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CONNECTING ‘ORGANIZATIONAL WORLDS’ BY BRIDGING ASSESSMENT TOOL DESIGN AND CHANGING WORK ACTIVITIES

Abstract

In recent years learning orientation has landed to evaluation studies. The critical weakness of evaluations seeking for practice improvements and learning is that they do not make explicit the theory of change linking evaluation and improvement (also Rogers & Williams, 2006: 94). This paper presents a gap between evaluation and constantly transforming work activities. Theoretical- methodological task of this paper is to apply theory of expansive learning as a learning approach to evaluation, linking evaluation and learning. The empirical case presented in the paper, analyzes a collaborative design process of a new type of evaluation tool. The paper suggests that theory of expansive learning and collectively created tools can be used for connecting two separate organizational worlds: constantly transforming activities and evaluation. The paper emphasizes that evaluation can be seen as collective, historical, dialogical, constantly transforming and developing activity.

Keywords: assessment tool design, transformation, expansive learning

1 Introduction

In this paper, I present an activity theoretically oriented narrative evaluation approach, which I will further construct in my dissertation. The activity theoretically oriented narrative approach tries to widen our understanding and provide new theoretical tools and concepts to the field of qualitative, learning oriented evaluation. In the activity theoretically oriented narrative evaluation approach, evaluation situates at the level of activity. It focuses on evaluating organizations transformations and learning taking a long-term aspect in which evaluation is seen as collective, historical, dialogical, constantly transforming and developing activity. The approach applies the theory of expansive learning, developed by Yrjö Engeström (1987). The approach regards tools

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as essential mediating devices and as means for bridging evaluation between transforming work activities and evaluation.

In the public sector, also in health care organizations, various quantitative and qualitative techniques have been used in order to produce information for day-to-day decision making, to do financial planning and to enhance manager's ability to use of financial resources effectively (Steiss & Cyprian Nwagwu, 2001). The issue of unusability of measurement tools, used in institutionalized settings, has been brought up in previous studies. Practitioners in hospital organizations, for instance, rarely benefit from measurement data. It is often hard to access and tool use is experienced as difficult. Therefore attention has been paid to the usability and impacts of the use of artifacts and tools; such as managerial key figures. Rather than devices of control, tools have become to be seen as a dynamic, constantly developing, collective resource for practitioners. Novel ways of using key figures have for example been introduced (Kern, 2006).

The empirical case example, presented in this paper, is from university hospital in Finland. Evaluation tools used in the university hospital, did not serve the purpose of investigating daily activities of the surgical unit. This created a challenge to develop a new assessment tool. The case depicts the design process of a new assessment tool between surgical operating unit and quality department. The paper analyses the obstacles and learning in assessment tool design, implementation and use.

Taking an activity theoretical stance, I perceive hospital work as historically developing activity. Methodology of this study highlights that capturing of qualitative transformations of work requires a historical perspective. The approach takes a long-term perspective in tracing the transformations and consequences of conducted change efforts. This is a temporal expansion from project evaluations often conducted straight after organizational development projects.

In this paper a new activity theoretically oriented narrative evaluation approach is first presented. Then the meaning of tools as means for organizational transformations is depicted from an activity theoretical view. The activity theoretically oriented narrative evaluation approach is then located to the field of learning oriented evaluation. Next, the setting of the study is illustrated. The methodology and data collection of the study is presented thereafter, including summary of the course of the design process under study and data excerpts. Learning during the assessment tool design process is captured in the analysis and followed by a discussion of the analysis and central findings. Finally conclusions are made.

2 Evaluation from activity theoretical point of view

Psychological and educational studies typically take a humanistic viewpoint on evaluation and usually focus on the evaluation of learning of individuals (Burns and Ludlow, 2005). Learning oriented evaluation approaches often focus on evaluation of individual's actions and organizational tasks. Theory of expansive learning differs from learning theories by focusing on analysing collective activity. In this study, the unit of analysis is spatially and temporally widened from separate actions to a system level; to evaluation of object oriented activity.

In his theory of expansive learning, Yrjö Engeström (1987) presents organization as a system, which consists of activity systems having objects. Activity can be presented as a triangle model of an activity system consisting of subject, object, mediating artefacts, rules, community and division of labor. Activity systems are in relation with neighbouring activity systems in organizations. The object of expansive learning is the activity system to which the learners belong. Qualitative transformation of an entire activity system may be triggered by an introduction of a new technology. However it is not reducible to it (Engeström, 2004: 15).

From activity theoretical viewpoint the motivation for change always arises from tensions or contradictions in organizations. Contradictions manifest themselves as primary, secondary, tertiary and quaternary contradictions in and between activity systems (Engeström, 1987). Actors construct objects as they make sense, name, stabilize, represent and enact for their actions and activities (Engeström & Blackler, 2005). Object oriented actions are always characterized by ambiguity, surprise and sense making, including potential for change i.e. expansion of the object. As a result of renegotiation and reorganization of collaborative relations and practices and e.g. through construction of new tools expansive learning and qualitative transformations of the objects of an activity may take place (Engeström, 2004; 2005).

Originating some of its central ideas from Vygotsky (1978), activity theory stresses the central role of mediation. In this view, artefacts (tools and instruments) mediate actions between subjects and objects. In my study, tools are regarded as essential part of human activity and they must always be examined in relation to the context in which they are used.

