

Gamification as an enabler of mutual learning in complex health care systems

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In our paper, we present a gamified role switching method which has been developed to promote dialogue and mutual learning in complex health care organisations. Our research is based on two case studies with 25 interviews and four workshops. Our study indicates that the gamified role switching method inspired and gave means for the participants to enhance systemic understanding of their organization and to improve dialogue. The role switching method also made the participants see the situation from the other perspectives and thus promoted collaboration and the change process.

1. Introduction

Major challenges are emerging in the health care service system as chronic diseases are increasing and the population is ageing. At the same time new ICT solutions and citizens' increased expectations have led to the situation where the health care system needs radical changes. New innovations and methods are needed to ensure the quality of health care services. However, at the same time, the service as a whole becomes increasingly complex and the needed change is difficult to specify and describe. Furthermore, this complexity makes it more difficult for the customers to understand and participate to their care processes.

The evaluation of the success (or failure) of an organisational change is difficult because of multiple reasons (Hughes 2011). This makes it challenging to identify the true factors that promote the successful organisational change even though numerous guidelines and models for change management have been published. Jorgensen et al. (2014) note that one key issue for successful change is the consistent engagement of the employees during the change process. The successful "change architects" seek collaboration across the entire organisation. It is also important to notice that in order to promote change, participation of different stakeholder, not only employees of the organisation, are needed. There are also methods developed to promote the participation of different stakeholders. A dialogue between organizations, professionals and customers is essential in ensuring the high quality health care services. (Kivisaari et al.2004, 2013) One of the most commonly noted challenge was the underestimation of the complexity of the organisation (Jorgensen et al. 2014). This is likely to be based on the lack of the systemic view and understanding of the intrinsic complexity of any social system (eg. organisation).

Gamification is the use of game-like elements and game-design principles in non-game applications (Deterding et al.2011). For instance, storytelling is a form of gamification that allows systemic aspects of health care processes to be discussed among a group of players: different roles produce different perspectives and coherent storylines involving different

stakeholders concretize the often fuzzy interactions between different actors and actions. We see gamification as a promising tool for collaborative learning and promoting dialogue and innovation. In our previous research (Leväsluoto et al. 2014) we argued that in order to promote change processes in health care, we need shared visions, collaboration, support and education of professionals to adapt to changes which are taking place in health care. These changes also include multi professional work and new electronic ICT-based tools.

In this paper we examine the change process in organizations and whether change can be promoted through gamified solutions. Gamification in this context aims to make the organisational processes more engaging and inspiring. The focus of gamification in our cases has been on improving mutual learning by means of role switching game. Mutual learning can be achieved by creating dialogue and opening perspectives of different actors (Kivisaari et al. 2004). Collaborating across the organisation has been noted as important for successful organisational change (as mentioned above). In our case studies we focused especially on mutual learning as a form of collaboration. The importance of a systemic view and acknowledging other actors in the management of changing systems has been noted both in the literature (see e.g. Reiman et al. 2015) and in our case studies.

The following research questions are guiding our work:

- Can gamified solution inspire to learn and understand the viewpoints of other professions and a system view?
- Can gamified solutions activate dialogue and mutual learning?

The focus of this paper is on the results of the work we have done to develop a gamified role switching method. The further development work towards a “medication game” will still continue and will be finalised by the end of year 2015.

In our paper, at first we describe our theoretical framework which is based on gamification, societal embedding of innovation and role switching. Then we present our case studies and continue to the research results. In the conclusion, we discuss the issues faced in the two cases when promoting dialogue and mutual learning. We end our paper with the conclusions of our research.

2. Theoretical background

Our theoretical framework is based on theories of gamification, societal embedding of innovation and role switching. These theoretical frameworks form our starting point in understanding how to promote dialogue and mutual learning in complex organisations. In the framework of gamification, the factors of engagement and inspiration has been examined as well as the transfer of the engaging and inspiring elements from games to organisation management. How to create dialogue and promote mutual learning is the key issue in our second framework which is societal embedding of innovation. Role switching on the other hand can help to discover or even overcome biases in our reasoning and decision-making. The cognitive shortcuts can cause problems when we are unaware of them or when we apply them inappropriately. Seeing and feeling things from another person’s perspective can elicit some these biases and change the way we understand and reason behaviour.

