The four cultures of collaborative health. A first empirical study

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Abstract

The concept of collaborative health has been found to be an adequate expression of the physical, psychological and social health resources the individual uses in collaboration, health resources which also are affected by teamwork collaboration (Sandberg, 2010). The aim of this study is to elucidate the concept of collaborative health in different working life contexts and thereby develop the meaning of this concept. In 2009 – 2010 individual interviews were undertaken with 19 experienced professionals from the welfare sector as well as trade and industry in Sweden. The main result of this study is described as "cultures of collaborative health": The resource culture; the mission culture; the relational culture and the human value culture. These four cultures express partly overlapping ways of describing meanings of collaboration at work with consequences for collaborative health. Conflicts in the collaborative situations are discussed as a consequence of the individuals' different, sometimes clashing, "paradigmatic positions" with regard to which culture they tend to emphasize when reflecting upon a satisfying collaboration. The main result of this study gives rise to a conceptual development of collaborative health.

Further empirical studies are needed in order both to clarify the methodological issues and to bring stronger evidence in support of the usefulness and meaning of collaborative health, possibly directing the concept to a position of being well defined and generally useful, e.g. as the core concept in an instrument relating working life conditions to health. The concept of collaborative health might have the power of bringing a somewhat new perspective to research and management of working life.

Fyra kulturer av samarbetshälsa. En första empirisk studie

Begreppet samarbetshälsa har nyligen konceptualiserats som ett adekvat uttryck för de fysiska, psykologiska och sociala hälsomässiga resurser individer använder vid samarbete och samverkan i team, hälsomässiga resurser som också formas av teamarbetet (Sandberg, 2010). Syftet med föreliggande studie är att belysa begreppet samarbetshälsa, som det framträder i skilda arbetsrelaterade sammanhang, och på detta sätt ytterligare utveckla detta begrepp. Under 2009 – 2010 genomfördes 19 individuella intervjuer med erfarna yrkesutövare från såväl välfärdssektorn som näringslivet i Sverige. Huvudresultatet från denna studie beskrivs i termer av fyra kulturer av samarbetshälsa: Resurskulturen; uppdragskulturen; relationskulturen och värdekulturen. Dessa fyra kulturer uttrycker delvis överlappande innebörder av samarbete med betydelse för samarbetshälsan. Konflikter i samband med samarbete diskuteras som en konsekvens av individers olika, och ibland motstridiga, "paradigmatiska positioner" med avseende på vilken kultur av samarbetshälsa individerna betonar då de reflekterar kring frågan om bra samarbete. Huvudresultatet utvecklar samarbetshälsa som ett teoretiskt begrepp. Ytterligare empiriska studier krävs både för att ytterligare klargöra metodologiska frågor vid undersökning med begreppet samarbetshälsa i fokus och för att utveckla användbarheten av och innebörden i begreppet samarbetshälsa på ett sätt som t.ex. kan etablera det som ett kärnbegrepp i ett undersökningsinstrument relaterat till arbetsliv och hälsa. Begreppet samarbetshälsa tycks bidra till ett delvis nytt perspektiv när det gäller såväl arbetslivsforskning som ledning och styrning av arbetslivet.

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Introduction

The concept of collaborative health has been developed by research since the 1980's and was used in a scientific report for the first time in 2004 (Sandberg, 2004a; 2010). In English this term and its corresponding meaning so far has never been in use. This article demonstrates the first empirical study aiming at elucidating the concept of collaborative health in different working life contexts and thereby developing additional meanings to the concept.

Collaborative health is an expression for the fact that health and teamwork are connected to each other (Sandberg, 1995, 2004a,b, 2006; Carlström & Berlin, 2004; Berlin, Carlström & Sandberg, 2009; Sandberg, 2010). The studies presented in the referred research reports, articles and textbooks generally have their origin in the health services; i.e. the question of collaborative health largely emanates as a consequence of team studies from this part of working life. At the same time the concept by logic seems to have a large range; it should be possible to apply it in working life generally.

Sandberg (2010) defines collaborative health as the physical, psychological and social health resources used by the individual in working life collaborative acts, e.g. teamwork. These health resources are also shaped by collaboration. In short, collaborative health (CH) is synonymous with health aspects within a working group of intensively collaborating individuals.

A closer look at the meaning of teamwork might bring about clarity in why teamwork affects wellbeing and health. Sandberg (2004b; 2006) describes an analytical perspective upon teamwork by using three criteria on teamwork. They are labeled the essential (functional), the structural and the process criteria.

The essential criteria of teamwork are the ability to create synergy in the working group and to bring about a clear goal direction in the work. When those criteria are at hand simultaneously, the most characteristic quality of teamwork appears as functional synergy (Sandberg, 2010).

Structural criteria are often judged as defining teamwork, and they influence the essential qualities in many ways. Those criteria are e.g. the number of team members, the team members' competences, the mission and the goals for the team, the mix of sexes within the team, tools, economy, meeting places etc.

