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Towards Work Integrated Learning Communities

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Towards Work-Integrated Learning Communities

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Abstract

In this paper we raise the concept of Work-Integrated Learning (WIL) as a means of supporting activities of competence development and learning in organisations. In order to illustrate our conceptual understanding of WIL, the paper includes empirical results from a case study in a consultant firm, Ypsilon, which operates in the education sector and delivers courses for IT-professionals. Ypsilon is at present undergoing a transition from having one big customer to being forced into a more flexible way of meeting the different demands from many new clients. The results highlights three main considerations believed to be critical for WIL activities: (i) A shift from an individual teaching culture to a social and collaborative culture. (ii) Extending the role of technology from codifying competencies to supporting negotiation of practice. (iii) Adoption of holistic and integrated strategy that can cope with a dynamic business context. We conclude the paper by pointing at several implications for how the understanding and advancement of work-integrated learning can be approached in the future.

Keywords

Work-integrated learning, community, e-Learning, competence development

1. Introduction

The business environment is increasingly characterised by global changes which needs innovative products and process for the rapid development of Information and Communication Technology (ICT) (Braa et al. 2000). Implications of such a transition of globalising organisational structures might be a strong pressure on firms for increased collaboration between business parties and adaptability to the process speed and market needs (Ciborra 1993). This is especially current for the competence development and the learning strategies of today's organisations. Companies and its workforce need to respond rapidly to these changes. The employees need to constantly learn new things in order to meet these demands and act knowledgeably and flexibly in their daily work. On an individual level this means to develop a commitment to continuous competence development and learning. From an employer's perspective, such learning should result in benefits for the organisation. On an organisational level it encompasses the recognition that there is a need for more targeted, flexible solutions in terms of local delivery, duration and timeliness to encourage their employees to undertake competence and learning activities (Holden et al. 2002)

Over the last five years various disciplines have come to realise that there is new ways of managing knowledge and competence differently from what previously was possible (Davenport & Prusak 1998, Alavi 1999). For a long time, the educational field has been concerned with the concepts of knowledge and learning. Among their research, they e.g. seek to explore learning frameworks in order to understand and further elaborate learning strategies from both individual as well as group perspectives (Fjuk 1998, Berg 2000). For the professional education sector, ICT plays the double role of both affording the means for innovative ways of delivering courses and at the same time being the subject of a large portion of courses. And this has led to many improvements and advancements in, for instance, flexible learning and distance education. Herein, they try for instance to design learning environments for supporting appropriate training and education. Today many organisations have set up learning centres where employees can take courses and share information and knowledge at any time over vast distances. Many organisations use the Web and have some form of corporate Intranet and Extranet in place. They become the main infrastructure to support knowledge sharing and collaboration among employees, customers and/or suppliers.

All together, these previous efforts imply a potential of rapid growth, but also extremely high demands on knowledge creation in order to keep up with competitors and meet the demands from customers. And never before has knowledge and competence development been so highly rated as now, both in terms of training staff members in organisations, educating students in academic studies as well as selecting people to professional positions.

To evaluate these insights we will introduce our understanding of the concept of work-integrated learning and its role in new ICT generations as well as competence development and learning strategies. The design and use of ICT is motivated as the key ingredient to aid the flexibility of for instance delivery. The paper offers results from a case study of a consultant firm (Ypsilon) in the education sector that focuses on delivering courses for IT-professionals (i.e. courses on hardware, communication, programming and software packages). A critical aspect of the case is the fact that Ypsilon is at present undergoing a transition from having one big customer to being forced into a more flexible way of meeting the different demands from many new customers. The study aims at exploring how existing work practices supports learning in the organisation, and how ICT is used in these processes. The main question to be answered was how successfully an organisation is able to support its professionals with work-integrated learning activities. We argue that a successful work-

integrated learning environment should be facilitated by a community approach as an overall organisational process in which to emphasise both technological as well as social support.