2.1. Gamification

Gamification is the use of game thinking and game design elements (including game mechanics) in non-game contexts. The idea of gamification is to motivate people by means which have been proven to be effective in game environment. Gamification is widely used in marketing and more and more in different forms of media and education (e.g. different competitions). In practice, gamification may be applied everywhere when human behaviour is wished to be influenced.

There are several game-related concepts which may be some times overlapping but which should not be confused. These include: play, game, serious game, and gamification. Caillois (1961) has defined a play (and a game) as an activity which is voluntary, separate, uncertain, unproductive, governed by rules and make-believe. Games, serious games and gamification have many similar features like rules, goals and structure (Herger 2014).

The key difference between game and its “serious counterparts” is that serious game and gamification are aimed to promote the production of something which is useful also outside the game (learning, sales, etc.) whereas a game is played voluntarily “just for fun” because the player finds it attractive. However, by playing games you may also produce something useful and serious games (e.g. flight simulators) may be also used just for fun. Thus, the purpose makes the difference – you may have as fun in both cases. Caillois (1961) suggests the voluntarily is an essential condition joyous attraction of game. This is a notable remark when the game mechanisms are applied for instance in organisation management. Gamification is an activity to make existing or forthcoming process more engaging and inspiring (Chou 2015), while a serious game is a specific engaging and inspiring application which is especially played for serious purpose, e.g. learning something – i.e. a game which is aimed to produce something useful (Djaouti et al 2011).

Games, game thinking and game design elements have been systematically analysed for gamification. Chou (2015) has developed an Octalysis framework for the purpose of evaluation and development of gamified applications. Octalysis presents eight core drivers according to which different game elements may be classified. The key drivers are different aspects which may attract a player. The drivers include:

- Meaning: the goal or the mission the player has in the game
- Empowerment: player is able to express themselves, e.g. create something
- Social Influence: e.g. sense of belonging in a group, social pressure and opportunity to communicate
- Unpredictability: advantageous surprises and exciting turns in the course of events, or experienced tension for waiting surprises.
- Avoidance: player had to avoid something unwanted to happen – typically losing something
- Scarcity: player has an opportunity to get something which is somehow scarce: limited quantity, available at certain time only or for certain group only
- Ownership: player gets, collects or builds something as their own property

- Accomplishment: player achieves something as a result of their effort: points, higher ranking or status, recognition etc.

All these key drivers should be taken into account from the viewpoint of the target group in order to achieve a successful gamification. There are several different known game elements for each key driver.

The flow theory (Csikszentmihalyi 1990) is often mentioned as a psychological basis for game playing and gamification. Flow refers to an optimal experience, a state of mind during which people typically experience deep enjoyment, creativity, and involvement with the activity they are performing. The identified supporting conditions for flow state include: goal-orientation with clear goals, binding rules, feedback, skill is required, challenges and opportunities are provided. These are well in line with both the classifications by Herger and certain key drivers in the Octalysis framework. In addition, the optimal flow experience requires appropriate balance between skills and challenges: too demanding challenges cause a frustrating experience and too easy challenges cause boredom.

As the gamification process and Octalysis framework suggests, an extensive investigation of the key development needs were identified by interviews and discussions with the case organisation representatives. The gamification elements for these needs were then chosen and they appeared to be role switching, storytelling and some visual elements: playing board and cards.

2.2. Societal embedding of innovation

Societal embedding of innovation is a research and development approach which has been developed by VTT in different research projects since 1990`s. It has been used in Finland to enhance novel health care services and environmentally friendly innovations (Kivisaari et al. 2004, 2013, Leväsluoto & Kivisaari 2012). It aims at facilitating and initiating new innovations in a multi-actor network. An important objective is to create a dialogue between different actors and give them a possibility to create a shared understanding of the elements of the solution. By opening up the perspectives of the different actors it aims to produce mutual learning.

The approach gives information about the needs of identified actor`s, worries and conceptions of the discussed change. An important aim is to identify promoting and preventing aspects of different actors and bring them to shared discussions. The approach is based on thematic interviews, observation and workshops. For the interviews, it`s essential to identify all the key actors to ensure that all the aspects are being heard. The information is then processed and used for promoting the change (for example the processed information can be used in organisation management) and planning the workshops. The aim of the workshops is to discuss all these different opinions, create more in-depth understanding of the change and create collaboration and trust. (Kivisaari et al. 2008)

Social embedding of innovation is one of the key theoretical frameworks in our paper as it emphasizes the role of creating dialogue between actors. In our research, role switching method is also based on the experiences of social embedding of innovation. The aim of it is to further develop the approach as an innovative and inspiring method.

