
Factors Influencing Learning in Work: a comparison of two research projects (European- and United Kingdom-based)

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ABSTRACT This article reports on two research studies exploring factors influencing learning, one in the United Kingdom (UK) and the other conducted across Europe. The European project focused on an investigation of the role of human resource development (HRD) practitioners in creating opportunities for, and supporting, lifelong learning. This article examines one aspect of that project – factors inhibiting and enhancing learning in work, specifically in large, learning-oriented organisations. These factors were categorised at organisational, functional and individual levels. The UK project focused on computer-based learning, with researchers exploring learners' perceptions of the quality of computer-based learning materials. Computer-based resources can offer accessible, flexible and affordable learning opportunities. However, it is important for managers, HRD practitioners and learners to be able to judge the quality of information and communication technology (ICT) based resources to ensure effective learning. It is also important for managers and HRD practitioners to be able to recognise, understand and address the more subjective factors identified by learners themselves which might affect the effectiveness of ICT-based learning in education and work contexts. Drawing upon the two research studies, the article identifies, compares and contrasts the various factors influencing learning in work, at organisational, functional and individual levels, and then focuses upon factors influencing computer-based learning. Research findings suggest that the same factors could be both positive and negative features, highlighting the complexity and subjectivity of investigating both factors influencing learning in work and learners' perceptions of the quality of computer-based learning materials. However, it is argued that identifying such factors is an important step, enabling managers and HRD practitioners to recognise how learning might be hindered or helped within the organisational, and particularly ICT, context. The article presents a model of factors influencing learning in work.

Introduction

This article reports on two research studies, one conducted in the United Kingdom (UK) and the other conducted across Europe, both exploring factors influencing learning. In the two-year European-Union funded project, researchers explored the role of human resource development (HRD) practitioners in creating opportunities for, and supporting, lifelong learning. The project sought to investigate what HRD strategies were articulated, how these were enacted, and what factors helped or hindered learning in learning

oriented organisations. Findings from this project suggest a continuing shift from training to learning, where the role of HRD practitioners is changing and where managers are increasingly responsible for developing their employees (Ellinger, 1997; Watkins & Ellinger, 1998). However, this article focuses on the results of one aspect of the research – that is, identifying and exploring factors that influence learning in work. Factors influencing learning were categorised at organisational, functional and individual levels. These included the organisation of work, resources for learning and motivation to learn.

Recently, 'learning' has attracted much attention. The European Commission (Gass, 1996) and the UK government (DfEE, 1998) have encouraged lifelong learning. There is an increasing emphasis on individual and collective learning to enhance competitive advantage (Moingeon & Edmondson, 1996). There has also been a 'Declaration on Learning' (Learning Declaration Group, 1998, 2000). At all levels, there are pressures to find new ways of providing learning opportunities within work. This is particularly so in small organisations, often with no formal HRD infrastructure (Hill & Stewart, 2000; Hyland & Matlay, 1997). The emergence of information and communication technologies (ICTs) provides new opportunities for learning and training. Indeed, there appears to have been a shift to e-learning, rather than e-training (Honey, 2000). The ICT context has become the subject of new research. For example, in a recent survey, 90% of users claimed e-learning was useful, and 81% of providers and 66% of employers agreed it would bring huge advances in their organisation's capacity to learn (Honey, 2000). The growing supply of computer-based learning materials might provide accessible, flexible and affordable solutions, addressing organisational, functional and individual factors that appear to inhibit learning. Thus, it is important for managers, HRD practitioners and learners to be able to judge the quality of ICT-based learning resources to assure effective learning. Yet, this is often a difficult task (Carr, 1999) and a potential barrier to the use of computer-based learning.

In this context, researchers at the University of Wales Bangor, in the UK, have explored trainers' and learners' perceptions of the quality of selected computer-based learning materials. The aim of this two-year project, funded by the National Assembly for Wales, was to develop a quality assurance system, providing a series of evaluation tools to assist in the design and selection of quality computer-based learning resources. However, again, this article focuses on the emerging results of one aspect of the research – that is, identifying and exploring factors that influence learners' perceptions of the quality of computer-based learning materials.

