Educational change at the department of surgery

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Business Administration – Change Management

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Preface

Of course I had been in a hospital before, but as a business student I never got the chance to get a look behind the scenes, therefore I took my time to get a little more acquainted with the hospital in general and the department of surgery in specific. I'm extremely grateful they granted me the opportunity to get into a white coat to explore the unknown world of residents, surgeons and patients, even during the night. It was a unique experience I will never forget. And compared to my fellow students working for other department I consider myself lucky to get great support of the department.

I would like to thank everyone at the Wenckebach institute that has helped me during my stay at the hospital, especially Abe Meininger who helped me enormously with the educational aspects of the thesis. But most of all I would like to express my gratitude to Dr. Van Ginkel who, despite his extremely busy schedule, found the time to sit down with me every week, and could open doors that would probably have stayed closed otherwise.

A final word of thanks goes out to my supervisor at the faculty Hans van Polen for his feedback, especially in the first period of the research and to Dini Beulakker who took the time the correct my grammar and thereby increased the readability of the thesis considerably.

Conducting the research and writing this thesis was sometimes hard when I got stuck, but most of the time it was fun, educational and extremely interesting, therefore I'm glad I conducted my research at the UMCG. At the moment I'm still not entirely sure what my future job will be, but a job in a hospital or healthcare sector is a serious option.

CONTENTS

Abstract

The department of surgery of the University Medical Center Groningen (UMCG) resides on the brink of the modernization of post-graduate medical surgery training for residents. This thesis explores the subject of resistance to change and methods to minimize it; 1)empathy, 2)communication and 3)participation. The research is based on multiple interviews (n=20) with staff-members (surgeons) as well as residents. While briefly addressing the change content, the thesis focuses mainly on the change process itself.
The interview data underlines the importance of the three methods described in the theory, and respondents confirm that the process can be improved significantly, when soundly utilising the abovementioned principles. The research concludes that the department is ready for future changes when acknowledging the recommendations by the author.

1. Introduction

The department of surgery of the University Medical Center Groningen (UMCG) is increasingly involved in several change initiatives. One of them is the modernization of post-graduate medical surgery training for residents[1] (in Dutch: AIOS: 'Arts in Opleiding tot Specialist').
The requirements for the curricula of the post-graduate medical education programs are determined by multiple collaborating external parties. However, the formulation of new educational requirements does not automatically change the daily routine. For example, the legal requirements[2] presented in 2004 state that the post-graduate medical education should be based on the development of seven different competencies[3] (Rademakers, de Rooy & ten Cate, 2007). These competencies are not clearly formally established in the present medical education at the department of surgery in Groningen.
The biggest changes in the curriculum are still to come. The new educational
plan[4] should be ready somewhere in 2008 and these guidelines should be adopted by the department in the following years.
The competencies and new methods for the evaluation of residents are the most important components to be implemented in the present curriculum (NVvH, 2007) and will be evaluated through visitation in the years following the realization of the new curriculum.

There are valid reasons to assume that not all staff-members (surgical staff, i.e. surgeons) and residents at the department of surgery have a positive attitude towards the future changes within the post-graduate medical education, this can be inferred from passive behaviour regarding educational changes and informal discussions.
The competence based education for example is directed towards the development of a much broader skill set (e.g. communication, facilitation and management skills) than just the medical expert role, which has always been the core of education of medical specialists. This changeover is perceived by some staff-members as time consuming, unnecessary and inefficient, because it could diminish the available resources for the medical core-business and residents should be able to learn the necessary competencies during their daily routine without the aid of formal modules.
The proposed changes will also lead to a lot more paperwork for the individual staff-member (e.g. structural feedback methods), as well as for the resident updating their obligatory portfolio.
It is important to note that all staff-members are of great importance to the proper implementation of the intended educational innovation, as they are responsible for the execution and the daily routines of the newly designed curriculum. Without the support of the medical staff, change initiatives have almost no chance of success (Letourneau, 2004).
To make sure that present and future guidelines can be implemented into the daily routine in an efficient way, it is important to research how staff-members and residents can be involved in the process in a positive manner to minimize resistance to educational change and to utilize it for good ends. The goal of this research is to map out the present situation regarding the attitudes and resistance to the innovation of the curriculum of residents and to

[1] Where the word 'residents' is used, I mean only the residents that are taking part in post-graduate education.
[2] Developed by the Central College of Medical Specialties (CCMS) and written down in the legal documents: 'kaderbesluit' and 'besluit heelkunde'.
[3] The CanMEDS (Canadian Medical Education Directions for Specialists) framework.
[4] Called 'SCHERP': Structure Curriculum Surgery for Reflective Professionals.

present valid recommendations to deal with these attitudes towards change in an efficient manner.

The preliminary research question can be formulated as:
Do staff-members resist the changes in post-graduate medical education at the department of surgery of the UMCG, for what reasons, and which methods are most suitable to deal with this resistance?

This first draft of the research question is not as detailed as it should be, but the next section of the thesis will present the theoretical foundation for the research, focusing mainly on resistance to change and related factors; empathy, communication and participation (Kirkpatrick, 1985), leading to a better defined research question. The third section is dedicated to the methodology of the research. It describes how the research was executed, who participated and why it was done in this particular way.
The fourth section is reserved for the findings of the empirical part of this thesis; the results section.
The fifth and last part of the thesis is the discussion section. There I will present an interpretation of the results in combination with relevant theories. This is also the place for a discussion on the implications of the research and the recommendations for the department.

2. Theory

In this section I will elaborate the preliminary research question from the previous section and present the underlying theoretical framework.
I will start with explaining relevant research findings from literature on the subject of resistance to change and methods to minimise this. The section will end with a precisely formulated research question, incorporating the relevant theories.

A possible problem of the application of change management literature in this situation is the dominant corporate setting in which change management has been developed.
Doctors generally have a deep knowledge of how the healthcare system works and are used to speak their minds and surgeons in particular have relevant managerial knowledge. However, they can lack some insight into the more corporate functions of a manager (Davidson, 2002). While these management skills may be less developed in comparison to a corporate setting, This will not be a problem for the utilisation of the literature, because of the general applicable nature of change literature, the highly educated employees and the professionally trained management.
I will now proceed with the main subject of the theoretical section, resistance to change. What is it? Where does it come from? And what can be done about it? These are all questions that are answered during the next part of the theory section.

2.1 Resistance to change

Organisational change efforts often run into some form of human resistance. This is perfectly normal, but does need to be taken into account (Kotter, 1995). It is not true that everyone resists change, nor is it true that everybody accepts change. It depends on the specific change and how people see it (Kirkpatrick, 1985:96).
In the majority of work on resistance to change, researchers have borrowed a view from physics to metaphorically define resistance as a restraining force moving in the direction of maintaining the status quo (Piderit, 2000:784). While it is one of the most common theories in change management, it is often interpreted the wrong way. It is not the case that people resist change per se, but people resist the consequences of change (Dent & Goldberg, 1999:26). The word 'resistance' has a negative ring to it, but should not be considered that way. Often the foundation of resistance is actually a valid complaint about the change intervention; resistance is therefore also an opportunity. These opposing ideas should be appreciated by management and can actually serve the change process. Therefore, it can be wasteful to dismiss valid employee concerns about proposed changes as simply undesirable (Piderit, 2000:784), it can also be an opportunity for management to incorporate different ideas in the change process.
There are numerous definitions of resistance to change, but this thesis uses the formulation of Giangreco and Peccei, (2005:1817) because of its neutral and complete character.

"(…) we define resistance to organisational change as a form of dissent to a change process (or series of practices) that the individual considers unpleasant, disagreeable or inconvenient on the basis of personal or group evaluations. This dissent may manifest itself in a range of individual or collective actions and take the form of non-violent, indifferent, passive or active behaviours. In all cases, the intent of resistance to change is to benefit the interests of the actor or of the group to which the individual relates or belongs. Importantly, though, this resistance is not necessarily designed extensively to undermine the needs of the organisation and can involve the forbearance to engage in pro-change forms of behaviour, as much as the active

engagement in more explicit forms of anti-change behaviour by individuals."

At organisational level, resistance to change may originate from three sources (Cummings & Worley, 2005; Tichy, 1993). *Technical resistance* originates in a deviation from standard procedures and processes. *Political resistance* can arise when the positions of powerful organisational members are at stake (Macri, Tagliaventi & Bertolotti, 2002). *Cultural resistance* comes from the perception of change in traditions, standards or values in the organisation. All these sources are associated with a sense of loss, these feelings of personal loss are a main reason for resistance (Wolfram Cox, 1997).
Kotter and Schlesinger (1979) identify, next to loss, three other common sources for resistance to change; a misunderstanding of change and its implications, a belief that the change does not make sense and a limited tolerance for change, which means that someone is afraid that he or she can't adapt to the new situation (Kotter & Schlesinger, 1979:107-109).
The level of resistance is not the same for all the different types of change initiatives; it depends on the depth of the intervention (Harrison, 1970). This perceived depth depends on the accessibility of information about the change intervention and about the extent to which the intervention is focused towards the individual. A transparent and rather incremental change program for example will probably not lead to very strong reactions (Huse, 1980:110).
To be able to deal with this resistance, it is wise to take time to assess systematically who might resist the change initiative and for what reasons. (Kotter & Schlesinger, 1979:107; Beckhard & Harris, 1977:53; Kirkpatrick, 1985:101). Change agents should therefore develop tactics to neutralize or at least minimize the anticipated delay from employee resistance (Nutt, 1986:230).
There are a lot of different lists with methods for dealing with resistance. In their classic article about resistance to change Kotter & Schlesinger (1979) present six main methods for dealing with resistance, also adopted by Daft (2003:384):

- Facilitation & support
- Education & communication
- Participation & involvement
- Negotiation & agreement
- Manipulation & co-optation
- Explicit & implicit coercion

A much shorter list has been introduced by Kirkpatrick (1985) and consists of empathy, communication and participation. These methods are supported by Cummings & and Worley (2005) in their 'Organisation development & change' and are practically the same as the first three methods presented by Kotter & Schlesinger.
The main difference between Kirkpatrick and Kotter & Schlesinger, is that Kirkpatrick only mentions the positive methods.
While negotiation for incentives, manipulation and coercion may be helpful in particular cases, it may have serious drawbacks as well. And the effect these kinds of measures have on the attitude of employees makes them unsuitable for the development of organisational capabilities, for example curricular reforms (Beer & Nohria: 2000). When implementing long term change initiative with the help of (healthcare) professionals, creating commitment to the program is the key (Litch: 2005; Kotter: 1995; Burnes: 2004). Therefore the three methods mentioned by Kirkpatrick (1985) and Cummings & Worley (2005) are the most sensible in the curricular reform of medical specialists. I will proceed to elaborate on these methods.

- empathy
- communication
- participation

2.2 Empathy

Organisational change can disrupt the 'normal' daily routine. The gap between the old and the new situation should be acknowledged, and managers should therefore be considerate of the employees (Strebel, 1996:87). A first

step in a change situation is to assess the probable reaction of employees. The attitude towards the change of the employees should be mapped out through analysis or conversation (Kirkpatrick, 1985: 117).
The word empathy itself is hard to define. Psychoanalytical scholars describe empathy as a complex construct of multiple dimensions, hard to study empirically (van Strien, 1999:35). The change related literature utilizes a more practical approach. Rogers (1995: 272) defines empathy as: *"(…) the ability of an individual to project himself or herself in the role of another person"*. Kirkpatrick (1985:112) mentions: "*A practical definition of empathy is putting yourself in the shoes of the other person"*. He adds that empathy is not an inherited trait, but that it can be developed.
The study of empathy has followed two fairly distinct paths, based upon two different definitions of the empathic process, on the one side cognitive empathy and on the other emotional empathy (Mehrabian & Epstein, 1972). The former means that a person can imaginatively take the role of someone else and is able to understand and accurately predict that person's thoughts, feelings and actions, in short: predictive accuracy (Hatch, 1962). Within the second approach, empathy is defined as a *"vicarious emotional response to the perceived emotional experiences of others*" (Mehrabian & Epstein, 1972: 525). There is a critical difference between the cognitive process and empathic emotional responsiveness, whereas the former is the recognition of someone's feelings, the latter also includes the sharing of those feelings to some extent. Recent work on empathy made it clear that cognitive and emotional empathy are not mutually exclusive and that empathy can be measured by combining the two definitions (Jolliffe & Farrington, 2006). Both cognitive and emotional empathy have their use when dealing with resistance to change (Cummings & Worley, 2005:159).
The fact that an organisation consists of various groups of employees with a divers set of characteristics (status, hierarchical level, role, etc.) is often overlooked when studying organisational change. People are often treated as a single entity (Martin, Jones & Callan, 2006:146-147). As stated above, effective and successful change should pay attention to the various groups of employees so that interventions can be specifically aimed. Doctors, for example, tend to operate in informal, horizontal networks, while nurses more often have formal, vertical networks (West, Barron, Dowsett & Newton, 1999), I will discuss the role of these networks in the communication section. These occupational roles can result in so-called 'micro-climates' in hospitals. This can be of great influence on the attitude towards change, for higher status staff may experience less threat of negative consequences from change than lower level staff (Martin, Jones & Callan, 2006:146-147).
For all these reasons it is important to pay attention to the different stakeholder groups within an organisation so that interventions can be specifically aimed (Greenhalgh, Robert, Macfarlane, Bate & Kyriakidou, 2004).
This may help to determine whether or not the change can be made as anticipated, or that the speed must be increased or decreased. It also produces input for the communication and participation aspects of dealing with peoples attitudes towards change (Kirkpatrick, 1985). Empathy can therefore serve as the first step towards the other two key strategies; communication and participation.

