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Learning productivity: a case analysis of the 'e-BOSNO' course for manager teams

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Abstract

Action learning in a workplace context, focused on projects relating to real business needs, is the basis of the management seminars offered by the BOSNO (in Dutch, 'BedrijfsOpleiding voor Samenwerkende Nederlandse Ondernemingen' [Company training for Dutch companies working in cooperation with each other]) consortium in The Netherlands. In the seminars, managers from participating companies work in teams on multiple-step problem analysis and solution strategies, supported by workplace coaches. The teams also interact with each other so that peer learning is stimulated. To extend the BOSNO management seminar model in both depth and flexibility, a new approach called e-BOSNO was designed in which a web-based learning support environment played a critical role. This paper describes the e-BOSNO design process and gives results from the first cycle of e-BOSNO. The results showed the participants to be much more active and interactive than in previous e-BOSNO seminars, even though there were fewer face-to-face meetings. Workplace-oriented learning occurred and was shared in a way which makes it available for reuse in subsequent e-BOSNO seminars.

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Introduction: productive learning for managers in the workplace

Learning for professionals such as company managers or decision makers occurs in various ways. Most often learning occurs as part of a process of endogenous growth (Trentin, 2001), via mechanisms such as trial and error, problem sharing and solving, and informal contacts with peers. Coaching relationships are important opportunities for learning in the workplace, but generally occur without any reference to a conceptual framework for learning support. Another major way in which learning occurs is via traditional management training programmes, usually offered in the form of a few days or weeks of classroom-type courses. Increasingly, classroom sessions are being paralleled or supplanted by e-learning variants, offering content and support for interaction and communication via a web-based system in a time- and place-independent manner. The latter is being called 'blended learning'. Moving beyond the logistics of blended learning, we define learning of any sort as 'productive' when it is directly applied to real problems in the workplace and when it explicitly incorporates tacit knowledge in the organisation as a tool for this problem solving (Collis and Winnips, 2002a). Increasing the productivity of tacit knowledge in the organisation is a complex task. For managers in large companies, a strategy can be the explicit blending of learning experiences in the workplace supported by a coach, with formal learning and peer-to-peer interactions outside of the workplace or via a web environment. Figure 1 shows this process.

The roles of the persons described in Figure 1 already exist in companies and training institutes, but can be recognised under different names. A training facilitator is the person who organises the learning experience, and makes learning possible for all participants. Often he or she is referred to as 'trainer', but in this model a trainer might imply direct skill instruction and a too-passive role for the participants. A company coach is a senior person from the company who promotes transfer to the workplace, helps to formulate the learning-related project, and is aware of demands that the learning is making on the participants. Participants work on solving a problem for the company whereby they develop new competences; in this process they are supported by the company coach and the training facilitator as well as their peers in the workplace and in the course.

There are two basic flows of communication in a course that is ordered according to the strategy shown in Figure 1:

1. In a course (structured learning) setting: participants collaborate, share experiences and knowledge with each other, guided by a training facilitator, and their experiences are stored via an electronic learning environment to build upon throughout the course (and beyond).
2. In a company setting: in contact with the coach, learning experiences are tested for relevance to the workplace context, plans for future development of the participant can be developed, and experiences and results of the participants can be stored in a general repository, such as a portfolio.

There are two key attention points in Figure 1. One is how to realise the left-hand flow of the diagram: designing learning experiences that revolve around company needs.