2.3. Role switching

March and Olsen (2006) state that in most situations humans take reasoned action by trying to answer three elementary questions:

- what kind of a situation is this?
- what kind of person am I?
- what does a person such as I do in a situation such as this?

When role switching puts us in the shoes of another kind of person, we look reference from a new role. It does not change the perception of the situation but it can give us novel ideas on how and why to act in them. For example, when looking at a patient’s medications what would a nurse focus on? And what would a pharmacist focus on? These might differ significantly. A pharmacist might look more at the patient’s overall medication history and any cross reactions. A nurse looking at patient care from a pharmacist’s role might see new practises that could be integrated to the care processes. Changing the perception of the situation can potentially also be achieved by role switching. An actor’s view of the causes of his behaviour often differ from those held by outside observers. The actor has a tendency to emphasize environmental conditions. The observer on the other hand has a tendency to emphasize personality characteristics of the actor as causes of behaviour. (Jones and Nisbett, 1972) By assigning an observer to the role of actor and vice versa the situation and what lead to it can be seen in a different light.

3. Case context, methodology and results

In the empirical part of our paper we focus on two cases. In our first case, a university hospital was introducing an electronic medication storage unit. Changes in the medication process and operational culture were needed because of this coming change. In the second case, a clinical pathway for geriatric patients was implemented in a central hospital. In order for the clinical pathway to work as planned, changes in operation models are needed in the related private and public social and health care organisations.

The study is based on 25 interviews and four workshops with gamified and role switching aspects. The schedule and the number of participants in the interviews and workshops are summarized in table 1.

Table 1. Schedule and number of participants in the interviews and workshops

Gaming workshop	Interviews	Workshop, case 1	Workshop, case 2	Brainstorming of game concepts
May 2014, 15 participants	Case 1: May 2014, 9 interviews Case 2: Spring	Case 1: September 2014, 10 participants	Case 2: December 2014, 9 participants	Case 1: March 2015: 16 participants

	2014, 16 inter-views.			
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In the first workshop, the selected board games were played together with health care personnel and researchers in order to get familiar with different game ideas and mechanisms and to get feedback on what kind of gamification may be appropriate for health care personnel. In the fourth workshop the new game concepts to support the medication process were brainstormed together with health care professionals and researchers. The objective of this session was to get ideas how to further develop the role switching workshop approach which is in focus of this paper.

The interviews and the second and the third workshop are introduced below and are the focus of our paper. In between these mentioned five activities the group of researchers together with the representatives of the two case organisations carried out the analysis and development work in several sessions.

In both of our cases, creating dialogue and cooperation as well as seeing familiar situations from another perspective were important aspects of promoting change processes. The interviews gave an overview of the situation on which it was possible to start creating these workshops. The interviews also worked as a channel where employees and other actors could get their voice heard concerning the upcoming changes. The gamified role switching workshops were very similar to each other and were just modified to answer the needs of different cases. We summed up the interviews and the workshops by identifying visions and challenges (table 2 and 3) that prevent the change. Vision and challenges were identified and summarised so that they could provide information for the organisation on how to proceed with the implementation work and communicate the results to all employees.

3.1. Case 1: Changes in processes and in culture are needed to implement an electronic medication storage unit

Our first case organisation is a university hospital in one of the biggest cities in Finland. It provides basic and special services in the field of specialised care, trains health care professionals and promotes scientific research into health. The university hospital is a part of hospital district which provides care for 22 municipalities with population of 520 000.

The university hospital is implementing new electronic medication storage unit and because of this reform changes in medication processes are needed. A unit for renal patient is a pilot unit for implementation of the electronic medication storage unit. The renal unit was chosen to be the pilot unit, because the care of renal patient is highly dependent on medication and the unit uses a large amount of pharmaceuticals.

