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KNOWLEDGE MANAGEMENT AND E-LEARNING IN ORGANISATIONS

Abstract:

Challenged by growing competition, organisations are seeking to find efficient ways and methods to allow for shared access to their key resources: knowledge, experiences and expertise of their members and staff. The purpose of this article is to present a practical example that capitalizes on the combination of Knowledge Management and e-Learning as a response to this challenge. The paper first introduces the project Open Discovery Space, a practical example of Knowledge Management and e-Learning being combined. Secondly it gives a brief overview of both domains' theoretical background and a framework of quality standards for their effective combination. Finally the paper draws conclusions and offers practical recommendations for implementation in practice.

Keywords:

Knowledge Management, e-Learning, Quality Assurance, Organisation

Introduction

Open Discovery Space (www.opendiscoveryspace.eu) is the largest e-Learning project ever funded by the European Commission. Within a large consortium of 52 partners from 25 European countries the project started in April 2012 and has been scheduled to end in September 2015.

The overall aim of the ODS project is to set up a freely accessible international web-based platform including many OER repositories where teachers can find educational resources made by others. Teachers can readily use these materials in their own classes, or adapt them for better matching with their particular educational context and the capabilities and learning styles of their students. The exchange of open educational practices is fostered through the establishment of community platforms on local, regional, national and supranational level. The central outcome of the project, the platform, will be implemented in and affiliated to at least 2000 schools throughout Europe and will involve a minimum of 10.000 teachers.

In order to reach these highly ambitious aims, it is crucial to facilitate knowledge management, especially knowledge sharing between the extensive number of project members thus between different scientific areas. It is evident that such a big project cannot be carried out without the expertise of the whole consortium.

For efficient knowledge management in such a large multidisciplinary team, clusters have been organized allowing project members to work in more focused groups according to their expertise. Also the meetings have been arranged in line with the grouping: in and between the clusters, in thematic subgroups.

The exchange of information occurs in face-to-face and online meetings (web conferencing), by e-mail, and with the help of the project's web site. The web site is used as a means of important internal information's distribution; it includes a reminder of events, arrangements and trainings.

Since project partners are located in many European countries, the cooperation has been mainly organized by e-Learning; the open source Alfresco portal has been provided as digital workspace (www.alfresco.com). For successful communication, coordination and co-operation users have access to a wide range of tools and features such as online forums, dynamic news board, document co-editing etc.

Big ideas concepts (e.g. Action Collab methodology by the Institute for the Study of Knowledge Management in Education, ISKME) help partners sharing a common vision about Open Discovery Space and initiating innovation in exchanging experiences and collaboration. During capacity building events, knowledge sharing conferences, big ideas fests (www.bigideasfest.org) project participants are guided through a process that "stretches their creativity muscles".

An inventory of existing portals' teaching materials has been made and an initiative presenting them as best practices in the official project portal has been started. Thereafter partners have had also the opportunity of sharing best e-learning teaching practice. This way Open Discovery Space acts as a catalyst and inspires members

and teachers to discover and exhaust the potential of e-Learning in their teaching, to share their teaching experiences with colleagues, thus contributing to the (further) development of the portal (Fig. 1).