The process criteria of teamwork also signify the teamwork. They are related to communication in the team. The working climate is an example of an outstanding process factor (Sandberg 1995, 2004a, 2006, 2010). Information, basic values and the presence or absence of constructive controversies (Tjosvold, 1995) are other examples of critical communicative qualities within teamwork. Teamwork is generally judged as an activity with intensive communication between the team members (Mickan & Rodger, 2005). This intensive communication is a core element in the efforts to bring functional synergy to the team (Sandberg, 2010).

Perspectives on collaborative health

The advantage with the expression collaborative health instead of working health or work place health (Leiter, 2007) or team health is that the term without cir-

cumlocutions refers to collaboration. Another advantage is that collaborative health also refers to other kinds of collaboration than teamwork, which gives it a more general application.

A social constructivist perspective (Berger & Luckmann, 1966) refers to the fact that individuals and institutions in interaction have created the organization of society. From this point of view, teamwork is a construction by the labor market parties influenced by science, ideology, politics and economic demands. As an analogy to this, collaborative health (CH) could be judged as a social construction in interaction between a social science researcher and the organizations and the individuals included in this teamwork research.

To make the concept of collaborative health sustainable demands a theoretical and practical usability of the concept. During the later part of the last century, different concepts related to working life have been described. Examples of two such concepts are psychosocial stress and burnout.

Talking about collaborative health is consequently a way of creating a new kind of talk or discourse. Generally, this discourse can be described as follows: The concept of collaborative health points out that collaboration within the welfare services as well as trade and industry is not just about creating welfare and profit but also about creating welfare for the ones intensively collaborating with each other in the different working life sectors.

Collaborative health can be judged as a transactional cost for the team members and for the team as a whole. When the collaborative health is positive, it works as a strong support for the team members. A negative collaborative health correspondingly creates bad influence upon the team members and therefore on the team as a whole.

If interprofessional collaboration and competence are judged as important for teamwork with successful outcome, it's evident that the team members' health and wellbeing are crucial when it comes to developing collaboration and competence (cf. Howard et al, 2003). Examples of organizational support for this are clear goals, tasks and working roles, adequate leadership and an open and adequate communication. If the team allows constructive controversies (Tjosvold, 1995) in the intensive collaboration that often characterizes teamwork, this also affects the team members' health in a positive way. Social support, a crucial aspect of teamwork, has in working life studies been shown to influence wellbeing and health of the workers (Theorell & Karasek, 1996; Leiter & Maslach, 1988). Even though textbooks about teamwork generally have a tendency to emphasize the importance of structural circumstances for team success, they sometimes touch upon facilitating process factors such as commitment and even such a health related thing as love (Katzenbach & Smith, 2003).

Method

The empirical study was implemented as semi-structured interviews with 19 persons, ten women and nine men with at least ten years of working life experience. The interviews took place in accordance with the wish of the interviewees,

which meant that eleven of the 19 were interviewed at their workplaces, five were interviewed in their own home and the remaining three at the authors' office. The informants work in the welfare services as well as in trade and industry; the idea with the selection of interviewees was to cover working life generally. They had all answered yes in advance to the question if they had a "collaborative job". The selection of interviewees can be judged as stratified sampling with examples of snow ball sampling. The selection of the interviewees was done in order to get the "best" informant taken into account the aim of the study and the time limits for the study; selecting informants randomly was never an option (cf. Morse, 1992). Two of the interviewees had considerable experience from work abroad and two had lived their first decades outside Sweden. The interviewees are as described in table 1.

Table 1: The interviewees

Name	Sex	Age	Profession
Lars	M	50 - 59	Construction entrepreneur
Cecilia	F	50 - 59	Industrial manager
Desirée	F	50 - 59	Priest
Calle	M	60 -	Industrial manager
Eva	F	40 – 49	Municipality civil servant
Sixten	M	50 - 59	Teacher
Ulla	F	50 - 59	Community elderly care manager
Sven	M	30 - 39	Conference project manager
Britta	F	40 - 49	Assistant nurse
Hans	M	50 - 59	Estate caretaker
Pernilla	F	60 -	Municipality civil servant
Olle	M	50 - 59	Restaurant manager
Wiktor	M	50 - 59	Manager, provision merchant's shop
Barbro	F	50 - 59	Psychotherapist
Zacharias	M	50 - 59	Physician
Åsa	F	50 - 59	Occupational therapist
Henrik	M	40 - 49	Rescue team manager
Clara	F	60 -	High school teacher
Doris	F	30 - 39	Industrial manager

All of the interviewees were shortly introduced to the concept of collaborative health. As the interviewer, I described focus in this way: "With this interview, I'm interested in taking part of your experience of collaboration in working life and the consequences this collaboration has had." The interview had a point of departure in the fact that the interviewees consider themselves to have a "collaborative job".

