Learning to design in public sector organisations: A critique towards effectiveness of design integration

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Abstract

There has been a surge the last decade in the public sector to strive for transformation processes driven by design, to integrate design in the organisations and develop design capability and design culture. We draw on experiences from a range of projects, that are summarized in the form of exemplars. As analytic lenses, we use two constructivist learning theories, situated learning and socio-cultural learning, with associated concepts. Through these lenses we can show how the learning processes in the projects we have followed is not enough to drive integration of design or develop design capability. We can also show that the role of management practices is central to the effect of these learning processes. We can also show potential consequences of relying on individual's knowledge in consecutive learning processes. We conclude that, from a situated and socio-cultural perspective, there are important challenges for organisations that wants to develop their design culture, and challenges for management to take on, to achieve the integration of design and an increased design capability.

KEYWORDS: design capability, learning theory, situated learning, socio-cultural, experiential learning, communities of practice, design culture

Introduction

The interest to integrate design in public organizations, to develop design culture and transfer design knowledge and practice is blooming. Over the years, we have participated and followed several cases where organizations in different ways have started to develop their design capability (Wetter Edman & Malmberg, 2016, 2018; Malmberg, 2017; Malmberg & Holmlid, 2014, 2015; Lantz & Holmlid, 2010; Johannesson & Holmlid, 2013; Holmlid, 2008a, 2009, 2015). However, a reoccurring challenge we have seen in many of the cases, as well as encountered in dialogues about other similar projects, is the difficulty to disseminate the practice of working with design within the organization, or to develop the design culture (Julier, 2006). Although individuals in an organization who have taken part in

initiatives to integrate or learn design, has experienced design as a valuable contribution to the organizations knowledgebase and toolbox, many of these initiatives end up as one-off projects (Wetter Edman & Malmberg, 2016; Malmberg 2017) or the design knowledge is integrated but only within the group the individuals belong to (Malmberg, 2017; Malmberg & Holmlid, 2015). The same seem to be true for design projects that does not have the intent to build design capabilities (Yu & Sangiorgi, 2017)

Our studies have taken a learning perspective, earlier based in organisational learning and dynamic capabilities. Design culture, as a fairly recent concept, can be interpreted in several manners (Julier, 2006), of which one refers to the designer as an individual and him/her being a carrier of design culture (Manzini, 2016), and another refers to design culture as that which makes design as an expert, as well as diffused practice, valued and possible within an organisation (Julier, 2006). Some studies on design management are related to the latter aspect, highlighting design as being part of the operating core (Holmlid, 2008a, 2008b, 2009), as well as being an issue for management and leadership (Cooper et al., 2009). While not being the same as design culture, organisational capabilities for design seem to be closely related to some conceptions of design culture. Some studies suggest that design culture is characterized by its ability to change dominant enterprise cultures, and drive organisational change (Julier, 2006), and relates to recent work on institutional change in service design (Wetter Edman et al, 2017). In a sense that is closer connected to management and organisational learning, one way to understand how design culture works, is through dynamic capabilities and learning processes. The culture of an organisation is expressed, reflected and enacted through its structure and capabilities, and the structures and capabilities direct, engage and limit the culture.

A typical approach to integrate design has been to transfer design knowledge through design driven projects in which personnel participate and learn design methods and mindset through practice. The SPIDER project (Supporting Public Service Innovation using Design in European Region) (Swiatek, 2016), Förändra Radikalt (Radical Change) (Lindström, Fogelin, Feuk & Eriksson, 2015) and Innovationsguiden (the Innovation Guide) (innovationsguiden, n.d[1]) are examples of this approach. Another approach to integrate design has been to develop design labs within or in relation to an organization. A design lab holds design resources in the form of individuals with design knowledge and experience. The design lab collaborates with and support the organization as they explore the potential contributions of design and utilize design approaches (Malmberg, 2017). A need for collaborative platforms, increased understanding of user needs and desires, as well as the need in the organization to develop competence and leadership that enable development and innovation, are often stated as the motivations and foundation of these labs (Hillgren & Szücs Johansson, 2015). Mindlab in Denmark (Bason, 2010), the UK policy lab (Kimbell & Macdonald, 2016; Bailey, 2016) in the UK, Service Innovation Lab Kent in England, and Experio Lab in Sweden (Hillgren & Szücs Johansson, 2015) are some examples of design labs aiming to integrate design within a public sector context. Design driven projects with employees has also been set up by design labs in their efforts to integrate design (Hillgren & Szücs Johnsson, 2015).