2.1 Tools as means for organizational transformation

Tools used in health care contexts, usually have top down structure, which is vertical. The typical properties of vertical tools are presented in Table 1. Vertical tools are usually standardized, stable, given by the management and closed to revision. Horizontal tools are much fewer than vertical tools. Horizontal tools can be locally constructed, created by the users, more flexible and open to revision. However they often remain local and may be difficult to transfer to other settings. In organizations, both vertical and horizontal tools are needed and need to be combined to resolve the tension between verticality and horizontality and local needs and standardization (Puonti, 2004: 9).

Table 1 Typical properties of vertical and horizontal tools (Puonti, 2004:6)

VERTICAL TOOL	HORIZONTAL TOOL
Typical for hierarchies	Typical for networks
Intraorganizational	Interorganizational
Encourages individual use	Easy to use in collaboration
Prescriptive, authoritative	Communicative, negotiable
Ensures similar use across contexts	Use may diverge in different contexts

Horizontality has increased at work (Puonti, 2004) and stable institutionalized tools are not often adequate in depicting and supporting transformations in the overall organizational activity. For example, complexity of illnesses and care work has increased along with aging, medicalization, lifestyle illnesses and multiple, chronic illnesses (Kerosuo, 2006). However, health care organizations are being trapped into traditional organizational models and evaluation methods that seek for stability and optimization (Plsek & Greenhal, 2001). The weakness of standardized evaluation systems is that they give a very partial view of care as a system and do not pay attention to current learning challenges in organizations.

According to Puonti (2004) a shift from hierarchical work organization to collaboration requires new kinds of horizontal tools. There is a need for new tools that facilitate the coordination and planning of collaborative processes. More attention needs to be paid to tools which could be used for planning and information management and for synchronization of the action of various participants (Puonti (2004: 1-4).

Kern (2006) claims that management research has lacked a theory on tool use and she has recently developed theory of management tools by taking a process and activity based view. She has analysed the use of key figures as management tools in a hospital environment and her study shows how key figures have interpretative, subjective and situative dimensions. Kern emphasizes how the use of key figures is “vital for understanding organizational dynamics such as the articulation between individuals and collective activity and the balance between stability and change”.

Management tools and collective activities need to be connected in organizational settings to enhance activities. For example performance measurement needs to be studied in relation to design of a collective activity in which it is engaged to (Lorino 2005; Lorino& Gehrke, 2007). Instruments involved in social activity and for example cross-functional activities. These instruments do not determine but constrain processes. Instruments have a double bind and contradictory function. They both generate coherence and express local variance; such as local creativity (Lorino, 2008).

Social entities and user’s activity are crucial in designing information systems. Design has become seen as a mutual learning process between users and designers (Béguin, 2003). Users’ appropriation of the tools and learning in use are considered crucial issues in implementation of new tools. Instruction of a new instrument of activity usually requires adaptation of artefacts as well as changing activities and is often a lengthy developmental process (Rabardel, 2003; Béguin & Rabardel, 2000; Bødker & Graves Petersen, 2000; Hasu & Engeström, 2000).

3 Locating the constructed approach to the field of evaluation

The field of evaluation can basically be divided into three approaches 1) to approaches following hypothetic-deductive paradigm (Robson, 1999), which is quantitatively oriented and aims at measuring effectiveness and impressiveness of actions, 2) to approaches following social constructivism (Cuba & Lincoln, 1989), using qualitative techniques, and 3) realistic evaluation (Pawson & Tilley, 1997),

which combines the former two approaches and also pays attention to circumstance and mechanisms producing effectiveness. Lately attention has been paid to how can evaluation contribute practice improvement in organizations. Practice improvement has been defined, for example, as gaining knowledge on best practices, practice improvement through reflection and better adaptation or responsiveness to users needs. Practice improvement is closely connected to learning processes of individuals and groups and the organizational context (Rogers & Williams, 2006: 76).

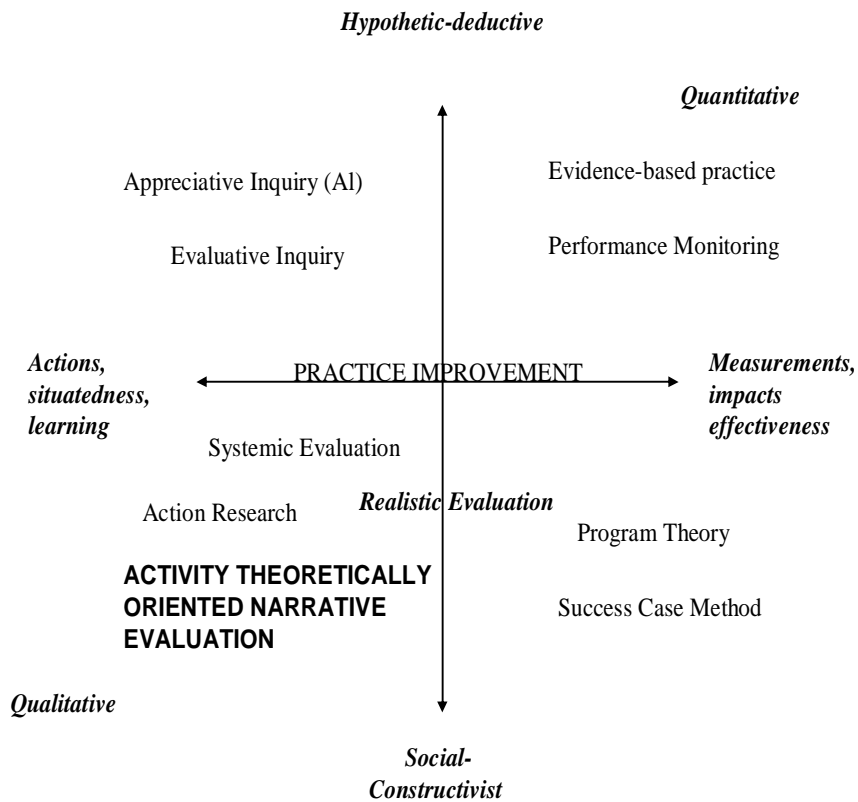
Rogers & Williams (2006) state that performance monitoring, program theory, evidence based practice and also some of the learning and development theories have blind spots in the theory linking with the intended change. The approaches do not often explicate their theoretical groundings, which is a serious issue that needs further addressing. The authors state that thinking through theories of change, practice improvement and learning can be useful in selecting and developing evaluation approaches (Rogers & Williams, 2006: 77, 94). However, their study remains at the level of introducing the approaches and presenting suggestions, not conducting empirical work.