The main questions in the interview were:

"Please, give one or more examples of collaboration you consider as positive from your working life experiences";

"Please, give one or more examples of collaboration you consider as negative from your working life experiences";

"Could you describe the contexts of your experiences";

"What consequences did the situations had";

"Have you experienced that collaboration influence your own or others' collaborative health and if so, please describe the contexts";

"What do you view as perfect collaboration or teamwork?"

Depending on the informant and the experiences being told as well as the interplay between the interviewer and the interviewee, some of the questions were not explicitly asked since an answer to one questions very often answered some other. Inspired by Kvale (1996) and his perspective upon the researcher as a traveler, the main questions were often followed by the investigator's curios questions: Why; How; Give an example. The interviews took from 35 minutes to 70 minutes with eleven of the nineteen interviews close to 45 minutes.

The interviews are summarized by the interviewer in the interplay with the interviewee and the interviewees commented upon the summary. The interviews ended with the interviewees' explicit approval of what so far has surfaced in the interview. The interviews were tape recorded completed with notes.

A fundamental idea in the interview is to create a reflective discussion in which collaborative health is contextualized. In many cases meanings are created when people talk to each other (cf. Atkinson, 1998).

Analysis

The analysis could be described as a move from a first step consisting of listening to and making a transcription of the interviews, followed by a second step of reading and re-reading the transcribed text resulting in a text reduction. In a third step categories are created and in the fourth step themes have emerged. Specific differences in data result in different categories, and consequently the categories are closely defined by explicit statements in the interviews. This analytic procedure finally gives rise to the conceptual development of collaborative health as summarized in table 3.

Graneheim & Lundman (2004) consider the creation of categories the core feature of qualitative content analysis. According to Krippendorf (1980), a category answers the question "What?", and the way the categories are created in this article stick to this by pointing out general referential aspects found in the organizational context (cf. Sandberg, 2004b). The categorization has the ambition of creating categories that are exhaustive and mutually exclusive (Krippendorf, 1980) and at the same time internally homogenous and externally heterogeneous (Patton, 1987).

In this case, the analysis has ended in a fourth step, themes summarized as "cultures of collaborative health", that goes beyond the analysis in a way Kvale (1996) points out as a result of a qualitative analysis. This is a final result my pre understanding hadn't a clue about at the beginning of the analysis. As such the real implementation of the process is an ongoing move from the text to the

theme and back again. The analysis of the interviews moves from listening to the interviews to the text and via a condensed text to categories and themes. The themes are descriptions on an interpretative level, a process also described by Glaser (1962). The process of creating themes can be viewed as steps from a quantitative approach to a qualitative approach, from the manifest to the latent, in this case depending on the interplay between interviewer and interviewee with certain subject areas and concrete questions put forward. This is judged as an abstraction process suitable for this research with its specific prerequisites (cf. Elo & Kyngenäs, 2008).

There is a focus on the subject and the context such as how the interviews are shaped within the interaction between the interviewer and the interviewee (cf. Watzlawick, 1967). How the meaning is communicated is important and for that reason silence, laughter, sighs etc. are noted in the transcription of the interviews. The question of the researcher's qualification is important since interpretation can be judged by the researcher's personal history (Patton, 1990). With the original research of collaborative health as an inductive process (the "exploration") this empirical work start as a "deductive intention" of using collaborative health as a suitable theoretical tool in empirical settings. This deductive ambition though is also, in this study, a starting point for an even more elaborated inductive process which ends in the further development of the concept of collaborative health. Two examples with meaning units from the transcribed text, reduction and categories follow here. The following process with the fourth step, themes, described as cultures of collaborative health, are in the text to follow.

Conclusively, the analysis as a whole has moved from a manifest content analyses to an interpretative stage in which the cultures of collaborative health appeared.

Before stepping into the main results by the help of a fourth and final step of analyses, it should be noted that these main results, the themes, reflect the result of the interviews with their description of situations, processes, circumstances, prerequisites and results related to collaboration and expressed in different ways in different interviewees, i.e. a conceptual framework called "the organizational context" (Sandberg, 2004b).

The end of the analysis, the fourth step, concludes that different interviewees work in different experiential worlds and in this article these themes are labeled as different "Cultures of collaborative health". It's also possible for one person to work simultaneously in more than one culture of collaborative health. The following presentation of the results goes on by giving examples from the four cultures.

