repetitious tasks within tight time constraints), as well as the rules and regulations governing workplace relations (e.g. close supervision versus "flat" hierarchies). The extent or degree of such discretionary scope can vary greatly between workplaces and occupations. For example, part-time workers are in general experiencing low degrees of autonomy (Gallie, 2002). One challenge associated with high levels of discretion is, however, that it requires a high level of personal skill (Green, 2006). This correlation constitutes a basic managerial dilemma or challenge, since high skill levels per se does not constitute job quality. If some kind of discretionary power is absent, the job may qualify as high commitment or high involvement work, but not necessarily as high quality work. The level of worker discretion may vary greatly across nations, and Gallie (2003) has pointed to the fact that the Nordic countries have greater autonomy than elsewhere. Green (2006) found that it is decreasing in countries such as Belgium, Britain, Denmark, Ireland, Italy and Portugal, while there has been improvement in Austria and Germany. Again, the framework(s) theorize that high levels of discretion are closely associated with well-being, while, conversely, a loss of discretion and autonomy may be a factor behind job dis-satisfaction and alienation (Green, 2006).

Thus, although skill and similar considerations are included and even strongly within job quality conceptions, learning is not being treated explicitly. One exception is the Gallie (2003) conception of the job requiring the person to learn new things, however, this is still treated as an intrinsic part of the job and hence left to subjective interpretation and not as an objectively measurable aspect (as a worker's right, for example). Thus there only exists a "crude" notion of job quality working as including learning opportunities. Instead of a focus on learning, the current conceptualizations of

job quality have got as their main focus degrees or types of discretion rather than degrees and types of learning.

### **Workplace (lifelong) learning**

Learning and the organization of the workplace are topics which have been extensively studied, however, there is no consensus on definitions of workplace learning and similar concepts. Indeed this field may be characterized as being in a situation of fragmentation. Lifelong learning (LLL) is possible to define as a concept which includes “all learning activities that are purposeful and undertaken continuously, independent of their degree of formality, source of funding or mode of provision” (Gruber, Mandl, & Oberholzner, 2009). Learning activities are then any of the activities of an individual which are organized with the intention of improving knowledge, skills and competence. One discerning aspect is that the activity is intentional either as determined by the learner or by somebody else. In addition, the activity typically involves transfer processes in order to bring about learning, in contrast to non-learning activities (EC, 2006; Gruber et al., 2009). Workplace learning, on the other hand, is commonly used as a concept which also includes non-intentional activities: “learning processes go far beyond intentional and organized activities, especially as far as learning at the workplace is concerned” (Gruber et al., 2009).

One way of distinguishing between different types of workplace learning is, however, to divide according to the degree of formalization. In addition to the in-between category “non-formal education” (EC, 2006), the main categories are formal education and informal learning. The former consists in structured forms of learning which might more often than not take place on off-the-job premises and are provided by external providers. It is also usually takes place in classroom or formalized educational settings, although in recent years an increase in simulation education forms supplements this picture. The result of learning also distinguishes this learning form, since it normally results in certification or a specific qualification, and will be a part of educational achievement or career ladders. It also goes without saying that this is an intentional learning form as seen from the perspective of the learner. Informal learning, on the other hand, is for statistical purposes sub-divided into taught versus non-taught learning, where the former type may include learning through coaching or informal tuition or, for example, guided visits to relevant sites. The latter type can be in the form of self-learning, learning-groups, practice or non-guided visits (EC, 2006).

The commonality between all these sub-types of informal learning is that the result is not tangible in the form of certification, and neither is it necessarily learning in a structured form. In addition to this official and definitional perspective on informal learning there has been research (Eraut, 2004; Felstead, Fuller, Jewson, & Unwin, 2009) which focuses on, for example, incidental or spontaneous learning and thus on even more informal aspects of the working situation. Incidental and non-intentional learning may be a “by-product of some other activity” (Gruber et al., 2009; Marsick & Watkins, 2003). This can be activity such as interactions between persons, accomplishment of certain tasks, or learning from mistakes (trial and error). Some organizations recognize that such processes are important, and although the activities themselves are not specifically designed for learning the structure of the activities may be shaped to increase the learning enhancing characteristics of the overall portfolio of activities in order to increase the likelihood of learning. One example of such forms of incidental

learning is the oft-cited case of learning by innovating: the innovation might be modest, but with marked learning effects (Van de Ven & Polley, 1992).

Informal learning is thus seen to be integrated into the daily operations and may be triggered by various events. It is not a highly conscious process, but rather an inductive process of reflection and action and is influenced by chance (Marsick & Watkins, 2003). The focus on this type of learning and the importance of learning from other people (such as, for example, learning from colleagues, superiors or clients) (Eraut, 2007), has triggered the relational turn within learning theory and new insights into the social aspects of learning.

