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Investigating requests and expectations for future methods of CEE: in the perspective view of Scandinavian managers and employees

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Abstract

This article presents a map of requests and expectations for future 'delivery' methods of continuing engineering education (CEE) viewed from the perspective of Scandinavian managing directors and their employed engineers.

During the last decades numerous attempts have been made to develop new methods for CEE in order to meet today's fast changing world. Methods, which at the same time both match the company's professional competence needs and meet the engineers' preferences. These attempts contribute to a lot of experience within CEE methods but common to most of these activities the focus is on the subject (content) of the course and less on how the course is organized and taught.

This paper brings the results of 26 interviews with Scandinavian managers and engineers asking questions regarding their previous experiences and knowledge on diverse CEE methods and further encourages them to gaze into the crystal ball to identify requests and expectations to future methods of CEE.

The significance of the investigation will be a conceptual map, which discloses some future focus areas ahead of CEE providers.

Situating the research area within the field

The research for this paper is financed by Nordplus[1] and accomplished in a partnership of three Scandinavian universities; Aalborg University, Denmark; Reykjavik University, Iceland and KTH Royal Institute of Technology, Sweden. The partners have all for several years been involved in CEE activities but mainly with focus on the content of the course (the

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[1] The Nordplus Programme offers financial support to a variety of educational cooperation between partners in the area of lifelong learning from the eight participating countries in the Baltic and Nordic regions

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subject) and less on how the course was actually delivered. As the interest for individual and tailor-made courses have increased more knowledge on models is desirable.

During the last decades numerous attempts have been made to develop new methods for Continuing Engineering Education (CEE) in order to meet today's fast changing world. When glancing through CEE promotion words such as '*tailor-made courses*', '*networking*', '*costume-made courses*', '*knowledge transfer*' and '*distance learning*' frequently come up in relation to CEE and especially the word '*tailor-made*' seems to be the centre of attention and the solution to all problems in relation to meeting the needs for new knowledge within companies. However, the field of CEE is broad and boundaries are not well defined, CEE is often used in different contexts with different meaning and there is a wide variation in the mix of elements it includes and the ways they are thought e.g. many CEE programs make heavy use of distance learning. The broad field range from traditional crash courses with duration of 1, 2 or 3… days and the content is predefined by the supplier, through courses that are costume-made with learning objectives and content defined by the client company, to problem based continuing education or research collaborations between e.g. university and company.

The tailor-made concept, which is the centre of attention is neither a well-defined nor a precisely described approach, it is an umbrella term used for various courses, which are individually designed. Courses which have been described and entitled: WBL, FWBL, TM-CE, etc. (Boud, 2001; Fink et al. 2003; Nørgaard et al. 2004) by researchers during the last decades, however a more or less mutual definition runs through the different approaches

> '*a course for 'individuals/groups of employees in a given company who in co-operation with a university establish a training programme where the employees at their work continuously go through a well-defined and tailor-made learning process. The training programme is taught by teachers from the university and if possible, based on relevant development projects in the company'* (Nørgaard et al. 2004, p. 2).

Often a tailor-made course is characterised as a partnership between three partners - the company, the employee and the CEE supplier. And the courses all have a distinctive mark of being individual since learning objectives are identified and specified to match the needs of the company and meet the preferences of the employee. The mutual definition of a tailor-made course communicates the individuality and the tailored process.

Various CEE suppliers have developed and implemented different CEE models during the last decades and some research have been evaluating these different models (Ellström et al. 2007) - but how do the companies and their employees receive these different approaches?

Research question

We only have sporadic knowledge and experiences with the variation and the newly developed approaches to CEE and even less knowledge about the companies' considerations and preferences in relation to them. We do not know the individual

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employee's requests and expectations to future education models. This paper investigates the question empirically by the means of an interview study. *How do companies and employees wish to collaborate on and participate in CEE activities in the future?*

Research approach

The empirical data comprise 26 qualitative interviews, 13 conducted with representatives from the management level of the company and 13 conducted with employees, in general two persons were interviewed in each of the 13 participating companies. The purpose of using interviews as the research approach in this study is very much in agreement with Kvale's description *'the propose of a qualitative research interview is the retrieval of qualitative descriptions of the interview person's lifeworld with an eye to interpretation of their meanings'* (Kvale 2004, p. 19). The purpose of this study is to gather the interview person's unique experiences with and descriptions of CEE activities and methods now and in the future, and to interpret their meaning in regard to future requests and expectations ahead of CEE providers.