Table 2: Two examples of the analysis

Description 1	Reduction/abstraction	Categories
I've been working as intensive and anesthetic care nurse, which relates to my good example of collaboration. In this work you have to work in teams. ... As an example of collaboration, I can pick a critical situation when you have sedated a patient and what follows are not according to your plan. The blood pressure is falling or the rising or the pulse becomes irregular. In this case everyone has to know exactly what to do, without talk. To me, this is the optimal collaboration, because everyone knows what to do without telling them. ... You don't ask questions, you just do it. Then, eventually, things might have gone wrong anyway, but we sort that out afterwards.	In intensive and anesthetic care … you have to work in teams. Critical situation … not according to your plan. Everyone has to know exactly what to do. Don't ask questions, just do it. We sort things out afterwards.	Processes and circumstances/ prerequisites in positive collaboration and with high demands Evaluation of the teamwork Tacit knowledge.
Description 2		
Indirectly we lost income, because we have such a loss of energy in this conflict with slamming doors and antagonistic behavior. All the time, there was such a ... how shall I put it ... constant nagging. ... I learned a lot. *... We had the same mission. We were to build a strong firm after this change ... I was very comfortable to have this support from the staff.*	A conflict results in a loss of income and the individuals' loss of energy. We had the same mission … I was comfortable to have support Collaborative problems are a source of learning.	Organizational and individual consequences of conflicts. Individual consequences concerning health and well-being depending on collaboration

Results

The main result appears in this section as "Four cultures of collaborative health". This main result, the four themes expressed as different cultures of collaborative health, is in this section presented first with an overview followed by sections with each one of the cultures of collaborative health, each section ending up with a conclusion. At the end of this main section, before the discussion, in the section labeled Different cultures of collaborative health side by side, I describe the fact that different cultures of collaborative health also in many cases exist side by side as experienced by some of the interviewees.

The relational culture of collaborative health is signified by manifest expressions that emphasize relational and communicative aspects as important in collaboration, the resource culture is signified by a collaboration depending on the presence, flow and logistic of different kinds of resources such as tools, competencies, finances etc. The content in the mission culture of collaborative health is oriented towards the answers to questions like: "What is our mission?"; "For what purpose do we work?" At the core of the mission culture is the overall purpose with the activities and the organizational structure created to satisfy this mission. Finally, the human value culture of collaborative health underlines in-

dividual feelings, needs and aspirations when describing the necessary prerequisites for collaboration. They are described in terms such as meaningfulness, self-realization etc.

The different cultures of collaboration might be both complementary and competitive, since they often exist side by side in the teams' work. This is also described in the following paragraphs.

The presentation of the four cultures of collaborative health contains a somewhat different quantitative space for the different cultures. This is also in line with the fact that the interviewees statements most of all related to the relational and resource culture of collaborative health.

The relational culture of collaborative health

Hans is an estate caretaker and a former preschool teacher. He describes his own experiences with more or less quality in the collaboration at a child day care center this way:

"… A good collaboration is signified by common discussions to develop and support each other. … When I worked with infants … to see each other's strengths and weaknesses and to support each other … that's positive collaboration. Simultaneously I worked with authoritarian guys. … Their lack of support when I had hard times … I might have done a few things the wrong way … then I heard the negative…"

Barbro is a psychotherapist and begins by talking about a negative example of collaboration:

"… When I worked at a health centre where we were different professions, a group of nurses … were harassing professionals that worked more individually.…"

Henrik leads a rescue team and his experience of collaboration might seem dramatic for an outside viewer:

"We had an accident where a car turned upside down and everybody within the car was thrown out. And the mother of the family is dead; she is just like a doll on the ground. But her youngest son had not been physically injured and sits there besides her. He might be 12 years. And he does not understand that she is dead and asks her to wake up. … I couldn't make it, so I had to leave this situation to another team member. It was no problem for him to take over. … I find that an example of very good collaboration."

Sven works as project leader at a conference building. He mentions a very clear example of collaborative consequences that occur as relational/communicative aspects:

"I think it's almost impossible to manage a company if you don't have a … good working climate. … Without a good working climate it's impossible to keep your staff for a long time."

Ulla works as health care manager at a community hospital. Her point of view is that the collaboration between colleagues has a direct influence on the caring quality:

> "If something has been wrong on the working place in an indefinable way … scapegoats occur. It might be enough if you're dressed in inappropriate clothes one day … My experience is that generally the scapegoat gets another job in the organization. … This is followed by a few weeks of tranquility … and then the next problem occurs."

Calle is engineer and industrial manager with working experience from Sweden and China. He describes severe health consequences of the collaboration in a group of women he managed:

> "There was envy and bullshit. The women in this group felt enormously lousy, and there were several replacements."

Calle also reflects upon the collaborative health and feedback in groups of Chinese and Swedish workers.

> "In China, the section managers never told the staff: 'This was very good!' This might have as a consequence that the workers did not feel well. …"

Clara describes her collaborative environment and the positive experiences related to this:

> "You can be under pressure … and if it's so, you have to have someone you can talk to about this. … It is important both to have the possibility to bullshit and be more serious. … To me collaboration also means safety within the group."

Desirée also reflects about the positive collaborative situations and the demands associated to positive collaboration:

> "My experience tells me that there has to be clarity, an open communication and a clear structure about what is going to be done. "

To Britta, one thing is clear:

> "It is important to be honest." … If you have positive collaborative skills, things work out much easier."

To Wiktor, being on speaking terms is important if collaborative problems arise:

> "You always try to influence your team members by positive feedback. … Further on, a replacement might make things much better. … In that case you have to have a dialogue: 'What do you really want?' As a consequence of this they often can collaborate much better … and feel better."