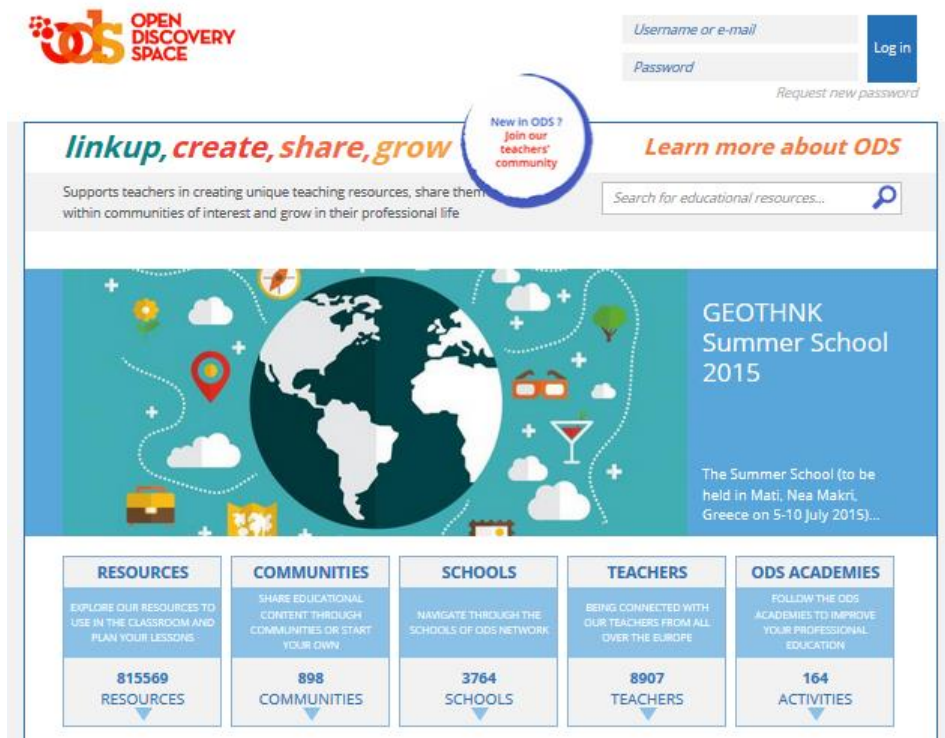


Figure 1 Portal Open Discovery Space (<http://portal.opendiscoveryspace.eu/>)

This approach establishes a link between research work and teaching practice by sharing research outcomes in form of best practices with the users, the teachers. In this way everybody has access to the most recent knowledge as it appears.

In order to monitor and evaluate the teachers' contributions an open forum for discussions has been introduced, where questions, doubts, objections and critical remarks are encouraged. Teachers' experiences will be subject to future analysis contributing to the (further) development of e-didactics.

In summary, Open Discovery Space fosters knowledge management through e-learning and vice versa and ensures a fusion of research and teaching. It can be seen as a step forward in the field of knowledge management by creating and disseminating new information, thus stimulating a change in organisations' routines.

Knowledge management and e-Learning

Knowledge management has emerged as an important issue in organisations, as the practical example above also shows. Its roots can be found in information economics, strategic management, organizational structure and quality management. There are also various ways of defining the term Knowledge Management (KM), but for the purposes of this paper, Rowley's (2000) definition has been adapted. He describes KM as follows: "Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives." So knowledge management can be seen as the

organisation and effective control of the intellectual capital within an organisation including explicit and tacit knowledge of its staff in order to deal with the challenges of a knowledge society.

The crucial factor for providing organizational success and prosperity is the knowledge value chain, defined by Weggeman (1997) as four successive constituent processes (Fig. 2). First, an organization's strategic knowledge requirements need to be identified. Second, the knowledge gap (the difference between the needed available knowledge in the organization) needs to be determined. Third, the knowledge gap needs to be closed either by developing new knowledge, improving existing knowledge or getting rid of out-of-date or irrelevant knowledge. Finally, the available knowledge needs to be disseminated and applied to conduce to the interest of the participants. (Wild, Griggs & Downing 2002)

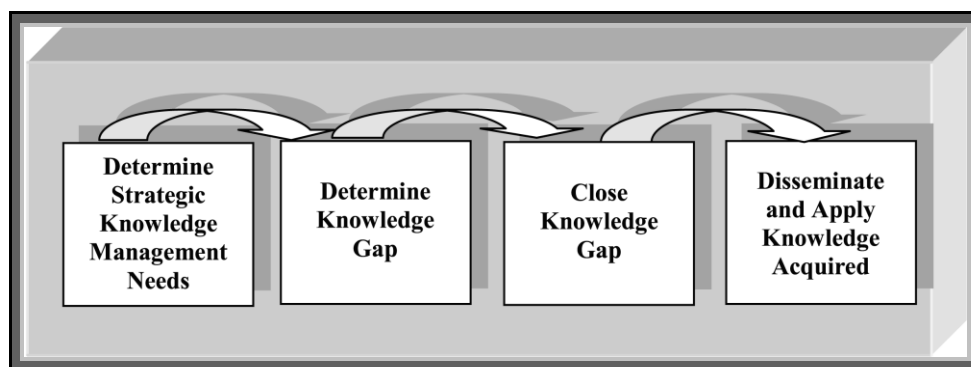


Figure 2 Knowledge management value chain (Wild et al. 2002)