2.3 Communication

When dealing with resistance to organisational change, communication is one of the most important aspects of the change program. Especially when there is not a clear sense of urgency, it is important to stress the necessity of the change program through different communication channels, as people do not perceive the change as necessary (Kotter, 1995; Harvard management update, 2007). So when the results of a process of change are linked to the perceptions of individuals, then the ability of management to communicate the goals of change and to provide motivation can be crucial (Reezigt, 1995; Sillince, 1999). People have to be made aware of the fact that there are plans for a change initiative, its content and what the

consequences are for the organisation and the individual (Greenhalgh et al., 2004:600). This helps people to see the logic and the need for a change (Kotter & Schlesinger, 1979:109).
Communication is not a one way event, it is more than just sending information, it means to 'create understanding' (Kirkpatrick, 1985:131).
It should be a continuous process instead of a one time initiative and is most effective when many different channels are used, informal as well as formal. When the same message comes to people from six different directions, it stands a better chance of being heard and remembered, on both intellectual and emotional level (Kotter, 1996:93). This can be illustrated by a citation of Burnes (2004:480):
"Whilst people are often willing to believe the wildest rumour from unofficial sources, anything from management has to be stated at least six times in six different ways before people start giving it credence."

2.3.1 Informal communication

When studying communication in combination with organisational change 'diffusion of innovations' is an important concept. *"Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system"* (Rogers, 1995:7). It is a special type of communication, in that the messages are concerned with new ideas. The newness means that some degree of uncertainty is involved in diffusion.
The adoption of innovations by individuals is partly dependent on the structure and quality of their social networks (West et al., 1999). A fundamental principle of human communication is that the transfer of ideas occurs most frequently between two individuals who are similar, or homophilous. This is the degree to which two or more individuals who interact are similar in certain attributes, such as beliefs, education, social status, et cetera (Rogers, 1995:286). Heterophily is the degree to which pairs of individuals are different in certain attributes.
Communication is more effective when source and receiver are homophilous. This can create barriers to the effectiveness of interpersonal communication, because it can be a problem for social networks to bridge different groups within the organisation.
It is important to note that key individuals can lead in the spread of new ideas. These 'opinion leaders' are at the centre of interpersonal communication networks and can informally influence other individuals' attitudes in a desired way across communicational barriers (Rogers, 1995).
Diffusion literature suggests interpersonal influence through social networks as the dominant mechanism for effective diffusion of innovation (Greenhalgh et al., 2004:601).
Empirical research illustrates this strength of informal advice and information seeking between physicians and the identification of opinion leaders among them (Weinberg, Ullian, Richards & Cooper, 1981). These opinion leaders may also play an important role in the diffusion of continuing medical education (Weinberg et al., 1981: 179).

2.3.2 Formal communication

However, informal communication is not enough. As stated above, a change agent should use many different communication channels at once as workable (Kotter, 1995; Harvard management update, 2007).
There are many ways to deliver a message in a formal way, Kotter (1996) provides some useful examples in his book: large group meetings, memos, newspapers and posters. While there are dozens of ways to get a message across, these can all be easily grouped. Reezigt (1995:41) mentions four main ways of organisational communication:

- Oral communication
- Written communication
- Optical or acoustic communication
- Behavioural communication (Reezigt, 1995:41)

The first two are the most important in communicating changes, whereas the third and fourth are mainly supportive.

For communication that is not part of the daily routine, like a change initiative, it is best to choose a so-called 'rich' communication medium, face-to-face for instance.
Richness in this context means the ability to make people learn, and depends on characteristics like (Lengel & Daft, 1988):

- Ability to handle multiple information cues simultaneously
- Ability to facilitate rapid feedback
- Ability to establish a personal focus

The oral communication, mentioned above, can be identified as a rather rich method, this is an important reason for its success (Reezigt, 1995).
Another prerequisite for effective formal communication in change situations is the clarity and simplicity of the message. Focused, jargon-free information can be disseminated to large groups of people at a fraction of the cost of clumsy, complicated communication. The latter only creates confusion, suspicion and alienation (Kotter,1996:89). Jargon is not a problem however when dealing with one discipline only.
A problem with the assessment of the organisational communication practice lies in its subjective nature. It is a phenomenon that is constantly structured and restructured through the interaction between people and based on their experience. That's why there can be multiple views on communication within one single company or department (Reezigt, 1995: 42).
I would like to introduce training as a form of communication and an important tool for the minimization of resistance and gaining support for change initiatives (Daft, 2003:392). This has to do with the richness and thoroughness of the method. People experience at first hand what is about to happen, what their individual role should be and the underlying assumptions. This increases the understanding of the process and reduces uncertainty. Beckhard and Harris (1977:54) underline this idea with and example of curricular change in a nursing school, where training can help to create awareness and commitment which legislation, policy statements or directives cannot accomplish.

2.4 Participation

One of the oldest and most effective methods for overcoming resistance is to involve organisation members directly in planning and implementing change. Participation can lead both to designing high-quality changes and to overcoming resistance to implement them (Vroom & Yetton, 1973).
Participation in planning the changes increases the probability that people's interests and needs will be accounted for. This can lead to more commitment from the employees because doing so can serve their own interest and create the feeling that one is taken seriously and is appreciated (Cummings & Worley, 2005: 159).
The early and widespread involvement of staff at all levels, through formal facilitation initiatives, enhances the success of implementation and routinization (Greenhalgh et al., 2004:611).
Coyle-Shapiro (1999) suggests on the basis of empirical research on participation in a change situation, that the participation of employees is positively related to the participation style of the supervisor or manager. While the term is questionable, this kind of participation is often called a leadership style. Leadership styles, and thus participation, come in many forms and shapes, but a very clear categorization is the 'five leader participation styles' by Vroom (2000), presented in figure 1.
These five leadership styles all serve their purpose. It is not the case that one is better than the other, it depends on the situational factors. In implementing new clinical guidelines for example, a more participative leadership approach is more appropriate because it empowers and facilitates teams to embrace change (Bennet, 2003).

Influence by leader / Area of freedom for group				
Decide The manager makes the decision alone and announces or sells it to the group.	**Consult Individually** The manager presents the problem to the group members individually, gets their suggestions, and then makes the decision.	**Consult Group** The manager presents the problem to the group members in a meeting, gets their suggestions, and then makes the decision.	**Facilitate** The manager presents the problem to the group in a meeting. Acts as facilitator, defining the problem and the boundaries. The manager's ideas are not given any greater weight.	**Delegate** The manager permits the group to make the decision within prescribed limits. The manager's role is behind the scenes, providing needed resources and encouragement.

Figure 1: Five leader participation styles by Victor H. Vroom (2000)

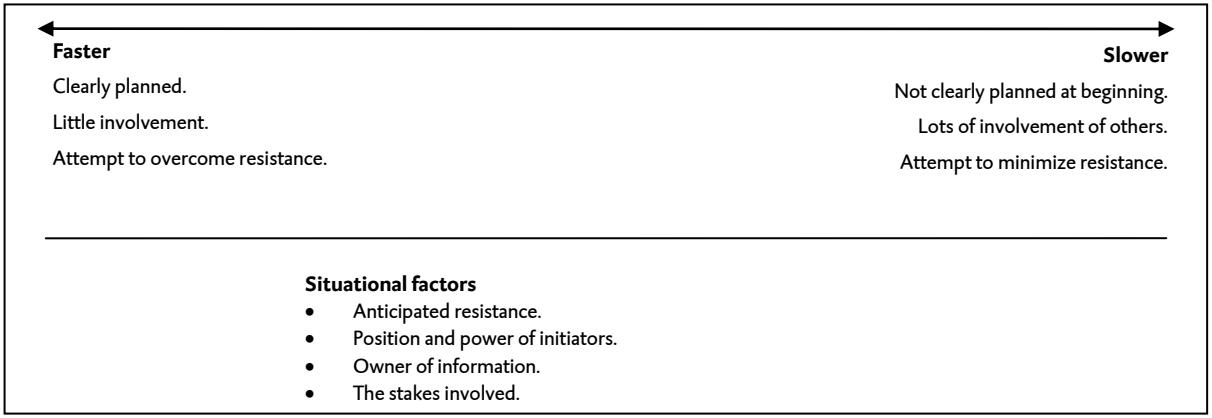

Figure 2: Strategic continuum by Kotter & Schlesinger (1979)

Kotter & Schlesinger (1979) identify four situational factors to which the change strategy and thus participation should be adapted, these factors were also mentioned by Victor Vroom (2000) and can be found in figure 2.

The first situational factor should be rather obvious by now. The more resistance is anticipated, the more a change agent should think of a participative approach. This is also true for the position and power issue. The more relative organisational power the employees have in comparison to the change agent, the more participation should be used. The owner of information is a situational factor that is very important when questioning the use of participation. Participation is a good method for dealing with resistance but it should be noted that this depends on the characteristics of the employees. It is often true that more minds are better than one, but only if they have relevant knowledge, are organised to share that knowledge and are

equipped to evaluate it. Participation by knowledgeable, skilled, and motivated members of the organisation does enhance a change project; participation by uninformed, unskilled and unmotivated members of the workforce definitely does not (Dunphy, 2000:133).
The capabilities of the workforce are critical for participation in change to have a successful outcome. For example, teachers are generally committed to their work, are likely to receive greater intrinsic rewards when task-related issues are solved properly, and possess the substantive knowledge needed, however, they usually do not have access to structures for collaborative problem solving (Cooke, 1980:406). In this example the facilitation of a participative approach can be very valuable.
This leads us to the last situational factor 'the stakes involved'. If the stakes are high and the change should be developed and implemented on rather short notice, it is important to move as fast as possible. Therefore this factor could be reduced to the single phrase 'time frame'. The use of participation is thus dependent on the time frame for the change initiative, as it is important to keep the time frame in mind when deciding on an intervention strategy. When the stakes are high and the change must be made immediately, it can take simply too long to involve others (Kotter & Schlesinger, 1979:109).
When the leadership style fits the situational factors as described above, participation leads to a higher decision quality and, due to more motivated employees, and to a more effective implementation (Vroom 2000:85). The most significant aspect of participation is that the change agents really want the involvement in decision-making from the different employee groups.
Although participation is often a successful method in change situations it is by no means a panacea (Kirkpatrick, 1985:146). Not only can it lead to a poor solution if the process is not carefully managed, but it can also be enormously time consuming. Therefore I conclude by saying that participation is a very valuable method to help overcome resistance and to improve the change characteristics but should be carefully managed.

2.5 Integration

Now that resistance to change and the three main methods for dealing with resistance have been discussed, the theoretical findings can be integrated with the main research question.
First it is important to investigate the status quo of the situation at the department of surgery of the UMCG. It is important to know what the present situation regarding resistance to change, empathy, communication and participation is at the department, before we can look at the future. The actual research in combination with the theoretical framework presented above will lead to the best way to react on the status quo, by using empathy, communication and participation. This leads to a reformulation of the research question:

Do staff-members and residents at the department of surgery of the UMCG resist the changes in post-graduate medical education, for what reasons, how are empathy, communication and participation currently used in this change process, and how can these methods (as described in the theory) be used to minimize resistance to change?