Åsa, occupational therapist, describes positive collaboration in relational terms:

> *"A positive collaboration is signified by mutual confidence for each other, for each other competence and a way to use each others' reasoning."*

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Sixten is a junior lecturer at a Swedish university with experiences from teaching and university management:

> "I had to manage a senior lecturer with big service demands related to collaboration with a junior lecturer. The junior lecturer felt so eaten up that she just quit the job…."

Zacharias as a physician relates his experiences from a non European culture to the relational considerations he means signify collaboration in Sweden:

> "The Swedish way of interacting with others is a bit different. … It should always be dialogue. … People really should have confidence in each other, be open to each other."

When different kinds of collaboration are described and judged especially with reference to collaborative health, a large amount of those descriptions contain concepts that signify relational and communicative acts, attitudes and qualities. The core of this culture of collaborative health could be described as relational/communicative dichotomies such as e.g. respect – disrespect, confidence – lack of confidence, feedback – silence, open – closed, honest – dishonest, safe – unsafe, professional - personal, good working climate – bad working climate.

The resource culture of collaborative health

The municipality civil servant Pernilla reflects and emphasizes competence as a resource on the basis of earlier experiences in acute health care. She also points out how such a resource as a physical surrounding contributes to specific communicative situations:

> "You know everybody's position. … You use each other's competence … If a car accident arrives, it's just like a dance. I know what I do, the anesthetist knows what he does, and the surgeon knows what he does. … When we are extremely competent, we don't even have to talk to each other. …
>
> The Nobel Prize winner Arvid Carlsson said that the best thing is the unexpected perspective. … A physical environment that elicits ideas from different angles."
>
> Lars, a house construction entrepreneur, describes the source of "stress":
>
> "The orders from the building company often result in wrong deliverances. This implies that it will be hard to finish the work on time. I have had problems with my blood pressure …. I have seen many others getting gastric ulcer. … Alcoholic problems are very common. "

Lars sticks to the resource culture during the entire interview and repeats and emphasizes his beliefs:

> "Good collaboration is signified by an adequate organization in the firm, competent staff … and safe contracts. … Competent buyers, competent team leaders … detailed planning and contracts."

Ulla, the manager of a community elderly care centre, rely on the competence of the team leader:

"I rely on the importance of leadership. … Don't try to escape and behave as if collaborative problem will be solved by automatically. Because they won't, never."

Sven, a conference project leader at a hotel, emphasizes different kinds of resources:

*"*A nice working environment … Nice and clean and tidiness. The proportion of men and women is … important. The same goes for the distribution of age among the staff … and the values of the company.*"*

Hans, the estate caretaker, reflects upon the needs in his former job in a preschool:

"Give us a few hours a week to discuss … Some education at first …
To feel safe with each other … having some supervision."

Psychotherapist Barbro judges certain personal qualities as well as physical restrictions as problematic in collaborative situations. She also points out education as a cause of positive collaboration:

"If you don't have the frames, e.g. having the time to talk collaboration over once a week … or … if the patients are too many, people get stressed which I think leads to bad collaboration. …

I have experienced positive collaborative situations in the car industry where collaboration between different groups had been in focus for a long time. The collaboration was continuously developed … and collaborative education took place. Each one got the responsibility for a specific working role, and in recurrent meetings each one was to contribute."

Olle, the restaurant manager, points out the necessary prerequisites for successful collaboration:

"Clear, clear arenas for responsibilities and an open dialogue are extremely important".

The industrial manager Doris talks about different technical tools for communication:

"E-mail is a lousy communication. … If you sit down in the same room five or ten minutes, you have solved the problem. E-mail is inexact and one dimensional. Telephone is much better the mail. …
Mail … should be forbidden."

Doris also expresses that she "stick to rolls and competences matching the work that's going to be done."

In this culture of collaborative health, collaborative qualities are generally related to as experiences of different kinds of technical resources, individual competencies, management, contracts/agreements, the flow and logistics of men and materials and the way the environment influences the interaction as well the importance of other aspects of the work organization, e.g. the time schedule.

The human value culture of collaborative health

Calle, an experienced industrial manager reflects upon the need for individuals' achievement in teamwork:

> "Sometimes I have the feeling that it's not just a question of a collective achievement, but we all have a driving force that we can achieve well as individuals."

Desirée works as a priest and view the collaborative acts as depending on the individuals' situation:

> "Something very strange happens when you enter teamwork. It depends very much were I am right then, as a human being, and what other things that happens at work."

To Ulla, with her experiences from intensive health care, fundamental individual experiences and qualities are necessary for a successful communication in the team:

> "You felt safe. Whatever stress and intensity … you felt safe. … If things did not work out well, we did what we could anyway … and talked things over."

