THE ILLUSION OF STRUCTURE: ABOUT HARMONIZATION AND VARIATION IN COMPETENCE MANAGEMENT SYSTEM PRACTICES IN A PUBLIC HEALTHCARE ORGANIZATION

Complete Research

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Abstract

This paper reports on a study of the use of a competence management system in a public healthcare organization. Even though systems for documenting and managing competence information have been implemented widely in most sectors, there is a lack of research focusing the adoption and use of such systems in general, and in particular within the public sector. The use of the system was studied through interviews, observations as well as document studies. In our analysis, we focus on local adaptation practices, and variations in use, as well as how this functionality is carried by social or material parts of the system. By so doing, we show how contradictory perspectives of the system's purpose and use is present in the organization, and surprisingly unproblematic. We argue that our in-depth case analysis illustrates how efforts of standardization in a system benignly can co-exist with local adaptation and variation.

Keywords: Competence management systems, healthcare, local adaptation, standardization.

1 Introduction

The tension between, on the one hand allowing for local adaptation and on the other organization-wide homogenization of work is a central issue in organization research as well as information systems research (e.g. Brown & Duguid, 1991). This paper explores an alternative path for understanding this tension in practice. Related to a line of research arguing that local adaptation is not a challenge to central standards, but rather a prerequisite for this (Timmermans & Berg, 1997), we found how homogenization and variation of work co-exist in the view of practitioners. Even though the system allowed practitioners' local variation in their system use, workers and managers perceived work as homogeneous and structured.

Within research on the use of information systems to support and enforce standardization there is a tension between on the one hand understanding standards as a tool for dealing with complexity, reducing risk and maintaining control, and on the other hand focusing on the necessity for allowing and supporting local, situated practices of use (Rolland & Monteiro, 2002). Timmermans and Berg (1997)

argue that the achievement of universality should be understood as an inherently distributed process, i.e. the standards are dependent on local re-articulation and tinkering. The necessity of taking into account local work settings and allowing local adaptation of information systems has been emphasized in several studies (Suchman, 1987; Greenbaum & Kyng, 1991; Dahlbom & Mathiassen, 1993). The discussion of information systems as driving homogenization, structuration, and the maintenance of infrastructures is a prominent theme in the work by for instance Orlikowski (1995; 2000) Furthermore, different strategies for system integration has proved to be one explanation for variation in outcome (e.g. Bygstad et al. 2010).

The study presented in this paper focuses the implementation and use of a system for documenting and managing information about employee competence, in a public healthcare organization. The underlying reasons for implementing the competence management system (CMS) was not only the possibility of improving quality of care, through increasing competence, but also to increase employee satisfaction. An organization wide system for working with competence was supposed to create structure and alignment, and ensure that all staff had the competence necessary for their role. Through enabling a model describing gaps and visualizing increased competence, the system was envisioned to act as a support for continuous individual competence development. Through this, the organization wanted to increase the perceived job satisfaction. Employees were expected to be more motivated and stay with the employer for a longer period. In the perspective taken in our analysis, the system includes functionality provided by both humans and technical systems, the socio-technical system. Systems for documenting and managing competence information have been implemented widely in most sectors. However, there is a lack of research focusing the adoption and use of such systems in general and in particular within the public sector.

A CMS, the term used in this paper, could be understood as a subgroup of systems concerning human resource management in organizations. A broader abbreviation for such systems, often found in related research are HRIS (human resource information system) or HRMS (human resource management systems). Even though HRISs have been in use in organizations since the 1960s (Ball, 2001), the research on these systems is still underdeveloped (Poutanen and Puhakka, 2010). In particular, there is a lack of studies on the adoption and use of HRIS, in favor of research focusing on organizational impacts including conditions for successful usage (Troshani, Jerram and Hill, 2011). In practice the HRIS support can take many forms: *"... a small spreadsheet-based employee file in a small business, or it can take the form as part of a multi-million dollar enterprise resource planning (ERP) system..."* (Dulebohn and Johnson, 2012, p. 71). So, there are a wide variety of systems utilized in different organizations and processes, and these systems are not necessarily more refined and costly in larger organizations. HRIS research is claimed to be still in its infancy (Poutanen and Puhakka, 2010), and Troshani, Jerram and Hill (2011) argue that there is a lack of research on the adoption and use within the field.