The change to using electronic medication storage unit is not straightforward as it needs changes in practices and in operational culture. Responsibilities of doctors and nurses need to have some changes as well as the sharing of responsibilities between units. One example of the change that needs to take place before implementing the electronic medication storage unit is the way patient medication data is being processed. If a patient is being relocated from the first aid unit to the renal unit, the medication information needs to be fed to data system before the patient enters the renal unit. Earlier the medication information was re-counted in many different ways and nurses had a chance to carry out the medication more

flexibly. The use of the new medication storage unit requires changes in the medication processes which are not easy to implement in a hospital with almost 6000 employees.

The work for purchasing and implementing the electronic medication storage unit had begun some years ago and was in the phase of planning the implementation when we carried out our research.

3.1.1. Methodology

In this case organisation, we interviewed nine health care experts that work with renal patients. The semi-structured interviews took place in May 2014. The interview questions were divided into five themes. The aim of the first theme was to gather information on the current situation, what are the things that are working and what are the things that need improvement. After that we discussed issues related to quality, safety and efficiency issues. We were interested in learning how the interviewees saw these factors in their organisation. In the third theme, we asked what the interviewee's experiences of previous development project were and what the organisations attitude towards them is. The fourth theme concentrated on what were the interviewees visions of their organisation. The last theme was about the coming change and what the interviewees saw as the important aspects of the implementation process. The interviews were recorded and transcribed and we used QSR NVivo qualitative data analysis software for analysing the results. We carried out the analysis by performing a thematic analysis of the relevant research topics and identified the common responses of the interviewees

The workshop was organised in September 2014. Ten health care experts from the pilot unit, other units, pharmacists and project development experts participated in the workshop. The participants represented all the key positions and professions involved in implementation of the electronic medication storage unit. We disseminated a feedback questionnaire to the participants in order to evaluate our workshops and also to evaluate our gamified role switching method. The participants filled out the questionnaire after each part of the workshop. The focus in the workshop was in the renewal of the medication process and also in introducing the concept of the electronic medication storage unit. The aim was to support change process as well as to get feedback about our gamified role switching method. Because the implementation of the electronic medication storage unit requires many changes, which were not all positive to all employees, it was important to share opinions and reasoning behind them. We aimed at encouraging participants to discuss their opinions more freely and also to help the change process by making participants to look at the everyday situation from another perspective. Creating dialogue between participants of the elements of the needed solutions was also aimed.

In the workshop participants developed a story of the care of renal patient. The story was based on maximum ten events which were chosen by the participants. After that participants then picked randomly one card which represented one of the four professions (pharmacist, patient, doctor and nurse). Thinking each event from the perspective of the given profession was then required of the participants. Questions in the profession cards guided the work. The guiding questions were about how the represented professional would perform in this situation, what are the obstacles of acting in a new way and what are the benefits of this action.

3.1.2. Results from the interviews

Working practices

The interviewees were aware that the official procedures are not followed in all cases and places. There were concerns about the idealistic requirement to always strictly follow the rules even when it is known impossible. Instead, they suggested focusing on finding the correct solutions whenever it is possible. The interviewees showed a generally positive attitude towards pursuing improvements, but also noted that actual change takes place slowly.

The consistency of practices within a hospital was regarded as important factor for fluent and safe operation of the system as a whole. The largest differences can be found between the units. There is not necessarily any mandatory reason preventing harmonization, but people are inclined to stick on the familiar customs and present explanations for why they should not be changed. However, it was noted that there are different practices and in some cases the local differences are necessary. Flexibility is needed because of the differences in situations, experience and skill of actors and the intrinsic uncertainty in health care activities.

Values

Certain values clearly emerged in interviews.

- Expertise: health care professional should continuously update their knowledge and skills and they should be aware of the limits of them
- Patient-orientation: professionals want to be responsible and work for the best of patients. Initiative and activity is expected also from patients.
- Attitude to changes varies. There have been negative experiences of too frequent changes and failed projects. On the other hand, personnel participate actively to development. Control of errors is regarded as critical.

Information systems

The up-to-date information on the medication and its documentation in the patient information system was regarded as critical for the functioning of the future system. Currently there are some practices which may make some medication information unavailable to the information system. In the future system, this means that the medicine is not available, either. With current system and practices it is possible to get the required medicine somehow anyway. The doctors criticise the difficulty of using the information system – especially concerning medication. Different doctors may also have varying knowledge on medication: all doctors are not equally capable of extensively assessing the medication of all kinds of patients. This limited capability may make some doctors more cautious to make certain decisions on the medication. However, it was agreed that there should also be change in attitude towards an accurate use of the system. It was assumed that professionals focus on the fluency on their own duties and mostly prioritise lower the tasks which do not are directly useful to them. The role as a part of the care system and a fluent overall care of the patient is not either understood or accepted.