The companies involved in the study were selected on one criterion - that the company should have some relation to the engineering line of business and within that group the companies were randomly selected. (Flyvbjerg, 2006). Even though the selection was random it still was within geographical locations e.g. in Northern Jutland, Denmark and in Iceland and in the Stockholm area of Sweden. The interviews were individually completed and they took place in the company.

The interviews were all conducted based on a mutual semi-structured interview guide which has '*a series of themes to uncover and a number of recommended questions. But it is at the same time open to changes regarding the order of questions and the form, so that the answers and stories the interview person provides can be pursued'* (Kavle 2004, p. 129). The interviews were all face-to-face interviews and all with a duration of 30 to 45 minutes. The dialogue segments (quotes) were all transcripts with several lines of 'before and after' texts and they were categorised according to the structure of the interview guide, i.e. three overall themes.

The first theme aimed at gathering factual background variables on the company along with past and present CEE activities accomplished within the company. The second theme focused on the strategic action regarding company's CEE activities. The third theme draws attention to future CEE activities and the respondent's requests and expectations as to how future CEE courses should be organized and taught.

Past and present CEE activities

Mapping the size of the companies participating in the interviews 18 were small and medium-sized enterprises (SME) with less than 250 employees while 8 were large companies with more than 250 employees (EU Commission 2003, Small and Medium sized

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Enterprise). Their past and present experiences with CEE activities were numerous but very diverse ranging from narrow subject specific crash courses through diploma and master courses to communities and networks. As one of the respondents said '*marketing materials for CEE activities come through the door constantly – UCN [University College Nordjylland] is very active, trade union is very active – there is an endless flow which piles up*'. This pile of CEE promotions is difficult to navigate through for some of the companies since the overall picture is that a minority of the interviewed companies have a clear and well-defined CEE-policy. And only the larger enterprises plan and budget their CEE activities in advance. Common to the SME's in this study is that they do not have a specified budget for CEE.

Strategic actions behind CEE activities

The second theme focused on the strategic actions behind companies' CEE activities e.g. who takes initiative to participate in a course. The answers are not unambiguous when it comes to initiatives concerning CEE activities. One of the respondents hesitantly said '*it both can be the employee or it can be me - who is doing something! If something comes up during the yearly staff development interview – then it is typically there it is born*'. This answer fairly well covers the diversity in the responses. No clear answer to whom takes the initiative even though the employees from SME's tend to have more influence on the decision. The large companies have HR-departments and some even have a web-based knowledge platform where the employee can choose from recommended CEE activities. Nevertheless several of the companies refer to the staff development interview as a means to consider and decide on CEE activities.

The decision to grant an employee the opportunity to participate in a specific CEE activity is primarily based on the content of the course and the benefits in terms of knowledge for the employee - '*we send off men individually - according to what they themselves think they need*'. The price for a CEE activity is not a crucial factor but it is of some importance in the selection process between identical courses. A manager from a SME company said '*something we also have used is supplier-courses – over time they probably are the ones we have used the most*' and earlier in the interview when asking about the price and if it had influence on the selection process, the same manager mentioned that '*supplier-courses are normally free of charge*'. So even though price is not the crucial basis for decision it somehow might have a hidden impact.

Most of the companies prefer that the CEE activity takes place on the premises of their own company and they only send employees to external courses if it is necessary and no other option is available. Others find external courses acceptable as long as they take place in the local area and again only a few prefer external courses '*I would prefer that it takes place outside the company. It gives much more peace and concentration. Because when we are in the company someone always comes and open the door - Peter could you please ...? Gladly, outside the company*'. The fact that most of the respondents prefer an in-house course perhaps also indicates that CEE courses have nothing to do with staff care and recognition as in earlier times with courses located in skiing resorts, they might have had a

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touch of acknowledgement. Now the overall demand is that the content is applicable in practise.

Academic credits and accredited courses have been ranked as important by only a few of the companies. Most of them believe that the least important thing is that the course will lead to a degree or is accredited. However, for the individual employee academic credits and accredited courses can have a value depending on his/her career planning.