The methodological foundations and the research design will be explored in the next part of the thesis, the method section.

3. Methods

This section of the thesis is for an explanation of the methodological basis of the research.

3.1 Research design

The research has been designed as a qualitative case study. This type of research is especially suited to deal with complex situations where surveys simply lack the flexibility to develop sound conclusions (Hutjes & Van Buuren, 1992:7). Questionnaires are a fine tool for quantitative conclusions and measurement, but interviews are better equipped for explanations of beliefs and behaviours (Kvale, 1996:94). In other words, qualitative research is a good way to look beyond the 'black-box' causality so often found in quantitative analyses. The extensive nature of qualitative research through interviews is therefore stronger in the assessment of causality and the empirical verification of conceptual models (Miles & Huberman, 1994:147).
Because of the research goal; to make valid recommendations about ways to deal with resistance to change, it was not sufficient, for instance, just to quantify the degree of perceived participation. I had to become aware of peoples thoughts on participation, otherwise I would be in no position to make valid recommendations for the future. This meant I had to know whether people were participating, why they were participating, if they felt this behaviour was encouraged and if it is perceived as important in the educational change context.
All these elements can be important when assessing a change situation and it can be very hard, almost impossible to gather data this complex through questionnaires (Babbie, 2004: 275). This face-to-face data gathering also allowed the interviewer to introduce and clarify the subjects to the respondents.

The interview questions (appendix A) were topic-guided as mentioned by Hutjes & Van Buuren (1992) and based on relevant literature. These questions were asked (in Dutch) as neutral as possible in combination with follow-up questions whenever suitable, to gain more insight in the view of the respondents and to make sure that all relevant theoretical aspects were covered. In many instances respondents were asked to further motivate their answers and explain underlying thoughts.
The interviews ended with a question to verify whether all important aspects were treated, according to the respondent.
The first interview was a so-called 'pilot-interview' to identify and correct any design flaws.
The results of the sessions were treated confidentially. I was the only one who knew the names of the respondents in combination with the interview data. Some parts of the interviews could be used to identify respondents, therefore these parts were not cited in the thesis.
To make sure there were no errors during the interview processing, all open ended interview questions were recorded using a digital device and transcribed word for word. The interviews were sent back to the respondents via e-mail for a so-called 'member-check'; a last confirmation made by the respondents (Hutjes & van Buuren, 1992).

3.2 Sample

The small population and the availability of potential respondents made it impossible to use a probability sampling selection method (Babbie, 2004: 186). Therefore I used a judgmental sampling method (n=20) based on the availability of respondents and some of their characteristics that were important for the research (see the next paragraph).

First I identified the most important stakeholder groups: staff-members and residents. The staff-members5 of the surgery department were important, because these people are responsible for the development, implementation and execution of the new plans (respondents n=14).
The surgical trainees (or residents) were also of great interest, because they are the subject of the innovations and are able to play an important role in development through feedback (respondents n=6).

The staff-members of the department of surgery are a diverse group of employees, with different roles and areas of expertise. It was important for the research to sort out the relevant characteristics that may explain some of the resistance to change.
The different surgical sub-specialties (seven in total) could play a role in this research. Keeping in mind the diffusion theory (Rogers, 1995), there could be differences among the members of the different sub-specialties, therefore I made sure that I interviewed two respondents from every sub-specialty.
It was also important to identify the different roles staff-members have. The possible differences in attitude may be attributed to the difference in hierarchical level and in knowledge of the change situation and the department. Therefore I used purposive sampling to take the diversity of the department into account, with respondents ranging from normal staff-members to staff-members with higher functions (e.g. program director, chef de clinique, etc.) and from staff-members with little formal involvement in the development of resident education to staff-members that have a greater involvement in the development of education.
A last characteristic that seemed important was the participation in the "Teach-The-Teacher" program, because training programs can have a positive impact on the resistance to change (Daft, 2003:392). At the moment of writing approximately 15% of the staff-members have taken this course, but in time all staff-members will.

[5] Staff-members are all surgeons, except for the 'intensive care' sub-specialty interviewees, these are intensivists.

Age and gender were also scored during the interview sessions, because these basic demographic factors might also be related to resistance to change (Giangreco & Peccei, 2005: 1822).

The general control variables:

- Age
- Gender

For staff-members:

- Sub-specialty (selection criterion)
- Organisational role (selection criterion)
- Participation in the "Teach-The-Teacher" program

For residents:

Educational progress (selection criterion)

Figure 3: Control variables

The residents were also controlled for their age and gender. Another aspect that seemed important was their progress in the education program, because their position in the organisation tends to rise with their progress. A 6th year resident for example has much greater power and responsibility than a first year resident. It also seems the case that older residents are not as interested in the educational changes, because the changes will probably not have a great effect on their last years of education.
The residents were grouped in the first and second year residents (called the 'common trunk'), and older year residents, I interviewed three residents per phase.
The control variables can be found in figure 3.

3.3 Interview questions

In this section I will explain the formulation of the interview protocol. The complete list of interview questions can be found in appendix A. This Table presents a schematic display of the operational steps between the research variables, their important components and the related interview questions. All the interview questions have their roots in theory.

3.3.1 Awareness

It was important to ask the respondents about their awareness of the innovations in post-graduate medical education, because this obviously effects the attitude towards it (Greenhalgh et al., 2004; Kotter & Schlesinger, 1979).
To what extent do you consider yourself aware of the several innovations in the field of post-graduate medical education?

I also asked for a motivation and the origin of the awareness, because it was important to know whether this awareness had any relation to the other variables.

3.3.2 Resistance to change

Resistance to change was questioned using a question directed towards attitude (instead of a question about resistance), to rule out researcher influence, leaving room for both pro-change and anti-change answers (Giangreco and Peccei, 2005).
Can you describe your attitude towards the educational innovations?
It is not only important to know whether people resist or embrace change. To be able to do something about it, it is also important to know why this is the case (Giangreco & Peccei, 2005), this was asked with a follow up question.
Can you motivate where this attitude comes from?
The used definition of resistance to change in theory section also describes behavioural consequences of this attitude. Following the resistance to change index by Giangreco and Peccei (2005) this was considered important and was therefore brought up during the interviews.
To be able to get a grasp on the relation between attitude and behaviour, I also asked why this was the case and what the behavioural outcomes actually where.

3.3.3 Empathy

The empathy questions are based on the research by Jolliffe & Farrington (2006) in which empathy is empirically studied as a construct of both cognitive and emotional empathy. These two sides of empathy were converted into interview questions about both the predictive accuracy (Hatch, 1962) and the emotional response of the change agents (Mehrabian & Epstein, 1972).
Respondents where also asked why they thought so, because it was important to know what the underlying motivation was.
Because of the abstract nature of empathy I also asked for examples, this way I was able to get a better picture of the status quo and it made it also easier to develop recommendations regarding the subject.
The word empathy itself was omitted in the interview questions, because of the possibility of different interpretation and the common misinterpretation of the word empathy as sympathy (Jolliffe & Farrington, 2006:591).
I ended with a question about the perceived importance of empathy in an educational change situation for the process as a whole and a separate question assessing the importance for the interviewee him/herself.
How important is this recognition and reaction (on concerns and opinions) for the innovations in post-graduate medical education and why do you think so?
These kinds of questions were also asked for communication and participation. The answers create the opportunity to make statements about the relation between someone's attitude and the opinion of different methods for dealing with resistance.

3.3.4 Communication

The measurement of the role of informal communication networks was based on the research of Weinberg et al. (1981).
Their research was accomplished by *"requesting each physician to indicate the clinical importance and frequency of such advice and information and the names of those from whom advice and information are sought"* (Weinberg et al., 1981: 175). The only thing changed in this research was the topic of the information seeking, making it applicable to the UMCG situation. The respondents were

also asked to describe this process, because this led to a better comprehension of the situation.
Often a handful of informants as in this research can identify the opinion leaders in a system, with a precision that is almost as accurate as sociometric techniques, where both are about equally valid. (Rogers, 1995: 292).
I asked the respondents to name only the three most important network partners on this issue, because this leads a respondent to name only the strongest network partners (Rogers, 1995: 290). Both studies also recognized the frequency of the network interactions as important, this was also asked during the interviews.
The questions on formal communication channels were based on a large scale research on internal communication (Reezigt, 1995). The important aspects identified in the theory section were, the usage of communication channels, and the frequency (e.g. Kotter: 1996).
Employees are well suited to define improvements and solutions for the functioning of the organisation. (Reezigt, 1995:78), therefore a last question, utilizing the knowledge of respondents, was added.
Can you describe what you perceive as suitable communication channels in the context of educational changes, in other words, how would you like to be informed in these matters?
These answers were very helpful for the eventual recommendations.

3.3.5 Participation

The measurement of participation in a change situation was based on the research by Coyle-Shapiro (1999). Employees were asked to indicate the extent to which they were participating in the activities of the intervention.
To what extent do you participate in the change intervention?
As a checking measure, when employees responded to this question they were subsequently asked to elaborate on why they responded in a particular manner (Coyle-Shapiro, 1999).
Further respondents were asked to describe whether it was possible to influence the decision-making and in what way and whether it was encouraged (e.g. Coyle-Shapiro, 1999; Kirkpatrick 1985), this allowed an identification of the participation styles described by Vroom (2000).

3.4 Analysis

The written down interviews were analysed using the qualitative method of directed content analysis (Hsieh & Shannon, 2005). Content analysis using a directed approach is guided by a more structured process than in a conventional approach, where the codes are developed during the coding sequence itself. This directed approach differs from grounded theory and other content analysis approaches in the origin of the codes. The codes used in this process were defined before and during the data analysis and are derived from theory and relevant research findings.
The next step of analysis was to code all relevant passages using the predetermined codes from the theory (Appendix A). Any relevant text that could not be categorized with the initial coding scheme was given a new code. Existing theory or research can provide predictions about the variables of interest or about the relationship among variables, thus helping to determine the initial coding scheme or relationship between codes (Hsieh & Shannon, 2005: 1281).
After the coding process, a sample (three interviews) of the data was also coded by another researcher. This way I was able to compare the similarities and differences of the coding and to discuss the differences, this way minimizing possible researcher bias, this led to no great changes.
The data was analysed with the use of different qualitative tools (as described in Miles and Huberman) to analyse the interview data in combination with the theoretical and conceptual model underlying this research design (Miles & Huberman, 1994:101). Among them: identification of patterns and themes, finding intervening variables, making comparisons, noting relations between variables and eventually building a logical chain of evidence as a result in the discussion session. This way I was able to compare the

empirical findings and the theory from literature and identify similarities and inconsistencies.
The outcome was collected in a qualitative data matrix as described by Hutjes & van Buuren (1992) and Miles & Huberman (1994). This data matrix served as a summarization of the interview data and as a tool for analyzing and interpreting, but the source material remained the basis for the actual analysis.
The coding outcomes were ordered in this matrix based on 'conceptual ordered displays', meaning that the matrix was organised on the basis of the variables from the theory section (Miles & Huberman, 1994:122).
For a very detailed description of the used analytical perspectives I like to direct the interested reader to the detailed work of the aforementioned authors.

4. Results

This section is the so-called results section, it is an objective and concise representation of the qualitative results from the interview sessions.
This section contains a comprehensive qualitative data matrix (table 2) which represents the interview outcomes. The data matrix is accompanied by an explanation of the data and additional information, including motivations, nuances and details, which are sometimes hard to capture in a table. This text is enriched using relevant quotes from the interviews. The original Dutch transcriptions will always serve as the basis for the presented results and can be found in appendix B. Every quotation has a reference number corresponding with the original quote in the appendix and a letter, an 's' for staff-member and an 'r' for resident.
To aid the reader, the structure of this section mirrors the theory section and its relevant topics; resistance to change, empathy, communication and participation. The control variables such as age, gender and other personal attributes will not be mentioned individually to protect respondent privacy, but are mentioned wherever relevant. The interpretation and the theoretical as well as practical implications can be found in the next and final section of the thesis, the discussion.

4.1 Awareness

The first topic of the results section is the level of awareness of the educational changes at the present as well as in the future for staff-members and residents. As mentioned before, these results are necessary to put things in perspective.
The numbers are shown in table 1. I discovered that not all staff-members and residents perceive themselves as fully aware of the educational changes, but most of both groups perceive themselves to be moderately aware or better, where residents generally seem to be more informed. There are only a few respondents that perceive themselves as not aware of the educational changes to come, but these people are aware of the changes that are already in motion within the department, for example the portfolio and the KKB's[6].