Expectations and concerns

The particular forthcoming change raised both (positive) expectations and concerns. The electronic medication storages were anticipated to improve patient safety and medicine control, enhance the conditions for work and clarify procedures for medication activities, and save costs. However, there were concerns about the bad usability of the information systems, excessive rigidity of new system, potentially vanishing knowledge on medicines, increasing work load, unpredicted problems in the initialization phase and concern about whether a critical medicine will be available if technical problems appear. Lacking information on the future changes raised concerns in general.

3.1.3. Results from the workshop

The results of the feedback questionnaires are presented in this section. All participants returned either fully or partly filled form. The participants expressed that the workshop promoted collaboration between professions. The role switching method was seen useful as it forced the participants to look at common situations from different perspective. It unveils how little other professions' duties are known contrary to the expectations of some participants. The participants thought that this way you get insight of the reasons of action in different professions and organisations. The reasons of acting in certain way were not always familiar to participants coming from another profession.

Due to the gamified aspect, the workshop was experienced as inspiring and refreshingly different. In addition, the participants felt that they had a chance to influence the change process by participating in the workshop. For the participants, the workshop was in some sense demanding, because it required a full concentration. The task that was given was not immediately understood by the participants and the workshop was quite long.

The workshop produced new ideas and some concrete tools for the participants. Identifying risks and obstacles from different perspectives was an important outcome from the workshop. The workshop also increased understanding of the upcoming change, opened up new perspectives and included positive feelings towards the change. Multiprofessional collaboration was one of the things that the participants considered valuable.

We summed up the interviews and the workshops by identifying visions for the change as well as challenges that may prevent the change happen (table 2). Vision and challenges were identified and summarised to help the organisation for their implementation work.

Table 2. Identified vision and challenges in case 1.

Achieving the goal together				
	Patient	Pharmacist	Nurse	Doctor
Vision	Is familiar with his/hers medication and can communicate it to his/hers health provider in all situations	To become a one of the key professionals in the patients multi-professional care team	Implementing the patients medication prescribed by a doctor	Prescribing and monitoring up-to-date medication
Challenge	To become an	Readiness to	Clear and practical	Practical and

	active patient	adopt a new role, resources, attitudes of other professionals.	instructions which every professional follows	doable instructions which every professional follows, hurry and extra burden
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The top vision represents the attitude that only by working together the change, which is the success in using the electronic medication storage unit, is possible to achieve. Pharmacists were identified as a new important actor in patients care when using medication in hospital renal unit. Pharmacists could have new tasks which would support nurses and doctors work and this has the potential of clarifying the care of patients. For the pharmacists the role is new and it requires learning and resources. Patients on the other hand should adapt to a new role, where the medication information should be clear at all times. This requires being active and participation. The nurses would like to have clearer instructions which are followed by everyone. To doctors the change causes potentially more work and increases hurry. However, if the medication information is up-to-date, the doctors' work will ease eventually and the patient care would be better.

3.2. Case 2: Using a clinical pathway for elderly patients requires cooperation and new operation models

Our second case organisation is a central hospital which offers specialized health care for 13 municipalities. The population is approximately 165 000 and about half of them speaks Finnish, and another half Swedish as a first language. The central hospital is active in participating in research and development projects and is especially known for its work in patient safety issues.

In the beginning of our study a new clinical pathway for geriatric patients (a document) had been produced in cooperation between the hospital, primary health care, social sector actors and the representatives of patient, and the pathway was about to be launched. Putting together a clinical pathway was a great challenge, because the information was scattered and different units and organisations had different ways of working. A number of employees and customers participated in the work of gathering and formulating information to form the new clinical pathway.

The idea behind this development work was to make the customership of the geriatric patient more flexible, effective and safer. Geriatric patients are a special group because of their special needs and vulnerability. For example, it is important to acknowledge in hospital emergency room that geriatric patients need to be helped out of the bed so that they maintain their ability to move around and stay active. Also the medication information is essential to have with them when coming to the hospital. Many small improvements, especially when a patient visits between different organisations, can help make the care more effective which is the aim of the clinical pathway.