In this paper we explore: (i) What role does a CMS play in the local work practice of a public healthcare organization? And (ii) how is CMS use understood and framed by the middle managers of the organization? Our analysis draws on socio-technical theory, and discusses how homogeneity in structures at the same time allows for diverse variation in the local adaptations of the system. We show how contradictory perspectives of the system's purpose and use is present in the organization, and surprisingly unproblematic as allowing both high level of harmonization as well as high level of social and local variation. The paper is based on data collected in a public healthcare organization. We studied the organization during one year, focusing on their implementation of a competence development system. The system intended to create more structured human relation processes with regard to how staff competencies were managed.

The remainder of this paper is organized as follows: firstly, we describe related research on the role of IS in human resource management, of which competence management is a part. In this section sociomateriality as an analytic lens for this class of systems are explained. Following this we describe the

data collection, analytic approach as well as the particular system in use in our case. After this we present the results with analysis, organized in four themes of local variation. Finally, we discuss the findings as well as present a conclusion.

2 The Role of Information systems in Human Resource and Competence Management

Systems for documenting, visualizing and managing information concerning employee competencies are becoming increasingly utilized in a wide variety of organizations (Ball, 2001; Bennour & Crestani, 2007; Dery, Grant & Wiblen 2009). Broadly these systems follow the development of human resource management processes in contemporary organizations (Poutanen & Puhakka, 2010). The encompassing term for these systems, supporting human relation (HR) processes is human resource information systems (HRIS). However, research on system support for HR is also found in studies of more dedicated systems for competence related processes, such as competence management systems (CMS) (Lindgren, Henfridsson & Schultze, 2004), electronic human resource management (e-HRM) focusing on net-based HR management support (Strohmeier, 2009), and as a module in, or part of enterprise resource planning (ERP) systems (Baskerville, Pawlowski and McLean, 2000).

Personnel management was one of the first areas where potential for office automation was identified, supporting payroll and record holding (Ball, 2001). The expectations of benefits from HRISs are both administrative and strategic, and potentially support a wide range of processes. A HRIS maintains information on recruitment, applicant qualifications, job specifications, hiring procedures, organizational structures, professional development, training costs, performance evaluations, workforce diversity, and employee attrition (Lippert and Swiercz, 2005, p. 341). With the introduction of personal computers in the workplace, potential support was refined and the interest in staff competence increased (e.g. Hustad and Munkvold, 2005), and HRIS extended to support a wide range of HR-related activities.

As HR-management is developing, and with that the support for HR, there is also a problem of shifting definitions of HRIS. Let us provide an example to how this is confusing when identifying related research. As Dulebohn & Johnson (2012) argues, desktop software such as spreadsheets are used to support HR management. In Balls (2001) study the survey is based on input from specialized HRIS vendors, a method that potentially excludes of-the-shelf office administration support. There is also a smaller array of terms concerning competence management activities such as “talent management” encompassing employee skills and knowledge (Wiblen, Grant and Dery, 2010), emphasizing the relation to systems for knowledge management. Studies of HRIS implementation have focused on aspects of trust (Lippert and Swiercz, 2005), consequences for practice (Strohmeier, 2009), HRIS impact on the HR function (Dery, Grant and Wiblen, 2009), and comparative studies between traditional and online system support (Payne et al., 2009). HRISs are driven by both organizational and technological generative mechanisms (Poutanen and Puhakka, 2010). Consequently, to understand the use and implementation it is necessary to address both organizational and technological aspects of the use, and employ theory that can embrace both. In such a perspective meanings attached to competence and competence management develops through iterated action by different users of the information, thus rendering different and potentially conflicting perspectives (Wiblen, Grant and Dery, 2010). Grant et al. (2009) point to how research on HRIS indicate different impacts across organizations, while there is few attempts made to explain this variation.

