

The effect on organizational change on relational coordination - a multi case study

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Abstract.

This study presents results from an original empirical study of 11 organizational change projects in different wards at two Danish hospitals. The purpose of the study was to study changes in relation coordination as a consequence of organizational change. We measured relational coordination before and after the organizational change using the 7 question relational coordination questionnaire. A group of employees were interviewed after the change project to uncover the nature and extent of the changes. We find that organizations' relational coordination score change very little – even for organizational change that introduces new work relations and new processes.

Keywords. Relational coordination, organizational change.

1. Introduction

Relational coordination was first studied in the airline industry (Gittell 2005) and later within health care (Gittell 2009, Noël et al. 2013). Relational coordination is a theoretical approach for measuring and analyzing the communication and relationship networks through which work is coordinated across functional and organizational boundaries (Gittell 2005). In hospital settings, a positive association between RC and quality of care has been found (Gittell 2009). This has led to political interest for relational coordination, at least at the regional level in Denmark – the regional level is charged with running the Danish hospitals.

Relational Coordination is defined as a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration. Relational coordination builds on coordination of work through relationships of shared goals, shared knowledge and mutual respect (Gittell 2009).

The argument for the positive effect relational coordination in health care hinges on said study of surgical performance (Gittell 2009). This cross sectional study provided evidence of a correlation between relational coordination and surgical performance. As the study is cross sectional it is not possible to infer anything about the causal relationship between relational coordination and surgical performance. The instrument used to measure relational coordination uses a 5-point Likert scale, but more interestingly, the score ranges from 3,84 to 4.22 points – 0,38 point variation.

While the study is statistically significant it is relevant to examine just how sensitive the scales are in the relational coordination instrument. This question is very important if relational coordination is to be used as a basis for diagnostics and intervention. Such a tool would ideally allow us to measure relational coordination, prescribe intervention and later

confirm successful change by measuring increased relational coordination.

The purpose of this paper is to examine the sensitivity of the relational coordination instrument by comparing qualitative estimates of organizational change with measured changes in relational coordination.

2. Methods

Relational coordination was measured before and after 11 organizational change projects using a Danish translation of the 7-item questionnaire (Gittell 2005). The questionnaire has been through a language and cultural translation where each item has been translated from English to Danish and back. Semantic differences have been analyzed and wording of each item has been carefully adjusted to reach the same meaning as the original.

The 11 projects represents natural experiments in the sense that we as researchers have had no opportunity to manipulate the study and because we examine a naturally occurring phenomenon in relation to an output variable (De Valk and Constatas 2010). In this study the naturally occurring phenomenon is the 11 organizational change projects and the outcome variable is change in relational coordination. This of course assumes that the organizational changes in question will affect relational coordination.

The relational coordination instrument measures seven items: 1) Frequent communication, 2) Timely communication, 3) Accurate communication, 4) Problem solving communication, 5) Shared goals, 6) Shared knowledge, 7) Mutual respect. The first 4 items represent in the communication-dimension and the last 3 items represent the relation-dimension.

Changes in how to do a task e.g. going from mobilizing a patient alone to being two nurses would presumably affect the two nurses' measurement of relational coordination. We would expect communication frequency, timely and accurate communication to increase as well as shared goals, shared knowledge and mutual respect. Those changes are expected because we assume the nurses develop a relationship from working together on the task. Communication may not naturally develop into a problem solving approach because this can be a cultural issue in the work relationship.

Data on the organizational changes were collected using one chronological workshop in each organizational change case. A chronological workshop is a structured group interview methodology. Respondents are asked to answer three rounds with one question in each round. The three questions are designed as a 3-level funnel beginning with the most general and ending with the most specific. The three questions were:

1. Think back and consider what *important changes or events* that have been in and around the ward since the project started.
2. Think back and consider important changes in *work processes and equipment* or events that have been in and around the ward since the project started.
3. Think back and consider how *collaboration and relations to your colleagues* e.g. other professional groups have changed since the project started.

Question 1 is designed to capture those events that are "on top of the head" of the respondents. It should capture changes and events that are substantial and has left an impression on the respondent. Responses at this level carry the most weight in the analysis because the respondents has not been compromised or directed to answer about relational coordination. Question 2 is designed to capture objective and functional changes in the work. Question 3 asks directly about collaboration and relations.