2. From Formal Instructors to Community Learners

Many various research fields contribute to the understanding of knowledge and learning. Concepts such as Knowledge Management, Communities of Practice and Organisational Learning have substantially contributed to our understanding of the problem domain. All these concepts are concerned with the processes of creating and interpreting information and how learning and meaning is produced out of such processes (see for example Scarbrough & Swan 1999, Lave & Wenger 1991, Wenger 1998, Argyris & Schön 1978, Weick 1995). In organisations, knowledge is often embedded, not only in documents and individual people's heads, but also in organisational routines, practices, and norms, as well as through person-to-person contacts. Many failures to interpret information correctly stem from the use of incorrect rules for the interpretation of information. This implies that people in their daily interpretations produce a great deal of knowledge and meaning. This interpretation requires knowledge and the application of certain rules. However, the most important thing is knowing the rules, which are said to be best learned within a community of practice. This trend is strongly suggested in the literature treating the concept of communities of practice (see for example Brown & Duguid 1991, Wenger 1998, Amindon 1998). Practice is by these authors defined as the coordinated activities of individuals and groups in doing their "real work" as it is informed and given meaning by a particular organisational or group context. A key to sustain learning in such communities is the organisational culture that forms the environment in which information and know-how can flow. A community of practice offers a body of solutions to problems that have worked consistently and are taught to new members as the correct way to perceive, think about, and feel in relation to those problems.

Learning in an organizational setting must not only be understood in terms of organized forms of training and education, but also as informal processes of sharing, creating and disseminating knowledge throughout the organization, (Lundh Snis 2002). These issues in general, and how they can be supported by ICT in particular have been at the core of the discourse in the research field of knowledge management and organisational learning. The term Work-Integrated Learning (WIL) is proposed as a concept stressing that learning is situated in the work practice of the learner. Learning should accordingly not be perceived as an activity separated from other work activities, but rather as a constantly present part of all work (Argyris & Schön 1978, Brown & Duguid 1991). Organized education and informal management of knowledge are inseparable from and integrated with everyday work practices that constitute the context for the learner's reflections, self or together with others (Cook & Brown 1999). Studying work integrated learning from an IS perspective means highlighting the use of technology. In the context of work and learning, the issues related to technology are complex. When interaction within a community is mediated by ICT, dissonance with respect to how the individual members perceives and makes sense of the technology can seriously obstruct communication and learning, (Orlikowski 1992, Weick 1995). Other aspects that could affect the conditions for learning are availability, access, and problems related to information and interaction overload, (Sørensen 1999). Learners and instructors using ICT for communication and collaboration can be viewed as constituting a learning community. For such a community of learners it will be crucial to establish norms and forms of communication within the group. A mutual, more or less explicit and shared perception of the community's interaction culture can depart from

expectations and experiences of the community members, and evolve through processes of negotiation, (Svensson 2002).

3. Empirical Approach

The shift to bring work more clearly in focus has thoroughly been addressed by for instance Barley & Kunda (2001). They suggest that it is important to systematically investigate the concrete activities that constitute the routines and practice of groups in organisations. They identify several methodological implications. In one of these implications they point out that ethnography, participant observations and other qualitative methods have continued to play a more prominent role in socio-technical studies. Without detailed, contextually sensitive data on work practices the potential role of technology can only be understood in thin abstract and functional concepts.

In order to understand the nature of work and the knowledge needed in the professional educational organisation we conducted a case study. Case study research is dominated by ethnographical methods such as participant observations, semi-structured interviews and document analysis (see for example McCracken 1988, Luff et al. 2000). Data about our case was collected from a series of interviews, which can be characterised as open-ended qualitative interviews. In order to make an analysis of how ICT can support Ypsilon as they move towards new ways of working we need to make clear what current processes exist and how they are, or might be, supported by ICT.

The interviews were designed and conducted guided by Mc Cracken's (1988) "four step method of inquiry. A short summary of the applied method for collecting and analysing data is presented below.

1. Review of analytic categories and interview design, which means reviewing the literature and previous research in this field to enable us to define problems and assure that our research will be a piece to the puzzle and not just a piece that puzzles. Furthermore it helps us construct a relevant questionnaire
2. Review of cultural categories and interview design. This step aims at engaging the investigator in two processes: familiarisation and de-familiarisation by first trying to identify cultural categories and relationships that have not been considered by the scholarly literature and then a critical distance from the world we're studying.
3. Interview procedure and the discovery of cultural categories. Doing the interviews in a relaxed atmosphere and phrasing the questions in a non-directive manner.
4. Interview analysis and the discovery of analytical categories. Analysing the interviews and trying to point out patterns and if possible, categorise them.

The study consists of semi-structured interviews with educational and administrative staff at Ypsilon, both at their local and regional office, in total 6 interviews ranging from 45 minutes to an hour and a half each. The interviews were recorded on mini-disc and later transcribed. The interview guide was based on the following themes of inquiry:

- The daily work.
- Individual development.
- Company culture.

- Education and learning structure.

The individual interviews were supplemented with two group interviews (2 h) and four observation sessions (1 h-2 h) that were documented in field notes.