3.2.1. Methodology

We interviewed 16 social and health care experts from the organisation working with geriatric patients. The semi-structured interviews took place in the spring 2014. Like in the first

case, the interview questions were divided into five themes. The aim of the first theme was to gather information on the current situation, what are the things that are working and what are the things that need improvement. After that we discussed the issues related to quality, safety and efficiency issues. We were interested in learning how the interviewees saw these factors in their organisation. In the third theme, we asked what the interviewee's experiences of previous development project were and what the organisations attitude towards them is. The fourth theme concentrated on what were the interviewees visions of their organisation. The last theme was about the coming change and what the interviewees saw were the important aspects of the implementation process. As in the first case, the interviews were recorded and transcribed and we used QSR NVivo qualitative analysis software for analysing the results.

After the interviews, we organised a workshop for nine key actors to promote dialogue. For the clinical pathway to function, it requires that every organisation takes a role in introducing it to all employees and starts to make changes in their operation models. It is also important to explain the significance and benefits of a clinical pathway to all employees.

The main goal of the workshop was to support the implementation of the new clinical pathway and to test and develop our gamified method. Workshop also aimed at visualising the situation from different perspectives (patient, emergency care team, nurse and doctor) and how the change would affect to it.

In the workshop, participants developed one story of a geriatric patient. The story was based on 5 events, chosen by the participants, from geriatric patient care pathway. Participants then examined new working method in this particular situation from the new clinical pathway document. In the next phase, the participants were advised to think working practices from the viewpoint of different actor. Participants randomly selected a card which represented one of the different actors. Like in the workshop held in the first case organisation, we used guiding questions to steer the process. The guiding questions in the profession cards were about how the professional would perform in this situation, what are the obstacles of acting in a new way and what are the benefits of this action. At the end of the workshop, a feedback from the participants was collected with questionnaire in order to evaluate our workshop and also to evaluate our gamified role switching method.

Through this gamified storytelling, we aimed at creating a clearer picture of what are the changes required in the organisations, how the change affects different actors, what are the elements in the clinical pathway document and what are the things that prevent the use of the clinical pathway. Altogether, through this role switching and implementing working practices, we aimed at promoting mutual learning and encouraging participants to take the clinical pathway to their organisation and eventually to everyday use.

3.2.2. Results from the interviews

The interviewed experts thought that the situation in their region is quite good compared to other hospital districts. However, they noted that a change in operation models is needed, because the population is ageing and more people are in the need of geriatric care. The interviewees had a common view that the clinical pathway was collected and created in a participatory way and that all the different viewpoints were acknowledged. However, because of the profound nature of the work, the interviewees thought that the clinical pathway document was too long and complicated and it was difficult to utilise in their work. They also

thought that this was the primary issue preventing the implementation of the clinical pathway.

The interviewees agreed that the work which was done to create the clinical pathway was valuable but the implementation work is going to be very difficult.

Expected impact

The clinical pathway for geriatric patient is going to bring benefits mostly to the patients, according to the interviewees. It was perhaps disconcerting that they didn't see so many advantages to the social and health care professionals if the new clinical pathway document is going to stay as it was at the moment of the interviews. The interviewees thought that the clinical pathway could be more beneficial to the professionals if it's divided into smaller more focused pieces.

Implementation

Some of the interviewed experts expressed their worry of the attitudes of the employees towards the new clinical pathway. They thought that the employees can easily think that the clinical pathway doesn't give anything new to them and the old ways of working are enough. The implementation was also challenging because there wasn't any single unit that was responsible for the clinical pathway or the implementation of it. It was the responsibility of every single unit and the organisation to introduce its employees to the clinical pathway.

The problem was that in order the clinical pathway to work as planned, it requires that it is used in every organisation. Because the benefits of using the new clinical pathway were so difficult to picture, it was likely that the implementation wasn't going to be easy.

3.2.3. Results from the workshop

To second workshops was evaluated the same way as in the first workshop. The participants filled out the questionnaire after each part of the workshop. Below we present the results of the questionnaires.

The participants of the workshop thought that the workshop was inspiring and promoted collaboration. Because the participants were from different units and organisations, they felt that truly different opinions and aspects were discussed.

Although collaboration and discussions were good, some participants felt that solutions to the identified problems were not found.