The most comprehensive approach with direct implications for practice within this field thus far is probably the Gruber et al. (2009) model of “Factors influencing workplace learning” enveloping both intentional and non-intentional learning activities, and including five different types of factors influencing workplace learning (Gruber et al., 2009). This model builds on previous and more delimited attempts (Ellström, 2001; Eraut et al., 2004; Skule & Reichborn, 2009). The factors which are seen as conducive towards or as barriers against workplace learning activities within this model are: “Environmental framework factors” external to the firm (e.g. market structure and technology development); “company organisation and culture” (e.g. division of tasks, human resources development practices and attitudes), structural “barriers at company level” concerning the provision of learning opportunities; characteristics of the learner (a factor entitled “personal factors and barriers”), and “design of learning measures and corresponding resources” (Gruber et al., 2009). The authors’ argue that the model has value in connection with both research activities and policy measures. Indeed the argument is not that the model fits all situations, but rather it provides an aid to awareness raising activities or to practical guidelines for businesses.

Somewhat less elaborate is the Working as Learning Framework (WALF) and its focus on expansive versus restrictive learning as developed by Fuller and colleagues (Evans, Hodkinson, Rainbird, & Unwin, 2006; Felstead et al., 2009; Fuller, Hodkinson, Hodkinson, & Unwin, 2005). The model takes its point of departure in the social learning focus mentioned above, but pursues this perspective by dividing between expansive versus restrictive types of learning. The model is built on the concepts productive systems; work organization and learning environments, and the central argument is that in order to understand the extent to which learning environments at work are more or less “expansive” or “restrictive”, “researchers need to examine how work is organized and how its organization is influenced by wider forces” (TLR, 2008). Furthermore, the framework can specify “the links between the broad relationships that shape employment relations and the nature of workplace learning” and the approach subsequently “enables us to explore how these broader processes are played out in specific workplaces and in the narratives of people’s working lives” (ibid.). In connection with discussing “expansive” aspects, however, the model is focusing very much on locational attributes as well being based on a, per definition, delimited notion of what counts as learning within the framework.

### **3. TASKS PERFORMED, REQUIRED KNOWLEDGE AND PERSONS INVOLVED IN THE WORK EXPERIENCE**

Even based on the brief and selective review above it is evident that there are a number of diverging views on both the issue of job quality and workplace learning respectively, as well as the issues regarding more specific aspects within each of the two conceptual

domains. The “solution” offered in order to approach some of the contradictions inherent in addressing the different types of literature reviewed above is to develop a heuristic device which can be used in order to conduct conceptual and empirical analyses. A heuristic device is a device that contributes to reduction when searching for a solution (Newell et al., 1959), and is in this sense literally a pragmatic and reductionist device instead of a theory. It is, however, useful in connection with laying the foundation for more context specific theories. The heuristic device presented here consists of three main dimensions, which together should be applied within a learning at work matrix assessing the types and degrees of cognitive and social learning when it comes to any adjustment of the three different basic relations. Furthermore, although not being part of the main matrix there are possibilities for adding second order dimensions in addition to this core learning at work matrix, and I will present one such possibility (regulation of workplace learning environments) based on the importance of this aspect when it comes to job quality issues.

Heuristic devices may, according to Anderson, shift between abstract and concrete representations, selectively ignore parts of the problem, apply analogies distant to the problem at hand, or view the problem from a different perspective than what is usual (Murray & Worren, 2001). The heuristic device suggested here consists in selectively reducing parts of the job quality plus LLL “problem” by way of envisioning typical forms of work relationships, and in extension of these relationships possible forms of learning under three different circumstances. The typical forms of work relationships are the worker’s (or employment seeking person’s) relationship to, firstly, the tasks at hand, secondly to required and optional relevant knowledge, and thirdly the relationship to other persons. The possible basic relations of a worker within any working situation we focus on are thus:

- Composition of tasks in terms of routine v non-routine aspects, and complexity v simplicity of task.
- Knowledge requirements in terms of type and character of knowledge required for the job.
- Personal horizontal or vertical relationships with other people, such as colleagues, instructors, superiors or clients, in terms of type and character of the required interactions.

Any individual worker or employment seeking person, the actor, will face relations of these three types, be they simple or complex, singular or multiple/overlapping. Differences are more matters of degrees and types of such relations. A person may in theory e.g. work with highly complex tasks and knowledge requirements, albeit predominantly in a solitary fashion (e.g. a highly skilled crafts person), “versus” a person working in close contact with clients, albeit with predominantly simple repetitive tasks and relatively routine knowledge content (e.g. a standardized commodities door to door sales person). Understanding the situation of a particular person would within such a matrix-based framework first be a matter of seeing how and in what degree there is a fit versus gap between the task, knowledge and persons requirements and the actor.