The design driven projects are often facilitated by professional designers (see for example Swiatek, 2016 or Lindström et al., 2015) and participants can come from different organizations of different parts of an organization with a challenge that they want to work on. Through working with their challenge, the participants experience how to work with a design mindset and tools with the support of the facilitator in an action learning set up (Wetter Edman & Malmberg, 2016). A preconception in this set up is that design skills and attitude is transferable directly through practical application, but what pieces of knowledge that is transferred is rarely discussed (Wetter Edman & Malmberg, 2016; Holmlid, 2015). Little attention has been given to how knowledge transferred though projects of this

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[1] www.innovationsguiden.se viewed: 2016-11-08

character is spread, integrated and used after the design driven projects have ended (Malmberg & Wetter Edman, 2016; Malmberg & Holmlid, 2015).

The set ups has proven successful in creating an understanding for the user-centered mindset and showing participants what value the design approach can contribute but they give little support for reflection about how it can be applied further in new projects (Malmberg & Wetter Edman, 2016; Malmberg, 2017). This implies a large responsibility for the dissemination of design in the organization is left on the participating individuals, without giving them support or guidance on how to do it (Malmberg, 2017). This poses a problem as even though many participants leave the projects feeling inspired and want to spread the use of design in their organizations, they do not feel that they are able to do so in other ways than being an advocate for design (Malmberg, 2017).

In this paper, we provide a theoretical foundation to understand challenges of integrating design in organizations through a learning perspective, with relevance for development initiatives aiming for successful integration of design in an organization.

Theoretical foundation

In order to understand the focus on the individuals as learning subjects in the organisations, we will introduce two constructivist learning perspectives.

Situated cognition perspective

The theory of situated cognition (Brown et al., 1989) claims that knowing is inseparable from doing. In a situated cognition perspective knowledge is situated in activity. Situated activities are bound by physical, social and cultural contexts. A simplified way of understanding knowledge under this condition, is that knowledge is not stored and accumulated in a hypothesized "mind", but knowing is exhibited in action (see e.g. Schön, 1987).

Within this perspective, Lave and Wenger (1991), developed what is usually referred to as situated learning. Situated learning builds on the central concept of a community of practice, which often refers to a group of people sharing a profession, with a vocabulary, tools, organizing principles, norms etc. In Lave & Wenger (1991) legitimation and participation are central to being part of a community of practice, and becoming a member of a community of practice is initiated through Legitimate Peripheral Participation, LPP. Typically, this means that a learner participates in the simpler tasks of the community, and in tasks that are driving essential learning as well as not putting successful outcomes at risk. In situated learning, it is viewed as important that learning happens in the context where the learned outcome is meaningful, and where invariants and variants of situated activities can be made part of learning (Barab et al., 1999).

The situated learning perspective also assumes a view of an organisation as consisting of individuals being part of one or more communities of practice, engaging actively in situated activates to achieve outcomes and learning. As a development of communities of practice, Wenger (1998), has suggested that the structure of a community of practice can be described with three interrelated concepts, mutual engagement, joint enterprise, and shared repertoire. Individuals in an organisation thus can participate fully and peripherally in different communities of practice.

Socio-cultural perspective

In a socio-cultural perspective on learning, Vygotsky (1980) has played a central role. He developed the concept Zone of Proximal Development, ZPD, as a means to understand how learners develop knowledge through participation in learning activities. The Zone of Proximal Development is defined as those things that a learner cannot do by him/herself, but can do with the assistance or guidance of a more capable peer. By doing these things

under guidance, the learner develops the necessary skills and knowledge to achieve those things by him/herself later. In pedagogics, this assistance is sometimes referred to as scaffolding (Wood et al., 1976).