Awareness	Low	Moderate	Moderate/ high	High
Staffmembers	2	5	4	3
Residents	1	0	3	2

Table 1: Level of awareness of staff-members and residents

It can be generally said that staff-members and residents that are formally tied to educational tasks, for example as a program director, educational committee member of some sort, or working in the students education, are more aware of the educational changes in the surgery department and that residents are usually more informed than staff-members.
The sources that contributed to the individual awareness showed, as expected, great overlap with other topics (informal and formal communication and participation) and will therefore be discussed in the corresponding sections.

4.2 Resistance to change

As expected, there is a certain amount of resistance to change with staff-members as well as residents, but the different sources distinguished in literature are not all present. The most common reason is technical resistance, meaning a deviation from standard procedures and processes and consequently the feeling that the changes do not always make sense.

[6] 'KKB' (Korte Klinische Beoordeling) is the Dutch equivalent of the mini-clinical evaluation exercise, a tool for staff-members' assessment of residents. Further reading: Durning, et al. (2002).

The arguments differ from person to person, but the opinions are always backed by rational statements. A main point of criticism is the expected workload, as a consequence of the digital portfolio system and the digital feedback methods, the so-called KKB's[7] and OSATS[8].
"I'm worried that, apart from the enormous workload it produces, paper creates a lot of work, a lot more than you initially think, for everyone from student to secretary, apart from the workload, I think we go too far." (1s)
The main criticisms of residents and staff-members are summed up in figure 4.

- **Discontinuity**
  The proposed changes lead to a more fragmented education and interfere with daily patient care.
- **Absolute appraisal**
  The residents are scored (KKB &OSATS) on an absolute basis, meaning that a lower year resident can't receive a good score, even when he/she is relatively very good.
- **Manipulation of appraisal**
  It is possible for bad performers to beat the system by carefully choosing feedback moments. Leading to better results on paper.
- **Workload**
  The changes are too time-consuming for staff-members as well as residents.
- **Checklist culture**
  The record keeping becomes an end instead of a means to an end.
- **No new content**
  The ideas aren't really new, just a formalisation of old ideas and routines.

Figure 4: Main content criticism

Table 2 shows that residents are in general very positive about the intended changes, but hold some reservations. The general view is that the underlying principles of the structural feedback are necessary for a hospital the size of the UMCG. *"The bigger the place, the more important it becomes to proceed with the renewal. Especially to create a clear overall picture."* (3r) But a point of criticism for residents as well as some staff-members is the possible tendency of the new system to become an end instead of a means to an end. *"I am aware of the relevance. Looking at people in a structured way is a fair assessment method, I don't know exactly how it should be done, but this looks a bit too formalised, it does not really measure anymore what it's supposed to measure."* (4s)

4.2.1 Behaviour

The present resistance to change does not seem to have a great effect on the behaviour of the respondents. As can be seem in table 2 most people responded resisting the changes or parts of it, replied that their behaviour was not affected by their attitude about the changes. *"No, I do not become more active or passive as a person, it has no emotional influence."* (5s) There was only one staff-member that responded that his/her attitude about the changes actually has a negative effect on his/her behaviour, resulting in less effort. A pro-change or low-resistance attitude in many cases had a positive effect on behaviour.
The positive change in the behaviour of residents is mostly, but not exclusively, due to the obligatory nature of some educational changes. *"Yes, when the professor tells me I have too few [KKB's and OSATS], then I am actively getting to work, but that's what I mean, I have to get more and then I have to accost everyone(…), you get them because you got to have them, but it has been of little help."* (6r)
In conclusion it can be said that the general view that evolves from the interviews is that most people, staff-members as well as residents, are not against the proposed changes as such, and that many (fifty percent) can even be described as pro-change. Most of the present resistance originates from practical constraints and continuity problems, there are only a handful of respondents that really have principal problems.

[7] For 'KKB' see page 18.
[8] 'OSATS' (Objective Structured Assessment of Technical Skill) is an assessment tool for surgical procedures executed by residents. Further reading: Martin et al. (1997).

				Informal communication			Empathy				Formal communication				Participation				
Staff-members	Awareness	Resistance	Behaviour	Frequency	Personal importance	Process importance	Cognitive empathy	Emotional empathy	Personal importance	Process importance	Frequency	Quality	Personal importance	Process importance	Individual participation	Possibility	Encouragement by department	Personal importance	Process importance
1	3	1	+	1x a week	5	3	Yes	Yes	3	5	Rarely	RI	5	5	Passive[9]	Yes	Yes	5	5
2	3	4	±	Weekly	5	5	Yes	I wonder	5	5	1x per 3 months	RI	4	5	Good	Execution[10]	Yes	5	5
3	4	1	±	Every few weeks	2	5	No	No	5	5	Rarely	RI	5	4	Very little	Yes	Sometimes	3	5
4	2	3	±	Every few weeks	5	5	Yes	Could be better	5	5	1x per 4 months	RI	1	5	Not yet	Don't know	No	5	5*
5	2	4	+	1x a week	5	2	Yes	Could be better	5	5	Few x per year	RI	5	5	Moderate	Insufficient	Don't notice	5	5
6	1	6	±	Rarely	5	5	Moderate	Yes	1	5	Always miss it	RI	5	5	Passive	Don't know	No idea	1	5
7	2	2	+	1x a month or <	5	5	Yes	Could be better	3	5	1x per 3 months	RI	5	4	Moderate	Yes	Think so	5	5
8	3	6	-	1x a month	5	5	Yes	Yes	5	5	1x per 3 months	RI	5	5	Not really	Think so	Yes	5	5
9	4	2	±	Daily	5	5	N/A[11]	Yes	5	5	1x per 3 months	RI	5	4	Very much	Of course	Yes	5	5
10	2	4	+	Not at all	1	5	N/A	Yes	5	5	No idea	RI	5	5	Not much	No idea	Yes	1	5*
11	4	6	±	Daily	5	5	N/A but yes	Moderate	5	5	1x a month	RI	5	3	Very much	Yes	No	5	5
12	2	4	+	Very rarely	1	5	Yes	Yes	5	5	Not much	RI	5	5	Passive	Of course	No	3	5
13	1	2	±	Very rarely	5	5	Yes	Yes	5	5	Pretty rarely	RI	5	5	Passive	Yes	Yes	5	5*
14	3	4	±	1x a week	5	5	Yes	No	5	5	1x a month	RI	5	5	Passive	Yes	No	5	5
Residents																			
15	3	1	+	Pretty often	2	3	Yes	Very slowly	5	5	1x per 3 months	GD	5	5	Not yet	Yes	Yes	5	5
16	3	1	+	Daily	5	5	Yes	Sometimes	5	5	1x per 3 months	GD	5	5	Little	Yes	Yes	5	5
17	4	1	+	Pretty often	5	5	Yes	Sometimes/yes	3	5	1x per 3 months	GD	5	5	Yes	Yes	No	5	5
18	1	5	±	Rarely	5	5	Yes	Very little	5	5	Pretty rarely	RI	5	5	Yes	Don't know	No	5	5
19	4	1	+	Monthly	5	5	Yes	Too little	3	5	1x per 2 months	GD	5	5	Yes	Yes	Yes	5	5
20	3	1	±	1x per2 months	2	5	Yes	Yes	3	5	1x per 3 months	GD	1	5	Passive	Yes	No	1	5

Table 2: Main research outcomes (for legenda p.t.o.)

Legend table 2:

[9] ´Passive participation´ means the respondents do not participate at the moment, but will when they are asked to.

[10] The respondent says that participation in only the execution phase is encouraged.

[11] According to the respondents the question was not applicable because people lack opinions and ideas on the educational change subject, the question whether their opinions and ideas are recognized is therefore not applicable.

Awareness

1	- Low awareness
2	- Moderate awareness
3	- Moderate/high awareness
4	- High awareness

Resistance

1	- Pro change-no resistance
2	- Pro change with practical issues
3	- Mixed reaction, pro change / some resistance
4	- Low resistance
5	- Moderate resistance
6	- High resistance

Behaviour

–	- Behaviour negatively affected by attitude
±	- Behaviour not affected by attitude
+	- Behaviour positively affected by attitude

Importance (Applicable to every importance topic)

1	- Not important
2	- Of little importance
3	- Of moderate importance
4	- Moderate/important
5	- Important

* Participation is important, but only for a small group, not the entire department

Quality of formal communication

RI	- Room for improvements
GD	- Good

The numerical and other coded values are an interpretation of the interview transcripts made by the researcher for the sake of summarization.

4.3 Empathy

4.3.1 Cognitive empathy

Practically all respondents (besides one) share the belief that opinions and ideas from the work floor on the subject of educational change are recognized within the department by colleagues and management and characterise the department of surgery as hierarchical but very open. There are several opportunities to vent ideas and concerns, for instance the different meetings but also from person to person, formal as well as informal[12].

"I think there are all kinds of moments where ideas are brought up and discussed. We've got all kinds of moments with residents only, or residents with the sub-specialty heads, the program director, residents with the whole group, so there are enough moments when such things can be brought up and it does happen." (7s)

Some staff-members mention the irrelevance of the question because of the lack of interest in the subject of educational change among staff-members.

"No, because it is hardly a subject of discussion, it should be and it will be in future, but I don't expect it to sky-rocket." (8s)

4.3.2 Emotional empathy

Respondents can be regarded as generally satisfied with the cognitive empathy within the department, but this does not necessarily mean that these ideas and opinions are always acted upon. "*Yes, everybody can raise everything around here, which is not the problem, what happens next, that's a relevant question. Even with all good intentions, a lot of things deteriorate in the well known management slogan, we'll take it along. (..) Never to be heard of again."* (9s)

As can be seen in table 2, the answers on the emotional side of empathy are rather diverse. Approximately fifty percent of the respondents are satisfied, while the other respondents indicate there is room for improvement.

"No, it's falling on deaf ears. I never hear from [the chef de clinique], I never hear from [the program director]. Problems, difficult, difficult, difficult." (10s)

If people wanted their ideas to be acted upon they often have to convince others. *"Yes, I think so. If you have a good idea, elaborate on it and if you can convince others that it's an improvement for the current appraisal and innovation (...) But you have to put in a lot of effort, you have to persuade people. I don't think these ideas automatically land and someone will take care of it. That's not how things work here at the surgery department."* (11s)

[12] For a detailed description see the communication section.

Residents generally point out that ideas are not always acted upon, but are aware of the several restrictions the department faces, for example the bureaucratic nature of the hospital and national laws.
"If you want to change a lot of things in this hospital, in such a big organisation, you have to be realistic about the inertia of the process, otherwise you'll be disappointed." (12r)
It can sometimes be hard for residents to get their ideas across and to be taken seriously, therefore they stress the importance of organising. *"It is very important to organise, otherwise people do not listen, but I think that's all right."* (13r)
As is the case with communication and participation, respondents regard empathy as very important for the process of educational change and for the department. Some individuals indicate that it is not important for themselves, but subscribe to the general importance. There seem to be two main motives for the relevance of empathy within the department, the first is the idea generation and improvement of the process and the second, related motive is the commitment of staff-members and residents. A resident mentioned: *"If you can facilitate that as a company, commitment will be much larger. It strengthens the organisation."* (14r)

4.4 Communication

4.4.1 Informal communication

The informal discussion of educational change differs from person to person, with frequencies ranging from daily to never, as can be seen in table 2. This has a lot to do with personal interest as well as organisational role (educational related tasks for instance).
Most of the respondents stress the importance of informal communication in relation to educational change, according to some, however, it does not happen nearly enough.
"They are present [informal networks], but there is no data communication. The cable is there, because we know each other very well and we talk regularly, but by far not enough. Because there is a lot more happening in the land of education, that I hear of through other channels." (15s) The interviews show that there are three primary motives for informal communication regarding educational change:

- A discussion of proposed changes
- A discussion about experienced problems and ideas for improvement
- A practical conversation about the usage of new techniques and routines

The focus differs per respondent, but people that are more involved in education and most of the residents tend to discuss the changes on a higher level. People that are in no way involved with education related issues are more practical and tend to talk significantly less about educational change. *"I talk about how people should be educated, but I do not talk about the educational changes that cross our paths, developed by others. So I do not discuss the value of a KKB or OSATS upfront."* (16s)
Part of the goal of the discussion of informal communication was the identification of opinion leaders, central figures that can influence people's thoughts about innovation. It seems there are several opinion leaders present at the department. The most important person is the program director[13]. Sixteen of the nineteen (excluding his own interview) respondents named him as one of the three most important people for informal conversation regarding educational change. One respondent mentioned the three most important persons in this context as: *"Ten Duis, Ten Duis and Ten Duis."* (17s)
There were two other staff-members that were mentioned as very important and three to a lesser extent. All these people are formally involved in education (except one person with a co-ordinating role).
The interviews clearly show that informal communication on the subject of resident education often takes place within ones own group. The staff-members often name

[13] In Dutch:'opleider', Prof. dr. Ten Duis. Responsible for the post-graduate medical surgery education in the north-eastern region.

persons from within their own sub-specialty and especially the appointed contact-person for post-graduate education. Residents show the same pattern, as they mostly name their colleague residents and their mentor as important.