Having introduced two distinct research projects with broad and varied aims, it is possible to synthesise these and identify one common theme. This provides the specific research question for this article: 'What are the factors influencing learning at work?' It is argued that HRD practitioners, managers and learners need to be aware of such factors to ensure effective (individual and collective) learning.

The European project provides some answers to this question, examining (i) sociological aspects such as the organisation of work and changing functional roles, and (ii) psychological issues concerned with motivation to learn, fear and confidence. This research, focusing on the organisational context, was informed principally by a review of literature relating to lifelong learning (Brandsma, 1997; Gass, 1996; OECD, 1996), learning oriented organisations and organisational learning (Argyris & Schön, 1978; Nonaka, 1991), and the changing role of the HRD function (Garavan, 1991; Tjepkema & Wognum, 1996).

The British project provides some answers to the question in the specific context of computer-based learning. In exploring learning in the ICT context, the British project focuses more on pedagogical issues related to the quality of computer-based learning, investigating such concepts as instructional design, accessibility, learner-centredness and transfer of learning, but also captures psychological aspects such as motivation and confidence to learn.

Factors Influencing Learning in Learning-oriented Organisations

The European research has been reported elsewhere (see, for example, Horst et al, 1999; Sambrook & Stewart, 2000), thus only a short overview will be provided here. This two-year project (1998-99) investigated:

- the reasons for seeking to become learning oriented organisations;
- how practitioners envisioned the role of HRD in stimulating and supporting employee learning;
- the nature of HRD strategies to enact this vision; and
- how practitioners cope with the factors inhibiting and facilitating the realisation of these strategies.

The research was conducted in two stages. The first stage employed qualitative methods to explore these questions in 28 case studies, with four organisations chosen from each of the seven participating countries. During this stage, researchers analysed internal documents and conducted semi-structured interviews with senior managers, managers, HRD professional, and other employees (learners). The second stage, 'testing' the findings from the case studies, involved a questionnaire survey of around 140 organisations across Europe, targeted at senior HRD professionals.

Researchers explored learning within the organisational context, and identified key factors at three levels: organisational, functional and personal. These included the organisation of work, the culture of the organisation, resources available for HRD activities, and the skills, attitudes and motivations of managers and learners. It is on this last point – at the personal level – that there are further similarities between the two projects. The UK project has identified factors such as learners' IT skills, confidence, fear and motivation as important issues influencing computer-based learning specifically. These

factors were also evident when interviewing learners across 28 European organisations about learning in work generally.

The key factors identified in all 28 case studies can be categorised into four main themes: motivation, HRD, culture and pragmatics. Each of these themes had factors which both inhibited and enhanced learning. These factors are summarised in Figure 1 below.

<i>Inhibiting</i>		<i>Enhancing</i>
	Motivation	
Lack of motivation		Motivation, enthusiasm, involvement
Extra work, unclear role	<i>Managers</i>	Clarity and understanding of own role
Lack of self-confidence	<i>Employees</i>	Increased responsibility
	HRD	
Role ambiguity		Role clarity
Perceived as support function		Perceived as strategic partner
	Culture	
Insufficient learning culture		Develop learning culture
Difficult to change existing situation		Senior manager support
	Pragmatics	
Lack of time		Organisation re-structure, job redesign
Lack of resources		Investment in HRD & learning environment

Figure 1. Factors influencing learning in learning oriented organisations (Sambrook & Stewart, 2000).

A Lack of Motivation Inhibits Learning ...