Given a more capable peer, and some structured learning process, there is assumed a set of important differences. The 1st difference concerns what the learner can do, and the goal of what the learner should be able to do after learning. That is, it is assumed that the learner cannot do the things that are being learned. The 2nd is the difference between the learner and the more capable peer in terms of what they can do. That is, whether the more capable peer is more capable than the learners. The 3rd concerns the difference between what the more capable peer can do and what the learner should be able to do after learning. That is, whether the more capable peer is more capable within those things that is going to be learned. The 4th difference concerns what scaffolding the more capable peer can create in relationship to what the learner should be able to do after learning. That is, does the more capable peer command the area of development in such a way that s/he can act as a guide or instructor for learners to pass through the ZPD.

Method

During the last ten years we have participated in numerous projects where public sector organisations have engaged themselves in, or wanted to engage in, introducing or integrating design into their development work. The range of organisations encompasses public authorities, regional organisations, as well as municipal organisations. During the last five years the number of projects and initiatives have surged, and the main approach of the organisations has been to use and apply design in specific development projects.

We have performed interviews, made participant observations, and studied outcomes and documents. In all the projects we rely on for this study, designers, service providers, service developers, stakeholders, customers and users have been involved in the projects at least under informed consent.

Illustrative case descriptions, exemplars, will be used as the basis for the analysis. Using exemplars resonates methodologically with what is suggested in Holmlid & Blomkvist (2014), where a service archetype is used as a prosthetic tool for reasoning, instead of a specific empirical case. In this specific study, we have identified archetypical situations and events based on reoccurrence across the projects, and made the exemplar descriptions based on these archetypical situations.

Exemplars

From the projects we have been part of and followed over the last ten years, we have identified four archetypical situations that describes most of the projects:
1) design training of individuals,
2) design training of groups,
3) design training with professional designer as facilitator, and
4) design training with non-designer as facilitator.

The projects we have been part of and followed have mainly focused on training the design-novice individuals in methods for user-centred design, a user-centred mindset and creating an awareness of how design can contribute value with its user-centred approach (Malmberg, 2017; Malmberg & Holmlid, 2014; Wetter Edman & Malmberg, 2016, Wetter Edman & Malmberg, 2018). Many projects aiming to achieve integration of design by training design-novice individuals also use some variation of an experiential learning set up where process, methods and mindset is trained through practice with the support of a facilitator (Malmberg, 2017).

1. **Individual design training**

The first exemplar is characterized by a set up where design-novice individuals from different organizations or different parts of an organization, are trained in the use of design methods within a given design-process framework. The training is individual in the sense that the participants represent, as individuals, their organization or unit. In the teams formed for training purposes the team-members are a mix from different organizations or different parts of an organization. This implies that members within a team do not always know each other from before or share a frame of reference related to their everyday practice. The team members might also have different prior knowledge and perspectives coming into the design training. An effect of this set up is that once the participants are back in their everyday practice they will each be the sole bearer of the methods and mindset that have been taught through the training.

2. **Group design training**

This exemplar is characterized by that it is groups rather than individuals that take part in the training. There may be a single unit from an organization or several units from different organizations taking part of the training, but they do so as different groups defined by the individual participants shared everyday practice. For example, the personnel from the community health centre make up one team and the personnel from the local library make up another team. This implies that the members of each team know each other from before and share a frame of reference, prior knowledge and perspective unlike in the prior described exemplar. With this set up there are also several individuals that will be bearers of the design methods and mindset once the groups are back in their everyday practice.

3. **Design training with an expert designer as facilitator**

What characterizes the third exemplar is that the design training is facilitated by what Manzini & Coad (2015) would call an expert designer. Someone who have a design education or has built up an extensive design experience through working with design and designers. A professional designer has an understanding of both the methods of design and the mindset and methodology behind them. This understanding supports the decision of what methods and tools that are suitable in a project and allows the designer to make adjustments to methods depending on the characteristics of the project. In such a training set-up the design novice participants are guided through the design process and the training by someone that is at the core of the community of practice that they are themselves entering. Someone who could explain the methodology behind methods and tools that are practiced in the training. Although, as mentioned, the training initiatives usually focus on the practice of methods and rarely go into the methodology.