As table 2 points out, most respondents feel that informal communication is important for themselves as well as the whole change process. *"Of course, when you want to change something, when you want to innovate something, you should talk about it frequently and thoroughly, you shouldn't keep quiet, because that is not going to change anything, it may change in your head, but not on the work floor."* *(18s)*
The few that do not perceive informal communication important for themselves usually do note the importance for the educational change process as a whole. The few that do not consider informal communication as important for the change process, or to a lesser extent, do so because they believe formal communication is more important.

4.4.2 Formal communication

By far the most important formal channels by which educational changes and related topics are communicated within the department are meetings and e-mail. Meetings are still a broad concept but the examples ranged from plenary staff meetings and educational committee meetings to management team meetings, depending on the respondent. The different background of staff-members, as well as residents (formal tasks in education) is a main cause for the difference in frequency mentioned in table 2. Therefore the most important meeting for the surgeons on this subject is the already mentioned plenary staff meeting, because it is meant for all staff-members. Residents mention the so-called OMA[14] meeting with the program director (and the pre-OMA meeting[15]) as their primary source of information on educational change. They are generally very positive about the meeting and do not feel the need to change this.
A list of the mentioned means of communication can be found in figure 5, nationwide and international channels are omitted because these lie outside the scope of this research.

- Local Meetings
  - Plenary staff meeting
  - Sub-specialty meeting
  - Committee meeting
  - Management Team
  - Sub-specialty heads meeting
  - Pre-OMA meeting
  - OMA-meeting
  - Morning report
- E-mail
- Teach-The-Teacher course
- UMCG intranet
- Wenckebach Institute[16]

Figure 5: Means of formal communication

Most staff-members are not satisfied with the quality of the formal communication regarding educational change yet every staff-member points out that there is room for improvement. The three main problems staff-members have are mentioned in figure 6.
The first item speaks for itself, many staff-members perceive the communication as too sporadically. The absence of a structural approach does not mean that the formal communication regarding educational change entirely lacks structure, but the subject is often omitted in staff meetings or is cancelled in favour of more urgent matters.

[14] The OMA meeting is a meeting headed by the program director for all residents.
[15] A meeting for residents only, as a preparation for the OMA meeting.

[16] The 'Wenckebach Institute' is part of the UMCG and is concerned with the development and education of healthcare professionals (www.wenckebachinstituut.nl).

Problems perceived by staff-members:
- Low frequency
- The absence of a structural approach
- The allocation of communication channels

Consequences perceived by staff-members:
- Unawareness
- Lack of interest
- Passive behaviour

Solutions perceived by staff-members:
- Gradual approach
- More structural embedded in meetings
- Oral presentations by experts
- Support of written (digital) documents

Figure 6: Formal communication problems

"It [formal communication regarding educational change] is still too much ad hoc, mainly because we do not have enough time and then these things are first to perish." (19s)
The allocation of communication channels means the usage of available resources. At the moment much of the communication takes place by e-mail, but according to the respondent this should not be the main source of information.
"Of course e-mail is very nice, but at the same time the biggest curse of the century, because it never stops. When you're out for a week, there are 120 or 150 new e-mails waiting, something you'll never get through, you get really behind sometimes, so that is not the way." (20s)
As a consequence of the scarce (or sometimes non-existent) communication respondents mention ignorance, passivity and a lack of interest among the medical specialists.
When asked for the ideal way of formal communication respondents prefer oral over written communication. The ideal situation would be a clear and oral presentation by an expert in the field during a staff meeting or the morning report to 'sell' the changes, supported by written documents for reference purposes.
"I think that the available means are basically adequate. This means the staff meetings, I think that's a good medium, on top of that a combination with e-mail containing a short announcement stating the intentions." (21s)
The department should be aware of the fact that too much exposure could actually create resistance.
"Yes, keeping the peace without flooding them, otherwise you get some kind of Soviet system, with pamphlets hanging everywhere (…) I think that only leads to aversion." (22s)
Another positive contribution to the formal communication is the 'teach-the-teacher' course offered to the staff-members. These courses have, according to the respondents who participated this year, a positive effect on their awareness and behaviour.
"Well, you gain some theoretical background, you are forced to practice in the form of role-playing, which I hate by the way.(…) I must say that after these two days, I really got the feeling I learned something there, something I will use it in the future.(…) I recommend this course to everyone that hasn't attended yet." (23s)

Like informal communication, formal communication is perceived as important for the individual as well as for the entire process of educational change. Opinions do seem to differ on the emphasis, but the general consensus is that the two forms of communication cannot do without one another. Informal communication seems to be important for the content of ideas and decisions, whereas formal communication deals more with formalization and implementation.
"Well, I think, the informal side precedes the formal side. Let's say, the informal personal contact suits a lot of topics much better than formal communication, this can eventually be completed formally. Just like when you have a conversation regarding a topic after which you confirm it by letter, that's what the difference between informal and formal comes down to." (24s)

4.5 Participation

As can be seen in table 2 there is a lot of variation among the self-appointed participation, this is, at least partly, a

consequence of the formal tasks of staff-members and residents and is not surprising. Participation ranges from full participation to none whatsoever, with all kinds of intermediate forms. As shown in table 2 a substantial part of the respondents is not really participating, but waiting for instructions.

"Well, I participate in the sense that when some one asks me to take part in the appraisal and such, I participate, but I do not develop new initiatives. I think that is the task of people that have made it their business." (25s)

In the interviews the respondent were also questioned about their impression on participation in the department. Staff-members often pointed out that there are some individuals participating in the innovations, but there are also plenty of staff-members not participating.

Many staff-members do not hold a positive view on the participation of residents. Some of the questioned residents share those views: *"Well, I think that, I'm a bit more pessimistic about that, many residents, by that I mean the lower year residents, are not really engaged in their education or educational renewal, and not only the lower year residents, also the residents that just graduated. Some go entirely passive through their education; this still happens too often."* (26r)

Another resident responded: *"I think that part of the residents is committed, really enjoys it, but I think that's about three or four out of twenty-five."* (27r) Residents were also critical on the participation of staff-members.

The possibility to participate in the decision making process is perceived in various ways among respondents. Most are either positive or are unaware of the possibilities.

The way of influencing the decision making process seems to be through formal structures in the form of committees and during formal meetings. But respondents stress that this participation is mainly about the execution of plans that are already formulated.

"I don't know really, it could be, there are committees free to join everywhere in the hospital if you'd like that, but this is not really well known and people are indifferent, I can't think of one person to go to if you want to do that sort of thing." (28r)

The importance of participation is supported by every staff-member. What's interesting is that a lot of them mention that it is not important for all staff-members to participate. A small group of devoted surgeons should be enough. The following interview quote sums it up nicely: *"Most people don't do anything regarding educational change, but that's really ok, it should only involve a few people, that's called focussing, that's what people do in a good organisation."* (29s)

This view corresponds with the existing educational committee, headed by the program director and comprised of representatives from every sub-specialty.

"So one person that keeps an eye on the process for every sub-specialty and if you know how to make it attractive and interesting, people will follow." (30s)

These people should, according to the interviews, be responsible for the further diffusion within the sub-specialties. *"So one from every sub-specialty. When they serve as the motor to motivate the rest, I think that's fine. I mean, not everyone has the same hobbies. (…) I imagine you can't expect from every staff-member to be enthusiastic about educating or educational innovations, and that shouldn't be ones goal."* (31s)

The next section is the discussion section. In that part I will deal with the interpretations and consequences of the presented results. It is also the last chapter of the thesis and wraps up everything from research implications and general conclusions to sound and grounded recommendations.

5. Discussion

So far I introduced the research question, elaborated on the underlying theories and presented the methods and the research data. This last section integrates all the previous effort, and ties up the loose ends.
I will start with a discussion of the results leading to a conceptual model. This will be followed by an evaluation of the research design, the scientific implications and further research. The section ends with practical recommendations for the surgery department based on the interviews and literature, and an overall conclusion.

5.1 Results and conceptual model

There are indications that the level of awareness might differ between sub-specialties, due to the differences in resident interaction. This evidence is not conclusive, but enforces the idea that informal staff-member resident interaction is very important and underlines the importance of structural communication and participation. The sources of awareness are primarily forms of (formal and informal) intra-department communication and participation in the form of committees, thereby hinting at a relation between the concepts. It also seems as if awareness and the knowledge it brings, logically, has an effect on the individual perception of the change content.

It is mentioned in the results section that, while some staff-members resisted the change and others pointed out practical problems, they generally have an open mind on the subject of educational change. This view resembles recent research by Bakker et al. (2008) which states that the post-graduate educational innovations are largely (90%) supported by specialists (of different disciplines) in the North & the East of the Netherlands, the educational region headed by the UMCG. The active participation of staff-members in the innovations seems smaller at a regional level (1 out of 5 specialists), but this can probably be explained by the overall participation of staff-members in post-graduate education, 60% regional versus nearly a 100% at the UMCG department of surgery.[17]
While the theory section provides different reasons for resistance, the experienced resistance of staff-members and residents mainly derives from disagreement with the content and the associated workload. It seems that the individual perception regarding the change content is at least equally important as the three concepts as a main source for resistance. The study by Giangreco and Peccei (2005) underlines this idea. And their quantitative research suggests that the individual opinion on the change content has a direct influence on resistance, next to participation (p. 1825).
The main change content has been nationally established, therefore the department has little influence in the formulation phase. So, while content is extremely important in an educational change situation, the department should especially focus on the implementation process.

The relationship between resistance and behaviour seems to produce interesting results. The resistance among surgeons and residents was found to take the form of failure to engage in various types of pro-change behaviour, rather than a propensity to engage in more open and active forms of dissent. Open resistance to programmes of organisational change may not be a feasible option for higher level employees. Much more likely, instead, is that they will express their discontent or disagreement with the change through passive behaviour, resembling the empirical research on resistance by Giangreco and Peccei (2005:1824), but this seems only a partial explanation. The interviews convinced me that staff-members do not hinder the changes partially because of their commitment to the

[17] Every staff-member has a role in resident education as a teacher, not to be confused with participation in the change process.

profession, the department, the residence and therefore the academic culture and maybe a feeling of inevitability.
The psychological conceptualising of empathy uses a combination of cognitive and emotional components, as used by Jolliffe & Farrington (2006). In this research the assessment questions were asked in a general fashion while leaving room for the respondents to mention the agents of empathy. Most respondents took the department as a whole as the agent of empathy, not in correspondence with the classical notion, empathy as an individual trait, but more as the pragmatic calculative business oriented use of empathy (e.g. Cummings & Worley, 2005).
People are aware that not all ideas and concerns can accordingly be dealt with. The frustration often originates from lack of feedback afterwards. Therefore I argue that communication on these subjects can have a positive effect on the perceived empathy within the department.
Respondents note that empathy is very important for the participation of staff-members and that frustration leads to lower participation.
While it is clear that empathy affects communication and participation, it is also part of it. Due to this ambiguous nature it is hard to define any relationship, as it seems more of a moderating factor. The exact interaction between these concepts could be a subject for further research.

The results on informal communication corresponds with the findings of Keating et al. (2007) suggesting that medical specialists seek information with experts in the department, the 'opinion leaders', as well as colleagues that are proximal; the sub-specialty colleagues and the residents group in this research. The sub-specialty representatives and the identified opinion leaders have a special part to play in the diffusion of the innovations within the department, pretty similar to the concept of a 'guiding coalition' mentioned by Kotter (1995). This creates several opportunities for the department which are mentioned in the recommendations. It is also clear that people with a formal educational task communicate more informally, hinting that participation does have an effect on informal communication. The most important conclusion from the research on formal communication is that staff-members as well as residents prefer the so-called rich face-to-face communication. The changes need to be 'sold' to raise awareness and interest in the subject, this is also widely regarded in the change literature in general but also in the medical profession in particular (e.g. Plsek & Kilo, 1999).
The teach-the-teacher course occurs to be valuable for the awareness of staff-members as well as their participation level. I am also convinced by the interviews that face-to-face promotion of the educational changes can spark interest in the subject en lead to more participation.

