Associate Learning

An Experimental Study on Environments for Blended Learning

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Abstract: In our position paper, we present an ongoing study that attempts to combine theoretical insights from social capital theory and from psychology. The underlying question is how it can be possible to link the fostering of individual motivation via virtual forms of learning with modes of common reflection and exchange in the social world. As recent approaches to Human Resources development show, it is of crucial importance to create supportive, appreciative and safe environments in organisations in order to guarantee an efficient use of knowledge. In an experimental setting, we try to relate the impact of different forms of presenting learning contents with the detection of the most appropriate way of blending the diverse media during the various learning phases. A questionnaire completed by a small sample of employees of seven major firms in Austria and Germany allows us to formulate first hypotheses on learners' motivations and their preferences regarding the possibility to reflect acquired knowledge with peers.

1 Introduction – Studying Virtual and Social Environments

The paper presents first insights from an ongoing empirical study on learning habits in the context of organisational training and education. The study – far from being completed – lays the focus on the preferences expressed by learners regarding the use of different media and didactical forms. It has been conceived by *create.at*, a Vienna based learning software provider, in cooperation with the consulting and research institute *4dimensions*, specialised in organisational development with the objective to enhance an organisation's culture, social capital and interaction as well as its cooperation modes and habits.

While *create.at* is a specialist in the evolution of virtual environments with the aim to foster the self determined, intrinsic motivation of learners (Deci, Ryan, 1985), *4dimensions* has been researching on the way organisations (as well as single departments or projects) can be conceived of as social environments and practically shaped in order to function on the basis of trust, acknowledgement, reciprocity, the evolution of autonomy as well as of common interaction rules and the cooperative development of structures. In the past years, several studies on cooperation in organisations have been accomplished that were based on the social capital approach. The aim of these studies was to gain evidence concerning the hypothesis that there is a correlation between the extent of trust, autonomy, psychological well-being, motivation and reciprocity and the economic performance of an organisation (Badura, 2008, 2010, Iseke, 2007). Major theorists in the field of social capital analysis have emphasised the importance of individual investments in form of time and trust in order to generate a common understanding as a fundamental precondition for effective forms of cooperation (Ostrom, 2000, Ostrom, Ahn, 2003). Furthermore,

research has been conducted with the aim to clarify the contribution of information technologies to the enhancement of social capital (in form of trust, the motivation to engage in common activities, reciprocity and the effectiveness of knowledge sharing and exchange) within organisations, learning communities and initiatives of civic engagement (Huysman, Wulf, 2004).

The theoretical interest of this research cooperation was to define more exactly the value of training measures as well as the efficient use of new technologies in the context of organisational training and education programmes. As a consequence, this exchange process was formalised in a feasibility study based on a small sample funded by the Austrian Research Promotion Agency (FFG). Starting from a social capital approach that was operationalised in form of an experimental setting and a questionnaire, the research question how to involve learners in motivating virtual environments was combined with the problem how to create social environments in organisational contexts that motivate employees to cooperate and to develop relationships based on reciprocity.

2 Social Environments for the Individualisation of Further Education

Recently published statistical data on the participation of people in non-formal further education reveal that in Austria, as well as in probably all developed countries, the trend to conceive of learning as a lifelong activity is gaining more and more acceptance. The majority of the labour forces, even in advanced age, takes part in non-formal training activities such as seminars, courses, workshops and so on. This seems to be a clear indicator that education is more and more considered as a lifelong career path that has to be shaped and evolved by the individual in coordination with the organisational environment and according to the particular needs caused by biographical or career shifts and passages. As a consequence of the expansion of training needs and learning engagement to the whole professional life, education is subject to processes of individualisation: the more people are skilled, the more they claim to fulfil challenging and satisfying tasks. This applies also to their training and further education needs. There is evidence that the use of information technologies for these new learning environments characterised by a series of passages and highly individualised sequences concerning the access to different didactical forms is of crucial importance (Hung, 2006). Obviously, not only the contents and topics of the training activities have an impact on the motivation of the individual learner, but also the form of the presentation. Yet, what emerges from an accurate interpretation of the overall setting, but also from the small survey we accomplished in the context of the study, is that it would not be effective to supplant the variety of didactical forms by the only use of information technologies. Individuals claim to have a range of choice that includes new technologies, traditional presentation forms like textbooks, seminars, workshops and diverse forms of regular exchange with peers from other departments or projects. This is a clear hint that learning activities are considered more effective if they are embedded in social settings (Bandura, 1977).