A brief summary of existing research on systems supporting human resource and competence management can conclude that most scholars agree upon the fact that CMSs have failed to deliver in accordance with its expectations (Butler and Murphy, 2007; Lindgren, Henfridsson and Schultze, 2004). This body of literature derives the potential benefits of an CMS from a managerial and system-centric perspective (Wöls, Kirchpal and Ley, 2003; Schmidt and Kunzmann, 2006) where support of, what is described as, a firm’s core competencies promises to potentially elevate competitive advantage (Lawler and Ledford, 1992; Baladi, 1999) and holds promises of the emergence of prosperous communities

of knowing (Hustad and Munkvold, 2005). The explanations to the shortcomings of CMSs in practice ranges from problems relating to how they should be evaluated (Hellström and Jacob, 2003), to failure in integrating and aligning individual job competencies and organizational core competencies (Lindgren, Henfridsson and Schultze, 2004) or the lack of an underlying ontology that could support the utilization of competence information (Draganidis, Chamopoulou and Mentzas, 2006).

From the above discussion on systems for managing human resources and competence we recognize a focus on a more normative and techno-centric perspective (as described by Alavi & Leidner, 2001). Our interest in focusing on the use of information systems in managing and analyzing competence relates to an ongoing discussion in information systems research pointing to the benefits of studying the details and particulars of social or organizational practice and action situated within practice. The privilege of human agency in local practices over social and organizational structures as well as over standardized technological functionality needs to be further explored. We base our analysis on socio-technical perspective of system use. In such a perspective, tools (such as HRIS and CMS) are part of what constitutes a social practice. Related to learning, Lave (1998) advocates a practice lens for understanding how settings for action provide resources for cognition. Building on this, Orlikowski (2000) presents a formulation of technology-in-practice: *"That is, a technology-in-practice serves essentially as a "behavioral and interpretive template" (Barley, 1988, p. 49) for people's situated use of the technology.* She continues: *"... it may be termed a technology-in-practice, to refer to the specific structure routinely enacted as we use the specific machine, technique, appliance, device, or gadget in recurrent ways in our everyday situated activities." (ibid., p.408]*.
In this perspective, the focal questions are: What characterizes these tools? How are they employed in practice? What knowledge is necessary in order to be able to use them? How do they need to be negotiated and adapted in the day-to-day practice? This transformation work is difficult to foresee. The success, or failure, of technology-enabled development would then be dependent on a combination of technical and social aspects. "*As technical and social influences interact, a diversity of consequences may be realized – intended transformations may occur, older forms may persist, or unanticipated combinations of new and old practices may emerge"* (Robey & Sahay, 1996, p. 94).

3 Case and Method

The data is collected within a large public healthcare organization. The CMS in focus will from here be termed CompMod. The overall research approach was primarily organized as ethnographical studies, where semi-structured interviews and group interviews, participant observations and document analysis provided the empirical data (Atkin & Hammersley, 2007). We have identified a number of activities where such information is added, used and manipulated and have sought to collect empirical data on such situations.

3.1 Data selection and collection

Data were collected through interviews, observations and audio recordings of professional appraisals (PA), observations and audio recordings of meetings and analysis of documents collected. We were given access to all formal decisions, documents as well as presentations regarding the competence work within the organization. This included both the documents and presentations used currently in the organization but also previous ones, providing an image of how the purpose and formulations around the introduction of the system developed over time within the organization. We interviewed the project leader of the competence project three times, the first time in the beginning of our study, one half-way and one at the end of the study (each interview took 1-2 hours). All interviews were audio recorded.

The HR work practice was the primary focus of our study, and the contact point between the system and the employee were mainly at the division level, administered by division managers. We have interviewed division managers as they had implemented the new system in their division of the organi-

zation and that they had been actively involved in using the system in some way. We conducted 5 interviews with managers at the division level (1-2 hours). The interviews with the division managers were guided by a template that besides background information focused on their individual history with the CMS, how the CMS were implemented in their organization, as well as a section of questions focusing on how material and social parts of the system related in actual use. A section of questions concerning their perceived success, and attitude towards the CMS ended the interviews. The activity chosen for the purpose of seeing the system in actual use was PAs with manager and employee. Seven (7) PAs with certified nursing assistants were observed. One researcher (the same in all PAs) were present and made observations as well as audio recorded all PAs. Each PA lasted 30-60 minutes. The field notes were transcribed after the PAs. The interviews and PAs were audio recorded and later transcribed using the transcription software *Inqscribe*. The interviews and PAs were transcribed verbatim, excluding non-verbal cues.