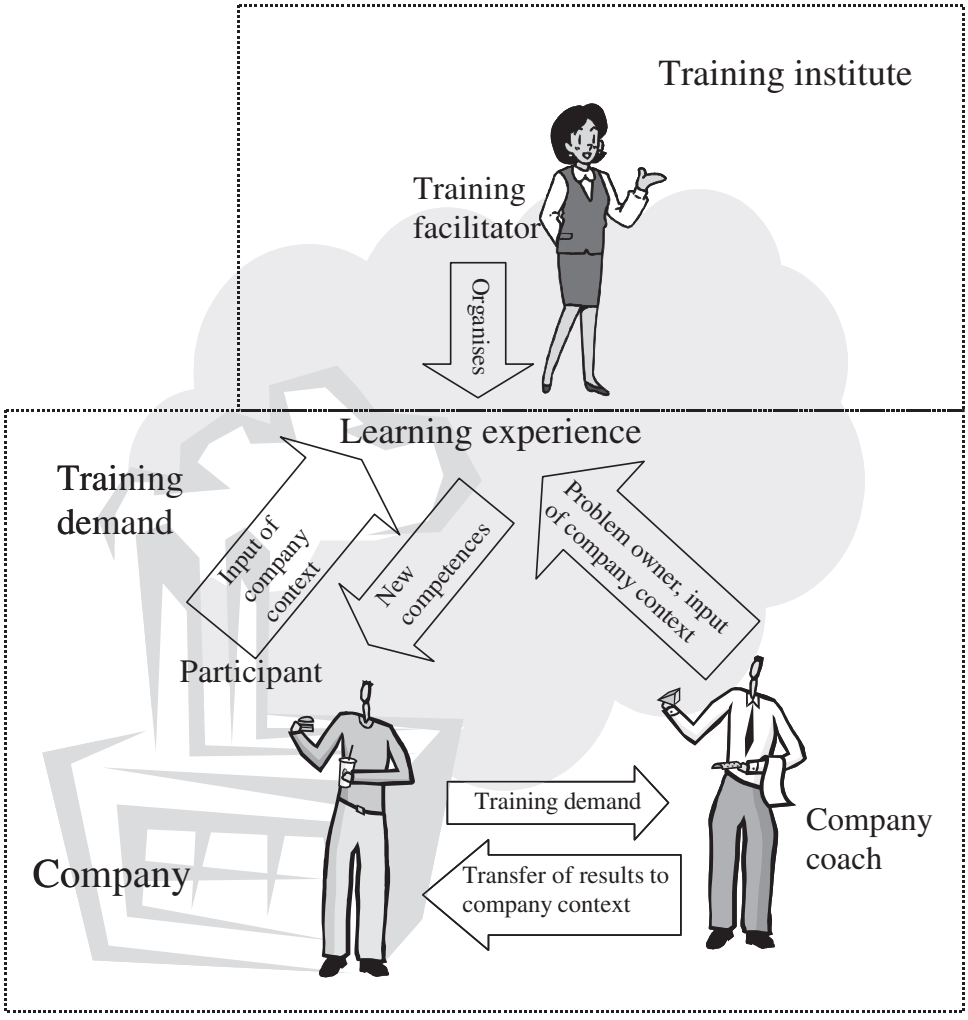

Figure 1: Blended learning in a productive learning orientation

This means the demand for new knowledge should arise from the workplace. If this demand is not present, the structured learning will probably fail to transfer. This also means the problems and issues that are tackled in the structured learning setting should be realistic, and should offer opportunities for practice in the workplace. The second is how to integrate the company coach into the course processes. Again this has to do with demand from the workplace. If the company coach is convinced that the problem being studied in the structured learning situation is directly relevant to the workplace, his support and involvement will be more likely to occur (Bianco and Collis, 2003).

Also important to Figure 1 is an underlying learning model, that of 'action learning'. Action learning in this context means working on real problems, and is based on identifying, formulating and learning about these problems and on implementing solutions for these problems (Steenbakkers and Jansen, 2002). Action learning principles underlie the evolution of learning away from being centred on classroom experiences toward learning via participation in communities of practice, an evolution which is beginning to occur in both company and academic contexts (Sfard, 1998; Tracy, 2001). Action learning involves collaborative participation in natural settings, 'groups of individuals formed around common interests and expertise... is an enabler for extracting the tacit knowledge—the "know-how" of practitioners' (Fischer *et al*, 2002).

How can these concepts for productive learning work in practice for teams of managers within organisations? This article describes the experiences of the e-BOSNO course as a response to this question. First, the BOSNO organisation and the traditional BOSNO management training course is described, followed by the specific transition to 'e-BOSNO', a new version of the course based on the productive learning model shown in Figure 1. Following this, three important aspects of the design of the e-BOSNO course are discussed: planning for the facilitator associated with the course, planning for the participants, and planning for the technology that supports both structured and workplace learning. The integration of company coaches is part of each aspect of the planning. The results of the first cycle of e-BOSNO are then given, both in terms of the workplace activities that occurred and the opinions and perceptions of the participants. Some guidelines based on this cycle of e-BOSNO as well as other experiences complete the article.

The BOSNO context

In this section BOSNO and its management seminars are described, key issues perceived by BOSNO in terms of new demands and opportunities for these seminars are identified, and the basis of the e-BOSNO course redesign activity is noted.

BOSNO and its management seminars

BOSNO (in Dutch, 'BedrijfsOpleiding voor Samenwerkende Nederlandse Ondernemingen' [Company training for Dutch companies working in cooperation with each other]) is a project-oriented, in-company management development programme for members of the BOSNO consortium of companies. Current BOSNO consortium members are large organisations with their main offices in The Netherlands, including Ahold, Ballast Nedam, Corus, DSM, Eon, Politie, Polynorm, Stork, Van Gend & Loos and Wolters Kluwer. The program is also open to non-member companies. BOSNO has been providing management seminars to teams of managers from the participating organisations for more than 20 years.