The first category of inhibiting factors, lack of motivation for learning, was mentioned by respondents in 19 (or around two thirds), of the 28 case-study organisations. A distinction can be made between a lack of motivation on the part of *managers* for supporting employee learning (mentioned in 15 cases, $n=15$), and a lack of motivation for learning or sense of responsibility for their own development from *employees* ($n=15$). This lack of motivation can be partly explained by various organisational, functional and personal factors, such as:

- the lack of time (due to the organisation of work and work pressures);
- the lack of reward for learning (at the organisational and HR functional level);
- the lack of enthusiasm in the concept of the learning organisation or training and development in general; and
- the lack of confidence to learn and/or take responsibility for learning (at a personal level).

... but Motivation to Learn Enhances Learning

The limited involvement of managers and employees in learning issues was linked to their lack of motivation for learning. However, the high involvement of managers and/or employees was cited as a supporting factor in 21 of the cases. It is interesting to note that in around half of the cases, organisations that mentioned the active involvement of managers as a positive factor ($n=16$) also cited lack of motivation the part of managers ($n=15$). This would suggest that these organisations have a *balance* of managers who are either supportive of, or negative towards, learning. However, at the employee level, the balance weighs down on the *negative* side. Lack of employee motivation was mentioned 15 times as an inhibiting factor. However, the active participation of employees in their own development was mentioned only 4 times and their motivation to learn mentioned only 3 times.

A Lack of Clarity Inhibits Learning ...

The second category of inhibiting factors concerns HRD, at organisational, functional and personal levels. The lack of clarity concerns both the new/changing role of HRD professionals, and new approaches to learning and working ($n=16$). One reason is the limited understanding of HRD's role. In some organisations, participants talked about the lack of understanding regarding HRD goals, tasks, responsibilities and objectives, and even the distance between managers and the HRD function. Another reason is the lack of practical information regarding the need for learning, on learning processes and on learning opportunities. These two factors might contribute to the lack of motivation of both managers and employees, described earlier, if they are unsure of what is expected of them and what support HRD professionals will provide.

... but Clarity Enhances Learning

However, HRD role clarity was mentioned in 19 cases as a supporting factor. Other factors were clear communication, clear training systems, procedures or policy and a widely shared understanding of the importance of learning and personal development. An important point to note is that, generally, those organisations that mentioned clarity of the HRD role as a supporting factor were different from those that mentioned a lack of clarity as an inhibiting factor. This would suggest that, unlike the mixed responses regarding motivation, there is a consensus between groups of respondents within organisations regarding HRD's role.

A Lack of Learning Culture Impedes Learning ...

The third category relates to culture, an organisational factor that influences the activities of (and attitudes towards) the HRD function and individual attitudes to learning. In 12 cases, the lack of a learning culture was cited as an inhibiting factor. Participants talked about the difficulty in developing a learning culture and insufficient knowledge sharing. This would suggest that it is very difficult to motivate employees to share knowledge or engage in learning processes if they are not used to this, or perhaps even reluctant to do so. This is supported by Jones and Hendry (1992) who found that a learning-oriented culture enhances successful learning, whereas it is very difficult to create learning situations in companies with cultures characterised by bureaucracy and inter-functional rivalries and politics. The difficulty in changing existing cultures was cited in 8 cases, including fear of and resistance to change as a barrier to developing a learning orientation. Other factors included inappropriate organisational structures, work pressures and an emphasis on meeting targets, and entrenched attitudes to training.

... but a Learning Culture Supports Learning in Work

However, if an organisation has a culture open to learning, this makes it easier to change HRD practices, such as devolving responsibility to managers and employees, and creating opportunities for learning within work activities. Such a corporate culture was mentioned as a conducive factor in 4 cases. However, again, the number of positive references ($n=4$) to a learning culture is smaller than the negative expressions ($n=12$). Related to culture is organisational structure. Changes in organisational structure, or in job design, can also support the development of a learning culture ($n=6$). New structures can provide employees with more opportunities for learning within work activities, allowing HRD professionals to support work-related learning. Another conducive factor is a flexible organisational structure, which enables jobs to be designed (and re-designed) to facilitate work-based learning and allow time for sharing and reflection upon learning.

A Lack of Resources Inhibits Learning ...

