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Unraveling the complexities of enacting change in undergraduate medical curricula

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CHAPTER 1

General introduction



Preface

When I was 16 years old, I experienced my first organizational change process. I worked for a supermarket that was taken over by another company. During a kick-off meeting I was sitting next to our senior greengrocer, who, unmotivated, reclined in his chair. Naive enthusiastically, I thought we were all looking forward to this meeting, thrilled to be involved in the processes that were going on in this organization. Looking at my neighbor, I found out that apparently not everybody in this organization felt the same. "Why this change again", "We have had so many changes over the years", "I'm done with all these changes". I laughed, said something about 'chances', 'new energy' and 'opportunities', but really, he could not care less. At that moment, I realized that bringing about change in organizations was not easy. As it was not my role to understand what was going on this greengrocer's mind, I left the opportunity aside to dive deeper into his thoughts and feelings. I didn't think of the whole situation until, 10 years later, when I encountered another major change process; the change of an undergraduate medical curriculum at the University of Groningen. Again I observed how difficult it was to bring about change, and that these processes cause a lot of hassle and tensions in medical schools and its related hospitals. This time, I decided to follow the path I left aside ten years before, and took the opportunity to explore the educational change processes through the eyes of several stakeholders, aiming to better understand the complexities of bringing about change in medical schools.

General introduction

Undergraduate medical curriculum changes are difficult processes, in which the dynamics in medical schools are seriously challenged. Scholars in the field of medical education emphasized the lack of research on medical curriculum change processes.¹ Similar to those,¹ and other scholars,² we observe that, both in our own schools' practices as well as in the health professions education scientific journals, we tend to spend considerable time on the content and pedagogical designs of our curricula, neglecting the importance of the underlying organizational processes that will, ultimately, make or break our beautiful curriculum ideas. Having an idea is not enough; the process of bringing ideas into practice is a long and difficult one. Although overviews of important factors for curriculum change,¹ and practical tips,³ are available, empirical evidence of what undergraduate medical curriculum change looks like in practice, and the actual experiences of stakeholders involved in these processes, is still scarce. As curriculum changes are frequently recurring, resource intensive processes, taking a lot of time and energy of a large number of stakeholders, it is in everyone's interest that these processes are going as smooth as possible. Learning from previous processes might help us in supporting future processes. Therefore, in order to support future change processes, this thesis focusses on better understanding the complex-

ities of enacting change in undergraduate medical curricula. We will address this topic from different stakeholder perspectives and at different levels; personal (the change leader), interactional (stakeholder involvement), organizational (governance processes) and transnational (the role of context).

The remainder of this chapter is organized as follows. First, the context of undergraduate medical curricula in the Netherlands will be described. Hereafter, some developments in change management literature as well as medical educational change literature will be addressed. Finally, the differences between linear and complex processes will be shortly discussed, followed by the outline of the separate research papers of this thesis.

Context of undergraduate medical curricula in the Netherlands

In the Netherlands, undergraduate medical curricula have to align to what is called 'Raamplan 2009'⁴ (soon updated), also known as 'the Dutch blueprint' for undergraduate medical education. The blueprint is developed by the Netherlands Federation of University medical centers (NFU), in which all university medical centers in the Netherlands are represented. In this blueprint, the required competency (knowledge, skills and attitudes) levels of students at the end of their undergraduate training are determined, following the Canadian Medical Education Directives for Specialists (CanMEDS) model. Medical schools have considerable amounts of freedom in how they are going to facilitate students to reach these competency levels within their curricula. Therefore, in the Netherlands, the undergraduate medical curricula differ in their curriculum design, underlying educational philosophies and use of teaching and learning methods.

Prescribed by law, all Dutch undergraduate medical curricula exist of six years. These six years are divided in a Bachelor and Master phase, in line with the European agreements of the Bologna declaration.⁵ Generally speaking, the first three years (Bachelor phase) focus predominantly on gaining a firm base of basic science and medical knowledge, and the development of competencies. In this phase, students will have their first experiences with patients.⁶ In the last three years (Master phase) the competency development continues, however training is now largely clinical.⁶

In this thesis, the focus is on (major) change processes in the Bachelor phase of undergraduate medical curricula.