4. The Case: Consulting with the Educators

Ypsilon has recently entered a large consultancy group and are now part of an organisation with representation in all 4 of the Scandinavian countries with approximately 8 000 employees. The object of study reported in this paper was a small unit of Ypsilon's educational branch. The main areas are competence (education and staff development), service (maintenance of networks) and complete solutions (from problem analysis to implementation and maintenance). The department consisted of one manager, three teachers, one customer manager and one administrative co-ordinator.

The results reveal three interrelated processes that dominated work at Ypsilon: (i) Delivering courses: A majority of courses are taught in-house at Ypsilon's premises. Clients study all days of the week, mixing lectures with self-studies and tutored sessions. The curriculum and assessment is regulated in the course guidelines, provided by Ypsilon (or the producer of the software used in the course). (ii) Cultivation of clients and products: The work of matching existing products with new clients was closely interrelated with a strategic environmental scanning in search for future fields of interest. (iii) Training of staff: Professional development and introduction of new staff members were addressed through a combination of organised courses and individual self-studies. Both types of training activities were individually planned and scheduled together with local management.

4.1 Delivering Courses

For a number of years a vast majority of the course modules have been delivered for one major client organisation (a public Swedish unemployment bureau). The workflow preceding the start of a course was typically initiated by a series of meetings between representatives from Ypsilon and the Swedish unemployment bureau. These meeting had the primary purpose of negotiating a financial agreement. If it was a new or modified module the initial meetings also resulted in a brief outline of course objectives. The Client organisation subsequently presented Ypsilon with a sample of potential students among their job-seeking clients. This was followed by a series of interviews conducted by the course responsible teacher at Ypsilon who selected students that were believed to have the highest potential of passing the course both with respect to their professional and their social skills. The ability to work in a team was thought important since the typical course lasts approximately one year. The chosen students (often between 12-16) then received information about the course, such as schedule, detailed course outline and course objectives. In each group a class-representative were selected. This representative has meetings with the management and a representative from the Swedish unemployment bureau once a month where practical and social problems were aired out.

A typical day would start with the students studying on their own from 9.00 – 10.30, followed by a lecture and a lunch break at 12.00. After lunch the students engage in self-studies for the rest of the afternoon, but the teacher is at hand for answering questions and tutoring. During the course there are a series of diagnostic tests in order to detect if a student is in need of extra attention and help in order to catch up. After passing the final exam the students are granted with a diploma.

In addition to the contracts with the unemployment bureau, Ypsilon has over the last two years become more and more involved in the so-called MOC-educations (Microsoft Official Curriculum). These are certification courses in areas such as: Supporting Microsoft Windows, Administering Microsoft Windows NT, System Administration for Microsoft SQL Server etc. To these courses Microsoft provides all the material. Included in this are highly detailed teacher-guides that regulates the delivering process in (e.g. the first break should be after 40 minutes, the break shall be no longer than 10 minutes, and before the break the first 17 slides should be finished). The teacher-guide also contains information on frequently asked questions together with recommended answers. Examinations of MOC-modules are done electronically at the Microsoft certified test-centre located at Ypsilon.

Ypsilon is also starting to give courses where the customer is more decisive when it comes to the content of a course and how it should be carried out. In these cases Ypsilon tries to sell combinations of current modules but usually needs to add something new to each course they sell.

4.2 Cultivation of Products and Clients

As indicated above, most new course modules have traditionally been designed based on brief specifications that are negotiated together with clients. Based on these specifications a senior teacher at Ypsilon proceeded with instructional design and practical planning. Typically, the course concepts conformed to a fairly standardised method of teaching that was well established in the organisational culture.

In addition to this type of client-oriented course development, Ypsilon also systematically monitored and assessed new technical innovations in search for new software and tools that could be packaged into educational products. This environmental scanning was coordinated by one person at the regional office. The main sources for information gathering were newspapers (mainly two Swedish papers, Dagens Industri and Computer Sweden), keyword-searches on the Internet, seminars, and newsletters via e-mail (mainly from manufacturers of the products they use in their education and mailing lists from their partners). Ypsilon's Intranet provides a discussion forum but he rarely visits it, and when he does it's mostly to lurk.

The primary purpose for doing environmental scanning is to be well prepared for the customers' questions and demands.

“We want to be the grind that sharpens the edge” [the cutting edge of technology].

When an interesting new trend or software package is targeted they usually contact the manufactures and send some of their educators to them in order to learn the new product/technology.