The fourth category encompasses pragmatic factors (mentioned 24 times in total) which also inhibit learning. These occur at organisational, functional and personal levels. Of these, the most frequently cited issue ($n=16$) was the lack of time for learning on the part of employees. Work pressure is so great that it is difficult for employees to find time for learning in their daily work routine. In addition, other opportunities for learning (such as courses) are cancelled/postponed to ensure the workload is completed. This compounds the problem of lack of motivation to learn and impedes the development of a learning culture. Other practical problems include a lack of HRD resources

($n=8$), and a lack of time to develop new HRD initiatives ($n=6$). The lack of HRD resources refers both to financial and human resources – that is money in the form of investment in the central HRD function and departmental budgets, and an adequate number of HRD professionals. However, there was no significant relationship between the organisations that mentioned a lack of HRD resources and the size of the HRD department.

... but Sufficient Resources Can Support Learning

Whilst the lack of time and resources were mentioned as inhibiting learning, similar issues, such as sufficient HRD resources (both financial and human), were mentioned as supporting learning in 10 cases. Another factor that helped to stimulate a change in HRD practices was the identification and communication of positive results of new HRD initiatives ($n=7$). The increasing use of ICTs might also help address the problems associated with lack of time and HRD expertise. Computer-based learning can help overcome problems of access to learning associated with shift work, for example, and off-the-shelf learning resources can help overcome a lack of internal subject expertise. However, investing in computer-based learning requires substantial financial resources and the ability to select appropriate hardware and software. (This latter issue is addressed in the British project, discussed below.) A recent survey argued that cost was the main barrier to e-learning, and that such an investment required significant senior management support (Training Zone, 2000).

Discussion

These findings suggest that lifelong learning in work is influenced by many factors, and the same factors can be expressed in both a positive and negative manner. Significant similarities were found between the twenty-eight case studies selected from seven European countries. Significant inhibiting factors were talked about as: insufficient HRD resources; a traditional culture and entrenched attitudes towards training; business pressures; and poor managerial skills. Key conducive factors included: sufficient HRD resources (human resources such as facilitation skills, learning expertise and flexible solutions, as well as financial resources); management support for learning; and the increasing willingness to learn on the part of employees. These factors impact on the various stakeholders in learning (managers, employees and HRD professionals), and impact on organisational culture, the structure of work, and resources. A key finding is the changing role of the stakeholders, the attempt to develop a (new) learning culture, and the restructuring of work.

However, despite being able to identify positive and negative factors, it is possible that some of the conducive factors are necessary but insufficient conditions for organisations to become learning oriented. For example, despite increasing HRD resources and senior management commitment, until

workload pressures and the organisation of work are addressed, and work time is devoted to learning issues, employees will continue to see learning as extra to their daily work practices, perhaps even unnecessary and worthless. The need to meet targets and a task orientation impedes the development of a learning environment. Conversely, inhibiting factors might not necessarily preclude the achievement of becoming learning oriented. For example, in the Royal Mail and Rolls-Royce, despite shift work and daily targets, time is being found to enable learning events to be scheduled in work time and in the work environment.

Analysing these findings from a different perspective, the same data can be constructed into three categories (or levels) of factors influencing learning – organisational, functional (HRD) and individual. Organisational factors include structure, culture, senior management support, the organisation of work, work pressures and managerial skills. Functional issues include levels of HRD resources (such as time, money, staff, expertise), the development of new initiatives, and the degree of role clarity. At the individual level, whether *managers* or other *employees*, factors include their level of responsibility for their own learning and that of others, their motivation to learn, their confidence and skills level and the amount of time they have for learning. Of course, these three spheres can be inter-related, again suggesting the complexities associated with work-related learning.

Having summarised the European research findings, the next section presents the findings from the British project.

Factors Influencing Learning in Computer-based Learning

The British research project, conducted during 1999-2000, has also been reported elsewhere (Sambrook, 2000 a & b). In summary, the two key objectives were to:

- investigate and compare the quality judgements made by trainers and learners; and
- investigate the relationship between quality judgements and learning outcomes, the hypothesis being that high correlations would enhance the predictive nature of the evaluation tools.