Once the nature and character of these basic relations are understood, the relations may be studied at a second order in terms of asking, firstly, whether learning opportunities or learning environments are comprehensive or pertain to a particular delimited nexus. Comprehensive learning covers the entire task – knowledge – persons triangle, whereas delimited forms may cover only for example the task - knowledge nexus, the knowledge - persons nexus, or task – persons nexus. In other words this part of the

framework may investigate whether and how there in the case of fit versus misfit occurs some kind of adjustment activities, including describing the role of workers themselves as well as adjusters, such as trainers.

Table 1: Learning at work-matrix as applied within the paper (basic relations and the form of learning and learning environments)

	Learning form	Form of learning environment
Tasks	Cognitive and social learning process	Formal and informal learning method
Knowledge		
Persons		

Source: Author's construct.

The heuristic device is thus intended for interpretative purposes of the qualitative kind, and can thus supplement and enrich comparisons and assessment in a substantial way compared to studies which rely predominantly on formal modeling based on quantitative indicators.

Subsequently, the next step is to include within the perspective the issue of how the three types of relations are regulated, for example through institutional arrangements. By including this aspect we gain an instrument for telling how or if a worker has some kind of discretionary leverage over the learning situation, and this aspect is thus indispensable within descriptions of how various forms of learning occur within the work context.

It is here that the selective merger between the workplace learning and job quality literature, respectively, occurs. Whereas the former pays very little attention to the issue of autonomy and discretion, the latter perspective is based on this aspect as its point of departure. Except in the case where theorists argue that learning is integral or synonymous to work (Felstead et al., 2009), the former is preoccupied with how learning is a part of the work situation. The latter is on the other hand a perspective based on the conception of acquired skills and knowledge and how the fit or mismatch between this situation and the work situation itself is a part of the good versus bad job situation. The perspective has, however, paid very little attention on the actual and continuous skilling processes and the way studies of these can or should be integrated to the discussion of job quality itself. In other words, if it is so that the presence or absence of learning opportunities is an aspect relevant for determining whether a job is “good” or “bad”, then we need instruments which may serve as the basis for assessing these aspects. It is here that the proposed heuristic device in its extended form including the regulative aspects may serve as a starting point for further discussions and tentative analyses.

#### 4. CONCLUSIONS

We starting out with a broad working definition stating that: Learning as an integrated part of job quality means that there is secured correlation between an individual's current work situation and future prospects on the one hand, and opportunities for workplace formal or informal learning of the cognitive or social kind on the other hand.

Re-examining the provisional definition, it contains the elements presented within the matrix, where the term work situation refers to all three “basic relations”. The term “secured” refers to the existence of some sort of institutional arrangement which entails that learning activities are legitimate. In any continued discussion based on this initiative, it might be included within the discussion whether specific requirements regarding degrees of autonomy or discretion must be specified. For the time being, however, the generic nature of the proposed heuristic device makes this somewhat difficult, since there may be great variations of workplaces when it comes to the composition of the basic relations within the matrix. Furthermore, the issue of learning and learning opportunities are perhaps more likely to be treated as an auxiliary activity at the workplace rather than as an integral part of the work situation, despite the prevalence of learning as crucial within present day working life. It is therefore a more proper strategy to treat the issue of worker discretion as a second order aspect to the matrix itself, rather than as a part of it.

One strength of the proposed matrix especially in its extended form is its relative simplicity. This makes it prone to surpass some challenging barriers when it comes to empirical cross-sector analyses, including the inclusion of relatively different cases within one and the same framework. In addition, the approach will open up for the inclusion of more systematic approaches to “intrinsic” criteria when assessing learning at work, an improvement when compared to the current job quality studies approaches relying predominantly on the subjective perceptions of surveyed workers (Beham, Drobni , & Verwiebe, 2006; Dahl et al., 2009). In its present form, the matrix contains several weaknesses. One of these is that a considerably more thorough examination of the theoretical literature on job quality and workplace learning respectively is needed in order to achieve a more robust sense of theoretical validation. Equally important, the matrix has been presented only in an abstract form and with a select few stylized hypothetical examples. In order to aspire towards contribution to the job quality and workplace learning discourses, the matrix will obviously have to be applied to empirical studies and be further developed based on such field experiences. It is however hoped for that also these preliminary deliberations regarding a possible synthesis between the workplace (lifelong) learning and job quality fields of research also constitute one kind of delimited contribution.

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