While participation has empirically proven to be of aid in a change process, a number of respondents mentioned that, although it is important, it is not relevant for everyone individually. Only for people that are interested in educational change or people that have a participating task. This means that there probably should be extra emphasis on communication to raise awareness and diminish resistance with the currently non-participating residents and staff-members.
There seem to be enough opportunities for staff-members as well as residents to participate, but these tasks are mainly in implementation. The actual decision making resembles the decide style of the Vroom (2000) (figure 1, page 10), while a consult group style may be more appropriate, there will be more on this in the recommendations.

Communication, participation and empathy, are perceived as important by practically all the respondents in the change process, as can be seen in table 2. While relationships between the different research concepts are not validated quantitatively at this point, the combination of literature and empirical research makes the model presented in figure 7 very *'plausible'* in the sense described by Babbie (2004*): "To indicate that theories represent our best understanding of how life operates".* This model can serve as a guideline for further research but also as a research subject for quantitative validation.
The change process is not a closed system and therefore faces external influence not included in the research, but certainly present.

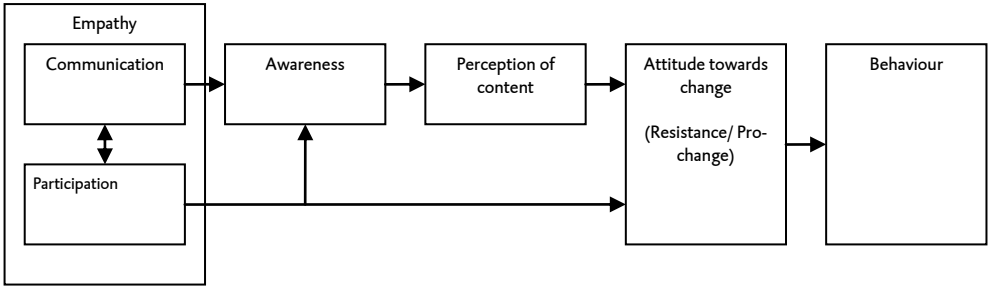

Figure 7: Conceptual model for further research

5.1.1 Validity and reliability

The sample of interviewees included both men and women, different ages and pretty much every level and function of staff-members and residents has been covered, ranging from normal staff-member without any formal ties to education to program director and management level staff-members. The residents are also from different years and with and without formal ties to education (e.g. education committee or resident associations). Approximately one third of the entire population has been interviewed 14 out of 40 staff-members and 6 out of 19 residents. I therefore conclude that the sample holds a very good representation of the entire population. The only thing that could be regarded as problematic is the distribution of the sample. Fifty percent of the questioned staff-members have (next to the usual educating role of all staff-members) a formal role in post-graduate education, and probably more in under-graduate medical education, also the level of involvement with the interviewed resident seems to be higher than the general level. This may seem problematic at first, but does not pose a problem to the research because the main goal is to map the presence of resistance and the status quo on empathy, communication and participation and methods for improvements. The heterogeneity of the sample is therefore perfectly suited for this end.

A fundamental problem of qualitative research has always been the subjectivity of the researcher, the interpretation of the data will always be subject to personal interpretation, but I did much to minimize this risk (member check, triangulation, coding, etc.). Therefore the probable researcher bias does not bear great influence on the research outcome.
The design of the research has been a trade-off between reliability and validity, choosing for the interview set-up. This conversation style research is probably less reliable than a quantitative method, but this is made up due to the heightened validity (Babbie, 2004, 147).
Overall I think that this research gives a sound picture of the situation at the department of surgery and that everything has been done to produce a research as minute as possible with qualitative methods and the available resources.

5.1.2 Scientific implications

The scientific relevance of this research consists of several aspects. Not only has it uncovered a very detailed image of

a change process in an academic surgery department, it also explores the relations between the different research concepts. It is hard to 'prove' the suggested relations among concepts, but the research outcomes show great similarities with business, healthcare and medical education related literature, and therefore seems a confirmation of previous research. As mentioned earlier, the exact relationships between concepts and figure 7 are a good subject for future research.
While the topic of resistance to change has been thoroughly covered in literature, the largest part of the available literature describes conceptual ideas and hypothetical examples instead of empirical research. The change literature that identified empathy, communication and participation as the most important means to minimize resistance, the scientific foundation of the theoretical framework, are not based on empirical evidence. The studies that do research resistance to change limit themselves to one or two concepts. To my knowledge there hasn't previously been a research that explored the big picture as compared to this study.
The situation at this department could be similar to other surgery departments of Dutch university medical centres. The exact situation will probably differ from normal teaching hospitals[18] due to time restraints and more emphasis on the daily routine in normal teaching hospitals, according to the program director of the 'Martini Hospital' in Groningen[19] and other UMCG staff, but probably shares great similarities.
It is not certain whether the findings are generalisable to other specialties within the UMCG, because of the numeral differences between medical-specialties, but it may well be that the results at the UMCG surgery department resemble other specialties and other professional organisations. This is probable because of the great similarities with healthcare literature and research in other professional settings. The resemblance between this department, other specialties and even other professional organisations could be subject for further research.
I am proud to pronounce that this research has already a follow-up study planned. The attitude towards change and the diffusion network of all staff-members will be researched as a part of a larger PhD thesis. This research can shed more light on the presence of opinion leaders and internal diffusion of innovations within the department and is a welcome addition to my explorative qualitative findings on this topic.
The practical value of this thesis is an identification of the different opinions present at the department, an inventorisation of ideas and solutions from the work floor and the integration of these ideas with theory and uncovering the picture as a whole. So while a majority of the ideas underlying the recommendations were already present within the department, this research identified them, enriched them with theoretical backgrounds and combined them to a complete package. Therefore I would like to emphasize the great practical value of this thesis for the department of surgery and other specialties facing similar changes.

[18] A teaching hospital is the name of a non-academic hospital that is engaged in teaching.
[19] Conversation held on Januari 28, 2008 with Dr. Baas, program director of the surgery department at the 'Martini Hospital'.

5.2 Recommendations

The following recommendations are based on the described research, as well as on informal conversations with surgeons, residents and educational experts from the Wenckebach Institute and on my own insight on the matter. I have chosen to limit the number and scale of the recommendations for the sake of realism and feasibility, thereby omitting unrealistic plans.

5.2.1 Attention to empathy

It is very hard to influence the perceived empathy of staff-members and residents, because the topic is so much bigger than educational change alone. But I think it can be very valuable to promote transparency throughout the intensifying change process. People already regard the department as open, but (sometimes) lack of feedback

leads to some frustration. Therefore it is important to pay attention to the feedback process. Even when problems can't be tackled, it is important to keep people in the loop. Part of this can be achieved through the other recommendations. "If you've got ideas all the time, but nobody's listening, you'll bleed to death quickly. Then, I think, you'll give up eventually."(36s)
This thesis can serve as a good starting point and is already a part of the empathy process as it reveals different ideas and sentiments within the department.

5.2.2 Oral presentation by experts

The results of the interviews clearly show that staff-members prefer oral over written communication and the theory (e.g. Lengel & Daft, 1988) subscribes to the idea that a change initiative calls for a rich medium like face to face communication. Therefore it seems wise to utilize oral presentations by experts to "sell" the idea. These experts can be the so-called opinion leaders from within or from outside the department, the program director, but also outside educational experts (e.g. the 'Wenckebach Institute'). "As is the case with motivation, if someone knows a lot about the subject and is able to pass it on very well, that's motivating."(32s)
The preference for face-to-face communication is unmistakable and is an ideal way to inform as well as motivate staff-members and residents.
The daily morning report session seems to be a perfect platform for this, because of the attendance of staff-members as well as residents. There is already a presentation everyday, so it takes little effort to apply this for a change related purpose. Another possibility is the plenary staff meeting. This does not mean that written communication channels like e-mails are useless. E-mail and written reports can be of great use as a complementary information source. For reference purposes, additional information and for people that were absent during the presentation. I would like to suggest to store this on the intranet or the shared hard drive of the department.

5.2.3 More structural approach to communication

The communication regarding post-graduate education is seen by many staff-members as insufficient and too ad hoc. The following statement by a staff-member sums it up quite nicely:
"Well, it should be a fixed item on the agenda in the medical heads meetings and in the plenary meetings for instance, but it's not always on the agenda, or it doesn't get addressed. (…) No, it's not on the agenda again. (…) That's part of the problem when you're talking about communication, when people do not communicate regarding this subject, then there is no communication. And this is the right body to discuss this, because all the staff, all the surgeons are present. So, if you want to convey anything to the educating staff, it should be done right there, but it's even not on the agenda."(33s)
This recommendation complements the previous in that communication moments should be more frequent and embedded in the standard structure of a meeting and provide more exposure for the educational changes and 'create understanding' (e.g. Kirkpatrick, 1985; Kotter, 1996; Burnes, 2004). This more embedded approach makes the topic of educational changes more part of the routine.

5.2.4 Stimulation of informal communication

Informal communication is stimulated indirectly by the other recommendations, but it could be stimulated even more. This could add to the learning capabilities of the department, aid the diffusion of innovations (Keating et al., 2007) and improve the relations between the staff-members and residents, so crucial for the educational reforms. This could be facilitated by the opinion leaders within the department. It is difficult to recommend a practical tool for this, because it is culturally dependant, yet the following staff-member proposition is a practical example:
"I would like some more informal contact with residents regarding this subject. (…) Actually, people should create a platform for this. To have a drink in a bar every week, that's too much if you ask me, but something like that. I wouldn't

mind, for example, to have dinner with everybody once every two months. We should do something like that actually, go to a restaurant (in a separated area), have dinner with one group one month and with another group the other, but intentionally staff plus residents."(34s)

5.2.5 Larger role for sub-specialty representatives

Most of the educational reforms are developed nationally, thereby leaving little room for interpretation. I already discussed the importance of participation of the sub-specialty representatives. It may be wise to involve them more in the decision-making process, regardless of the little bandwidth there is. This is also mentioned by a representative during one of the interview sessions:
"In the group of sub-specialty representatives we can participate a little, but this mainly concerns the execution and not the formulation of the plans. (…) If I were [program director],(…) I would involve the representatives more in the planning stage."(35s)

A transition of the decision-making style from 'decide' to 'consult group' of the Vroom model20 (2000), while still leaving the final decisions to the program director, would probably benefit the process. This can influence the decisions positively and result in better diffusion to the different sub-specialties through the representatives.
As I determined earlier, these people have a very important role as some sort of guiding coalition, and should be motivated to the utmost.
Three important preconditions for the proposed recommendations are that 1) it should not take up much extra time from staff-members as well as from residents, 2) it is not wise to start a big advertising offensive and 3) free will should be at the basis of everything. The communication should definitely be more extensive, but not to a point that it would invoke more resistance. A balance has to be found in this. This has also been acknowledged by the program director and other staff-members.

5.3 Conclusions

The main research question was presented earlier in the thesis, and has already been answered. The research question is:
Do staff-members and residents at the department of surgery of the UMCG resist the changes in post-graduate medical education, for what reasons, how are empathy, communication and participation currently used in this change process, and how can these methods (as described in the theory) be used to minimize resistance to change?
In conclusion, I think I can honestly say that the post-graduate educational changes at the UMCG surgery department have a good starting point. It should be kept in mind that the process is still at the beginning of the curricular reforms. Not everyone is fully aware yet, nor is everybody positive about the changes. There is a certain amount of resistance to change mostly originating from disagreement with the change content, yet most people are open to change and characterise themselves as 'educationally minded'.
The areas of empathy, communication and participation still leave room for improvement, but the organisational structure and the processes within the department are perfectly suitable as a basis for the proposed improvements (e.g. the sub-specialty representatives, the OMA-meeting, the morning report). There is still a lot of work to do within the department to raise awareness and especially more interest in the subject of educational change with staff-members and residents. It is also important to educate people in the execution of the new procedures, but I think that a structured and transparent communication/ participation program headed by the program director, with the help of inspired staff-members and experts (as described in the recommendations) can provide a major impulse in the initiation of structural durable educational change. Therefore it will be possible, with relatively minor adjustments to the daily routine, to streamline the process of educational change within the department significantly for now and the years to come.