Thus, the research design incorporated both quantitative and qualitative methods. The research included a critical review of literature on pedagogical and quality issues associated with computer-based learning, and three empirical studies.

Research Design

The aim of this study was to further test evaluation tools developed from previous studies, examine the perceptions of learners regarding their quality

judgements of a range of computer-based learning materials and compare these with their measured learning outcomes. The study was conducted during June/July 2000, involving 159 participants, recruited from the North Wales area. There was a wide spread of age and experience amongst the participants, including employees of SMEs, recent graduates engaged in work experience within SMEs and those not in work but engaged in vocational training. Five different computer-based learning materials were selected for the study, offering a range of subjects and required levels of IT skills. Participants selected their preferred learning material, worked on it in their own time, and were then asked to complete the Learner Evaluation Tool (online or paper version). This questionnaire comprised 91 statements, in five categories: general issues; access issues; design issues; issues concerned with the quality of the learning experience; and learning outcomes. Participants were asked to respond to the statements by scoring on a Likert-type scale. In addition, at the end of each section, learners were asked to comment upon both positive and negative features of that aspect of the learning material. This article focuses on these comments.

Analysis

Drawing upon the freely offered qualitative responses, factors that influenced learners' perceptions have been analysed using content analysis. Overall, there were 762 comments. Counting the number of times a particular element of content is mentioned provides an overview of the emerging factors influencing learners' judgements of quality. Further analysis examined the rich detail provided in learners' comments and explored potential links between the various themes (Sambrook, 2000 a & b). Overall, 33 different factors were identified (see Figure 2). Most of these factors were mentioned in all dimensions, suggesting their relative importance in influencing learners' judgements of quality. Thus, it is useful to examine the aggregated comments.

The most significant factor was the extent to which the computer-based learning material was perceived as being *userfriendly* and this was reported as a positive factor in 93% of these comments. It is interesting to note that the top eleven factors account for two thirds (66%) of the total number of comments, and include the six recurring factors from the analysis by dimension (Sambrook, 2000a). This would suggest that the most important factors influencing learners' judgements of quality are:

- *userfriendly* – the extent to which the material is easy to use, with clear instructions
- *presentation* – clear and accurate, with no mistakes such as spelling errors
- *graphics* – the number and quality of pictures and diagrams
- *interest* – whether the material generates interest or is found to be boring

- *information* – the amount and quality of the content, whether there is too little or overload
- *knowledge* – the extent to which new knowledge is gained
- *understanding* – whether the material is easy or difficult to understand
- *level* – whether the material is considered too basic or too deep for the learner’s current knowledge and skills
- *type of learning* – for example, whether deep learning or rote learning, memorising facts
- *language* – whether the language was difficult to read, using jargons or lacking definitions
- *text* – the amount of text and the balance with graphics