Traditionally there have been two basic principles of the BOSNO programme:

1. Action learning: 'Building on experience' centred on an in-company project and team-oriented context

2. Consortium-based: An organisational learning platform comprised of a close working 'parent group', the BOSNO consortium of companies

The approach used for the action learning episodes has traditionally consisted of a series of three or four face-to-face seminars. Each seminar took place over an intensive residential weekend. Participants came as teams from their various companies. There was typically a break of one or two months between the seminar sessions. Participants were expected to be working as a team within their own companies on the identification and analysis of a problem relevant in their own workplaces between the residential seminars. A particular strength of the programme is that the management teams from very different types of companies could share and discuss their analyses and approaches together in the face-to-face contexts. However, no specific strategy was in place to collect and save these contributions; they remained only at the level of stimuli for the face-to-face discussions.

From BOSNO to e-BOSNO

Over the years BOSNO company participants have become increasingly international in their business activities. This trend toward globalisation has begun to put strains on the expectation of attendance at face-to-face seminars. A need for flexibility in at least some of the times and places of the seminar interactions became clear. More than just responding to logistical difficulties, the benefit of integrating cross-cultural interactions and issues into the BOSNO management seminar experience was also acknowledged. Also, although BOSNO had always strove for the development of communities of practice, actually stimulating them to occur outside of the face-to-face seminars was not occurring as strongly as intended.

In response to these indicators, the BOSNO consortium decided to create a new variant of the traditional BOSNO seminar: BOSNO International, with the first management seminar in the new variant to begin in late 2001. An initial decision was to have fewer residential weekends and replace these with more contact, supported by network technology. Thus in order to facilitate participation outside of the (fewer number of) face-to-face sessions, the BOSNO board added a third element to the new BOSNO approach: the use of a web-based learning platform. Reflecting these changes, the new management seminar was called 'e-BOSNO'.

The e-BOSNO International management seminar was defined as:

- Learning and working in an international environment
- Executing practical 'real life' projects in an in(ter)-company team setting
- Developing individual skills and networks
- Participating in projects with international/global themes
- Building a shared knowledge base

All of this occurred via the support of the e-BOSNO technical platform (BOSNO, 2002). The new programme was envisaged as shown in Figure 2.

Figure 2: The BOSNO International management programme (BOSNO, 2002)

Distinctive features of e-BOSNO compared to typical blended learning situations are:

- e-BOSNO already had a strong focus on process rather than content acquisition, and made use of network technology to support and extend these problem-solving processes rather than to present and test content acquisition. Typically, in blended learning, the technology portion involves individual study of e-modules via a computer before face-to-face contact occurs.
- e-BOSNO changed its blend of workplace and residential seminar periods for a new blend in which participants continued in contact and facilitation throughout the entire course, and used various contact sessions (some face-to-face, some facilitated by technology) as moments for reporting and sharing on their progress to date in their workplace learning activities. Thus, the face-to-face sessions were not the defining aspects of the course, but rather these came to be the contacts and work that occurred between those sessions.

Concrete planning and support was needed to translate the components in Figure 2 into a running programme making use of network technology as a core tool. The e-BOSNO Project was launched for BOSNO to obtain help in this transformation process. The BOSNO consortium approached the Faculty of Educational Science and Technology (now the Faculty of Behavioural Sciences) at the University of Twente to make available its web-based learning support platform, TeleTOP (http://teletop.utwente.nl/) and support the redesign process for e-BOSNO. A third party in the e-BOSNO Project was the project-support group KLICT (http://www.klict.org/). This organisation stimulates the development and application of knowledge by serving as a broker and a 'liaison office' between the business world, knowledge institutes, social organisations and the government in The Netherlands. Together the parties established the e-BOSNO Project, to run in 2001–2002. The questions steering the project were:

1. Learning and technology design: How can learning activities and a web-based learning support environment be designed to support action learning among teams of managers in the e-BOSNO international context?
2. Training facilitator and coach roles: What will the role of the facilitator be in using this technology to support team-based action learning activities? How can the company coach be integrated into the learning process?

In the following section, the design activities that occurred in e-BOSNO related to these questions will be described.