3.2 Data analysis

All transcripts were read through by two of the team's researchers individually. Each researcher marked sections of relevance to the research aims and the theoretical interests, i.e. focusing on local adaptation practices, and variations in use, as well as how functionality were carried by social or material parts of the system, and where the CMS were either mentioned directly or made implicitly relevant in the conversation, the latter was particularly common in the PAs. The passages were collected and the two researchers grouped these thematically. The grouping was then examined by a third researcher in the team in order to check for ambiguity. The grouping was not exclusive, meaning that passages that could fit into several themes could be included in more than one theme. The excerpts brought into this paper represent a smaller portion of these themes. Throughout the process (1 year), three meetings have been held with the project manager of the CompMod project and accompanying managers from the organization to discuss preliminary findings. During these meetings the organization had the possibility to comment on the observations made, as well as our interpretations of these.

3.3 The competence system under study

The purpose of CompMod is to ensure provision of competence and create better opportunities for employees to develop. Broadly CompMod holds information about employee competence, competence descriptions of different roles, as well as assignments connected to specific competencies.

In general a CMS typically also include data on education, training, development and documents related to development discussions (Poutanen & Puhakka, 2010). As the system is used in and designed by a politically driven organization, the formulation of what competence is necessary for different roles not only relates to the actual demands in the job, but also incorporates the visions and goals of the political management. This is both on a municipal, regional and national level. The competence profiles of the different professional roles draw extensively on what is taught in basic training for these professions. In the case of healthcare education, this is also influenced by political values in play. The necessary profile of a healthcare professional always is a balance between what is necessary to conduct everyday work, political visions and legal demands.

CompMod has one view for the different organizational parts (sector, unit) where the local competence demands can be marked. It is also possible to mark if the organization needs basic, extended or expert level competence within the different competence areas. This is accompanied with an individual view where each employee can enter their competences and this can then be compared to the needs of their work unit. The three different levels of competence is in the individual view basically represented as a career ladder, where Base level competence is expected of employees who have passed their basic training and received introduction to the organization and at the local workplace. Extended competence means that the employee, in addition to basic education, have professional experience and

in some cases training in the area. Expert level competence requires that the employee also have a supplementary formal education.

The CompMod distinguishes between employee competence and if the employee has an assignment within that competence area. This means that several employees might have competence within a specific area, while only one or a few have assignments within the area. However, it is the assignment that renders the competence at extended and expert levels relevant. The table below describes the levels of competence in CompMod and the education, experience and assignments as part of each level.

Base level competence	**Extended competence**	**Expert competence**
Education: Formal education and introduction to the profession, at the local and in the central organization.	**Education:** Formal education as well as specific training for the assignment.	**Education:** Formal education and specialization through further education, vocational training or specialist training.
Experience: None / limited experience (previous experience is helpful but not necessary)	**Experience:** Some experience (duties require that the employee has previous experience in the work area / function)	**Experience:** Professional experience (tasks requiring expertise across multiple work areas / features or broad and / or deep experience in a work area / function)
Assignment: For example patient liaison, nurse in charge of care.	**Assignment:** For example unit representative/resource in one or more competence areas, mentor new staff, be in charge of quality and development of the unit	**Assignment:** For example specialist in the administration/resource in one or more areas of competence, as educators, mentor, quality developer and development work on the unit or in the administration

Table 1. Competence levels as part of the structure in the CompMod.

CompMod is intended to support managers in ensuring that all employees have base level competence within its range. Managers can also use the model to more systematically plan competence development, based on the unit's needs. Although CompMod has an important role to ensure employees' base level competence, it can also support managers in identifying employees with extended and expert competence. In the areas where managers identified that the work unit need extended competence, relevant assignments should be formulated and assigned to an employee. These extended assignments may for example be that employees have additional responsibilities in a specific work area. Extended assignments may vary from responsibility for a specific task, to a larger mandate for development of the competence area.