Factor	Positive	Negative	Total	%
USERFRIENDLY - ease of use, instructions	106	5	114	14.9
PRESENTATION - eg clear, accurate, no mistakes	34	14	48	6.3
GRAPHICS - eg pictures, diagrams,	22	23	45	5.9
INTEREST - eg interesting and engaging or boring	21	21	42	5.5
INFORMATION - eg amount, too little or overload	28	13	41	5.4
KNOWLEDGE - knowledge gained	34	6	40	5.2
UNDERSTANDING - eg easy or difficult to understand	31	9	40	5.2
LEVEL - eg too basic or too deep	5	30	35	4.6
TYPE OF LEARNING - eg rote, memory, discussion	19	15	34	4.5
LANGUAGE - easy or too difficult to read, jargon, definitions	26	7	33	4.3
TEXT - eg amount and balance with graphics	12	21	33	4.3
LENGTH - eg too short or too long	8	16	24	3.1
NAVIGATION - eg moving about package and other sites	12	11	23	3.0
STRUCTURE - eg in chunks, logical	15	7	22	2.9
USEFULNESS - eg relevance, transferability	18	3	21	2.8
PRACTICE - eg opportunity to practice, experiment, use	1	19	20	2.6
INTERACTION - interactive or not	8	9	17	2.2
EXPLANATION - eg how well the material was explained	13	4	17	2.2
ASSESSMENT - pre-test, self-test, post-test opportunities	7	7	14	1.8
IT SKILLS - eg appropriate for beginner	11	2	13	1.7
COLOUR - eg use of colour in text, to highlight key points	9	4	13	1.7
PACE - eg ability to progress at own pace	10	2	12	1.6
HARDWARE - eg size of screen, use of mouse	2	9	11	1.4
EXAMPLES - use of examples	3	6	9	1.2
ENJOYMENT - eg fun	7	1	8	1.0
CONFIDENCE - eg reduced fear of computer based learning	8	0	8	1.0
PROGRESS - eg ability to learn further	5	3	8	1.0
FEEDBACK - eg on tests, wrong answers	6	0	6	0.8
LINKS - to other sites, content	4	0	4	0.5
SCROLLING - eg moving about text within pages	0	4	4	0.5
INTERFACE	2	0	2	0.3
HELP - eg online help facility	2	0	2	0.3
LEARNER CONTROL - eg choice, self-directed	2	0	2	0.3

Figure 2. Analysis of overall comments, ranked according to frequency of mention.

Discussion

It is important that managers and HRD professionals responsible for selecting computer-based learning materials are aware of factors influencing learners' perceptions of the quality of the resources. Findings from the British project are similar to the European project in that the same factors influencing learning can be perceived by different learners as being positive or negative. The British study also confirms results from the earlier European project that factors influencing learning are both complex and subjective. It is also important to identify if there are any relationships between these perceptions of learning and actual learning outcomes, although that is not the purpose of this article.

When asked what impeded or enhanced learning in learning-oriented organisations, findings from the European research could be constructed into three categories (or levels) of factors influencing learning – organisational, functional (HRD) and individual. It is possible to re-analyse the findings from the British research from a broader perspective and identify three levels of factors influencing perceptions of the quality of learning experiences. Although the research explored learners' perceptions of the quality of *computer-based* learning materials, the comments offered are also pertinent to other forms of learning materials, and learning in general. Thus, these findings can also be constructed into three generic and hierarchical themes. These are (i) learning, (ii) learning materials, and (iii) computer-based learning materials, illustrated in the model in Figure 3.

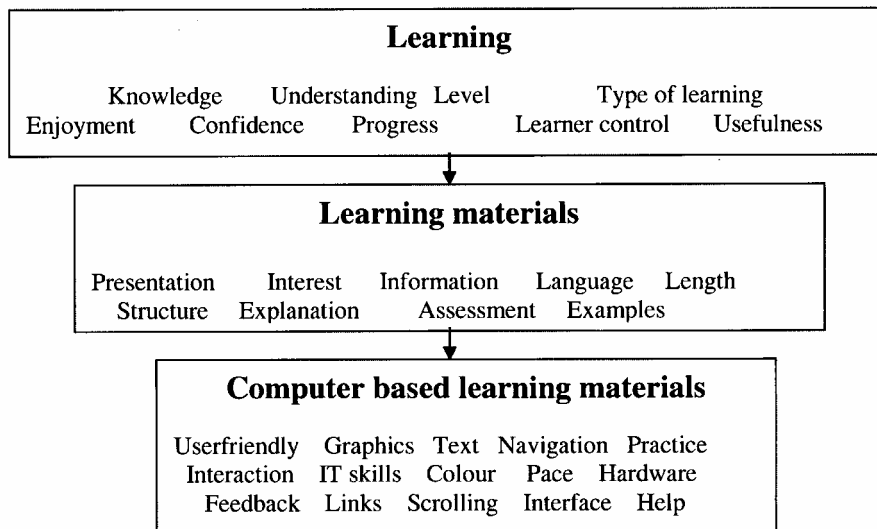


Figure 3. Factors influencing learning: 3 generic and hierarchical themes.