With his experiences from infant schools, Hans also reflects upon the emotional situation for the team member, in this case a problematic emotional situation:

> "I think people feel bad at many working places. … They have got nobody to talk to. … Everything must be so perfect. … At my former unit, people have got anorexia and all kinds of problems. … They are so scared, scared. … You don't feel comfortable and safe with yourself or with you team."

Pernilla, municipality civil servant, points out that demands upon your work influences the needed individual qualities with consequences which might be problematic:

> "You have … lots of new things coming on. … Yes, you should be flexible. … The question is how flexible you can get before you lose the respect from your colleagues."

Olle, the restaurant manager, points out necessary personal qualities that are of importance for functional relations in the team:

> "You have to try to understand each other's situation. You should understand and have confidence."

Psychotherapist Barbro reflects about inner feelings as connected to collaboration:

> "The most crucial factors in bad collaboration are when people are afraid. … Bad self-confidence and self-esteem influence the collaboration in a negative way, just like bad leadership."

Added to other ways of reflecting and judging upon circumstances, prerequisites, processes etc. related to collaboration and collaborative health, the hu-

man value culture of collaborative health refers to the individual's moral, emotions and beliefs that's something else than the individual's usefulness referred to as "competence". The interviewees refers to this in terms like identity, meaning, being, putting yourself aside, personal confidence, safe with yourself etc.

The mission culture of collaborative health

Henrik leads a rescue team and have experiences from coordination that works well:

> "Positive collaborative situations … When we enter the scene of an accident, and on our way out to the scene, everybody knows what to do. You really don't have to say that much. Everybody does their thing, which is planned, and I walk around and keep an eye so that everything looks alright. … We feel safe with each other."

Desirée is priest and describes how unclear working roles create frustration and bad wellbeing:

> "The answers I got from individuals in the group were steadily unclear. We could have been standing at the parish house for ever. … When each one does not contribute with his or her part … I felt sick."

To Doris, industrial manager, the collaborative situations are generally positive and at the same time, it's the mission and the kind of work that follows that decides the collaboration:

> "This moving ahead and facing results … you add something and something happens and you are on your way forwards. That gives you energy. … Positive collaboration gives you energy and makes you happy. You also become creative. Negative collaboration, well you might get tired and give up. … It's the kind of work that decides the collaboration."

Zacharias is physician, a general practitioner. In the interview Zacharias reflects upon the collaborative health as his patients express it and what's generally needed for a good collaborative health.

> "It happens that patients come and … one of the reasons for coming to me is difficulties with collaboration at their working place. … They can't sleep, they lose concentration … The most important is that you have to define what you are supposed to do at work. Then … you have to have a certain amount of freedom in work. … The manager has to make it work and make people work together."

Olle is a restaurant manager with many years of experience from the branch. There is no doubt that collaboration has influenced both him and others:

> "I was to start a company owned by another guy. … There was no clear line to lean on … I slept very badly. … The staff was picked out by someone else."

This culture of collaborative health evolves since certain experiences and judgments of collaboration and collaborative health emphasizes aspects such as a

clear direction at work, a functional timing, the individuals' responsibility taking for the common mission, facing results, clear working roles etc. This theme is the easiest one to conclude; the mission or the purpose with the collaboration and the way it relates to collaborative health seem very easy to express in similar terms for the different interviewees.

Different cultures of collaborative health side by side

The cultures are signified and parted through their relative emphasis of different factors important for the collaboration. From the statements of the interviewees, it's generally not possible to draw the conclusion that one person only experiences one culture of collaborative health. From an analytic point of view though, the cultures of collaborative health are clearly traceable and can be expressed as a meaningful general result of this study. From the presentation of the results above, using the conceptualization in this article, it was found that different cultures of collaborative health might exist side by side without creating conflicts. On the contrary such manifoldness of cultures seems necessary for an optimal collaborative health. Zacharias, e.g. expresses in the interview the need for both positive relations and the importance of goal orientation: "People must have confidence to each other. … It's important that people are sure about where to work and with what." From Hans' perspective, human values and relational aspects seem to have great influence upon the wellbeing of the team members: "They are afraid, afraid. … To be popular and … having respect within the team. The emotions manage us at work … You're not safe in yourself or in the team." As another example of cultures of collaborative health existing in a parallel way without creating conflicts, Sven talks about the importance of positive relations as well as an optimal resource distribution in certain cases: "Good communication … between the management and the staff … Open minded, humility. … Pleasant working surroundings, tidiness. ... The relative distribution of men and women … and between ages. … The values of the company."

Wiktor talks about a very satisfying collaboration in a campaign. From his point of view, the success at work in this case went through stages such as a specific resource ("a course"), human values ("got the idea") and to a relational situation ("staff meeting"): "Me and one of my partners were taking a course. … We got some ideas of what to do to teach our customers more about food. … We got the idea of having a Christmas table for all our customers. … We had a staff meeting … and everybody was positive to this. … And then we implemented the idea. Everybody enjoyed the day. … There was lots of positive feedback."