In their study, Rogers & Williams (2006) have selected nine evaluation approaches that aim at practice improvement. Those are: action research, empowerment evaluation, appreciative inquiry, evaluative inquiry, systemic evaluation, evidence-based practice, performance monitoring, program theory and success case method (Rogers & Williams, 2006: 76-98). In Figure 1, I have placed those nine evaluation approaches into a four field and added hypothetic-deductive and constructivist dimensions. For me, inquiries, evidence-based practice, performance monitoring, success case method represent hypothetic-deductive orientation. They typically aim at enhancing organizational effectiveness. They usually focus on contribution of individuals. They apply quantitative methods and focus on producing evidence on impacts of conducted change efforts.

By contrast, action research, empowerment evaluation and systemic evaluation may be seen as alternative to positivist, hypothetic-deductive evaluation paradigm (Patton, 1987; 2002; Alkin, 1990). The alternative approaches usually apply qualitative methods and discard the idea of causal relationships, and focus for example, on the empowerment of actors. In these studies the world is perceived as socially constructed and constructivist evaluation methods are often applied (e.g. Cuba and Lincoln, 1989; Strauss and Corbin, 1990).

I have positioned the activity theoretically oriented narrative evaluation approach close to action research, empowerment evaluation and systemic evaluation. However, it adds historical perspective to evaluation and conducts analysis in the level of collective activity, not individual or action level. For me learning is not comparable with practice improvement. Practices for example can form larger, collective work activity. Single practices may be improved, which does not necessarily mean expansive transformations in the overall activity. I see organizational knowledge as interwoven into organizations' products, processes, technologies, structures, culture and norms (Argote 1999) and also created and distributed collaborative efforts.

Figure 1 locating the activity theoretically oriented narrative evaluation approach in the field of evaluation approaches associated with practice improvement



4 Setting of the study: surgical operating unit

The unit under study, is a surgical operating unit in university hospital in Finland. Surgical operating unit forms a community of 300 medical practitioners and nurses. Work at the surgical operating units is emergency like, complex and risky in nature, requiring high specialization from its staff members. Through the 1990's until the year 2006 the unit was divided into professional functional sectors: surgeons, surgical nurses, anaesthetists and anaesthetist nurses. The unit had had an increased amount of patients to be treated and simultaneously lack of personnel due to sick leaves and other reasons. Many disturbances emerged in daily activities of the unit and frankly it was in a crisis like situation. The recovery room, placed in the unit, had especially formed a disturbing 'bottle neck' for years causing delays in patient flow and gaps in the functionality of the surgical operating unit. The division to smaller units, called activity areas, was done as a consequence of an intervention in 2006.

A group of researchers, including myself, were called to facilitate a large scale intervention process to improve the surgical operating unit's difficult situation. Through a developmental project, the unit started to move towards a co-created

organizational model, which created a contrast for the conventional hierarchical and market-driven models typically used in hospital organizations. The intervention was based on Change Laboratory method which is a research assisted method for developing work activities and is based on activity theory (Engeström et. al., 1996). The sessions took place between August and December 2006. During the intervention the working group at surgical operating unit constructed a new organizational and leadership model based on four activity areas and management team. Three of the new activity areas were formed on the basis of surgical specialities which were activity areas for 1) Urology and gastrology, 2) Thorax and vascular surgery, 3) Orthopaedics and traumatology and hand surgery and recovery room as fourth activity area. Surgical patients are placed to recovery room or to the intensive care unit after the operation to wait until their local anesthetic is over. The staff nurses were given responsibility of coordination of activities of surgical operating unit in collaboration with three surgeons and three anaesthetists.

Evaluation of activities in the hospital focuses on measuring and providing managerial key figures on production of services, caseload, care periods, man-year, labor costs and sick leaves. Statistics are produced and comparisons are made with previous years, budgets and other hospitals. Assessment tools used typically presuppose progress in care processes. Also surveys are also being conducted. The statistical key figures are usually produced by head nurse (sick leaves, surveys e.g. on working conditions) and operations manager (amount of operations, utilization rate of operating theaters) of the unit. The tools usually serve hospital management and typically seek for controllability and rationalization of care processes. Quality department functions as a separate function in the hospital. It is physically very far away from where the actual patient care takes place.