Design activities for the preparation of e-BOSNO

Design decisions related to the general organisation of the e-BOSNO course, the strategies for workplace-oriented team activities involving a coach, the use of the TeleTOP system to support the overall learning process, and the implications for the training facilitator in being responsible for setting up and managing this process.

General organisation of e-BOSNO

Instead of four face-to-face sessions, e-BOSNO involved only three, thus reducing the burden of travelling and being away from the workplace. However, participation still occurred, via asynchronous communication and chat sessions facilitated via the TeleTOP environment. Email was also used. Team-based workplace activities were regularly reported upon and shared via submissions within the TeleTOP environment. Regular feedback occurred from the facilitator, primarily using email and during the chat sessions. Figure 3 shows the general blend of the course.

The organisational model reflects the integration of workplace activities and structured learning sessions indicated in Figure 1. The relevance of the process and the opportunities for coach involvement depend on the activities in which the teams participate. Thus, particular attention was paid to the design of multi-step workplace activities.

Design of the workplace activities

A series of 14 activities were planned for the participants, leading them as teams through a step-by-step process related to identifying a workplace problem, engaging the

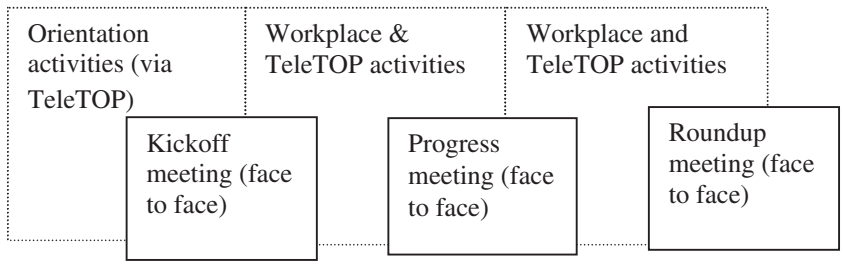

Figure 3: The organisational blend, with dotted lines illustrating workplace and TeleTOP activities and closed lines illustrating face-to-face meetings

Table 1: Learning activities in e-BOSNO related to Salmon's stages of e-activities (2000)

Stage (Salmon, 2000)	*Planned activities (with the numbers they were in the course roster)*
1. Access and motivation	• Various activities that occurred in the first face-to-face session, and in the first few weeks of the programme
2. Online socialisation	• Participants post information with personal information and photo Post first messages in discussion area 1.01 Submit project description
3. Information exchange	1.03 Submit feedback on others' project descriptions 1.05 Re-submit project description 1.10 Submit evaluation of e-BOSNO 2.00 Submit time planning 2.01 Submit resource list 2.03 Submit preliminary progress report 2.04 Submit feedback to progress report 4.00 Submit block evaluation 4.01 Submit examples of leadership decisions
4. Knowledge construction	4.02 Submit preliminary project report outline 5.01 Submit feedback on report outlines 5.02 Submit revised project report outline • Chat sessions ongoing to discuss progress and procedures
5. Development	6.01 Enter information on stakeholders for building commitment • Final evaluation

support of a coach in the workplace, planning a solution for the problem, and testing the solution in actual practice. Each of these 14 activities involved a team submission into the TeleTOP environment. (some other activities did not involve a team submission). Team self-reflection and peer feedback accompanied the team submissions for many of these steps. The series of activities are compared in Table 1 to the five stages of 'e-activities' identified by Salmon (2000): (1) access and motivation, (2) online socialisation, (3) information exchange, (4) knowledge construction and (5) development. Table 1 shows the 14 activities involving submissions in the TeleTOP environment (indicated by numbering) as well as several other activities that were mostly of an orientational nature.

The overall purpose of the activities related to the team's efforts to address a workplace problem, with interaction among themselves, their coach, the facilitator and the other teams. Each activity builds on the one before it. Records of all submissions were designed to be directly available to the facilitator the coaches, and the other participants via the 'Roster' of the TeleTOP environment. Figure 4 shows a portion of the Roster interface. The small images in the right-hand column indicate locations where all the submissions for the activity described in the adjacent cell can be found. Links shown in the cells meant that an associated work area could be entered by clicking on the words. The teams can see each other's submissions in order to learn from each other's approaches.