In the context of learning, which is defined as the process of gaining knowledge and expertise (Knowles, Holton & Swanson 2005), the following five processes take place in the course of a typical knowledge management (Fig. 3): knowledge creation and acquisition (finding existing knowledge), sharing, capture (select, choose and archive knowledge), application (apply knowledge to achieve goals) and evaluation (review for verifying knowledge is relevant and accurate). (Sammour, Schreurs, Al-Zoubi & Vanhoof 2008)

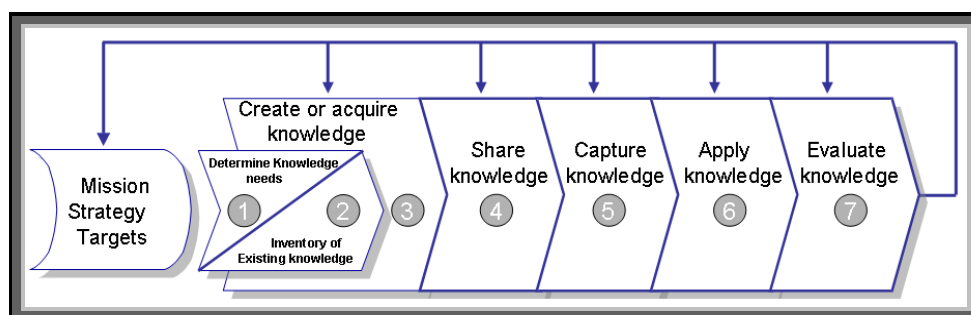


Figure 3 The knowledge management processes (Sammour et al. 2008)

A cardinal principle of knowledge management is to identify where knowledge and expertise exist within an organization and most importantly, how it can be shared among the members. The major problem within an organization might be the lack of means of sharing knowledge among members. As mentioned above, the expertise of

people is one of the greatest assets of a learning environment. Therefore, knowledge should be embraced as an asset that creates value when shared, ensuring a high level of efficient performance.

E-Learning, the exchange of knowledge through online media (Liebowitz & Frank 2011), can be a logical solution to this need. It introduces new innovative forms of transferring knowledge and it can therefore be used as a tool for KM. Many definitions exist for the term “e-Learning”, but for better understanding of the connection between Knowledge Management and e-Learning (Judrups 2015) the following definition is used here: “E-learning is a methodology for the transfer and exchange of knowledge, attitudes and performance via an interactive electronic platform that can be used online or offline” (Brijs & Lecomte 2006). This definition links to knowledge management issues, because both e-Learning and KM are essentially about generation, storage, distribution and application of knowledge. In this process, Information and Communication Technology (ICT) is utilized for learning purposes by designing, distributing and marketing knowledge. (Ali, Bilotta, Gabrielle & Pantano 2006)

But it appears that the processes in the knowledge value chain do not necessarily require the use of ICT. It is often the users dissatisfied with the conventional delivery of learning resources who demand the application of ICT. Knowledge societies' requirements and needs for innovations of methods, tools and techniques in knowledge management processes influence the integration of KM in e-Learning (Yordanova 2007). ICT is utilized to facilitate collaboration and interaction among team members and it is seen as a facilitator in knowledge management processes by collecting, storing and organizing knowledge for online or offline multimedia contents. A strong technological infrastructure is therefore a prerequisite for implementing KM successfully. However, the technological dimension is not the only aspect of KM. Human and organisational factors are also present, making e-Learning sustainable and effective in the longer term. (Sammour et al. 2008)

Another similarity between KM and e-Learning is illustrated by the e-learning value chain, which can be directly linked to the knowledge management value chain. Fig. 4 represents this process in detail: assessing and preparing organizational readiness (considerations before going online), determining the appropriate content (content that ties in with the goals of KM), determining the appropriate presentation modes (considering factors which make for effective e-Learning), and implementing e-Learning (content and technology infrastructure considerations). (Wild et al. 2002)