New communication technologies have a double role in the context of further education. On the one hand, in the form of sophisticated learning tools based on the visual and narrative elaboration of contents, they can foster states of flow (Csikszentmihaly, 1991) by creating virtual environments that enhance the intrinsic process motivation and learning performance (Bandura, 1986, Barbuto, Scholl, 1998). On the other hand, as communication tools they can contribute to enhance the presentation of individual skills as well as to the multiplication of exchange possibilities between specialised people in the sense of the instrumental motivation as well as the internal and external self-concept described by Barbuto and Scholl (1998). Social capital theorists as Ostrom (2000) point out that the individual investments in the creation of communities have to be seen not only in the perspective of classical capital theory, but also from the point of view of the evolution of reciprocity and other social norms that are essential for the sustainability of the common goods that bind the exchange processes and ties beyond instrumental, rational choice driven forms of interaction. Therefore, it is also necessary to investigate on the social environments that help to develop norms and interaction modes that shape exchange and cooperation processes in projects and departments.

In this sense, the organisation's essential challenge, from our point of view, is to integrate the statistically proved increasing individual motivation of employees to participate in further education into a working environment that manages to link the individual’s motivation to the team’s or

department's processes and structures. Human resources development becomes a task that must be based on the evolution of a firm's social capital. According to Kessels and De Jong (2007), learning has to be conceived of as a collective process that depends on the creation of safe learning environments, of room for initiatives. Safe environments do not emerge from the establishment of formal hierarchies and structures, but from the clear formulation of goals, which relates to what Barbuto and Scholl (1998) characterise as goal internalization motivation, as well as from the evolution of trust and from interaction modes based on appreciation.

3 Experimental Design

The objective of the study was to shed light on the question which didactical form is to be considered the most effective according to the respective learning phase. The theoretical presupposition underlying the concept of "associate learning" (or "associates development") is that learning processes are characterised by passages which function as links between the different learning phases. For the creation of effective learning environments it is thus important to gain insights on the impact of the different tools, media and methods (Mayer, 2001).

In order to generate data allowing for the outlining of certain tendencies, we decided to operationalise our assumption via the comparison of three different forms of imparting the same content. While the initial research question was based on the question if virtual or traditional forms of presenting learning contents were more efficient, in the course of the development of the setting our interest shifted towards the question which medium or didactical form was the most appropriate according to the specific learning phase. This is the reason why we chose three instead of two modes of presenting the same content, including not only a virtual environment and a conventional text format, but also an interaction based training.

During the preparatory phase, a group of about 10 human resources executives from seven major firms with main offices in Austria and Germany accepted to take part in the process of preparing and carrying out the study. We organised a series of encounters in which we discussed our research hypotheses and worked out fundamental challenges regarding education and training that are common to all of these firms.

In a second step, the HR executives invited a certain number of employees to take part in the study. Accepting this invitation, 51 employees working in these organisations participated in the experiment and filled out a questionnaire. This questionnaire was conceived in order to identify their individual preferences concerning non-formal learning activities and their assessment of the integration of individual motivation, competencies and experiences in their organisations' training programmes. As already mentioned, the participants were subdivided into three groups that took part in a basic training unit with the title "The management of emotions". The content imparted to the three groups was identical, what differed was the form:

1) The first group worked through the content in form of a web-based training.[1] The training has the form of a video, for which a storyline and a graphic design were developed by *create.at* together with a trainer specialised in the topic of the "management of emotions".

2) The second group had the task to acquire the same content by reading a text without any illustrations formatted in PDF.

3) The third group attended a one hour's introductory lecture on the "management of emotions" given by a trainer.

4 Sample

As stated, the 51 participants are employees working in seven major firms that operate in the following branches: banking, automobile industry, retail and administration of public goods. The task to fill out the questionnaire some days after the training unit was carried out by 47 persons, 25 female and 22 male, aged between 20 and 55. The quantitative composition of the three groups was as follows: 19 persons did the web-based training, 22 persons read the PDF and 5 persons attended the introductory lecture.