Henrik has experienced an example of a way that human values create certain relations in the team: "I had a working mate that died without a warning…. He had several kids and had just started repairing his house. … Four of us team mates finished that job, while the others took their shifts. … good collaboration." Henrik shows from his experience that the mission culture and the resource culture generally dominate the work, but in a critical moment a very strong relational culture enters the scene and contributes to human values important for the collaborative health: We help each other; we see each other; We

carry each other's weaknesses and strengths; we don't desert each other; We are useful for each other.

Discussion

The resource culture of collaborative health is dominated by the use of physical and other organizational resources as tools for the implementation of the work. It's also a fact that working life in general uses such tools, e.g. computers. The resource culture is expressed in terms of competences, tools, equipment, economy and administration and the coordination between all these resources. It's about having the right man at the right place doing the right thing equipped with the right tools. Physical damages, lousy achievement and low collaborative health are obvious consequences of the lack of timing in these organizations, while the opposite prerequisites leads to lean production with high quality results and a satisfying collaborative health.

A dominating resource culture might lead to an extremely technical and logistic perspective (cf. scientific management*)* in industrial settings and has also influenced education (teaching technology) as well as health services. In the resource culture, the organization might be described as a "machine" and terms like planning, detailed management and control are central (Morgan, 1997).

Today, the perhaps most distinct expressions for the resource culture in all kinds of organizations are the use of computers. From a staff view, organization management seems to be an ongoing process of what I would like to call a "technocratization" of the work by repeated news and changes in the soft ware, the home page etc. parallel with expectations and managerial demands on the use of "the virtual reality" instead of physical meetings or contacts via telephone. This is a situation with consequences for the mission, the relations and human values – and the health.

At the core of the mission culture of collaborative health is the overall idea that the organization, the goals and objectives logically follow from this basic mission: "Why are we here and now?"

As expressions for the mission we have steering document and persons with a specific responsibility for this mission, managers. The managers have a responsibility to point out a direction for work and to create prerequisites that makes that work possible. In the welfare sector the mission culture is linked to political ideologies and goals, in trade and industry the mission is more of an explicit economic thing – but in all organizations a multitude of goals is at hand. The organizations are structured with staffing, tasks and decision processes to fulfill its mission.

Systematic and repeated evaluations and follow-ups, the mapping out of influencing factors that can be judged / measured, changed and communicated in a meaningful way imply a possibility for an organizational development from the mission culture perspective.

Organizations dominated by the resource culture or the mission culture have a systemic structure in which one part of the organization influence all the other parts (cf. the ecological idea), and on the contrary a domination of the relational

or the human value culture of collaborative health might imply an organization internally more loosely connected.

Relations between individuals and groups are important in all kinds of collaboration in order to be both productive and efficient and for the individual to feel well and be healthy. In many cases correct and fair relations is enough for achieving this (Lennéer Axelsson & Thylefors, 2005). At the beginning of the 1930's the school of Human Relations noticed the need for positive social relations as a prerequisite for a good work.

A positive relational culture of collaborative health means having a communication signified by openness, clarity, feedback and a positive working climate, all favoring positive collaborative health. At the same time a positive collaborative health supports a positive and functional communication. The relational culture no doubt most obvious and direct creates and is dependent on the individuals' collaborative health. The more the work demands intensive interaction, the more important the collaborative health.

Asplund (1987) describes a "responsorium" (response-arena) as a context within which two individuals are totally absorbed by talking and listening to each other. The persons are each others' "responses" in a dialogue. This genuine conversation could be diminished by time and place from which follows a break in the complementary relation that signifies genuine teamwork. Transformed to a team context this means that there could be a "team room", a genuine interaction where we are each others' responses in acting for functional synergy. In this team room the dialogue implies that the interacting parts are not sure about the quality of their statements and actions before the other parts have reacted to them, and the activities have signs of every team member. At the same time, the team room cannot exist without the individual competence each one brings into the team room.

The identity of the individual is also formed by work place collaboration. Styhre (2002) means that organizations create "subjects". He writes (p. 134, own translation): "Organizations and companies are not just places where you earn your money, they are also arenas for establishing an identity." Big changes, instability and insecurity in the rules of the game create uncertainty about your own identity and the risk of becoming lonely (Heinskous, 2005).

It might seem as if the human value culture of collaborative health, with its individual creation of meaning and identity, would be more self evident within spiritual, social, psychological, educational and caring work, because communication in these arenas often are about values. But all work with close collaboration is a rationale for the individual's development, identity and creation of meaning.

The four cultures of collaborative health gives rise to two dimensions, namely a coordinative dimension and a value dimension. The value dimension is characterized by the fact that organizational collaboration are being based on certain values, which could be viewed either as the mission with the activities declared by the organization or declared as the individual experiences of the meaning with the work. The coordinative dimension is signified by the efforts to "make things going", i.e. to get the logistic working with the help of a flow of

optimal resources and/or with the help of useful communication and the synchronization of man-machinery. An overall impression of the interviews is that the coordinative dimension is a dimension the interviewees talk about significantly more about than the value dimension.