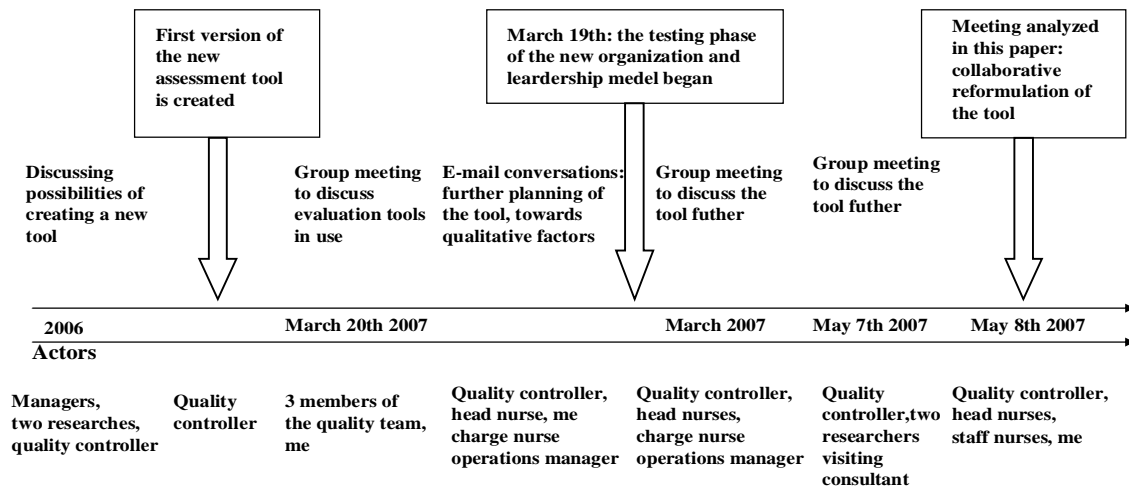
The researchers together with hospital management agreed to follow the consequences of the intervention. A creation process of a new assessment tool soon began. The fundamental aim of the new assessment tool was to reveal the possible emerging problems of the new organization and leadership model just implemented.

5 Methods and data

I followed the Change Laboratory -intervention process and the assessment tool design process with ethnographic methods. I mainly collected the data by doing observational ethnography (see Strauss & al. 1985; Neyland, 2008) and interviews and also collected documents. During 2006-2008, I conducted several observations at the control room and other spaces of the surgical operating unit. I followed care pathways of surgical patients. I conducted interviews with the staff members of the quality department (quality controllers, head of quality) and the surgical operating unit (operations manager, head nurses, top manager, staff nurses, surgeons and other members of the community). I had planned interviews but I also interviewed staff members of the surgical operating unit in situ while they were working.

On the regards of the assessment tool design, I took part to several e-mail conversations between the quality controller and operations manager of the surgical operating unit. In the analysis, stepped theoretically further from mere ethnographical descriptions and applied Engeström's (1987) theory of expansive learning. Figure 2

depicts the historical course of the design process of the assessment tool. The especially significant events in the process are marked as boxes to the figure. All the actors involved in the process are marked in the figure, below the timeline indicating the temporal course of the design process.



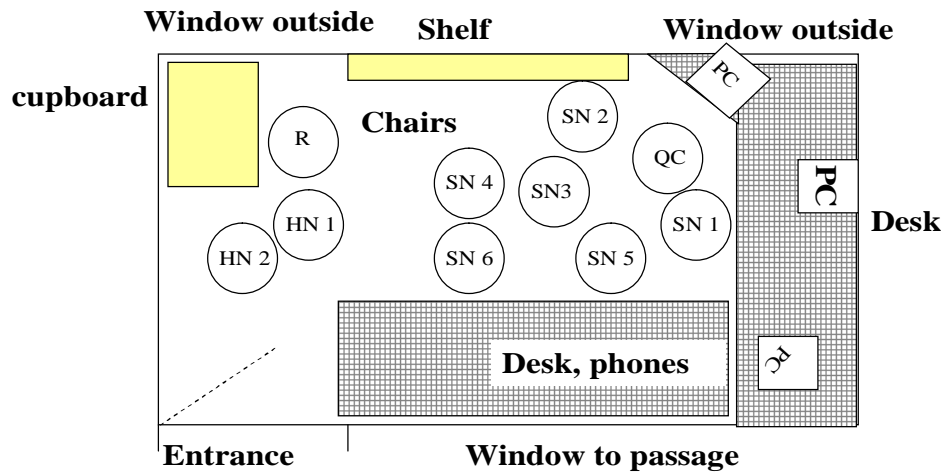
In this paper, I focus on analyzing a shared meeting that took place between staff nurses and head nurses of the surgical operating unit and the quality controller of the university hospital. I videotaped and audio recorded the meeting. I later on viewed the videotaped meeting several times. I selected situations from the meeting to be transcribed. The meeting was hard to transcribe as a whole, because participants spoke simultaneously and loudly. I then analyzed the parts I had selected and transcribed. I made a lot of field notes during the meeting. The field notes and other forms of collected data supported the choosing of the significant parts of the meeting for closer analysis. Looking the movements and expressions of the participants helped me in analyzing the data. I captured activity systems involved in evaluation of hospital work and their objects. Then I studied the design process, learning and obstacles during the process.