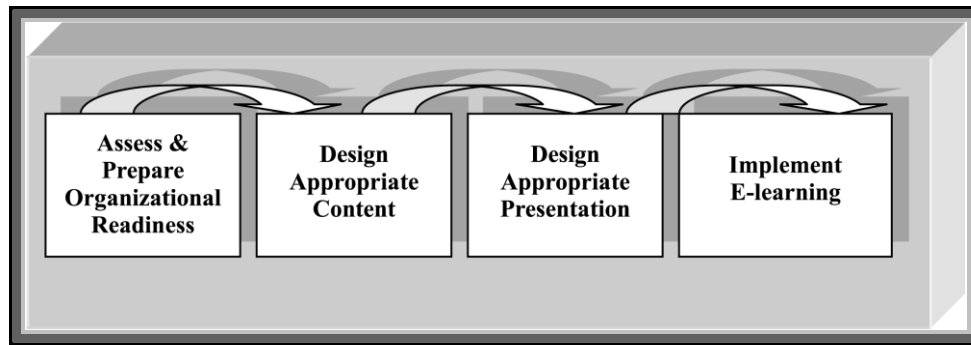


Figure 4 E-learning value chain (Wild et al. 2002)

Properly developed, an e-learning environment will attempt to close the knowledge gap between those who have knowledge and those who will benefit from the available knowledge within an organisation. It creates a growing repository of knowledge that will continuously deliver to the organization's staff when needed and in a style that everybody can understand. In short, e-Learning permits participants to acquire knowledge, pass it from one person to another, apply it to organizational problems, and store it for future use. (Wild et al. 2002, Yordanova 2007)

The interaction of both domains may be summarized like this: KM facilitates e-Learning by increasing the effectiveness of knowledge dissemination and e-Learning and its enhanced advantages of technology stimulate important changes in knowledge management processes (Denning 2000, Yordanova 2007). Joint studies of both domains point out the same fundamental opportunity for increased quality, convenience, diversity and effectiveness within an organisation. In addition, jointly applied, they are increasingly seen as a catalyst for organisational learning, which improves the performance of team members, and is a basis for achieving better results. (Sammour et al. 2008)

Furthermore, KM and e-Learning both serve the same purpose: facilitating learning and competence development in organizations. They just follow two different perspectives. KM relates to an organizational perspective by addressing the lack of sharing knowledge among members of the organizations, and, opposed to that, e-Learning emphasizes an individual perspective by focusing on the individual acquisition of knowledge. (Ras, Memmel & Weibelzahl 2005)

Quality assurance

The above chapter outlined the potential for synergies between Knowledge Management and e-Learning. When realising this in practice, several considerations should be taken into account regarding effectiveness and quality. The main problem is not finding quality standards per se, but rather choosing the right one from among the huge number of quality strategies available (Ehlers, Goertz, Hildebrandt & Pawlowski 2005: 12). As success in knowledge management efforts can be only achieved by understanding a human activity system (Pircher, Zenk & Risku 2007), the model of the organisational dimensions (MOD) relevant for knowledge transfer within a system is seen in Fig. 5 as the shape of a triangle.

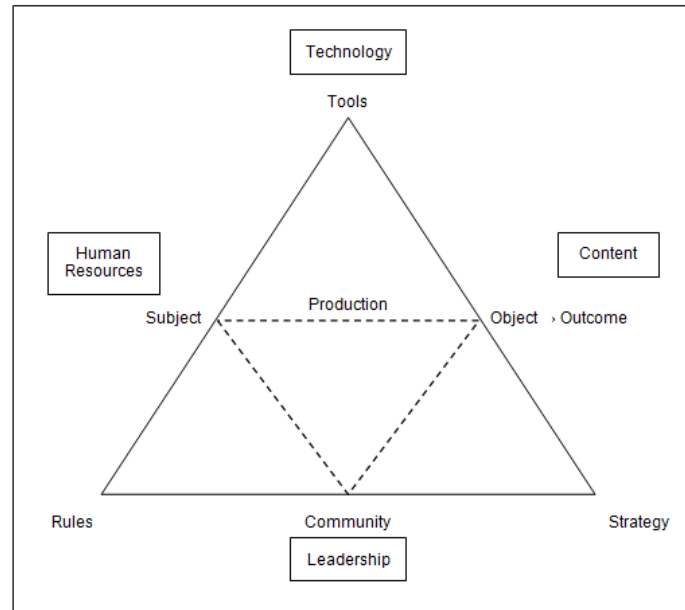


Figure 5 Model of the organisational dimensions relevant for knowledge transfer within a system (Pircher et al. 2007)