Curriculum change

Medical curriculum changes are recurring, high-stake undertakings at medical schools. Reasons for change vary per institute, however, political changes, changes in medical knowledge and health care practices, societal needs and expectations regarding healthcare professionals, as well as advancements in our understanding of teaching and learning, usually play a central role.⁷ A particular

driving force in the Netherlands is also the national blueprint, 'Raamplan', to which Dutch undergraduate medical curricula have to align (see former paragraph).⁴ Furthermore, as the accreditation system in the Netherlands act as major driving force for curriculum changes in medical schools, most change processes start from an initiative from higher-management.

Generally speaking, over the years, the Dutch medical schools have made a shift in their curricula. Traditionally, most curricula were discipline and knowledge oriented, in particular in the Bachelor, using conventional teaching methods such as lectures, which was followed by clinical skills training in the later years. Courses were predominantly delivered in silos; each discipline provided its own educational courses in the curriculum. Nowadays, we see a shift towards more integrated, competency based curricula in which various clinical and preclinical specialties provide integrated education.^{6,29}

In this thesis, the focus is on major curriculum changes. In chapter 2, we defined 'major curriculum change' as changes that are not about the yearly, regular adjustments at course level, but are centrally organized, intentionally initiated change projects that affect the entire curriculum and organization involved in the curriculum. The ways in which the curriculum and organization will be affected will of course differ between schools, and is very much dependent of the context and types of changes that are initiated. Our definition resonates with what other scholars called 'curriculum innovations'.^{8,9} The idea of innovations is that they generate added value. An innovation does not only concern an idea or concept, but also the actual translation of an idea into reality.⁹ In education, this means that the innovation is reflected in educational practice, and therefore the behavior of the people involved. One speaks about innovation when the new behavior is embedded in people's daily routine.⁹

As van der Klink states: *"A characteristic of educational innovation is that it involves changes that have a major impact on the behavior of teachers and students and on their intended learning outcomes."* (original in Dutch)⁸ For example, one could think of changing from a traditional teacher-centered, discipline-oriented curriculum to an integrated, problem-based-learning (PBL), and competency-based curriculum. Stated shortly, in such curricula the aim is to acquire and assess competencies, and stimulate active and collaborative learning. Teachers from various (pre)clinical disciplines work together to create integrated courses and materials, using active learning approaches, such as PBL. In PBL-curricula students learn collaboratively with peers, for example in small groups on realistic patient cases. Such major changes have implications for teachers, as their role changes more towards being a coach, instead of using frontal, teaching centered methods. Similarly, a change in the behavior of students is expected, since they will have to take more initiative in their learning, and have to work more collaboratively with their peers. Additionally, changes are expected in the organi-

zation, such as the necessity of more alignment between teachers because of the integration. Furthermore, also the facilities need to be adjusted, such as changing the learning environments/areas and ICT facilities to facilitate collaborative, and small-group learning. Finally, also the outer world needs to be informed about the changes, for instance the hospitals and other health professions domains where the 'new' students are going to work, but also potential, future students.⁸ As one could see, such major changes are an interesting fusion of very practical and more fundamental issues that, all together, have to be addressed.

Developments in change management literature and medical educational change literature