With respect to the standard of education the sample had the following distribution: 31% do have a secondary education and completed an apprenticeship in the organisation, 18% have a secondary education and completed a vocational school, 18% have completed a professional school, 5% have acquired a degree at a university of applied sciences, 9% have a bachelor's or master's degree at a university and 3% have acquired a PhD.

[1] http://2.create.at/clients/Management_der_Emotionen/

5 Contents of the Questionnaire

As mentioned above, the questionnaire was conceived in cooperation with a group of HR executives in a series of encounters. The topics emerging from these expert rounds were integrated in the questionnaire that was divided into three sections:
Section 1 regarded the general learning motivation of the participants (regarding also contexts that are not connected to their professional environment). In this section, the aim was to find out to what extent the employees are ready to take part in further education programmes. In section 2, focus was laid on topics regarding further education related to the organisation they work in. Section 3 contained question related to the specific impact of the different presentation forms and their relatedness to the diverse learning phases.

5.1 General Learning Motivation

Indicators for behavioural modes related to learning motivation are, for example, the disposition to spend time for education as well as the reasons quoted by people for their engaging in learning activities.

Asked about their general motivation, more than half of the participants of the sample expressed their intention to go through further education activities. Approximately the same number of people already spends some time in education activities not related to their professional career, ranging from about 5 hours up to 5 days a month. More than a third of the people spends 5 hours a month in education activities related to their job, 13% spend one day and 4% two days a month in this sense.

We asked the participants what motivates them to take part in education activities during their leisure time. In the answers, the following reasons were cited: 1) the personal interest, the interest in the content, the opportunity to acquire new knowledge and new perspectives, the mastering of challenges and the possibility to transfer knowledge from the professional to the private sphere; 2) the participation in specialised networks, the possibility to keep in touch with other colleagues with whom one has attended courses and, in general, the possibility to exchange knowledge; 3) the opportunity of a career advancement as well as to increase the salary; 4) contents that are relevant for the daily routine, the acquisition of knowledge that is helpful for the mastering of challenges.

The tendency emerging from the answers is that people do have the intrinsic motivation to keep updated in their professional area and that they consider learning as part of the development of their personality. Furthermore, these statements are closely linked to the reference to professional networks, i.e. the willingness to keep in touch with colleagues beyond the own department, to be part of a professional community.

5.2 Topics Related to the Organisation

Generally speaking, the educational programmes provided by the organisations that took part in the study do meet the needs of the employees. Participants describe the offer as flexible and characterised by a great variety of different internal or external courses, seminars and other measures. Obviously, the courses provided by the HR department are not the only occasion to learn. Therefore, in their answers, people underline the importance of learning on the job and the important role of superiors and executives with respect to the exchange and circulation of knowledge. According to the participants, it is a central task of the superiors like the head of a project team or of a department to transfer knowledge by supporting the team members when they take over new tasks or when they are introduced in new projects. If an executive manages to do so, he or she increases his/her *linking social capital* (Badura 2008). Ideally, superiors carry out potential analyses and find out opportunities for the personal development of the employees.

Highly interesting for the purpose of our study are the answers given by the participants to the question which opportunities they see in order to improve the education and training programmes of their firms. The suggestions made by the employees are rather diverging: 1) the claim for either more internal or more external courses, 2) an external evaluation of the programmes, 3) more seminars and workshops, 4) more online courses. Several participants suggest an intensification of the networking that emerges from the courses, especially regarding the opportunity to establish an interdepartmental know-how transfer. People claim for regular meetings between specialised colleagues, follow-up-activities after seminars or regular one-day-workshops dedicated to the exchange of knowledge and experience. Employees seem to be well aware of the importance of an appreciative, safe and autonomy-driven social environment for the effective use of knowledge in the organisation. This can be seen also as a confirmation of David Kolb's

(1984) hypothesis that common reflection represents a central method in organisational contexts in order to process knowledge and to meet several needs at the same time: 1) The different views contributing to a common reflection improve the quality of the outcome of the problem solution process. An indispensable precondition for such a process is an appreciative and cooperative mode of relating to each other. 2) Common reflection makes the single expert visible in his/her role and helps to overcome social conformity and group pressure. 3) The experiences accomplished in the practical implementation of given knowledge can only be transformed into useful, approved new knowledge for the organisation if experts are given the opportunity to reflect and critically revise these experiences.