Leadership has the potential to influence organisational culture (community) to a certain extent. The relevant characteristics of human resources correspond to the individual (subject) engaged in the activity, and the content within an organisation define the practice, teaching and research (object). The object (the desired outcome) can be achieved through the three vertices: tools, rules and strategy, whereby the technology relates to the tool used to reach this goal.

For carefully designed decision-making aids, a quality approach is required, which is able, on the one hand, to mirror the previously discussed holistic approach of an activity system, and, on the other hand, to consider e-learning quality standards. These standards aim underpinning the process of quality management and assurance by meeting the stakeholders' needs. For designing an individual quality system, the ISO/IEC 19796-1 Reference Framework for the Description of Quality Approaches was adopted by using the quality adaptation model (Pawlowski 2007).

Fig. 6 shows the steps for implementing and adopting quality in organisations. These steps are individually scheduled. Context setting contains all the preparatory activities for the adaptation process. Model adaptation covers activities to implement the reference model based on the needs and requirements of an organization. Model implementation and adoption correlate with the realization and the broad use of the quality system. Quality development means that quality systems should be continuously improved and optimized (Pawlowski 2007:10).

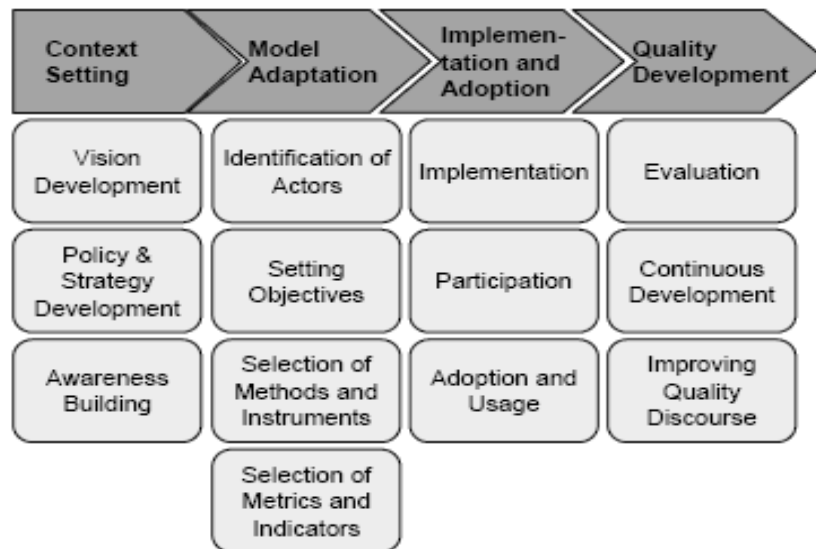


Figure 6 Quality adaptation model (Pawlowski 2007:9)

As quality standards and their complex realization in practice relate to the whole e-learning strategy of the organisation rather than merely to a particular project, they will be discussed in more detail in a forthcoming publication.

Recommendations for the implementation

The important aspects of the outlined quality standards in the combination of e-Learning and Knowledge Management are highlighted and summarized in the following subsections relating to the model of the organisational dimensions (Fig. 6): technology, content, human resources and leadership.

Technology

An important component of e-Learning is the environment for managing the distribution and use of knowledge. As nearly all relevant e-learning environments offer rich functionality, it is important that a well-known one is used decreasing the inhibition level of the user. If participants have experienced difficulties in order to keep up with ever new technologies it may lead to refusing the treadmills of change (Baumeister 2005).