	Virtual activity, week 9		New version of preliminary progress report (including feedback of others) before 4 March	Please submit your new preliminary progress report here.	
	Virtual activity, week 10		No assignment (group meeting week)		
	Second face-to-face meeting, 7 - 9 March 02		Project progress presentations (for schedule and contents outline, click here)	Revising project definition, revise planning	
Evaluation form	Virtual activity, week 12		Block III (7-9 March) evaluation, before 26 March, 12:00.	Submit your block evaluation here.	
Trainer's slides	Virtual activity, week 13		Examples of leadership decisions Before 2 April 2002	Submit your leadership decision examples here.	
Example project report outline	Virtual activity, week 15		Project report outline No later than 22 April 2002	Submit your preliminary project report outline here	

Figure 4: Roster portion illustrating the learning blend and activity submissions in the TeleTOP environment for e-BOSNO

TeleTOP design

The TeleTOP system provides course designers with extensive flexibility in the choice of options for a support environment (Collis, 2002). A variety of different features were included in this course. Figure 5 shows the final set of TeleTOP functions in the left-hand navigation menu and the News area of the TeleTOP environment for e-BOSNO. (The functions available varied during the course, as the facilitator was free to try out and remove functions whenever he wished.)

Tasks for the training facilitator

The facilitator in a blended learning experience such as e-BOSNO has a new set of roles in addition to those of the leader of the face-to-face sessions. Table 2 outlines the steps and activities that the facilitator performed as per Salmon's stages.

Thus, the e-BOSNO course was designed. The course ran from November 2001 to July 2002 with seven participants, representing teams from four companies. Teams consisted of course participants, plus their company coaches. There were three teams of two participants each, and one team with only one participant. All four teams completed the course although not all teams completed each of the 14 activities involving submissions. An evaluation was held at the close of the final face-to-face session, which also was the close of the course.

In the following section, the main results from the e-BOSNO course are given.

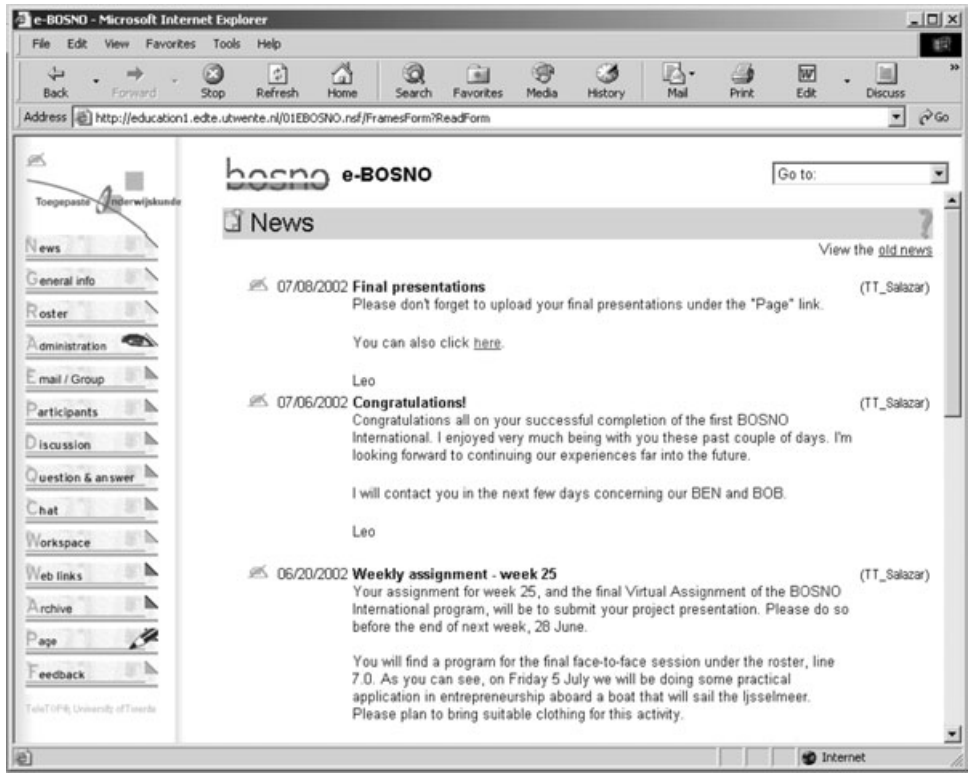

Figure 5: Final set of TeleTOP functions and window showing the News area

Results

The results will be discussed from two different perspectives. One of these is via an examination of the participants' submissions in the TeleTOP environment. Mostly these were team submissions. The second relates to the opinions of the individual participants, based on the questionnaire administered at the completion of the course.