Drawing upon learners' own comments, this model provides a useful tool to raise awareness, in a systematic way, of the whole range of factors learners consider when evaluating the quality of ICT resources. This may provide practical assistance to managers, HRD practitioners and material producers during their decision making processes – whether designing, evaluating or selecting computer-based learning materials. It highlights that when learners were asked to judge the quality of the learning materials, they did not only focus on specific features of ICT resources. Instead, they made reference to the much broader issues related to learning in general. However, this model does not suggest that learners first consider learning in general, and move down the hierarchy to the specific learning materials themselves. Empirical evidence suggests that the most significant factor influencing learning and the quality of online learning materials was userfriendliness.

A Holistic Model of Factors Influencing Computer-based Learning in Work

The analysis so far has concentrated on identifying:

- organisational, functional and individual factors influencing learning in work, as stated by HRD practitioners, managers and learners, and
- factors influencing (the quality of) computer-based learning, as identified by learners.

However, it is useful to synthesise these findings into a holistic model of factors influencing learning in work. The Figure 4 provides a systematic way of raising awareness of, and thus being able to cope with, the many factors influencing learning in work. The model could be used by senior managers, HRD professionals, managers and learners to analyse factors both inhibiting and enhancing learning – to help overcome the problems and promote the successes.

Some Conclusions and Implications

Lifelong learning and learning in work are important issues in small and large organisations. Empirical evidence from 200 large organisations across seven European countries suggests that lifelong learning and learning in work can be greatly enhanced by developing organisations as learning cultures, by increasing motivation to learn, by clarifying responsibilities for learning and providing resources, and by the re-organisation of work. However, as Oxtoby (2001) reveals, 'to create a learning culture requires much more than fine words.' For example, it requires significant commitment from the senior management team, in the form of championing the concept of learning and approving investment (Training Zone, 2000).

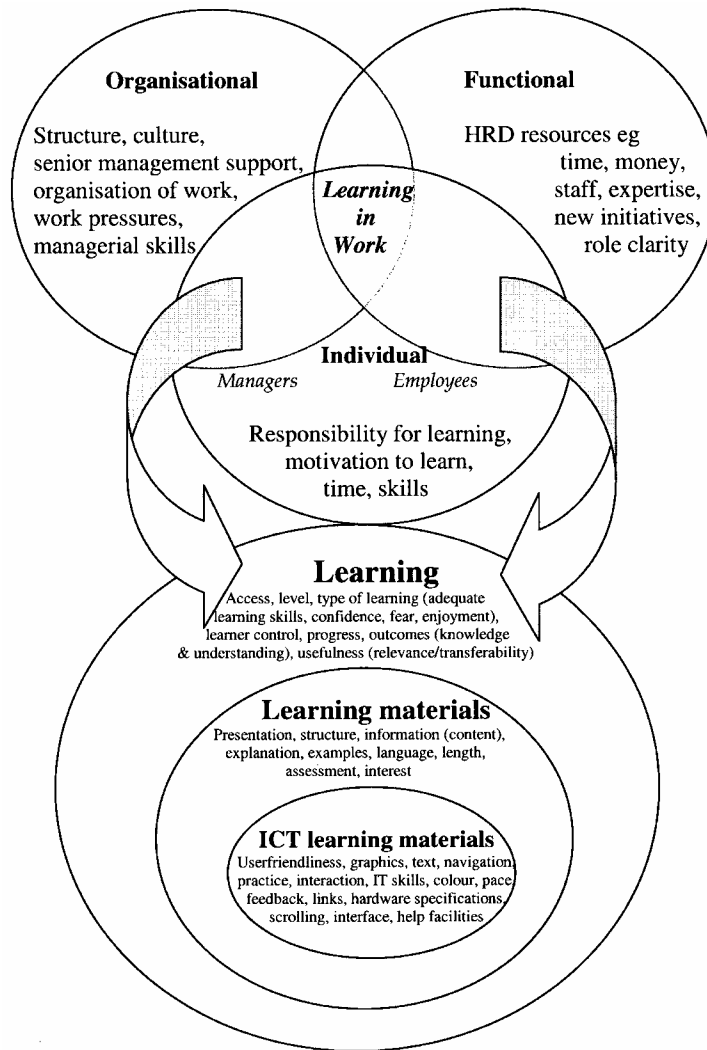


Figure 4. A holistic model of factors influencing learning in work.