As outlined in the book of Smith and Graetz about the various 'philosophies of organizational change', ideas and conceptions about change in organizations have shifted over time.¹⁰ For a long time, theorists and practitioners of the 'traditional' change agenda perceived change to be a controllable and orderly process, *"a simple case of 'unfreezing', 'moving' and 'refreezing'."*^{10 (p.3)} In this perspective, the charismatic and inspiring leader plays a central role. This is someone who is able to change the organization with his/her powerful new vision, using strategic plans to reach the final goal of change.¹⁰ In this perspective, change is perceived to be a predictive, orderly and linear affair, that could be best approached with a well-thought plan and change models that describe the right steps to take (e.g. Kotter's model of the 'eight steps to change an organization'¹¹).¹⁰ However, other scholars challenged this perspective. Critique was expressed concerning the assumed linear and predictable nature of change processes, and the underestimation of the human factor in organizational change processes.¹⁰ Should the reality of change not be considered to be a fuzzy, hardly predictable, emerging and complex process in which intangible factors such as interacting systems, humans and organizational cultures play an important role?¹⁰ Although the rational perspective was considered to be a useful, initial guide for enacting change, a more comprehensive, holistic view on change processes became advocated, in which the incorporation of other change perspectives (such as the political, cultural, systems and psychological perspectives) was emphasized.¹⁰ *"It is the interplay between different perspectives that helps one gain a more comprehensive understanding of organizational life, because any one theoretical perspective invariably offers only a partial account of a complex phenomenon."*^{12 (p.510)}

Although the amount of literature about change processes in medical schools is less extensive, a variety of perspectives is recognizable throughout the publications. Some scholars use a more practical approach to change processes, reflected in providing handbooks for change,¹³ and the "twelve tips" for curriculum renewal in which Kotter's eight steps are emphasized.³ On the other hand, also more complex, comprehensive views on change processes are reflected. One

prominent publication about curriculum changes in medical schools in which this complexity is recognized, is the review of Bland et al.¹ In this paper, the main success factors for bringing about change in (medical) curricula were described. The authors emphasized the leader as a central person in the change process, and additionally described other features that are of importance for successful curriculum change; among which, communication, mission and vision, resource allocation, politics, a cooperative climate, and human resource development.¹ With their review, they show the broad range of aspects that medical schools - and particularly the leaders of the change process - need to take into account to bring about curriculum changes. In their conclusion, they *“wholeheartedly agree with Krackov and Mennin’s characterization of the innovation process as a “complex interaction among many elements.”*¹ Indeed, more recently, Mennin and other scholars started explicitly elaborating on complexity as a perspective to look at medical education,^{14,15} and its curriculum change processes.^{16,17}

Linear and complex processes

Linear processes assume a certain degree of regularity in which similar outcomes could be expected when the process is repeated. In linear processes, the predictability of outcomes is rather high,¹⁸ as there is usually a relatively simple formula behind these processes in which A+B leads to C.¹⁴ Common examples are piecing together a jigsaw, following a cookbook recipe, and a thermostat that regulates the temperature.¹⁴ In organizational change processes, a linear, project-based approach is suggested when both the goal of a change process, and the way to go, is clear.¹⁹ If this is not the case, which is usually the case with major change processes, project-based approaches are not going to work, as they do not take the dynamics of more complex processes into account, that ask for more flexible approaches.¹⁹

In contrast to linear processes, complex processes suffer from low predictability. This low predictability is caused by the fact that numerous (potentially unlimited) variables are interacting together, creating a situation that is constantly subject to change.¹⁶ In institutions like medical schools, these interacting variables could be the various people (e.g. teachers, deans, students, educational scientists, and secretary staff), from various backgrounds and contexts (e.g. hospital, research departments, educational support units), organizational structures (e.g. formal curriculum committees, rules and regulations) and objects (buildings, rooms, schedules, books and technology) involved in curriculum changes. Within these interactions, the process and curriculum emerge.¹⁶ Therefore, while in linear processes the whole equals the sum of the parts, in complex processes the whole is more than just the sum of the parts.¹⁴ These more complex processes call for adaptability and flexibility, in which change leaders rely on various change perspectives and approaches.¹⁰