The quality controller stayed at the meeting for 34 minutes. The others stayed in the room as a group around thirty minutes before and some minutes after her visit, exploring the new tool collaboratively. However those parts of the collected data are not analyzed in this paper.

Staff nurses, head nurses, quality controller and me met in control room is a space from where staff nurses coordinate activities of the surgical operating unit, sort out electronic schedules for emergency and elective operations and place staff to operations theaters. Practically staff nurses sit in the control room using computers and coordinate and control activities. Figure 3 presents a layout of the control room and the participants of the meeting, who were all female. Participant QC stands for the

quality controller. Participants HN 1 and HN 2 are head nurses of anaesthesia and surgery. All SNs stands for all the six head nurses. I am R, which stands for researcher. Three PCs mean the computers that had electronic assessment tool on their screens. Behind the window for passage were the Surgical Operating Unit and its 16 operations theatres.

Figure 3 Layout of the control room



The following excerpt is from the meeting where staff nurses, head nurses and quality controller gathered together to discuss the new assessment tool. The quality controller had by herself designed the first version of the tool in the beginning of year 2007. As illustrated in Figure 2 this meeting took place 8th of May 2007. In this meeting the nurses were exposed to it for the first time and also most of them met the quality controller in person for the first time. Some gestures of the participants and my own clarifying notes are mentioned in parenthesis in some quotes.

Exerpt:

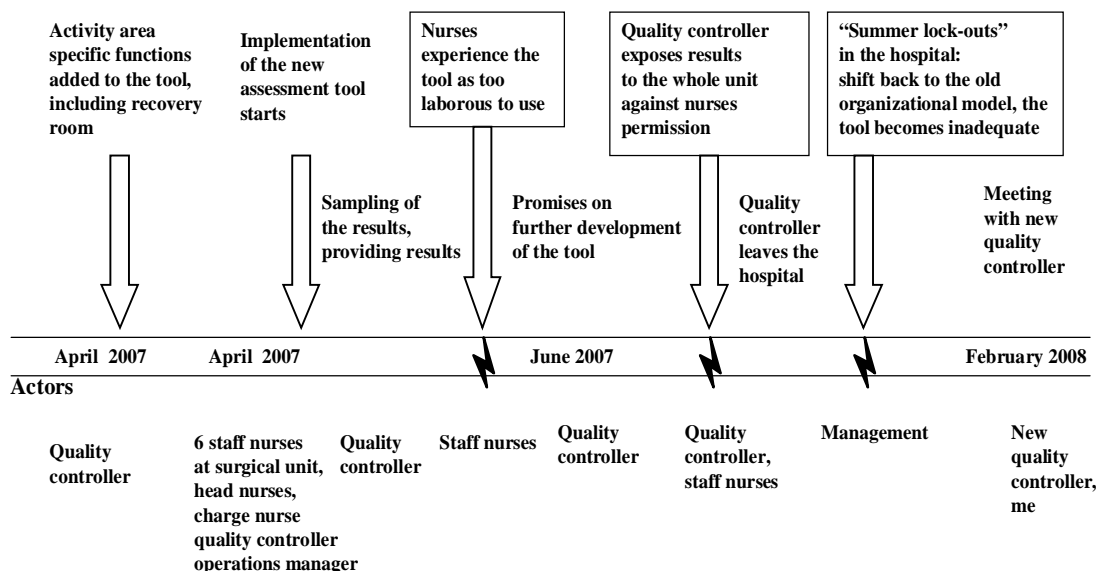
1. SN1: Actually, I mean the work load there, for example one might conduct five to ten operations there during the day, postoperatively, so could one have them somehow reported, could one think about that.
2. QC: Well it depends, are they planned activities, aren't these operations and setting cannula and so on planned actions, I think they are planned actions.
3. SN1 and SN2 together: No, they are not!
4. QC: I thought they belong to the normal recovery room activities (shaking and raising her hands)
5. SN1: No they do not.
6. SN2: It is emergency like work! (raising her voice)
7. SN1: It is emergency like work, that's what it is.
8. QC: Yes, you mean extra work.

9. SN2: It's not extra work, it is emergency like work. It's emergency like work also in the recovery room!
10. QC: But it belongs to the work there in the recover room, if you only think about the work there..
11. SN1: No, it does not belong, one can never measure the real work load of the recovery room if it is not reported anywhere.
12. QC: That's true.
13. SN2: That's right!
14. QC: The original idea was that we could get one common, identical assessment tool for all operating units, which could have served all, but now ones we started to revise it this it is not possible, its out of question. The main idea should be that the tool is controllable and not too laborious to use. So these assessment tools need to be local and unit specific (...) Premises of the tools are the same but as one thinks activity of the recovery room. You (staff nurses) are the ones using this (tool), let's add some new functions to it! (at this stage the meeting had proceeded for 12 minutes)
15. HN1: (suggests to nurses) Let's look at it (electronic assessment tool on the PC) with Mia and also Ann, Ann do you have a moment now?
16. SN6: I have something critical I need to do now but I'll look at it with Paula little bit later, ones we have a more calm moment (who is next to her chair, SN5).
17. HN1: (to Mia) So, please sit down, take a chair (to SN3). First, you go to the unit's intranet, surgery and intensive care, Surgical operating unit, forms. Then you just fill your name and date, you can also fill in your e-mail address but that's not compulsory.
18. HN1: Try (to SN3) to click on it ones again, oh, you cannot do it. Martha (calls for the quality controller) how come we cannot rewrite this part? We cannot take this wrong answer off from here (SN3 had filled some information accidentally to the wrong section).
19. QC: Oh, that's right. I guess you cannot take it off. You cannot take it off, unless you exit the form. There are two separate questions there which I tried to form into one..
20. SN1: What could you not get removed (wants others to tell her too)?
21. SN3: So we have to exit the whole form and start all over again?
22. QC: Well, I need to think about this. I have not come across this idea before, that it (the form) needs to be cleared at some stage (i.e. to correct a mistake that occurs in filling the form) (QC then laughs) (...) Usually one only proceeds in these inquiries! (...) Right, I think, at this stage, I think I could take this question off totally from the form, this concerning emergency duty. If you do not use it, I'll take it off, so that it will not be entered there by accident. Let's do that! (writes down this issue to be taken care of). (At this stage the meeting had proceeded 20 minutes)
23. HN1: Yes. (agrees with the quality controller)
24. SN1: So that it (the tool) could truly show all the other things we do there than just the post-operative work!
25. QC: (to SN1) Operations conducted in the recovery room could form one section, and there amount of personnel in relation to activity another. You can write there how many emergencies, operations, patients arrive to the recovery room, so and so much, so you can get support (I think she referred to management decisions on staff use).