Submissions via TeleTOP

The first of the 14 workplace-specific activities in e-BOSNO was for each team to submit a description of the problem-solving project they intended to carry out in their workplace during the course. All four teams submitted these descriptions. The projects selected were:

- Helping to measure the cost of the IT infrastructure in a department, and developing a business plan to improve that structure
- Changing the contract structure in a supply chain to one with more equally shared risks
- Bringing risk management into a company

- Analysing cultural differences in a merger between companies, and designing a tool to realise a better fit between organisational cultures

These projects represented current problems in the organisations involved. The project plan needed to include the identification of the main stakeholders in the company relative to the project and a planning and time schedule for the project.

Table 2: e-BOSNO facilitator activities ordered in Salmon's (2000) five stages of e-activities

Stage (Salmon, 2000)	*Tasks for the facilitator*
1. Access and motivation	• Set-up of initial TeleTOP environment, including 'news', 'course info', 'roster', 'discussion', 'email/group' and 'web links' • Determine the learning blend • Send an email with password for URL access to e-BOSNO to participants • Organise and lead the first face-to-face meeting, with hands on experience with e-BOSNO, project definition and presentation, and initial access • Follow up the first face-to-face session, deal with password problems and problems with handing in assignments
2. Online socialisation	• Add participants' information to the e-BOSNO TeleTOP environment with personal information, photo • Add follow-up information to e-BOSNO TeleTOP environment, session information, e-book added • Post first messages in discussion area • Add 'question and answer' section to e-BOSNO TeleTOP environment
3. Information exchange	• Monitor the process of participant submissions, and react to their project definitions via the roster • Monitor the participants' submissions and sharing of their first project evaluations via TeleTOP • Monitor the participants' submissions relating to time planning, project resources and progress reports via TeleTOP • Carry out ongoing moderation tasks such as sending reminders and comments, and providing feedback on submitted materials • Add and modify the chat area
4. Knowledge construction	• Organise and lead virtual sessions via chat to discuss progress and procedures • Put agenda and deadlines in roster • Include coaches in e-BOSNO, stimulate their contribution to a participant's page
5. Development	• Add a 'Page' area to the TeleTOP site to be filled with final presentations • Include stakeholders from the companies in the participants' projects • Carry out the final project evaluation (from participants in the project as well as of the e-BOSNO course itself)

Following this first submission, 13 additional activities, shown as numbered steps in the second column of Table 1, occurred, each with a target date for submission in order to keep all teams on pace and to stimulate teams to share with each other their common processes and experiences.

Results of the activities involving submissions in TeleTOP

The methodology for this analysis of the activities in the e-BOSNO course consisted of a post-course inventory of all submissions in the roster of the TeleTOP environment. The level of team response to the activities in terms of submissions per team is shown in Table 3.

It can be seen that submissions were made by at least one of the teams for all but one of the activities. No team submitted a midway evaluation. In some cases results of activities were sent back by email or via telephone, so they were not submitted in the TeleTOP roster and thus were not available for the post-course analysis shown in Table 3; thus, the actual participation rate was higher. (A benefit of systems such as TeleTOP is that all course materials, such as participant submissions, can always be found, in one convenient location, for after-action reviews). In total 43 documents were submitted in TeleTOP for the 14 activities.

The submission of activities was not only a matter of quantity; there were also qualitative aspects that were desirable. In particular, these relate to the potential business impact related to the submission and how clearly the submission related to an actual workplace problem, as these are both key aspects of the approach to productive learning in e-BOSNO. Another point of interest was evidence of teams learning from each other via the submissions. In order to code for these qualitative variables, each submission

Table 3: Level of response to activities

Activity, as numbered in TeleTOP	*Number of team submissions per activity (out of four teams)*
1.01 Submit project description	4
1.03 Submit feedback on others project descriptions	4
1.05 Re-submit project description	4
1.10 Submit evaluation of e-BOSNO	4
2.00 Submit time planning	4
2.01 Submit resource list	4
2.03 Submit preliminary progress report	3
2.04 Submit feedback to progress report	1
4.00 Submit midway evaluation	0
4.01 Submit examples of leadership decisions	2
4.02 Submit preliminary project report outline	3
5.01 Submit feedback on report outlines	7
5.02 Submit revised project report outline	2
6.01 Enter information on stakeholders for building commitment	1

was read and scored relating to the presence or lack of evidence of these three aspects. Table 4 provides a qualitative summary of what was submitted by the teams for each of the activities, relating to the outcomes: potential workplace impact, relation to actual workplace problems and learning from others.