4. **Design training with non-designer as facilitator.**

The final exemplar we have seen is a set up where the role of being facilitator and trainer is taken on by someone who is not a trained expert designer. The facilitator in these cases is typically someone who has taken part in an earlier design project and experienced the value of the design approach and wants to disseminate it further. The facilitator is a more capable peer than the individuals participating in the training program but is not at the core of the design community of practice but may share the participants' community of practice.

	Group design training	Individual design training
Design training with an expert designer as facilitator		
Design training with non-designer as facilitator		

A small summary on exemplars

The exemplars highlight certain aspects of the actual projects, however, many projects, albeit being archetypically recognized in one of the categories, may also exhibit aspects from the other categories.

Going beyond the categories suggested here, the following generic aspects may be relevant to use in future analyses:

- Who is performing the training (e.g. what is this person's education, what practice is the person part of, what role does s/he have in the organisation, what direct and indirect relationship/s does s/he have to the participants)
- What is the framing, content and topic/s of the training program (e.g. mindset, methods, tools, application area, rationale for methods)
- Who is participating in the training program (e.g. what is this person's education, what practice is the person part of, what role does s/he have in the organisation, what direct and indirect relationship does s/he have to others participating in training)
- Where the participants come from (e.g. what part of the organisation, if they come from different, similar or same organisation/unit as other participants)
- To where they go back (e.g. what part of the organisation, if they go back to different, similar or same organisation/unit as other participants, if they go back to the same, similar or other organisation/unit)

This is not meant to be an exhaustive list of aspects, we expect that other aspects are present in the projects we have been following, and that other projects may add to such a list.

Discussion and analysis

A developed understanding of the individual perspective will be grounded in the exemplars based on the theoretical perspectives introduced. This will allow us to take seriously that it is individual learners that often are put center stage.

A view from the situated cognition perspective

The situated cognition perspective is prevalent in all four exemplars. Several of the initiatives are setup so the learners become *legitimate peripheral participants* in design based community of practice during a development project. By working inside a defined process, under the auspice and coaching of a trained designer, using described design techniques, learners are given the possibility to have an experience of being part of a design process and doing some design work.

In the 1st kind of exemplar, the learner is invited into a learning process, where s/he becomes *legitimate peripheral participant* in a specific development practice. This development practice is defined by the development process employed, and the knowledge of the instructors. When returning from learning, the learner is back in his/her ordinary community of practice, often being the only person with the design learning experience.

In the 2nd kind of exemplar, when returning to the ordinary business, the participants may form a community of practice around what they learned. What they actually learned is important in this perspective, because this defines what they themselves later can take on a role as instructors for.

In the 3rd kind of exemplar, the learning is structured so that the learners become *legitimate peripheral participants* in a design community of practice during a development project. By working inside a defined process, under the auspice and coaching of a trained designer, using described design techniques, learners are given the possibility to have an experience of being part of a design process and doing design work, and to learn from this experience. It is common that the instructors and learners focus on the tools and techniques, and several of the guiding principles that are part of the design community of practice is not made explicit. This is partly due to the pre-structured development process, and partly due to the way in which the trained designers structure the learning process. That is, what situated activities that the trained designers allow the participants to do and learn.

However, in the 4th , the person being the instructor, is not him/herself full participant in a design practice. S/he may have been, in earlier projects, a legitimate peripheral participant in a design community of practice. The community of practice that this person is a part of, may however, have integrated the earlier learning from design into his/her community of practice. An effect of this on learning to use design, or to integrate design in an organisation, is that it will be the knowing of the instructor gained as a legitimate peripheral participant, and the possible integration of that into another community of practice, that will be the framework for continued learning and integration in the organisation.