26. SN1: But then when one takes reports, isn't it always better, more respectable, if we can produce some numerical information (...) So the explanations go down better (she clearly refers to management).
27. QC: Numbers, we are so used to numbers! But you can also get those (statistics) from there, one can do sampling..
28. QC: You know what, I think will do so that I'll add here (to the tool) the questions needed concerning the recovery room, usability of room here and. Then I'll not include and mess it with the usability of operations theaters (...)
29. SN1: Ok, and then if head nurses cannot follow then, they can be adjusted.
30. QC: I could do reports that can be updated by activity areas and one can view them from the intranet straight, one could (...)
31. HN1: It would be important to see the differences between the activity areas (to use the tool as a management tool in further development efforts)
32. QC: Ok, so I'll add them there.

The new electronic assessment tool was in active use of the staff nurses during the spring, from April till June 2007. Figure 4 depicts the critical obstacles that took place during the implementation phase and use of the new assessment tool. The obstacles are marked as boxes and indicated with lightning type arrows in the timeline. The actors in the process are marked to the figure below the timeline.

Figure 4 Obstacles in the use of the new tool



6 Tracing learning in the design process

In the following I trace learning during design process of the new assessment tool. I first depict the objects of different actors involved in evaluation in hospital organization. I then depict a quaternary contradiction between the activity systems. Thereafter, I study the emergence of collaboration between surgical operating unit and quality department. Then I capture the manifestations of collaboration between the actors and finally elaborate whether expansive learning took place in the process.

6.1 Depicting the distinct objects and a contradiction

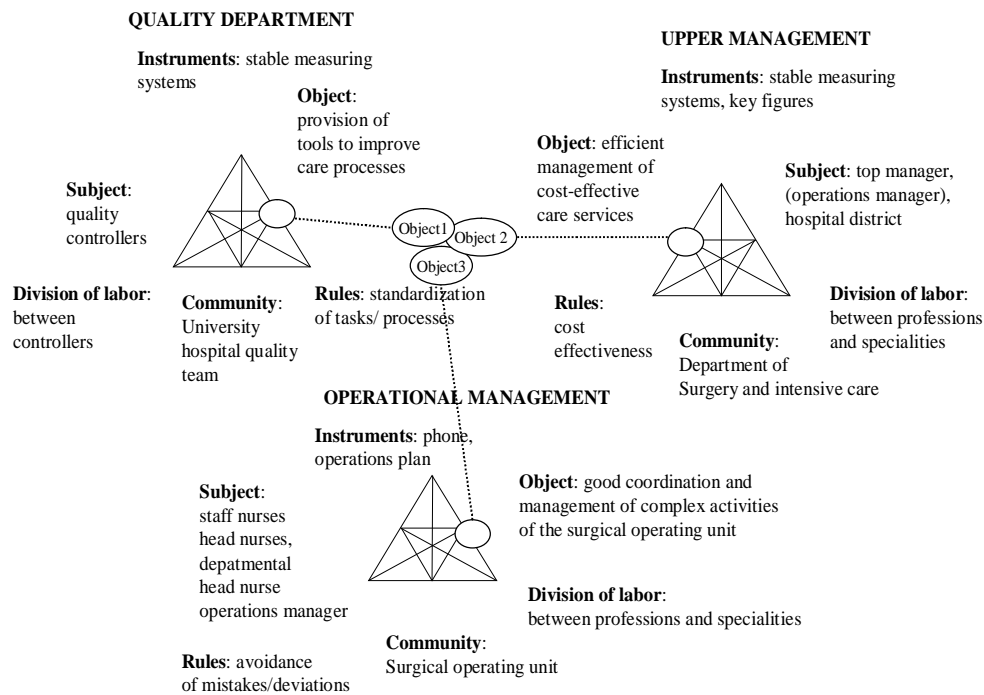
The division of labor is typically divided between professions and specialities in hierarchical hospital organization. Each party is conducting their specific duties. In activity theoretical terms, the subjects in the three activity systems, upper management, operational management and quality team, taking part to evaluation of hospital activities have distinct objects of activity. The object of activity of operational management (staff nurses, head nurses, departmental head nurse and operations manager) can be depicted as good management and coordination of complex, often unpredictable daily activities of the surgical operating unit. As tools the nurses mainly use phone and electronic list on the computer indicating operations and work shifts.