The managers also define the needs for the level of expertise in each unit. There are only a few employees within the organization that have expert level assignments, since this requires that the employees have some form of specialization within the competence area. Besides this competence, the central organization has to have expressed a need for expertise in the specific area of work. CompMod includes the development of expert networks throughout the organization. These networks aim to lift competence issues across the organization, monitor research and enhance competence in local units.

The system as well as the competence templates was developed by the healthcare organization. The team working with the design drew on experiences from other municipalities, using their templates as blueprints. The design focused on the development of the descriptions of competence for the professional roles, and the process of how to understand this as part of a career development effort, rather than on the development of how the system would be implemented and used in practice. As units were

introduced to the templates for each profession, they could provide feedback on structure as well as content.

The technical setup is very basic. A number of templates are shared using Lotus Notes. Here managers can find Microsoft Excel templates for each profession to use when identifying their units needs. There are also templates to use when assessing the individual staff member. There is no functionality for making aggregations of the staffs' competence. However, some managers have themselves developed different solutions for this, paper based or in Microsoft Excel. Approved assignments are also shared as templates and there is also an area for assignments in development. The system provides no possibilities for managers to search or to render visualizations of the competence data, apart from those available in Microsoft Excel.

4 Results and analysis

The results are organized in four themes, each focusing on aspects of variation with regard to the CompMod.

- Variations in how the purpose of CompMod is described
- Variations in the perceived benefits of CompMod
- Variations in the use of CompMod
- Variations in the descriptions of the relation between competence in practice and competence in CompMod

In quotes from the interviews, managers is marked with M1, M2, etc. and the interviewer I. In quotes from the PAs the manager is marked M and the employees E1, E2, etc. The selected quotes are chosen to represent the width and richness of the variation in purpose, perceptions, use and relation between competence in practice and in the descriptions in the system.

4.1 The purpose of CompMod

The idea with CompMod was discussed as a way of structuring and aligning the competence management work within the whole organization.

> *M 3: ... it was really important for us back then to explain the competence model as a whole. That you [the organization] attempt to structure this.*

Managers also made comparisons with previous ways of working, e.g. by using an unstructured problematic past as a backdrop to present better ways of working.

> *M 1: And that everyone uses the same tool so that... because if I come to another part of the organization then it is... then I know that this is the model we use, it is not like... before, it was like everyone were using their own, by themselves. So there are enormous advantages in having these structures.*

Managers talk positively about the idea of CompMod and also of the main purpose with introducing it. In presentations of CompMod the focus is on how ways of dealing with staff and competence will change, but there is no introduction to how the system is to be put to use in the managers everyday work. At the meetings we attended, different managers, which had started to use the system, presented narratives of how they put it to use. Since the same technical system is intended to support quite different social practices it is not surprising that we see variations in the emerging local use practice. However, the implementation of a common technical system is providing a wide variety of benefits to the local units, with only limited sharing of developed material resources.

4.2 Variations in the perceived benefits of CompMod

Besides the main goal of creating organization-wide structure the managers also described a number of parallel, perceived benefits of the system. The creation of structure and alignment is described as connected to several positive outcomes.

One of the benefits seen by the managers is that CompMod makes dealing with, and coordinating staff development easier and more visible.

> *M1: It is both about competence provision, and all that, but also, to make use of and develop it [competence]. And that was also about being an attractive employer where you could develop within your work role. To find career paths also. That was the main purpose and the background they described.*

The use was also described as allowing for coordination between the different units. This was accomplished either by a small group of managers self-organizing the coordination or initiated by a superior manager. Specialized, expert staff could then be used as a shared resource among several units. However, CompMod provided no technical support for this, it was rather arranged in meetings among the different managers. Still it was suggested that the use of CompMod made the qualifications of the specialized staff visible to the managers individually, making it possible for them to suggest sharing the resource. Units also created networks of staff with similar competences, which could drive development work within their competence area. This was one of the early proposed benefits from the central project management. On the other hand, we saw very few of these networks in actual operation. The documentation of staff training needs was also used as a resource in attempts to coordinate educational efforts.