The action learning approach that is commonly used in all four exemplars requires of the learner to learn by being part of a design situation. The learner is tossed directly into what is presented as a full design process with activities and methods. This is in stark contrast to a situated learning approach, where the learner is introduced into a community of practice, beginning with limited tasks, that will drive essential learning without risking successful outcome. For the action learning based learner, it implies many new things at once for the learner. Some of which may also collide with his/her previous knowledge, practice and culture. This make essential learning, for example understanding the rationale behind the iterative approach or the need to fully understand a problem before looking for solutions difficult to pick up.

A view from the socio-cultural perspective

The perspective of ZPD come into play mainly through the 3rd and 4th exemplar. The initiatives focus on learning by doing supported by an overall process, examples, tool descriptions and coaching by a designer. Typically, the content is focused on staff being able to do user research, dare to do prototypes, etc. The learning process, as a whole, is scaffolded by the overall process and the tool descriptions.
Scaffolding is a pedagogics concept, and being aware, as a more capable peer, that one is always scaffolding learners, is important in order to create scaffolding for the learning outcomes.

In the 3rd exemplar the learners are guided by a trained designer. This means that the instructor is a more capable peer in a design mindset, design methodologies, specific methods and tools. In most of the cases, the instructor is a more capable peer in the specific

design process and the associated tools used in the development project. The ZPD thus created can be on any of those aspects that the instructor is a more capable peer in. However, in most cases, the predefined development process, and by choice of the instructor, the ZPD is directed to be on the design tools and techniques, such as interviewing users or using a certain template to document the process.

Moreover, the expert designer is seldom part of the learners home-organisation, and will therefore not contribute to scaffolding for continued learning or knowledge integration in the future.

In the 4th exemplar the learners are guided by someone without formal design education. The instructor has either joined a specific training program to run this kind of processes, but more often the instructor has been part of one of the processes him/herself earlier. Given that most of the learning, even with trained designers, focus on tools and techniques, the more capable peer takes on two forms.

The first is when the instructor is a more capable peer on the tools and techniques, that which s/he as a legitimate peripheral participant was allowed to do. This, then, will be what the peer can do, that the participants cannot. Unless the instructor earlier also learned some of the rationale and framing issues, learning risks focusing only on being able to use the tools and techniques as is. A lot of the guiding principles that a trained designer would use in the training process, is not part of what the more capable peer can do, and not part of choices being made in the development process. As pointed out above, much of the guiding principles of the design community of practice are not made explicit, thus impeding the ability for a non-designer facilitator to create a ZPD around this.

The second possibility is that the instructor has integrated the tools and techniques into his/her own practice. Given that the instructor structures learning in such a direction, the learners may work with a ZPD that is defined by integrating design tools and techniques in another practice. This alternative is seen much less often than the first alternative.

There is a paradoxical twist in between the 3rd and the 4th exemplar. In the 3rd exemplar there is an expert designer engaging with learners, that may or may not have knowledge about the home-organisation. It is rare that the expert designer is also part of the home organisation of the learners, so the expert designer has few possibilities to structure any scaffolding in the home organization, should it be for continued learning for the individual, for integrating design into the practices of the organisation or creating a design culture. In the 4th exemplar there is an individual with good knowledge of the home-organization, but with limited understanding of design beyond the methods and techniques. This diffuse designer have good possibilities to structure scaffolding for integrating new knowledge, but the knowledge that the individual can act as a more capable peer of, is shallow. Either or, design practice will be hard to integrate.

From the individual perspective to integration of design

When looking at integrating design into an organisation as a cumulative process, where there are sequences of situated learning, based on the learners that have participated, a set of interesting developments should be taken into account.

Forming or reforming communities of practice:
- A single learner integrates ways of working into their own practice, and help other learn how this enriches their own practice. However, most training programs does not focus on how the learners could expand their own practice with design.
- Single learners across the organisation form a community of practice based on the knowledge they gained. This means that they are forming a new practice around the peripheral practice they learned. However, most training programs do not highlight this organisation wide community of practice, and that it is formed around a peripheral practice.