Table 4 shows that six of the 14 activities stimulated submissions (a total of 18 team submissions across these six activities) that addressed workplace problems or

Table 4: Qualitative overview of workplace problems, job impact and learning from others as found in participants' submissions

Activity	*Workplace problems found in submissions*	*Evidence of workplace impact found in submissions*	*Learning from others found in submissions*
1.01	Relevant problem to the workplace submitted (in all four team submissions)	—	—
1.03	—	—	Via the assignment, feedback was provided to others (all four teams made feedback submissions)
1.05	Yes, (in all four team submissions) but improved problems could have increased relevance; problems relating to others' workplaces may have been brought in as well	All projects now mention a coach or sponsor of the project (all four teams include this in their submissions)	Project descriptions have been improved based on feedback from others (all four teams indicated this in their submissions)
1.10	—	—	—
2.00	—	Planning submitted, possible workplace impact if problem relates to workplace problem (all four teams indicated workplace problems in their submissions)	—
2.01	—	Persons in the company are involved as resources (all four teams indicated this in their submissions)	Teams responded to each others' resources lists (all four teams made submissions)

Table 4: Continued

Activity	*Workplace problems found in submissions*	*Evidence of workplace impact found in submissions*	*Learning from others found in submissions*
2.03	Preliminary report, some workplace problems reported (three of the teams made submissions)	—	Reports shared (three of the teams did this with each other via submissions), coaches feedback included in one occasion
2.04	—	—	Feedback given by one team
4.00	—	—	—
4.01	Workplace problems were identified and examples given (by two of the teams in their submissions)	Leadership examples submitted, linking theory to workplace impact (by two of the teams in their submissions)	Documents are specifically shared by others (as seen by the submissions of two of the teams)
4.02	Report outlines submitted, workplace problems addressed (seen in submissions from three of the teams)	—	Report outlines submitted, specifically shared by others (seen in three teams' submissions)
5.01	—	—	Feedback on others' report outlines submitted (seven submissions, teams sent feedback to more than one other team)
5.02	Revised project reports submitted, workplace problems included (seen in submissions from two of the teams)	—	Revised project reports submitted, based on comments from others (two of the teams made submissions)
6.01	—	—	—

Note: Empty cells indicated the variable could not be inferred from the team submissions.

introduced new workplace problems (see the column 'Workplace activities found' in Table 4). As several of these activities were centred on workplace problems, this was expected. However, the middle column in Table 4 relates to evidence of a business impact in terms of what was described in the submissions. Based on the analysis of the contents of the submissions, the submissions to four of the 14 activities showed a possible direct workplace impact. All four teams submitted evidence of workplace impact in their submissions to Activities 1.05, 2.00 and 2.01; two of the four teams submitted evidence of workplace impact in their submissions to Activity 4.01. Examples of such evidence include:

- A description of a (personal) conflict in a large-scale project. The conflict is related to leadership decisions made, and styles of leadership from theory. The manager describes going though different styles of leadership (out of frustration), but manages to stay in a strategic role and avoid becoming involved on an operational level.
- A manager describing joining production on the work floor, as more managers were asked to do so. This gave some credit to taking unpopular measures.

In terms of the goal of stimulating sharing across the teams, Table 4 also shows that the submissions to eight of the 14 activities produced evidence of learning from others. Asking for peer-feedback on submitted documents (Activities 1.03, 2.04 and 5.01) particularly facilitated this sharing.

Conclusions from inventory of TeleTOP use

Overall, Table 4 gives an overview of the quantity and some aspects of the content of the submissions in the e-BOSNO environment. Ongoing evidence of workplace impact was found in the submissions, workplace problems were addressed and learning from others occurred by participants reacting to each others' documents. This amount of contribution and explicit sharing and learning from each other would not have happened to the same extent in the traditional BOSNO seminar approach, consisting only of face-to-face sessions. In addition, in terms of the goals of productive learning, the TeleTOP environment was a success as a tool for e-BOSNO (for a full evaluation of how the tool was used, see Collis and Winnips, 2002b). By blending face-to-face activities with workplace activities and by working together via the TeleTOP environment, participants were able to keep in contact, albeit sometimes only in a marginal way. In this way the e-BOSNO programme has stimulated participants to be more active between the face-to-face sessions than had been the case in previous cycles of the BOSNO programmes.

A disappointment of the first cycle of e-BOSNO was that the involvement of workplace coaches did not emerge as strongly as hoped. This may be accounted for partly by the fact that few of the activities explicitly called for some sort of interaction with the coach. As well, no particular tools or messages for the coaches were placed in the TeleTOP environment. Strengthening this involvement will be a focus for subsequent cycles of eBOSNO.