> *M 2: Yes I think that, or I experienced that it was positively received and that there would be a structure for this [competence]. And to me it became much more obvious: here is the competence model, where we started to make a competence specification, what do the organization need.*

The identification of competence development needs in the local unit was a perceived benefit. CompMod provided a structure for going through all the competences needed to perform work for the different professions, and how these competences related to the particular needs of the managers particular unit. Managers described this as connected to being increasingly prepared for changed external demands. However, when trying to inquire how this was accomplished in practice we could not get any concrete descriptions of this.

Managers also reported on the benefits of the competence descriptions for recruiting new staff. At the same time recruitment in the organization was heavily dependent temporary staff, with lower competence requirements, being given permanent employment. In particular this was the case with certified assistant nurses, which by far is the largest group of staff.

4.3 Variations in the use of the CMS

As described before, CompMod has a pre-defined structure that had been on referral within the organization, before its implementation. However, very limited adaptations were made at this time. On the operations level, inputs to adapting the model were left to the unit managers. Specific needs and adjustments could be done locally depending on the characteristics of each unit.

> *I: these criteria. Were you involved in the process of defining them [the relevant competences]?*
>
> *M1: No, the municipality did that centrally... and I am not really sure, probably it was... it was probably the operations manager back then who was the one who determined those. Then you are able to make your own adjustments at your own unit, if there is something specific that you have in your operation.*
>
> *I: have you done that?*

> *M1: I have not really had the need to. It is more if you... I know a colleague that in their business. [...]. There you need specific competence. So there you might have something to add.*

The space for modifying the model to each unit was rarely utilized. In our data we have no reports on local adaptations. Rather the operation managers decided to agree on certain definitions to be applied in certain situations of practice. As we will show later, adjustments of the CompMod were accomplished in the actual use situations.

The most frequent use of the competence descriptions for each profession reported on was in professional appraisal (PA). In discussions of this use, it was unclear if the PAs mainly were an opportunity to fill out the data in CompMod or if CompMod was mainly a support in conducting the PAs. It might even not be as clear-cut as this.

CompMod could also be a support in salary negotiations.

> *M3: mmm, now but that becomes quite obvious, since you, really what is it that is part of base competence… well you are supposed to be a contact person, have delegation, have an education, or long experience, and all those things. And you maybe cannot expect to get the same [salary]… you know, it becomes so obvious when you explain […] And then you can't, to me it is pretty obvious, you know it becomes so clear that you shouldn't even have to question why you get three hundred why you get 600…*

In this way CompMod supports the manager in motivating differences in rises of salary. In the discussions the managers can move the focus from themselves as making the decision and use CompMod as a proxy for the central organization. Other managers might consider the competencies as a basic prerequisite, guiding competence development, and not staff salaries.

> *M: And I would like to add that this has nothing to do with your salary. This is your competence plan. When everyone… when I have everyone I will sit down and compile this and make an excel sheet of who I have, what do they want to learn about. And then when I see a course that sounds like, for example the Lotus Notes course right now, then I had those that had marked training in Lotus Notes, then I had those on a list and just signed them up. (from PA)*

Managers see the CompMod in general, and the results from using it in PAs in particular, as a resource in the work of assessing need for staff training.

> *M4: A lot of the time you don't really remember what you talked about, me in particular. If I've had 45 appraisals I can't remember the development areas for all those 45. So what I really liked was that, since we had the list, it was a pretty limited number of areas that the staff could ask for training in. Otherwise when you are in PAs, like of you and I would be sitting in one now, and I would ask 'what do you want to develop yourself in?' I could get million different types of answers, but now it is a little more controlled.*

So in this way the variety of different training areas are limited by using CompMod. This is interesting since when discussing what constitutes Base level competence, this is argued to be highly dependent on basic formal education. Expansion of what is determined as relevant competence then is dependent on how formal education is developed, rather than on new developments in the actual practice.

Some of the managers deal with their needs of increased technical support for aggregation and different visualizations by designing their own additional functionality of the CompMod:

> *M4: … and that [having a limited list of competence areas] also led to me making an excel document where I wrote down all persons development areas.*

Even though these are quite low-fi add-ons, managers talk about them as part of their local technical system that support decision-making in questions regarding competence.