The object of the activity of upper management of the surgical operating unit (top manager and also the level of hospital district and to certain extent the operations manager) can be depicted as efficient management of the provision of care services, cost effectiveness as a guiding rule. Activity system of hospital management historically relies of measurement techniques based on hypothetic-deductive paradigm. This tradition does not typically integrate evaluation results to interventions or other qualitative development attempts. The existing assessment tools in the hospital under study are statistical key figures that measure performance and effectiveness of work conducted inside surgical operating unit.

For the members of the quality department the object of activity can be depicted as provision of measurement and control tools to improve care processes and tasks, standardization as a guiding rule. As tools quality controllers use stable, quantitatively oriented measuring systems and different computer programs.

Figure 5 depicts the three activity systems involved in evaluation in hospital organization and outlines the distinct objects of the different actors. The constellation of activity systems depicts a *contradiction*: the tools available in the hospital serve upper management but do not serve sufficiently the needs of the lower management responsible for operational management. The tools in use represent stable measuring systems. These tools do not, especially, communicate to the staff nurses trying to manage and coordinate the daily activities of the surgical unit.

Figure 5 Three activity systems as framework for studying evaluation in hospital organization



6.2 Emergence of collaboration

During the meeting the staff nurses and quality controller greatly exchanged knowledge on the nature of each others work. The quality controller had a false impression of the nature of work in the surgical operating unit. The nurses, future users of the new tool, soon in the meeting, started to correct her view. The quality controller thought that the work in the sixteen operations theatres and recovery room in the surgical operating unit was always well planned.

The new tool introduced by the quality controller was soon perceived as too narrow, by the staff nurses. This came as a surprise to the quality controller. As the original developer of the electronic assessment tool, the quality controller this came as a surprise. Staff nurses expressed a current need to quality controller: that they do not have adequate tools to assess the real activity of the unit that needs to be evaluated for the management. They stressed that the new tool was especially dysfunctional for the purposes of assessing work of the recovery room. In the new organizational and leadership model the recovery room became an activity area of its own and a need for new assessment tool to measure its daily activities was therefore very acute. The nurses collectively requested for revision of the new tool from the quality controller. The quality controller evidently started to realize that the tool she had created was not extensive enough to cover all the needs of the nurses, conducting complex work.

6.3 Designing the new tool collaboratively

The participants in the shared meeting made their work visible to each other by telling about the 'real nature' of their work and also by questioning and challenging each other. The quality controller soon started to give insights to the possibilities of cultivation of the electronic form. The basic rule she wanted to express was to make the assessment tool "controllable and not too laborious to use" (Excerpt, line 14). As the meeting proceeded for twelve minutes, she suggested to the nurses that she could add some new features to the tool to make it more useful for them (Excerpt, line 14).

The nurses and quality controller physically often leaned and pointed towards the computer while the meeting was held. The quality controller was a visitor at the surgical operating unit and at first she was physically a central person in the meeting. She sat in the control room next to the computer in the very centre of the room. The nurses physically gathered around the computer she was sitting at. She talked a lot answering and asking questions. However, two interesting turning points occurred later on in the meeting: The first turning point occurred as the head nurse of anesthesia made a suggestion to two of the nurses to try filling the new tool in another computer (in Figure 1 PC near by the window). By doing this she tried, I guess, to involve a staff nurse (SN6) to the design process. While the others were discussing she had been taking the responsibility for answering the phone and doing other responsibilities during the meeting.

The second turning point occurred when the quality controller stepped aside from the central computer. By doing this she shifted her position in the meeting by giving responsibility to the nurses. The nurses started to do agentive actions by experimenting with the tool. They first used the tool in head nurse –staff nurse pair and quality controller –staff nurse pair and the others were watching (Excerpt, line 15). Soon after they formed staff nurse –staff nurse pairs in using the tool.

6.4 Emergence of expansive learning?

The participants of the meeting collectively negotiated on possible solutions of the cultivation of the tool. Some crucial decisions and promises for taking action in cultivation of the tool were made during the meeting. As a final decision the parties taking part to the meeting agreed to add a specific section to the assessment tool to rapport daily activities of work conducted in the recovery room. An innovative solution was offered by the quality controller to create separate sections to the tool to cover the four activity areas (Excerpt, line 30). The idea was strongly supported by head nurses (Excerpt, line 31) and soon after the meeting the quality controller cultivated the tool to serve this purpose.

Staff nurses promised to take the new tool in active use as soon as the quality controller has done the changes to the tool. Quality controller made a commitment in the meeting to cultivate the tool to include the suggested ideas and she kept her promise. Head nurse suggested the quality controller to send the forthcoming reports to head nurses and also operations manager. The quality controller promised to do this. In the meeting the participants started to create some shared criteria for

assessment. Quality controller suggested that in order for the nurses to be able to use the electronic assessment tool specific guidelines for the use need to be created by the unit's head nurses. A specific, shared criterion for example for condition for the patients treated in recovery room needed to be identified in the guidelines. However they did not make specific decisions on who would commit in producing the guidelines and the task was left open.