Results: participant questionnaire

In addition to the post-course analysis of the TeleTOP environment, participants were asked to respond to a 17-item questionnaire during the last face-to-face session. The questionnaire consisted of open-ended questions with 12 items related to the use of a Web environment (TeleTOP) to support workplace-oriented action learning, three items focusing particularly on peer-to-peer exchanges within TeleTOP, and two on general indicators for the success of the course. All of the participants who were present (six of the seven, representing all four teams) completed the questionnaire. An hour was spent on answering these questions individually and then discussing the questions as a group. Although there were only six participants their comments nonetheless provide valuable indicators for the further development of e-BOSNO. The full set of responses is available elsewhere (Collis and Winnips, 2002b).

The questions regarding TeleTOP focused on participants' experiences with the use of specific functions and the way they were applied in e-BOSNO. Some suggestions given for improvements were: increase speed, add videoconferencing (mentioned twice), add direct links to office programmes and add a direct link to personal email. From the questions regarding the use of TeleTOP for peer-to-peer exchanges one question asked: 'Have you been able to collaborate more easily with an international partner by using e-BOSNO? If yes, in what sense?' Answers indicated that four participants were positive, one had doubts, and one said it was easier to meet face-to-face, but this way could be an alternative. With regard to feedback from the facilitator, it was mentioned twice that the reactions given to submitted documents (in the Roster area) were of good use, but only in a limited sense when these reactions were given via the discussion area in TeleTOP.

As an example of responses to the general questions, the responses to Item 17a, in which the participants were asked to name key benefits of the 'e-BOSNO way of learning', were:

- Web site was a focus point for documents and communication
- Good face-to-face sessions supported by electronic tools
- Web environment provided a common meeting point/space
- The Roster detailing project deadlines
- The web environment as a medium for communication, chat discussion feedback
- Good alternative for flying to meet each other
- The project orientation is a good backbone to learn upon, exchange ideas/problems
- Allows out-of-hours working when time scheduling in normal working day is not possible
- Multiple companies joined the course which was very interesting for me
- Links with other academic sites

The questionnaire responses showed that the participants were satisfied with the new opportunities available to them via the use of an environment such as TeleTOP. TeleTOP is valued most when it is used efficiently and consistently. Feedback and contact with other participants is critical. The focus on practical problems in the workplace, documented and addressed via activities supported by TeleTOP, was endorsed. Some of the

points for improvement requested by the participants in the questionnaire were further strategies for sustained discipline and commitment by all participants and more involvement by a coach in the workplace. The blend of face-to-face sessions and workplace learning, all integrated with support of the TeleTOP environment, was seen as more valuable than only face-to-face, or only 'e-learning'.

Reflection and further action

The e-BOSNO Project Team agreed that e-BOSNO has been a valuable step forward in the redesign of traditional management seminars toward integrated learning experiences involving workplace as well as face-to-face activities (Collis and Winnips, 2002b; Salazar, 2000a, b). The model shown in Figure 1 was illustrated in practice, although the involvement of the coach from the workplace was not as much a feature as had been hoped. Ideas for increased coaches' involvement surfaced during the analysis of activities in TeleTOP and the analysis of the participants' responses to the questionnaire. Several comments indicated that there should have been projects identified by the coach as arising from a need in the workplace rather than identified by the teams themselves. More involvement of coaches—possibly as problem owners—can ensure the introduction of priority workplace problems and can promote transfer to the workplace. The intention is that project participants will be guided by the training facilitator, who teams up with the company coaches to better help the participants in solving the workplace problem. Finally the coach can facilitate the transfer of the results of the activities to the workplace, judging the value and practicality of delivered products to the company. The involvement of both participants and coaches can be thus heightened if the coach takes more responsibility in identifying realistic problems related to business goals.

For the first cycle of a new approach to integrating work and action learning for more productive learning experiences, the e-BOSNO experience made a strong step forward. For subsequent cycles, skills for managing blended learning can continue to grow. Particular attention can be given to designing more activities that explicitly involve some sort of interaction with the workplace coach. This can involve in time a change in workplace culture, so that learning on the job and from one another is given the same valuation as 'going away to a course' in terms of time and support (Bianco and Collis, 2003). Furthermore, on a more micro-level, facilitators, coaches and participants alike will need to develop experience with the use of a web-based environment as a common place for sharing and communicating. For the BOSNO consortium, the first cycle of e-BOSNO has led to many different insights in this respect (Salazar, 2002a, b) which can only come from learning by doing. In the ongoing task of the better integration of formal and informal learning, workplace and structured learning sessions, and learning from the tacit and explicit knowledge of others, courses such as e-BOSNO are making a valuable contribution.

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