[20] See page 11 of this thesis.

References

Babbie, E. 2004. ***The practice of social research 10th edition***. Belmont, CA: Wadsworth.

Bakker, R.H., Meininger, A.K., Dijkstra G.J., Reijneveld S.A., Groothoff, J.W. 2008. Medisch specialisten in de OOR Noord & Oost steunen innovaties medische vervolgopleidingen. ***Tijdschrift voor medisch onderwijs***. (unpublished)

Beckhard, R., & Harris R.T. 1977. ***Organizational transitions: Managing complex change***. Reading, MA: Addison-Wesley publishing Company.

Beer, M., & Nohria, N. 2000. ***Breaking the code of change***. Harvard Business School Press.

Bennet, M. 2003. Implementing new clinical guidelines: The manager as agent of change. ***Nursing management***. 10(7): 20-23.

Burnes, B. 2004. ***Managing change: A strategic approach to organizational dynamics 4th edition.*** Harlow: Pearson education limited.

Centraal College Medische Specialismen. 2004. ***Besluit heelkunde***. Staatscourant. 14 December.

Centraal College Medische Specialismen. 2007. ***Kaderbesluit CCMS***. Staatscourant. 15 November.

Cooke, R. A. Organizational development in school systems 1980. in E. F. Huse (ed.). ***Organization development and change 2nd edition***. 406-414. St Paul, MN: West Publishing Company.

Coyle-Shapiro, J. A. M. 1999. Employee participation and assessment of an organizational change intervention: A three-wave study of total quality management. ***Journal of applied behavioural science***. 33: 439-456.

Cummings, T. G., & Worley, C. G. 2005, ***Organizational development and change 8th edition***. Mason, OH: Thomson South-Western.

Daft, R. L. 2003. ***Management 6th edition***. Melbourne: Thomson Learning.

Davidson, P. M. 2002. The surgeon for the future and implications for training. ***ANZ Journal of Surgery.*** 72: 822-828.

Dent, E. B., Goldberg, S. G. 1999. Challenging 'resistance to change'. ***Journal of Applied Behavioral Science***. 35: 25-41.

Durning S.J., Cation L.J., Markert R.J., Pangaro L.N. 2002. Assessing the reliability and validity of the mini-clinical evaluation exercise for internal medicine residency training. ***Academy of Medicine***. 77(9):900-904.

Dunphy D. 2000. Embracing paradox: Top-down versus participative management of organizational change, a commentary on Conger and Bennis. In M. Beer & N. Nohria. (Eds.) ***Breaking the code of change***: 123-135. Boston: Harvard Business School Press.

Giangreco, A. & Peccei, R. 2005. The nature and antecedents of middle manager resistance to change***.*** ***International journal of human resource management***. 16:1812–1829.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. 2004. Diffusion of innovations in service

organizations: Systematic review and recommendations. ***The Milbank quarterly***. 82:581-629.

Harrison, R. 1970. Choosing the depth of organizational intervention, ***Journal of applied behavioral science***. 6: 181-202.

Harvard management update. 2007. Leading change without a burning platform: How to create a sense of urgency when business is good.12(6): 1.

Hatch, R. S. 1962. ***An evaluation of a forced-choice differential accuracy approach to the measurement of supervisory empathy***. Englewood Cliffs, NJ: Prentice-Hall.

Hsieh, H. & Shannon, S. E. 2005. Three approaches to qualitative content analysis. ***Qualitative health research.*** 15: 1277-1288.

Huse, E. F. 1980. ***Organization development and change 2nd edition***. St Paul, MN: West Publishing Company.

Hutjes, J. M., & van Buuren, J. A. 1992. ***De gevalsstudie: Strategie van kwalitatief onderzoek***. Meppel: Boom.

Jolliffe, D. & Farrington D. P. 2006. Development and validation of the basic empathy scale. ***Journal of Adolescence***. 29: 589–611.

Keating, N. L., Ayanian, J. Z., Cleary, P. D. & Marsden, P. V. 2007. Factors affecting influential discussions among physicians: A social network analysis of a primary care practice. ***Society of general internal medicine***. 22:794–798.

Kotter, J. P. 1995. Leading change: Why transformation efforts fail. ***Harvard business review***. March-April: 59-67.

Kotter J. P. 1996. ***Leading change***. Boston: Harvard Business School Press.

Kotter, J. P., & Schlesinger L. A. 1979. Choosing strategies for change. ***Harvard business review***. March-April: 106-114.

Kirkpatrick, D. L. 1985. ***How to manage change effectively: Approaches, methods and case examples***. San Francisco: Jossey-Bass.

Kvale, S. 1996. ***Interviews: An introduction to qualitative research interviewing***. London: Sage.

Lengel, R. H. Daft, R. L. 1988. The selection of communication media as an executive skill. ***The academy of management executive***. 2: 225-232.

LeTourneau, B. 2004. Managing physician resistance to change. ***Journal of healthcare management***. 49: 286-288.

Litch, B. 2005. Facing change in an organization: How to chart your way through the chaos. ***Healthcare executive***. Sept/Oct: 20-24.

Macri, D. M., Tagliaventi, M. R., & Bertolotti, F. 2002. A grounded theory for resistance to change in a small organization. ***Journal of organizational change management***. 15: 292-311.

Martin, A. J., Jones, E. S., Callan, V. J. 2006. Status differences in employee adjustment during organizational change. ***Journal of managerial psychology***. 21: 154-162.

Martin, J.A., Regehr, G., Reznick, R., Macrea, H. Murnaghan, J. Hutchison, C. & Brown, M. 1997. Objective structured assessment of technical skill (OSATS) for surgical residents. ***British Journal of Surgery***. 84(2): 273–278.

Mehrabian, A., & Epstein, N. 1972. A measure of emotional empathy. ***Journal of Personality***. 40: 525–543.

Miles, M. B., Huberman A. M. 1994. ***Qualitative data analysis: An expanded sourcebook 2nd edition***. London:Sage.

NVvH (Nederlandse Vereniging voor Heelkunde). 2007. ***Structuur curriculum Heelkunde voor reflectieve professionals*** (concept). http://nvvh.artsennet.nl. (accessed on 12-07-07)

Nutt, P. C. 1986. Tactics of implementation. ***Academy of management journal***. 29: 230-261.

Plsek, P. E. & Kilo, C. M. 1999. From resistance to attraction: A different approach to change. ***The physician executive***. November/December: 40-44.

Piderit, S. K. 2000. Rethinking resistance and recognizing ambivalence: a multidimensional view of attitudes toward organizational change. ***Academy of management review***, 25. 783-794.

Rademakers, J. J. D. M. J., de Rooy, N. & ten Cate, O. Th. J. 2007.Senior medical students' appraisal of CanMEDS competencies. ***Medical education***. 21 May: 1-5.

Reezigt, C. 1995. ***Zicht op interne communicatie: Ontwerp van een bedrijfseconomisch georiënteerd diagnose-instrument***. Groningen: Rijksuniversiteit Groningen.

Rogers, E. M. 1995. ***The diffusion of innovations 4th edition***. New York: Free press.

Sillince, J. A. A. 1999. The role of political language forms and language coherence in the organizational change process. ***Organization Studies***. 20: 485-519.

Strebel, P. 1996. Why do employees resist change?. ***Harvard business review***. April-June. 86-92.

Strien. A. P. M. van, 1999***. Empathie: Een kwaliteitsaspect van de psychoanalytische praktijk? Een exploratief onderzoek van een concept.*** Amsterdam: Thela Thesis.

Tichy, N. 1993. Revolutionize your company. ***Fortune***. 13 December: 114-118.

Vroom, V. H. 2000. Leadership and the decision-making process. ***Organizational dynamics***. 28(4): 82-94.

Vroom, V. H., & Yetton P. W. 1973. ***Leadership and decision-making***. Pittsburgh: University of Pittsburgh press.

Weinberg, A. D. Ullian, L. Richards, W. D. & Cooper, P. 1981. Informal advice – and information- seeking between physicians. ***Journal of medical education***. 56: 174-180.

Weisbord, M. R. 1976. Why organizational development hasn't worked (so far) in medical centers. ***Health care management review.*** 1(2): 17-28.

West, E., Barron, D. N., Dowsett, J., & Newton, J.N. 1999. Hierarchies and cliques in the social network of healthcare professionals: Implications for the design of dissemination strategies. ***Social science & Medicine***. 48: 633-646.

Wolfram Cox, J.R. 1997. Manufacturing the past: Loss and absence in organizational change. ***Organization studies***. 18: 623-654.

Appendix A Interview questions and preliminary codes

Variables	Definition	Component	Questions	Answer Possibilities	Codes	Respondents
Control Variables						
Age	The respondents age	Single component	*How old are you?*	Open answer in whole years	Age	Staff-members/ residents
Gender	The respondents gender	Single component	No question – identified by researcher	1. Male 2. Female	Gender	Staff-members/ residents
Sub-specialty	The sub-specialty in which a respondent is currently working	Single component	Derived from formal documents, verified during the interview: *Can you name your sub-specialty?*	1. Surgical oncology 2. Vascular surgery 3. Hepatic surgery 4. Intensive care 5. Pediatric surgery 6. Traumatology 7. Abdominal surgery	Sub-specialty	Staff-members only
Organisational role	The position and job of a respondent	Single component	Derived from formal documents, verified during the interview: Can you describe your *organisational role?*	1. Staff-member 2. Professor 3. Program director 4. Chef de clinique 5. sub-specialty head 6. other	Organisational role	Staff-members only
Teach-The-Teacher program	The respondent has taken a T3 program in the last five years	Single component	*Have you participated in the T3 program in the last five years?*	1. Yes 2. No	Teach-The-Teacher program	Staff-members only
Educational Progress	The year of education a respondent is in	Single component	*What year of education are you in?*	1. Year 1-2 2. Year 3-4 3. Year 5-6	Educational Progress	Residents only
Research variables						
Awareness	The degree to which respondents consider themselves aware of the educational innovations	Awareness	*To what extent do you consider yourself aware of the several innovations in the field of post-graduate medical education?*	Open answer	Awareness Sources of awareness	Staff-members/ Residents
			Can you explain why you assign yourself this level of awareness, in other words could you explain your previous answer?	Open answer		
			Where does this awareness come from?	Open answer		
Resistance to change	A form of dissent to a change process that the individual considers unpleasant, disagreeable or inconvenient. This	Attitude	*Can you describe your attitude towards the educational innovations?*	Open answer	Attitude towards change • Resistance • Mixed or Neutral reaction • Pro- change Behaviour	Staff-members/ Residents
			Can you motivate where this attitude comes from?	Open answer		
		Behaviour	*How do you think this attitude affects your behaviour concerning the educational innovations?*	Open answer		
			Why is this?	Open answer		

	dissent may manifest itself in a range of individual or collective actions and behaviours			*What are the outcomes of this?*	Open answer		
Empathy	The ability of an individual to project himself or herself in the role of another person and acts upon it		Cognitive empathy	*To what extent do you have the idea that the opinions and concerns of yourself, as well as that of others involved in the educational changes, are recognized within the department?*	Open answer	Empathy • Cognitive empathy • Emotional empathy • Persona importance • Process importance	Staff-members/ Residents
				Can you motivate your previous answer?	Open answer		
				Can you give examples of this?	Open answer		
			Emotional empathy	*To what extent do you have the idea that management shows concern about these opinions and concerns or acts upon it?*	Open answer		
				Can you motivate your previous answer?	Open answer		
				Can you give examples of this?	Open answer		
			Perceived importance	*How important is this recognition and reaction (on concerns and opinions) for yourself and why do you think so?*	Open answer		
				How important is this recognition and reaction (on concerns and opinions) for the innovations in post-graduate medical education and why do you think so?	Open answer		
Communication	Process in which The sender influences people through information/ knowledge related to educational innovations	Informal communication	Occurrence	*When you have questions concerning the innovations in post-graduate medical education, do you turn to colleagues for discussion, advice and/or information?*	Open answer	Informal communication • Occurrence • Opinion leaders • Frequency • Personal importance • Process importance	Staff-members/ Residents
				Can you describe this process?	Open answer		
			Opinion leaders	*Can you name the three most important colleagues in this context?*	Open answer		
			Frequency	*How often does this happen?*	Open answer		
			Perceived importance	*How important is this form of communication for yourself and why do you think so?*	Open answer		
				How important is this form of communication for the process of educational change at the department and why do you think so?	Open answer		
		Formal Communication	Formal communication channels and application	*Can you name the most important formal communication channels used to communicate the innovations in post-graduate medical education and tell something about the application?*	Open answer	Formal communication • Channels • Frequency • Quality • Personal importance • Process importance	Staff-members/ Residents
			Frequency	*Can you give an estimate of the frequency of communication?*	Open answer		
			Perceived importance	*How important is this formal communication in an educational change situation according to you and why do you think so?*	Open answer		