4.3 Training and Educating Staff

The primary strategy for recruiting new people is to scan the students attending courses at Ypsilon. Since most of Ypsilon's students come from the Swedish unemployment bureau, they are typically available for a job. At the time for the study two of their teachers were recruited from their course attendants and one of the students currently following a course were about to be employed as a project manager.

Ypsilon has a database in their Intranet with all the employees and their competence profile in a searchable database. This database is updated whenever they hired someone new. They also has an extra net for their customers, a database with all the students they have educated. They also have a production database where all their PowerPoint presentations are being stored. The PowerPoint presentations are merely the slides to support the teacher during class and don't contain any preparations or tips from lessons learned from former teachers who have used the material.

When it came to training and educating their staff, Ypsilon strongly encouraged their teachers to learn new things. As stated above, the initiative for areas of competence development were to a large extent controlled through the outcome of the centralised environmental scanning, and weekly coordinated with the needs and demands of the employees. The time available for learning activities during working hours was sparse, and was often disrupted by having to assist students in their self-studying activities. As a consequence, the teachers reported to do most of their competence development at their spare time.

"... and my own staff development is mostly done in my spare time, and that's a pity. ... I'd rather study than watch the television on my free time."

4.4 Summary

Existing work practices at Ypsilon have been established as a result of the static and inert context, which comes from having only one client. Moving towards the uncertain, competitive and dynamic conditions of tomorrow where Ypsilons customers to a much higher extent want to and will control both form and content of courses they buy. Such a transition will challenge Ypsilons current culture and way of organising and acting with regards to WIL.

The three core processes vital for WIL are all characterised by individual and isolated work. The role of the formal instructor is dominating at Ypsilon. The work practice is characterised by a "teacher-culture" rooted in the work practices of traditional classroom based teaching. It is a highly individual culture, where teachers to a large extent work on their own. The teachers are acting like typical professionals as they highly rely on their own skills and competence in their teaching role. This has been possible since they themselves, upon until now, have had the control over both form and content of delivered courses.

The analysis makes it also clear that not much time is given to reflect in their work-integrated learning activities. The time spent on delivering courses has priority over teacher's informal and formal competence development. Thus the daily work of educating students is being focussed on at the expense of WIL and community activities.

One teacher felt that it was hard to focus and that the student must see him as very disharmonious. This is a consequence of that the organisation and management do not acknowledge the importance of WIL activities. The fact that the fear of prioritising their own staff development could have a negative effect on the management view on their qualities as a teacher is obvious. The teachers' tight schedule makes it almost impossible for them to meet under informal conditions during work hours. In order to make room for informal knowledge exchange it requires explicit strategies and directives from management. Consequently, WIL and community building activities have not been seen as critical by the organisation.

The eagerness of the employees at Ypsilon was apparent. This is rather important for future directions. The employees were now much more willing to undergo these changes that a work-

integrated community requires. And this is usually one of the largest barriers that an organisation has. Furthermore, they agreed on that, without having the opportunity that their new customer now demanded these changes, the transformation from being a traditional educating firm to establishing a WIL community, would not have been undertaken.

Regarding the ICT use Ypsilon had no wide-ranging technology-supported training and competence development. Their actual ICT use was restricted to the use of emails, Intranet repositories consisted of personnel data and a production database with course material as powerpoint presentations.

In sum, Ypsilon is facing the challenge of becoming a firm where educators take the varying roles of being both formal instructors and members of a learning community.

5. Discussion and Implications for Work-integrated Learning Communities

Based on the findings from our case study and of the current related research we will re-direct the focus for a coherent adoption of WIL, formulated as three implications for the design of work-integrated learning communities.

- **An assessment of the current need and status of work-integrated learning practice:**

An understanding of actual work practice is needed in order to identify activities of work integrated learning in the organisation. Processes and mechanisms that encompass organised and formal, as well as spontaneous and informal activities are of vital importance in this understanding. For Ypsilon, an assessment of their work practice cannot be limited to treat knowledge and learning as objective constructs, but rather as processes of social negotiation. The structure in these activities need to be socially constructed and must rely on negotiation and collaboration. This means to employ a more collaborative and constructivist view on work and learning (Berg 2002).

From an organisational point of view, the community approach to WIL considers the learning activities as highly dependent on the organisational culture and climate in which interaction should be spurred among different community members. As suggested by Wenger (1998) we propose that the employees who engage in WIL communities are motivated to develop shared frames of references, recall of past events, and interaction structures of stories and memories in order to support meaning and learning among each other. The community identity is of vital importance and consists of the loyalty of the group effort as well as the institutional commitment to this loyalty, see for example Svensson (2002). Social norms and reward systems are not part of the community culture, but a means to achieve one. The community reference could be both the educators at Ypsilon as well as the customers attending the courses delivered by Ypsilon.