Responses at level 1 which characterize process changes that affect collaboration were coded. This was to differentiate between process changes that only had effect on a person but not the work relation or collaboration. An example of this could be a new individual lifting aid. This changes the persons work but not collaboration with other professional groups. In this example we would not expect the project to product a measurable change in relational coordination.

Change in relational coordination was calculated as means and significance was calculated with T-test using Stata release 11.0. A p-value < 0.05 was considered statistically significant. In this analysis we only consider the overall relational coordination scale and do not analyze individual sub-scales. We consider changes in relational coordination for individual work groups perception of other work groups (e.g. doctors rating nurses) to be relevant indicators. One groups rating of other groups tend to show larger degree of change and will increase the sensitivity of the rational coordination rating. For the sake of simplicity we only report a positive or negative significant change with +/- in the results.

3. Results

Case	Change in RC	Change in collaboration	Project description
1	0	Yes	Combining two departments into one single emergency ward. New organization and new processes with significant impact on relations and collaboration.
2	0	Yes	Reorganizing eye treatment based on lean principles. Fundamental change in doctor nurse relationship. Before doctors and nurses worked separately as groups. Now a nurse and a doctor work together a full day at a time.
3	0	Yes	Developing new treatment regime for COPD patients. Nurse competence has increased and nurses may prescribe limited amounts of medication in order to start up treatment. A strict treatment regime has been developed which clearly specifies tasks for nurses and doctors.
4	0	Yes	New discharge process for infectious disease patients. Nurses have increased their competence based and may conduct limited prescription and initiate treatment.
5	0	Yes	Reorganizing treatment of medical patients at an orthopedic bed ward. A new role has been introduced at ward round and doctors conference: endocrinologists participate 4 hours every day
6	0	Yes	Introduction of kaizen-improvement and teams in back-surgery teams. New processes for preparing surgery, weekly kaizen meetings, changed meeting plans, and new rules for when the surgeon has to be present e.g. strict 8 o'clock surgical team briefing.

7	0	Yes	Reorganizing AMD-eye treatment. Processes changed to a new regime with fewer patient contacts. New processes were developed based on functional specialization. A period of function rotation resulted in increased respect between doctors and nurses because they now understood each other's functions.
8			Project not completed
9	0	Yes	Improving quality of care in a geriatric ward. Ward round was reorganized from doctor doing a round to a multi-disciplinary patient conference. Morning conference changed from just doctors a multi-disciplinary. Nurses and assistants are now being heard on equal terms.
10	0	Yes	Collaboration between medical ward and bed ward. Inter professional learning and collaboration was used as a process tool to improve collaboration and design new processes.
11	0	Yes	Cardiologists ward round. Develop new and more efficient concept for the cardiologists ward round. Ward rounds now start at a fixed time and begins with a joint status meeting for doctors and nurses. Before just a doctor for ward round now always doctor and nurse.
12	0	Yes	Emergency ward. Reducing waiting time and patient frustration by introducing a new role "Nurse in front". The nurse in front informs patients and act as intermediary between treatment, secretaries and patients. Work distributed has changed between nurses and secretaries.
13			Project not completed

4. Discussion and Conclusion

The results show that 11 projects have been completed. None of the projects show a significant change in relational coordination although the group interviews show evidence of significant changes in processes and collaboration. In these projects it was expected that the changes in organization, processes and collaboration would result in a measurable change in relational coordination – it did not.

Case 5 introduced a new role in the ward round: an endocrinologist should do a ward round for patients with medical complications. This is a completely new professional group that is introduced and takes part in the doctor's conference every day. Because of the fundamental change in daily practice it was expected that this case would exhibit particular strong changes in relational coordination. However, this case as the other cases relational coordination does not change significantly.

The hypothesis was that reported changes in collaboration and work processes would result in a change in relational coordination. This hypothesis was rejected and this raises a

number of questions both regarding the methodology used in this project and regarding the relational coordination instrument.

The relational coordination instrument refers to a specific process e.g. mobilizing patients it must be assumed that the relative amount of time/effort of the specific process may have bearing on respondent's evaluation. If the process in question only makes up a fraction of the respondents working time, even major radical changes in the process may not change the respondents' evaluation of relational coordination.

Based on this study we question if the relational coordination instrument is indeed sufficiently sensitive to measure changes in relational coordination or it might also be that relational coordination does not easily changed. While we are unable to answer these questions based on this study, it does warrant further investigation of the relational coordination questionnaire.

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