The workshop produced new ideas, collaboration, thoughts on what are the issues that need improvements and altogether broader understanding of the change. The workshop also revealed some critical points for the change process which were not recognized before. Our role switching method was enlightening for the participants and it was appreciated as a tool of see things from different perspective.

Visions and challenges are summarised in table 3 which was created the same way as in the first workshop.

Table 3. Identified vision and challenges in case 2.

Better results of patient care and ease of workload by enhancing the information flow between actors				
	Patient	Emergency care team	Nurse	Doctor
Vision	Will get the care she/he needs and hers/his needs are being heard	In addition to emergency care, the team informs all the relevant information to the hospital	Knows how to implement the clinical pathway for geriatric patients in flexible and comprehensive care	Knows how to implement the clinical pathway for geriatric patients and can make use of tools used by other professionals.
Challenge	Patients as a passive participant in care processes	Information is unavailable	Clinical pathway is not familiar and information blocks appear	All the needed information is not available

The top vision in the second case represents the idea of what are the benefits of the new clinical pathway for geriatric patients and what it requires. In the vision, patients will get the care they need and they are also seen as an equal partner in care. The role is new especially for elderly people who are not used to be demanding. Emergency team will pay attention much more on the information that is needed in the hospital. This information could be for example medication information. The problem is that all the information is not always available. For the nurses it is important to know the clinical pathway so that the geriatric patient will get special care that she/he needs. Geriatric patients' special needs are not known very well which could cause problems in later phase of the treatment. It is important for the doctors to use the information which has been gathered before to make right decisions of the care.

4. Discussion and conclusion

In our first case, new electronic medication storage was planned to be implemented in a hospital pilot unit. In the second case, a new clinical pathway for geriatric patients was about to be launched and implemented. In our research, we aimed at promoting change in the two case organisations and also to develop a new gamified role switching tool for promoting dialogue and mutual learning.

For this purpose we interviewed 25 social and health care professional from different organisations. The interviews had two aims. The first one was to give the employees and other actors a chance to tell their opinions of the change. Second, the interviews gave information to the researchers about the current situation and opinions of different actors. The interviews revealed that the attitudes towards the change varied. The varying attitudes were depending on the previous experiences of the changes in organisation work processes, expectations for the new change, the seen benefits which would result from the change and the

usefulness of the information that was given. In many of the cases, the interviewed experts didn't see or couldn't figure their role as a part of complex health care system where action of one professional effect to the other. The links between professions and organisations were difficult to understand and thus the importance and the action which was needed for the change wasn't clear.

The two gamified role switching workshops, together with the interviews, were in the focus of our paper. The aim of our workshops was to create dialogue and cooperation and give a possibility for the participants to see familiar everyday situations from another professions perspective. This way we aimed at toward mutual learning and thus promoting the change processes in the organisations. We summarised the visions and challenges identified from the interviews and the workshops to provide information to the organisations and help them to steer the implementation work.

Our results indicate that our gamified role switching method inspired and gave means for the participants to enhance systemic understanding of their organization and to improve dialogue. The health care professionals that participated in gamified workshops felt that they are involved in the change processes and that their opinions have an effect. Gamified elements in the workshops made the atmosphere inspiring and opened the mind for new viewpoints. The role switching method made the participants see the situation from the other perspectives and thus promoted collaboration and the change processes. The workshop and the discussion between participants didn't offer solutions to all the problems which were identified. However, solving all the identified problems wasn't the aim of the workshops, but rather to identify the problems, to offer different perspectives and to bring them to the discussion. From the experience of our workshop, we learned that some of the participants from the health care organisations want to see benefits of the event or means immediately. The problem in that is that our gamified solution aims to promote dialogue and mutual learning. The benefits of enhanced collaboration are difficult to demonstrate at that point. The experienced joy from the event may even emphasize the experience of missing immediate usefulness. Quite common belief in serious working life is that "what is fun can't be useful". We need to develop the approach so, that the participants more clearly learn what the benefits of playing are.

Our study indicates that it is useful to simulate being in the roles of others to enhance the understanding of a complex system where the actions of one professional affect the work of another one. We argue that these effects can help to reveal the issues related to organizational changes and also to provide solutions for dealing with them. As many organizations struggle with various obstacles when attempting to improve their activities, gamified solutions can be a valuable tool for assisting the implementation of changes.

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