- **A redefinition of the role of ICT supporting work-integrated learning activities:**

Just as our views on learning are formed and socially constructed through past and present experiences, so are our attitudes towards ICT support. At Ypsilon, the current support is based mainly on a codification strategy, in which their production as well as competence databases could be seen as codified productions of knowledge and competencies. However, interacting with information and databases, requires also that people have to relate to and make sense of these particular productions, and for this they need collaborative support as well. This requirement is also in line with what Lundh Snis (2002) discusses for the codification of knowledge. Both competence

profiles and powerpoint presentations need to be constantly explored and redefined. Therefore, an ICT support for negotiation and collaboration is needed. Ypsilon is in need of support for informal peer-to-peer communication, as suggested by Fjuk (1998). Support for the teachers could simply be some kind of debate board where they could discuss asynchronously. If someone made an entry a reminder could be sent out to the other teachers at the local office and to teachers with similar profile in the rest of the organisation. This would of course also have to be connected to some sort of incitement. ICT support for making people with the same profile in the database more aware of each other could also have a positive effect on community building for WIL.

The ICT support the staff at Ypsilon needs is foremost supporting interaction (see e. g. Sorensen 1999). An example could be some sort of encouragement for the person at the regional office doing the environmental scanning alone for his region. A higher degree of interaction with other environmental scanners would without a doubt be valuable for all parties. It could be as simple as visible statistics over how many entries and replies to entries they have done. It could of course be argued that it would lead to entries of lesser quality just to get on top of the list, but we think a higher degree of interaction would nevertheless lead to community building and the community would not accept that in the long run.

The ICT support is also, to some extent, understood in terms of increased flexibility of delivering courses to their new customers. Delivering flexible solutions means that the employees at Ypsilon must be provided by tools and mechanisms that fully support this design activity. The goal is to arrive at a knowledge platform that could constitute the base for designing course content modules in a flexible and innovative way. As mentioned in Magnusson and Svensson (2001) many organisations today think in a direction of implementing an e-learning concept where an e-learning portal or a Learning Management System (LMS) plays a central role. A LMS is a system often containing functionality for administrating courses and skill management. It may also include tools and functionality for statistics tracking, communication and collaborative learning possibilities. A more simple system for handling e-learning is a portal that is more of a common place for administration and distribution of e-learning courses, perhaps with communication possibilities in various forms but not as much functionality and intelligence as a LMS. An ICT systems design that supports communities of work integrated learning should include a detailed consideration of a learning portal where support for communication between a learner and her peers, the tutors and the students will be facilitated.

- **The ideas of work-integrated learning and technological platforms should be seen as compatible elements in an overall management strategy:**

Adopting a holistic approach to work integrated learning that encompasses organised and formal, as well as spontaneous and informal activities tend to be appropriate for Ypsilon. However, there exists an awareness of that important knowledge and learning mechanisms are embedded in community work practices and routines. Lundh Snis and Svensson (2001) stress the importance of culture and communities of practice, rewards and trust for creating a context for successful WIL. Looking at Ypsilon today there is no reward system for knowledge sharing and learning activities, such as participating in a discussion forums. The reluctance to participate in forums could be interpreted as lack of trust. A closer alliance must be developed between the human dimension of learning and the organisational technology adoption. Therefore, organisations, such as Ypsilon, need to manage the development of learning and competence as an integrated, managerial, and organisational process. The professionals within the organisation need a sense of community that

links and supports their everyday working activities. To be able to address these challenges, culture and processes, the organization needs a clear strategy from top management who has the power to address such issues. It is also important to anchor the management of processes with the educators at Ypsilon. Without having a management support for the participation and negotiation of the actual community members the implementation and use of work-integrated learning communities is put on risk.

6. Conclusion

We have studied an organisation that is typically based on a formal educator tradition. We have analysed how their teaching processes are performed and how training and learning actually occur in their daily work. However, towards an era of extreme demand from customers on specialist courses and flexible education the work at Ypsilon needs to be carefully considered and re-organised. Their organisational structure that is geographically dispersed actually puts greater demands on their organisation of learning activities and its ICT support. Based on the findings from our case study and of the current related research we will re-direct the focus for a coherent adoption of WIL, as arguments for both social and technical support.

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