			Preference	*Can you describe what you perceive as suitable communication channels in the context of educational changes, in other words, how would you like to be informed in these matters?*	Open answer		
			Perceived importance	*How important is this form of communication for yourself and why do you think so?*	Open answer		
				How important is this form of communication for the process of educational change at the department and why do you think so?	Open answer		
Participation	The extent to which a respondent participates in the formulation and implementation of the educational changes		Individual participation	*To what extent do you participate in the change intervention?*	Open answer	Participation • Individual degree of participation • Department participation • Participation decision making style • Encouragement • Personal importance • Process importance	Staff-members/ Residents
				Can you explain why you assign yourself this level of participation, in other words could you explain your previous answer?	Open answer		
				Can you compare your participation level with the other individuals in this department, staff-members as well as residents?	Open answer		
			leadership style	*To what extent is it possible for staff-members and residents to influence the decision-making concerning the educational changes?*	Open answer		
				Can you give some examples of this?	Open answer		
				Is participation in the formulation of plans and implementation encouraged?	Open answer		
			Perceived importance	*How important is the participation in the educational change process for yourself and why do think so?*	Open answer		
				How important is participation of employees in an educational change situation according to you and why do you think so?	Open answer		

Appendix B Original Dutch transcripts of presented quotes

Resistance to change

1s *"Ik ben bezorgd dat los van de enorme workload die het geeft, papier geeft heel veel werk, veel meer werk dan je aan het begin denkt, voor iedereen van student tot secretaresse, los van de workload, denk ik dat we doorschieten."*

2s *"Dus ja, dat vind ik een beetje het beangstigende eigenlijk aan het kritiekloze, op het ogenblik, achter de fanfare aanlopen. Terwijl niemand bij tijd en wijle durft te zeggen dat de keizer eigenlijk helemaal geen kleren aan heeft."*

3r *"Hoe groter de tent is, hoe belangrijker is dat je ook die vernieuwing doorzet. Met name om het overzichtelijk te krijgen."*

4s *"Ik weet het belang, dat gestructureerd naar mensen kijken een eerlijker manier van beoordelen is, hoe je dat moet doen dat weet ik ook niet precies, maar dit lijkt een beetje te geformaliseerd te zijn, dat het niet meer echt toetst wat het toetst."*

Behaviour

5s *"Nee, als persoon word ik er niet actiever of passiever van, dat heeft geen emotionele invloed."*

6r *"Ja, als de professor zegt dat ik er te weinig heb[KKB's en OSATS], dan ga ik wel actief aan de slag, maar dat is dus wat ik bedoel, dan moet ik er meer halen, dus dan moet ik iedereen nog even snel aanklampen(…), dat je die hebt omdat je die moet hebben, maar dat je er weinig aan gehad hebt."*

Empathy

Cognitive empathy

7s *"Ik denk dat er hier allerlei momenten zijn waarop ideeën aan bod komen en dat dingen besproken worden. We hebben allerlei momenten met assistenten onderling, assistenten met de bazen, de opleider, nog assistenten met de hele groep, dus er zijn genoeg tijdstippen waarop dingen aan de orde kunnen komen en dat gebeurt ook wel."*

8s *"Nee, omdat het nauwelijks een onderwerp van discussie is, dat zou het wel moeten zijn en dat zal het ook wel worden in de toekomst, maar ik verwacht niet dat dat een hele grote vlucht neem.."*

Emotional empathy

9s *"Ja, iedereen kan hier van alles aan de orde stellen,dat is niet het probleem, of er vervolgens wat mee gebeurt, dat is wel een vraag, ook met alle goede wil verzanden een heleboel dingen in de bekende management kreet, dat nemen wij mee.(…) en vervolgens hoort nooit iemand daar weer wat van.".*

10s *"Nee. Een roepende in de woestijn. Ik hoor niks van [de chef de clinique]l, ik hoor niks van [de opleider]. Probleem, moeilijk, moeilijk, moeilijk."*

11s *"Ja, ik denk het wel, als je een goed initiatief hebt en je werkt het uit en je weet anderen ervan te doordringen dat het een verbetering is voor de huidige beoordeling en vernieuwing(…) Maar daar moet je wel aardig wat werk voor verzetten, dan moet je wel mensen overtuigen, ik denk niet dat een idee automatisch landt en dat iemand zegt dat doen we en dat wordt geregeld, zo werkt het niet bij ons in de chirurgie."*

12r "Als je heel veel dingen wil veranderen in het ziekenhuis, in zo'n grote organisatie, je moet er wel een beetje realistisch in zijn dat dat niet al te snel gaat, anders wordt je wel teleurgesteld wat dat betreft."

13r "Het is echt belangrijk dat je je organiseert, anders ben je een roepende in de woestijn, dan vind ik het ook terecht.

14r "Als je als bedrijf zorgt dat mensen dat kunnen, dan heb je een veel grotere betrokkenheid, dan wordt je als organisatie veel krachtiger."

Communication

Informal

15s "Die liggen er wel maar daar is geen data communicatie over. Die kabel ligt er wel, want we kennen elkaar heel goed en we zitten ook regelmatig met elkaar te spreken, maar veel te weinig. Want er gebeurt veel meer in opleidingsland, wat ik dan wel via andere kanalen hoor."

16s "Ik praat wel over hoe je opgeleid moet worden, maar ik praat niet over de opleidingsvernieuwing die op onze weg komen, door anderen bedacht. Dus ik bediscussieer niet vooraf de waarde van een KKB of een OSAT."

17s "Ten Duis, Ten Duis en Ten Duis."

18s "Uiteraard, als je iets wilt veranderen, als je iets wilt vernieuwen moet je er veel en indringend over praten, dan moet je je niet stil houden, want dan verandert er echt niks, dan verandert er wel wat in je hoofd, maar niet op de werkvloer."

Formal

19s "Het [formele communicatie over opleiding] is nog teveel ad hoc, en kijk het komt ook natuurlijk doordat wij te weinig tijd hebben en dan zijn dit soort dingen de eerste die sneuvelen."

20s "E-mail is natuurlijk hartstikke mooi, maar tegelijkertijd is het de meest grote vloek van deze eeuw geworden, want het gaat de hele dag door. Ben je een week weg, dan staan er 120 of 150 nieuwe e-mails, ja daar is niet meer door te komen, je krijgt zo'n enorme achterstand af en toe, dus daarin moet je het niet meer zoeken."

21s "Ik denk dat de middelen die daarvoor ter beschikking staan in principe adequaat zijn. Dat zijn dus de stafvergaderingen, dat vind ik een goed medium, daarbij een combinatie met e-mail, waar een korte mededeling in staat van wat de bedoeling is."

22s "Ja, de rust bewaren en niet te overvoeren, want anders krijg je een soort van sovjet aanpak, dat overal pamfletten hangen (…) dat wekt volgens mij alleen maar weerzin op."

23s "*Nou je krijgt wat meer theoretische achtergrond, je wordt gedwongen om in rollenspelen, die ik overigens haat, toch daarmee te oefenen.(…)Ik moet zeggen dat ik na die twee dagen ook echt het idee had van hé ik heb hier wel wat aan gehad en ik ga hier ook wel wat mee doen.(…) De cursus is ook zeer aan te raden voor degenen die het nog niet gedaan hebben."*

24s "Nou, ik denk, de informele kant gaat vooraf aan de formele kant, laten we zeggen, in het informele menselijke contact komen een heleboel dingen veel beter tot hun recht dan in het formele en uiteindelijk wordt het formeel afgemaakt, net zo goed als je een gesprek hebt over een onderwerp en het vervolgens met een brief bevestigd, daar komt het eigenlijk op neer in het verschil tussen de informele en formele kant."

Participation

25s "Nou ik participeer in die zin dat als er iets gevraagd wordt om mee te doen aan die beoordelingen en dat soort dingen, daar doe ik aan mee, maar het is niet zo dat ik nieuwe initiatieven ontplooi, dat niet. Dat vind ik ook meer de taken van anderen die zich dat meer toegeëigend hebben."

26r "Nou ik denk dat, daar ben ik wel pessimistischer over, dat heel veel assistenten, dat zijn dan jongerejaars assistenten, te weinig met hun opleiding bezig zijn, dan met opleidingsvernieuwing, en niet alleen jongere assistenten, maar ook assistenten die net klaar zijn, dat die eigenlijk passief de opleiding hebben meegemaakt, dat gebeurt nog teveel."

27r "Ik denk dat een deel van de assistenten er wel bij betrokken is die dat leuk vinden, maar ik denk dat op de vijfentwintig, dat dat er drie zijn, vier."

28r "Ja, dat weet ik eigenlijk niet, het zou vast kunnen, er zijn overal commissies in het ziekenhuis waar je eventueel bij kunt gaan zitten als je dat leuk vindt, maar het is niet zo dat dat heel erg bekend is en leeft, ik zou zo niet iemand kunnen noemen waar je heen kunt om dat te doen."

29s "De meeste doen niks aan opleidingsvernieuwing, dat is maar goed ook hè, een paar mensen moeten zich met dingen bezig houden, dat heet focussen, dat doe je in een goede organisatie."

30s "Dus voor ieder aandachtsgebied een persoon die voor het aandachtsgebied het proces in de gaten houdt en als je het maar leuk weet te maken en interessant, dan volgen de mensen wel."

31s "Dus van elk aandachtsgebied eentje, en als dat de motor is die de rest moet enthousiasmeren, dan denk ik dat dat prima is. Want ik bedoel, niet iedereen heeft dezelfde hobby's. (…)Dus ik kan me best voorstellen dat je niet van alle stafleden kan verwachten dat ze even enthousiast zijn over opleiding, of over opleidingsvernieuwing, en dat moet je ook niet willen."

Recommendations

32s "Want altijd met motivaties, als jij iemand krijgt van, die weet er veel van en kan het goed overbrengen, dat werkt motiverend."

33s "Nou dan zou het bijvoorbeeld een vast agendapunt moeten zijn in de medisch hoofden vergadering en ook in de plenaire stafvergadering, maar daar staat het niet altijd op de agenda, dan wel komt het niet aanbod. (…) Nee, het staat alweer niet op de agenda. (…). Dat is een deel van het probleem als je het over communicatie hebt, als er niet wordt gecommuniceerd over dit onderwerp, dan is er dus geen communicatie. En dit is het gremium om het daarover te hebben, want dan zitten alle staf, alle chirurgen, bij elkaar. Dus wil je iets overbrengen aan de opleidersgroep, dan moet het daar gebeuren, maar het staat niet eens op de agenda."

34s "Ik zou wel wat behoefte hebben aan wat meer informele contacten met assistenten in opleiding over dit onderwerp, (…) je moet er eigenlijk een soort platform voor creëren. Om elke week 's avonds weer te gaan borrelen in een café, dat vind ik ook iets te veel van het goede, maar toch ook een beetje in die sfeer. Ik zou het bijvoorbeeld niet raar vinden om bijvoorbeeld een keer in de twee maand met iedereen te gaan eten of zoiets. Nou zoiets zouden we dan moeten doen eigenlijk, dan gaan we naar een groot eetcafé waar je dan afgezonderd zit en dan zit je de ene maand met de ene groep en de andere maand zit je weer met een andere groep aan tafel, maar bewust staf plus assistenten."

35s "In het groepje van vertegenwoordigers van de aandachtsgebieden kunnen wij een beetje meedenken, maar het gaat dan met name over de uitvoering van de plannen en niet over het maken van de plannen.(…) Ik zou als ik [opleider] was,(…) de contact personen meer betrekken bij het maken van de plannen."

36s "Anders bloed je natuurlijk snel dood als je iedere keer dingen roept en je hebt het idee dat je een roepende in de woestijn bent, dan hou je er zelf natuurlijk vanzelf wel een keer mee op denk ik."