Whilst it is important to have good connectivity and equipment, this is not the only success factor of effective e-Learning. Experience has shown that the key factor of success in learning supported by ICT is guidance. Stakeholders should feel comfortable with the technology before actually using it for knowledge sharing processes.

In addition, many users prefer to have the opportunity to ask support questions to an instructor, so a human interface as a source of support is needed. Support is also required to manage the discussion forums, user access rights and the repository.

Content

As has been mentioned before, connectivity and equipment are no longer the central issues as the focus moves to content, quality assurance and standards, training and

continuous development. Appropriate content should be matched to the strategic knowledge requirements of the organisation. Furthermore, it should be relevant and practical, well-constructed, stored consistently and up-to-date. Simply putting material online does not make e-Learning successful. Participants require a certain degree of integration of the information provided in the learning environment. According to the contextualised learning approach, users should identify correlations with their daily work, as otherwise learning might not take place at all (Schmidt 2005). E-Learning best practices in authentic virtual learning environments stimulate not only learning but also the transfer of the newly learned matter and additionally they deliver ideas how to create and implement virtual learning activities and contents into the daily teaching practice.

In order to provide relevant information only, digital depositories should contain solely filtered material to avoid the overwhelming flood of data. The feature File Search within a platform makes the searching and finding of information required easier. So the question is how to effectively select the data and information that participants need to understand and control their operation so as to be able to improve their performance.

Comments on discussion boards and user questions received should be taken into account and converted into useful FAQ documents, which translate information into knowledge by reflecting user's needs and feedback.

Beneficial e-learning environments support the process of absorbing the material by accompanying the content with video, audio or other multi-media choices, which contribute to the richness of the e-learning content.

Human resources

Whether a project in the field of KM and e-Learning is successful or not depends on the engagement and motivational levels of its members. Knowledge sharing is more likely to become embedded in people's behaviour when it is intentional and tied to strategic institutional goals (Wild et al. 2002). Therefore practitioners need a meaningful goal to pursue.

The other main success factor is the encouragement to share knowledge through the development of communication and collaboration. The preference for collaborative knowledge management is based on the assumption that the quality of collaboratively produced or acquired knowledge is higher than the quality of individually produced or acquired knowledge, and even higher than the sum of all individually produced or acquired knowledge in a group (Kuhlen, Griesbaum, Jiang, König, Lenich, Meier, Schütz & Semar 2005). Different opportunities for stimulation of collaboration and enhanced communication can be offered like discussion forums, in which all team members can gather information related to their subject and ask questions. To be able to further maintain and develop communication, community portals and knowledge cafés can be initiated (Sammour et al. 2008). Especially, the exchange of experience and interaction in form of chats and discussion forums is one of the most efficient ways of informal training. And as research shows, up to 80-90% of job-related learning

is informal, where learning is incidental and self-directed and the organisation does not have control over learning goals and processes. Informal learning can be seen as an individually controlled learning process and leads to individual competency development. (Yordanova 2007, Ras et al. 2005, Efimova & Swaak 2002) Hence, learning on demand is a very appropriate form of education at work. Accordingly, communication and collaboration will be improved and a free exchange of competences will be provided. (Yordanova 2007)

Leadership

Besides access to technology, content and human capital, another factor determines the success or failure of ICT-related educational innovation. Management and thus the organisational domains appear to be a critical factor: the realisation of the organisation's missions is only possible if the management supports knowledge management infrastructure and promotes knowledge sharing within the organisation. Showing commitment to innovations is a prerequisite for their successful implementation. In addition, the management should incorporate policies into its culture that support the elimination of barriers between those who have information and those who need information (Wild et al. 2002). This includes all the necessary resources for trainings and professional development activities as well as personal promotion.

Conclusions

Organisations generate extraordinary quantities of knowledge, but in many ways the management of knowledge transfer struggles to keep pace. As has been outlined, the combination of the domains of e-Learning and Knowledge Management offers a great opportunity to meet a unique challenge: the management of a constantly growing pool of knowledge and human expertise in organisations. Such integration has, namely, the potential to dramatically change today's understanding of organisation. In this paper an example integrating both domains in practice has been shown. The experiences within the project Open Discovery Space have been a framework of considerations that may contribute to the success of implementing similar projects.

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