Scholars and change practitioners emphasize that linear approaches usually fall short in organizational change processes,¹⁰ but often these linear approaches are still embraced.^{10,20,21} According to Hawick et al., the reason why change processes in medical schools are so challenging, might be because “*medical curriculum reform is often seen as linear but yet medical curricula themselves are complex and messy.*”^{17 (p.337)} In this thesis, complexity is perceived to be a paradigm,¹⁸ a way of thinking and therefore a lens through which one perceives the organizational world and its processes.²⁰ In adopting this complexity lens, we look at the curriculum change processes as dynamic, non-linear unfolding processes, in which medical schools and related hospital(s) are perceived to be complex adaptive systems (that in itself again exist of other, numerous amounts of smaller adaptive systems). Complex adaptive systems (CAS), big or small, consist of multiple people that function together, and whose actions are interconnected.¹⁸ A hospital and medical school for example exist of multiple smaller CAS, such as administrative, health, research, and educational departments, all kinds of committees, student cohorts and teachers belonging to a particular course. Usually the people in one CAS have multiple connections, and/or also belong to other CAS. Therefore, in curriculum change processes, a multitude of stakeholders need to work together, and the new curriculum, ultimately, emerges from these interactions.^{16,20}

Outline of studies

From the outline provided above it becomes clear that the leader plays a central role in (curriculum) change processes. Although much is written *about* these change leaders and what they are expected to do, not so much is written about how they perceive these curriculum change processes *themselves*. There is a body of literature studying leadership roles in medical education,^{22,23} however, little research has focused on these leaders’ roles in curriculum change processes and how these leaders enact and direct undergraduate medical curriculum change. Furthermore, the studies available, have predominantly been conducted at single medical schools,²²⁻²⁵ and were not focused on major changes. Therefore, in **Chapter 2**, we dive into the individual perspective of change leaders who lead or led a major undergraduate medical curriculum change process in their institute, including all ⁸ medical schools in the Netherlands. This chapter addresses the research question: *How do curriculum change leaders conceive of the process of enacting change, and what strategies do they rely on to succeed in their efforts?* Using interviews, we explore their unique experiences in bringing about change and we summarize their main challenges and strategies.

Due to the level of complexity, we explore these change processes from different angles. In addition to knowing *what* is said about the processes, we are also interested in better understanding *how* people talk about these processes.

Therefore, in **Chapter 3**, we use a novel analysis method in medical education, called Membership Categorization Analysis. In this chapter, we explore the same data as presented in Chapter 2, this time analyzing the change leaders' discourse about one particular stakeholder group: educational scientists, who are working in educational departments within a medical school.²⁶ This chapter addresses the research question: *How do change leaders represent and talk about educational scientists in an interview about a major curriculum change process?* By conducting a Membership Categorization Analysis we explore how change leaders refer to educational scientists (use of category terms) and what they say about them (predicates) in relation to the change process.

In **Chapter 4** we dive into an important organizational aspect; governance (the means by which decisions in medical curricula are made, implemented and monitored)². In medical education journals, critical questions arise to what extent our change efforts actually result in true, institutionalized, changes in the curriculum in action.^{17,27,28} One under-explored aspect that presumably plays a role in this unsatisfying result, is the role of governance. It is stated that one of the key mistakes that lead to failed change efforts is focusing on curriculum change while ignoring the organizational, governance, processes.² To better understand the role of governance in undergraduate change efforts, chapter 4 addresses the question: *What is the role of governance in the process of translating the original goals, outlines and philosophies of the curriculum into institutionalized curriculum change at micro-level?* For this study, we interview teachers, and we use a relatively new method called Rich Pictures. In three medical schools in the Netherlands we explore the governance processes, and their consequences for the actual curriculum outcomes.

In **Chapter 5**, we bring our perspective on curriculum change processes again to another level. In order to get a better understanding of the role of context in curriculum change, we explore the challenges of adopting jointly developed learning modules in different medical school across Europe, as part of a European project on health literacy education. In this study, we interview project leaders and several local stakeholders of three participating project partners in Germany, Slovakia and Italy. This chapter addresses the following research question: *What are the contextual aspects impacting the adoption of newly developed learning modules, in health professions curricula in different countries?*

In **Chapter 6** we provide a summary and discussion of our findings and their implications for medical curriculum change processes. In addition, strengths and limitations, and recommendations for future research are discussed.

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