After the cultivation, made by the quality controller, the nurses also kept their promise started to use assessment tool, filling its questions. They completed the form at the end of each day. They produced a lot of information and in their open answers they revealed significant disturbances and obstacles of daily activities and suggested innovative ideas and preliminary solutions for improvement of unit's activities.

Discussion

In the meeting, the computers and the tool which was presented on their screens functioned as mediating artifacts. The computers orchestrated the learning process and functioned simultaneously objects of learning. The new tool enabled horizontal use while it was in use. It can be seen an attempt to resolve the tension between horizontality, verticality and between standardization and local needs (see also Puonti, 2004: 21). For an artefact, to turn into a useful instrument requires a lot of time and continuous effort (see Rabardel, 2003). In this case the efforts after all ceased and the tool did not become a useful instrument to support improving of practices at surgical operating unit in the long run.

During the meeting, participants expanded their historically defined professional roles, rules and division of labour. The nurses and the quality controller became agentive subjects of learning. The meeting enhanced and expanded previously poor communication and enhanced knowledge sharing between quality department and users of assessment tool. Boundary crossing of hierarchical organizational boundaries between quality work and care work also emerged. The learning process involved collective negotiation, reflection, making agreements and innovative decision making. Engeström (2004) defines these features as typical for co-configuration type of work which he calls an emerging historically new type of work, in which previously separate parties may achieve transformation in their activity systems and construct an object that is to some extent shared. Originally the concept of co-configuration was introduced by Victor and Boynton in 1998.

Expansive learning may take place through construction of new tools (Engeström, 2004). Learning happened in the presented case example, and also the learning cultivated and expanded the new assessment tool itself. The design and implementation process and tentative use of the tool widened the understanding of evaluation among parties. My interpretation is that a somewhat shared object of evaluation activity of different previously separated activity systems started to emerge.

In the shared meeting between quality controller and employees of the surgical operating unit multiple perspectives to work and evaluation of work were articulated. The parties that took part to the meeting came from different epistemic grounds, representing voices of staff nurses, head nurses and quality controller. The mutual widening of knowledge was crucial for the purposes of development of the tool.

Stronger management involvement and support could have enhanced the continuity of the use of the tool. I facilitated the process as a mediator only occasionally and an internal staff member dedicated to the coordination of the design process was missing. By management's strategic decision, the new organizational and leadership model was turned back to the old structure and alongside with this radical shift, the new tool was withdrawn from use.

In the case presented in this paper, the design, implementation and use of the new tool required a lot of collective effort and took a lengthy period of time. Altogether, development of a new type of an activity and new interpretation of a shared object is demanding. Objects are never constructed arbitrarily on the spot (Engeström & Blackler, 2005). In order to the process to continue towards an expansive cycle, constant collaboration and reformulation of the tool would be required. Construction of a shared object of evaluation activity in the hospital would still many more reinterpretations and a longer period of time.

Conclusions

Theoretical- methodological task of this paper was to apply theory of expansive learning as learning approach to evaluation. This paper depicts a gap between evaluation and constantly transforming, developmental work activities. Second it makes an explicit theoretical contribution to the field of evaluation studies related to practice improvement and learning, which theoretical groundings are not often explicated (Rogers & Williams, 2006). An activity theoretically oriented narrative evaluation approach is developed in the paper. This approach emphasizes collective, historical, dialogical, transformative and developmental aspects. The approach is located to the field of evaluation related to practice improvement and learning. The activity theoretically oriented narrative approach expands the existing approaches by bridging evaluation activities, tool design, tool use and organizational transformations. The paper contributes to our understanding of how a collaborative design processes of a shared tool influences organizational learning.

An empirical case example, presented in the paper, analyzes a collaborative design process of a new type of evaluation tool. Tool the users did reflected on the tool collectively and re-formulated it during the analyzed meeting. The case example provides insights to how collectively created tools can be used for connecting to separate organizational worlds: transforming work activities and evaluation.

In this case, the design process was incidental and started to emerge improvisation like. Attention needs to be paid to this type of unintended, unstructured collaborative efforts taking place outside planned settings. The "bottom up" design process represent evaluation in and for developmental work activity. The process was unusual and differed from the stable measuring practices and techniques normally used in

hospitals. The paper calls for development of managerial skills and managerial actions to be alert to this type of work and also systematically create conditions and spaces for collaborative tool design processes.

This paper suggests that new evaluation practices and more flexible tools are needed to meet today's organizations multilevelled needs. First of all, actors involved in evaluation and their distinct objects of work need to be brought together. Evaluation practices and tools need to be co-created and developed in relation to transformations of user's work activity and objects of activities. Special attention was paid, not just to progression but also to contradictions and obstacles of progress and learning in system level.

In the presented case, some major obstacles occurred in the implementation and use of the new tool. The quality controller did not continue cultivating the tool and the nurses did not develop strong ownership of it. The surgical unit was transformed back to its old way of working as a consequence of managerial decision making and the tool faded away alongside this decision. Nurturing of sustainability and further development of the tool would have required collective effort and ownership of the tool.

Past experiences related to tool design and tool use processes should be utilized in organizations. The learning gained from these processes should be put in use in order to enhance continuity of tool use and sustainability new way of working. In the light of my findings, hospitals and in health care in general, increasingly need tools that are to some extent open ended for collaborative re-design and cultivation processes. Tools need to be constantly reflected and updated in order to bridge evaluation and transformation of developmental work activities.

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