> *M5: and I can add that we also have a… Lisa have made a database here where all our staff have access, including us managers, where you can find all the planning tools. It is all there, accessible to everyone, and you can log in and look 'well who have this and that assignment, with for example specialist competence within dementia as a nurse.*

Some of these local variations in the system are known by the central administration and some are not. As we have shown above there are variations in the use situations but also variations in the technical setup of the system. However, local adaptations are never described as dealing with a problem with the CompMod, instead managers are quite content with their local designs. Designing additional functionality locally also requires local competence in database development or at least some extended competence in using spreadsheet software.

4.4 Variations in the descriptions of the relation between competence in practice and competence in CompMod

How competence is defined and assessed is also subject to variation. Firstly, competence is understood as related to the employee having undergone formal education within a field or in a profession.

> *M2: Well it has to be that way, but we thought that occupational therapist, physiotherapist, nurse, then you have a formal education, so then base level is that level that the education provides for you to become… a nurse, occupational therapist, physiotherapist. On the other hand, and I am not working with if you say assistant nurses, or assisted living, then it has to be something else… Then it will be corresponding to that education, because that is how I make the connection. And I think that this was the idea in the model.*

To be assessed as competent within an area, in some cases requires having professional experience related to the description and sometimes also formal education.

> *M: Pain and ostomy*
>
> *E5: Ostomy is also extended, because I have worked with that for several years, since we had one here who had that.*
>
> *(from PA)*

It can also relate to personal experience related to the competence field.

> *E7: I have it on a personal level too. This with substance abuse, a friend that has been an addict, or several... that drains you. So you know, you learn from… as you say […] That is life you know.*
>
> *M: And that is almost the best way to gain knowledge.*
>
> *(from PA)*

Such a performance-focused perspective on competence, rather than one based on formal education, also were exemplified in the PAs, where emphasis was put on how and if a particular employee had executed certain tasks successfully.

Different competences are valued differently. We have observed how this can be dependent on how frequently the competence is needed in work, i.e. how often a task that depends on a particular competence occurs, as well as on the managers' view of the healthcare practice. Most likely there is a larger variation in factors influencing this. One consequence for the work of entering competence information into CompMod is that managers tend to put in less work discussing competence areas that they do not value highly. In some cases Base level competence can mean just being aware of something, and not relating this to a particular performance in work.

> *M: OK, lets se MAS and MAR guidelines?*
>
> *E7: Excuse me?*
>
> *M: MAS and MAR guidelines.*
>
> *E7: there it is. You know it's a little, you know you forget, and that is how it is.*
>
> *M: but you are not supposed to know them by heart. It is more about knowing what you can find there. It is mostly about, if you are in that situation, you know that the knowledge is there, and where you can find it. But I think that we need to go through this with everyone. Because*

we no longer have things in binders, since the content is changed all the time. It is on the intranet.

(from PA)

Managers vary in understanding competence as either absolute, discussing what the coworker should know to have the competence, or alternatively understanding competence in relation to co-workers. Below is an example of assessing base level competence in relation to the rest of the staff.

M: MAS and MAR guidelines, do you know what that is?

E1: I would recognize them.

M: But do you know what you would find in them, what they say?

E1: no

M: but that you share with all the others. Many know what it is but can't say what's in them.

(from PA)

Competence can also be understood relative to your professional status.

I: So if you have a unit that is quite specialized within an area, then it can be the case that what would be extended competence in another unit might be base level competence in that unit?

M2: Exactly! Exactly! Because it is similar to what we discussed. Yes, now I remembered another difficulty: They have decided to hire a nurse with specialization in psychiatry. You know that is a specialist. Where would that person's competence be placed? It is not an extended assignment or anything. That person is hired because of that competence.

I: so from the nurse perspective it is base level competence, but compared to the others it is expert competence?

M2: that is one way to put it. Because the unit has decided that you want that competence in the base level. Concerning these things we have made many logical mistakes.

Since the local part of the system adjusts depending on the needs of the unit, as well as to the professional status of the co-worker a competence field (in this case psychiatry) would mean very different things. The meaning of one competence field in CompMod could then only be understood in relation to the specific local unit where the information was entered.