When asking about the importance of the choices of CEE activities in relation to the company strategy, the answers are divided as to the size of the company. However, more than half of the respondents think that it is very important that the choice of a CEE activity is in alignment with the vision and strategy of the company. On the other hand some respond that it is not so important, because they have no particular strategy for the company regarding CEE, therefore as long as the course is useful to the employee and the work he is doing, then the company is satisfied. Even though the answers are very different a clear relation towards the size of the companies appears whereas the large companies all have strategies on CEE the SME's more seldom act strategic in relation to CEE activities. Two respondents from SME's said *'until now strategy has not been important since they [red. the courses] have all been professional related'* and the other one said '*Everyone here are wearing working gloves - we do not have the time for someone to sit down and think strategic'.* As it appears some of the SME's do not have a company strategy, nor do they have a strategy for competence development of their staff.

Requests and expectations regarding future CEE activities

During the interviews it was in general difficult to keep the conversation all about the models for CEE and not consider content or subject and especially when the respondents were asked to look into the future and phrase their requests and expectations regarding how CEE in the future should be organized and taught. Most of them were not able to reflect beyond the well-known and traditional model in their requests and expectations only a few were by themselves able to articulate '*CEE is considered as an important matter within the company and if it is tailor-made it is even better'* and *'we are not interested in fundamental research, problem based projects are much more interesting for us'.* When it is emphasized that it was - by themselves – it is because when finishing the interviews all respondents were shortly introduced to principles of tailor-made courses and afterwards asked about their views on a tailor-made approach to CEE. The tailor-made approach was very well received, most saw great potential in the concept and especially the connection to development and problem solving projects in the company but also the idea of having an academic staff member as teacher in the company one said '*very relevant! It sound like a great idea – just like* having a professional specialist'. Still, a few did not support the concept '*we are ok buying short courses [red. traditional courses] since we have very many traveling days which makes it difficult to coordinate'.*

Besides the tailor-made concept other requests and expectations were mentioned as important to the companies one of which of universal characteristic '*the flexibility and*

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usefulness in practice' but also requests and expectations of a more sporadic character was mentioned. One company mentioned the importance of '*Knowledge should be transmitted between generations*' within the company and other companies demanded '*extended network and closer cooperation with education providers such as Institutes and Universities*' and one would like to '*work a bit more structured and have a red line going through – if one could have a CEE provider who could make an education plan'*.

Conclusions

The interviewees were both representatives from the management level and employees however in this study there is no clear signs of differences in their meaning and behaviour towards CEE activities. When asking about their past and present experiences of CEE activities they referred to a wide variation of activities however indicators show that only a minority of SME's have a clear and well-defined CEE-policy based on which these CEE activists were chosen. The large companies however normally navigate both by strategy and budget.

The absence of a CEE-policy can be reflected in the decision-making process where employees in SME's more often take initiatives to CEE-activities than in the large companies but in general employees have a major influence on their own competence development. Neither companies nor employees find the goal of acquiring ECTS or some kind of credit for CEE activities important and neither is the price of the activities a top priority.

The future focus areas ahead of CEE providers will be to deliver CEE courses which take place in the premises of the company and even though most of the respondents were not able to articulate a need for a tailor-made approach to CEE most of them found it very important and interesting when introduced to the possibility.

References:

Boud, D and Solomon, N 2001, Work-based Learning, A New Higher Education? St. Edmundsbury Press

Commission Recommendation 2003/361/EC - Small and Medium sized Enterprise 2003.

Ellström, P and Høyrup, S 2007, Arbejdspladslæring, forudsætninger, strategi/metoder og resultater, Ekspressen Tryk & Kopicenter, TemaNord 2007:579

Fink, F and Nørgaard, B 2006, The Methodology of Facilitated Work Based Learning, 10th IACEE World Conference on Continuing Engineering Education.

Flyvbjerg, B 2006, Five Misunderstandings about Case-Study Research. Qualitative inquiry (219-245)

Kvale, S 1994, Interview, En introduction til det kvalitative forskningsinterview, Hans Reitzels Forlag.

Nørgaard, B and Fink, F 2004, Continuing Engineering Education and Facilitated Work Based Learning, 4th International Workshop on Active Learning in Engineering Education (ALE)