Learning can also be enhanced by information and communication technologies (ICT), including new educational and training technologies. Two key factors influencing the demand and supply of computer-based learning materials will be (i) learners' perceptions of their quality and impact on learning, and (ii) trainers'/managers' perceptions of their effectiveness regarding their impact on work performance. Factors influencing learners' perceptions have been identified in this article. Further analysis is required to compare these with learning outcomes, and further research is being

conducted to investigate trainers' perceptions. However, empirical evidence from more than 150 learners in the SME context suggest that the most significant factor was *userfriendliness*, and this is especially important with the increase in self-managed learning, where the learner could be alone and isolated. Within the e-learning context, there is also the assumption that learners know how to learn effectively (Honey, 2000). Motivation to learn was a factor identified in both research projects. However, motivation, confidence and learning skills are particularly problematic in the ICT context (Honey, 2000). From the quantitative analysis of frequency of mention and an exploration of learners' own words (Sambrook, 2000 a & b), research findings suggest that the same factors could be both positive and negative features, highlighting the complexity and subjectivity of investigating learners' perceptions of the quality of computer-based learning materials. Thus, it is important for managers and HRD practitioners to be able to judge the quality of ICT-based learning resources – taking into account *learners'* perceptions – to assure effective learning. This is particularly pertinent in SMEs where – despite the lack of formal HRD infrastructure – computer-based learning can offer accessible and flexible learning opportunities. An awareness of these factors is also useful for producers to enable them to design *learner-centred* materials, by taking into account learners' perceptions of quality.

It is argued that identifying influencing factors is an important step enabling managers and HRD practitioners to recognise how learning might be enhanced within work – whether in traditional classroom-based training or through ICT-based learning resources. Currently, the bulk of computer-based learning focuses on IT training (Training Zone, 2000). However, the increasing use of e-learning has widespread effects. For example, it appears that e-learning is used in larger organisations to provide individualised training, although a recent survey suggested that whilst 43% of employers stated they provided tailored learning, only 7% of employees stated they received tailored training (Honey, 2000). This highlights how perceptions of learning vary. In addition, e-learning transforms the trainer's role, a factor both feared and embraced by HRD professionals (Training Zone, 2000). Having the ability to accurately evaluate the quality of e-learning resources could enhance the credibility of HRD practitioners, particularly as their role becomes more uncertain.

Many of the factors identified would seem intuitively obvious. However, the empirical findings of two separate research studies would suggest that these factors are indeed evidence-based. Thus, it is both possible and useful to present this evidence in a model, highlighting for HRD practitioners, managers and learners the range of contextual (organisational), material (HRD and ICT resources) and personal factors influencing learning in work. It is only by raising awareness of these factors that it is then possible to deal with them, to encourage and harness all forms of learning in work. Although further research is required to identify the relationship between these factors and actual learning outcomes, highlighting key issues raised by learners enables

managers and HRD practitioners to first acknowledge, understand and then address such factors. This is especially important as responsibilities for training and learning in work shift. HRD practitioners are increasingly taking the role of internal consultant, facilitating learning rather than providing training (Garavan, 1991; Watkins & Ellinger, 1998), and managers are increasingly assuming the role of role model and developer (Ellinger, 1997; Horst et al, 1999; Sambrook & Stewart, 2000). An understanding of factors influencing not only computer-based learning, but how learners judge the quality of learning experiences in general, will be crucial to these emerging roles.

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