5 Discussion

This paper has addressed the role of standardization by reporting on a study of the use of a competence management system in a public healthcare organization. Even though systems for documenting and managing competence information have been implemented widely in most sectors, the public sector is of special interest as competence and employee development is framed in a political as well as legislative context. We hav found that competence profiles can never be fully defined by practice alone. Instead, they always have to be balanced with political visions, policies, laws, etc. The initiative under study in this paper was driven by a political mission to make this an attractive workplace, as well as increase the quality of the delivered healthcare. This can also be placed in a context where life-long learning has started to become a topic in public debate.

Furthermore, municipalities and organizations within the public sector are still facing general challenges related to information systems and what model to follow for their choice of technology. When public administration invest in information systems much of its efforts remain on the implementation phase, where usually a procured standardized technology is to be fitted and used into their processes of communal services. This appropriation process needs to be considered in terms of the actual context in which the public organizations exist.

Even though we identified a gap between the described benefits of the CMS and the actual use in practice, the studied participants never describe this gap as problematic. The practice allows for this discrepancy between purpose and use and we have not identified any actual problems with this distance. One of the reasons for this might be the very low level of aggregation that the system supports. If the organization in a more regulated manner would start to collect, compare and make decisions drawn from the competence information in the CompMod, variation locally would be a problem. Attempts to align the local use of the system would limit the unit managers possibilities to adapt the model to their local needs and preferences in the same time it would allow for a number of central needs. The need for adaptation is primarily discovered in the use of the CompMod. However, this does not seem to render a need for adapting it. Instead managers handle the different ways of defining, and valuing competence information in relation to the unit's actual needs, in the use situations. This allows for a large amount of variation, even though they still experience benefits from using the same system.

Other studies discuss the balance between sensitiveness to local contexts and standardization across local practices, where the boundary between the global and the local infrastructures are conceptualized (Gasparas & Monteiro, 2009; Rolland & Monteiro, 2002). Herein, standardization involves negotiations between the global and the local (Timmerman & Berg, 1997; 2003), and the balance between the local variation and the global standardization often are misconstrued as an issue of control. The local variation is seen as a way to regain control, to work against or "around" the top-down and enforced structuring of information systems (Rolland & Monteiro, 2002). Consequently, it has been argued that the challenge of managing standardization requires much effort. This is especially prominent in settings where work is dynamic and unpredictable (Meiers, 2012) and in settings where there is variation in local needs (Wette, 2010).

The fact that the same technical system is used in quite different ways in similar work settings is not very surprising (see for example Robey and Sahay, 1996). However, it is interesting how the variations in use is not seen as problematic, and might even be considered one of the factors for the systems perceived success. The "same" system are given different purposes and values depending not only on the social practice in which they are imbricated, but they can also be ascribed different functionality in variation within those same social systems. The systems functionality is shifting while it's functional properties stay the same. So while the system functionality remains stable, the local use does vary. Our data illustrates how the technical system simultaneously supports intended as well as unintended use. An attempt to allocate more functionality held by the technical parts of the system, rather than held by social parts, restricts variation in use. This could potentially create a foundation for more standardized work processes, but also limit the possibilities for unforeseen positive variations in use. Such a process would then decrease the perceived value of the system to the users.

6 Conclusion

Our findings show that the CompMod allows for both local variations of system use and at the same time represent an organization-wide illusion of structure. The CompMod system, in terms of its structure and functionality, is remarkably stable, and understood in the organization as a guarantor for standarized work and globally shared views of how competencies should be defined, assessed and developed. At the same time, we see that locally extended use of the system allows for a great deal of adaptation and contextualization. In that sense, the globally shared system functionality provides an illusion of structure and harmonization throughout the entire organization, and even though this perception of shared structure to some extent is an illusion, it does not seem to be problematic for the organization in terms of working systematically with the competencies of the staff.

As such, we think our case illustrates how high level of standardization and unity benignly can coexist with a high level of social variation in use. In design and implementation of systems for competence management, we have found that efforts of standardization should always be balanced with a possibility for local variation. Our findings also indicate that global standardization and local adapta-

tion are not in conflict, if allocation of functionality between the social and the technical is adapted to the needs of the organization.

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