- A single learner integrates ways of working into their own development practice, and apply this when being engaged in development work. However, most training programs do not take as a starting point what development practices the learners are engaged in, nor focus on how the learners can take on a role in the development practices of the organisation.

All of these can have consequences not only on those practices, but also on what design practice is. It is similar to the idea of diffuse design, and it will require of designers, as a community of practice, to acknowledge and appreciate practices within which design has been integrated in this specific way.

Turning learners into experts:
- A single learner becomes the local expert and uses his/her knowledge locally. However, the training programs rarely focus on how the learners can use what they learned in their ordinary work environment, mostly on how to use it when developing new ways of working.
- A single learner uses the knowledge gained and invites others into learning about that practice. However, the training programs rarely focus on what the individual need to learn to be able to act as a more capable peer together with their co-workers in their ordinary community of practice. Unless the single learner quickly became a full participant in design practice, the practice others are invited to is peripheral in relationship to the originating design practice

When the single learner tries to act as the more capable peer, this will be done on what has been learned. Given that this learning is described by the tools and techniques, it narrows down what is meant by design seen from a design point of view.

From collaborative learning to learning competition:
- A learner goes from the learning situation, which is a collaborative learning setting, to a setting where the priority is collaborative work. In this collaborative work setting, there is a competition between many different learning processes, and what is regarded as important to learn.

As an effect, if the learner is engaged in trying to pass the knowledge on, and the next layer of learners does not get a good learning experience, the new knowledge will be outcompeted by other learning processes.

From managing an organisation to managing organisational capabilities:
Viewing learning from the individual perspective, with the lens of constructivist learning, to build further on the knowledge and reach the aspiration of design integration and transformative processes, it is necessary to also look towards the management practices. Management practices can facilitate with what is mentioned above. Moreover, we may also look specifically at management practices in the light of the training programs
- Line management was involved by allowing the learner to participate in the learning processes. However, the training programs rarely engaged line managers in preparing them for including the new knowledge in the day to day practices.
- Most of the training programs did not involve other management practices, such as innovation and development managers. As the tools and techniques learned are geared towards development projects, it is usually not the role of the line manager to build on such new knowledge. However, line managers are exposed to the effects of the individual learning, and its consecutive effects, whereas development managers are not.
- Managers are future owners of solutions to challenges where design can be applied as an approach to achieve solutions. However, most of the training programs did not include managers to learn how to require design in development, nor to learn how to prepare resources and processes to work with design when being part of development.

A management practice that is engaged in how new knowledge could be applied to daily work as well as to development, is required to not leave the learners alone with their

knowledge, and instead to make the new knowledge matter. A future research study may use the constructivist learning theories as interpretative frames of the consequences for management to take on such an active role in managing capabilities.

Even though our reasoning mainly has been based in a capabilities perspective, and with constructivist learning interpretations, there is a contribution to the ongoing discourse on design culture. Design culture, seen as the provisions for an organisation to have design as an integrated practice, is heavily dependent on how design is presented, understood and nurtured in the multitude of discourses in the organisation. Some of the consequences of the exemplars in this paper, carries a risk working against developing design culture, because of a lack of focus on organisational capabilities. Design culture, seen as carried and enacted by designers, is related to what the diffuse designers enact as being the design culture. The assertion about design culture as being the culture needed for an organisation to change, however, seem to find little support from the exemplars; rather there is a need for a learning or change culture, to which a design culture has specific contributions as opposed to the administrative culture.

Conclusion

In this paper, we have shown how a focus on the individual is not enough when aiming for developing an organisation's design capability or to integrate design in organisations. We rely on two constructivist learning theories, with associated concepts, to explain how many of the participants in experiential learning programs does not learn enough to drive integration of design, or transformative processes. We also show effects of assuming that the individual will be the drivers for integration of design in the organisations.
It is time to take seriously that one is leaving the learners alone with their knowledge, and that this knowledge is not enough to drive the aspired transformation and integration. It is time for engaged management to take on the challenge.

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