The answers given to the question if there is the opportunity to get into an exchange with other colleagues on acquired knowledge correspond to these principles. People express the need for a "common space" or "social space" for an exchange that should be separated from the offices. Yet, the concept "room" for exchange is defined in various ways by the participants. Some refer to the possibility to disseminate knowledge via a regular exchange. Others also suggest the possibility to share knowledge and to reflect on it, having in mind rather diverse modes of doing so, ranging from workshops, moderated conversations, blogs, e-mail exchange, to informal meetings in restaurants or conversations during the coffee break.

Furthermore, the participants had to assess their organisation's capacity to establish a recognisable learning culture. Also in this case the answers are rather diverging. On the one hand, there are participants that attest to their organisations a "rather supportive culture especially for new employees". Others, probably working in another organisation, remark that the management often takes over "fashionable", "trendy" modes of shaping the education programmes. In diverse answers, people deny that the organisation has a specific learning culture. Yet, it is remarkable that the employees do not only stress the organisation's responsibility regarding the capacity to evolve such a culture. Diverse participants explicitly refer to the single employee's responsibility to actively contribute to a common learning culture. An example for such a contribution would be the readiness to make a reasonable choice of the courses and to feed internal knowledge management systems (databases) with the knowledge and experiences acquired. Some of the participants assert that there is still potential to be exploited: "The newly acquired knowledge is not being used sufficiently, knowledge is not being shared."

5.3 Impact of the Presentation Form – Learning Phases

Regarding the impact of the content presented, the first question posed to the participants was what exactly stimulated them to further reflect on the topic. The motives quoted are as follows: 1) the content, the topic itself, the practical relevance; 2) the personal concernment; 3) the fact that possible scopes of action were suggested by the training unit; 4) the presentation mode; 5) the invitation to reflect at the end of the presentation; 6) the possibility to relate the content to other courses attended in the past.

Many of the participants actually continued to reflect on the content after the training. The forms of confronting themselves with the topic ranged from a simple reflection to conversations with partners, friends and colleagues, internet research, relating the acquired content to books or seminar notes and deepening readings. Most of the participants expressed the wish to get further input on the topic presented within a period from one to four weeks. With respect to the form of the input, people had the opportunity to give multiple answers: 24% of the participants prefer a video/interactive video, 26% prefer an introductory lecture while 17% prefer a seminar setting. 17% prefer books or specialised journals and 8% prefer an audio-book.

Participants were also asked to attribute their preferences regarding the use of the diverse media to the following four phases: 1) introduction to a new topic; 2) deepening of existing knowledge; 3) updating or extending of existing knowledge; 4) repetition of (or exchange concerning) existing knowledge. The ideas expressed by the participants with respect to the use of different media and methods in different learning phases are surprisingly differentiated (Figure 1). This can be seen as an indicator that the shift of our research interest towards the study of the relatedness between the use of media and the diverse learning phases was justified. Furthermore, the claim for the creation of spaces for knowledge exchange could be interpreted as a confirmation of the importance to apply social capital analysis to the study of learning issues.

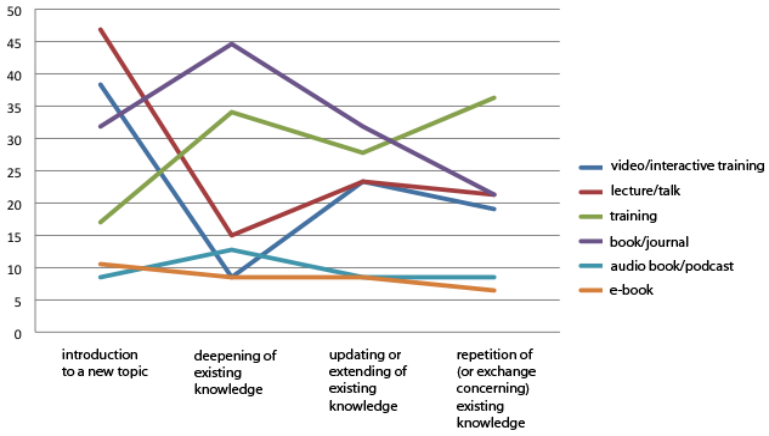

Figure 1: Variety of preferences of different media and methods in different learning phases.

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