Clashes between cultures

Collaborative problems are in a general way related to "clashes between cultures". For the health care manager, e.g., what fundamentally underlies work is a general consciousness amongst the staff about the mission of the work – a mission culture perspective. Simultaneously, parts of the working groups represent very strong relational and human value cultures in which the clearest motive for the work is about confirming each other in a positive way. You go to work primarily to meet one and other. These divergences between two partners at work also might imply different perspectives upon the meaning of work. From the data in this study, it is easy to see "rivalry" or conflict with regards to basic values about work when the clashes appear.

The junior lecturer experiences collaboration between another junior lecturer and a senior lecturer in which the junior lecturer judges her work as contribution to the senior's personal human values. The senior lecturer on the other hand is focused on the mission culture of the university related to the students' education and really does not see that the junior is in need of a positive relational culture.

The estate caretaker Hans has experiences from a nursery school in which there was a move from a strongly supporting to an unclear mission and relational culture with weak leadership and no time for evaluation and reflection. In the former situation, Hans had a very strong and positive identity, whereas in the latter he came to view himself as worthless. In the present situation as estate caretaker Hans now is a part of a mission and resource culture that has brought a new and positive self esteem to Hans, since the mission is very clear and the relations are unproblematic.

Sometimes there are "clashes" within the cultures. Within a mission culture, individuals might have different ideas about the mission. Within construction companies, different views upon the coordination and distribution of resources might exist. The same goes for the equipment and resource coordination in health care and treatment. Yet another example is found in the universities' education with students possibly seeking a pleasant and meaningful relational culture, the teachers in theoretical courses focused on certain teaching goals, and the practitioners the students meet on the applied course wishing that the students could be resources, i.e. take part in the actual work. Cecilia describes several tensed collaborative situations from her time as employee and later chief of executive office in an industrial company. A new CEO changed the relational culture with dramatic consequences: "In the earlier days, our company had been very hierarchical. … When we appointed a new CEO, we wanted to change this. So we appointed a CEO who delegated responsibilities to the employees. This became a clash between cultures. The company lost dynamics. … Indirectly we lost incomes when energy was being used in a conflict like this."

Collaborative health as a developed concept

The overall aim with this study has been to elucidating the concept of collaborative health in different working life contexts and thereby developing additional meanings to the concept. What have we gained? Table 3 at the end of this section is summarizing this developed meaning of the concept.

We can see from this study that the leadership is of great importance. There are clear indications on the importance of the leadership also from other studies, though it's hard to be sure about a causality from leadership to health amongst the staff, since leadership, working life and the individuals' health are complex phenomena and the research is limited (Kuoppala et al 2008)[1]. Nyberg (2009) found though that there are clear indications of the managers' influence upon the staff's stress and bad health. Nyberg concludes that managers not only influence the level of stress and emotional fatigue but also the quantity of sick leave. Nyberg (ibid) investigates the relation between leadership and the health of the employees and points out four groups of health / lack of health: Wellbeing, emotional fatigue, self estimated health and heart diseases. The research of Åkerlind et al (2007) is in support of the fact that the leadership influences the employees' health. With the power that follows from a managerial position, it is important that the manager is an emotionally mature individual who prioritizes positive collaboration instead of personal needs (Thylefors, 2007). Kivimäki et al (2003) show that the managers lack of support and ability to behave in a fair way are related to the health of the employee.

The working climate, a central part of a relational culture, is strongly associated to the leadership and has a pronounced influence on the health of the individual (Sandberg, 2004a). Lehtinen (1998) describes the "shame of the subordinated" leading to a lack of self esteem. When the working climate is of a kind that the individual experience as unjustified negative critic and humiliation, the situation is directly unhealthy (Starrin et al, 1999).

There are studies pointing out professional disinterests (Sandberg, 1995; Sebrant, 2000). This shows that the needs of the individual are not always consistent with the demands and expectations on collaboration. Individuals are not only members of different professional groups. They also have different backgrounds socially, personally and culturally. To be different from each other is sometimes judged as a key to success, but if other collaborative prerequisites are poor, these differences between the individuals might make the opposition to collaboration stronger. Examples of such prerequisites are uncertainty about the mission and unclear goals, weak or otherwise inadequate resources (e.g. time and place for collaboration), a lack of common education, no feedback upon the implementation and result of the work, unclear working roles etc. Yet another obstructing prerequisite, with a direct connection to the motivation of the individual, is when the individuals do not take responsibility for their own collaboration with others but view themselves as victims of collaboration.

An obvious result of this empirical study is that the cultures of collaborative health have different emphasis for the individuals depending on where and with

what they work, but there ought to be a simultaneous presence of all the cultures to support the individuals' wellbeing and health, something that is in favor of work with high quality. For this reason, the concept of collaborative health now has reached the position showed in table 3.

Table 3: The developed concept of collaborative health

Collaborative health (CH) is defined as the physical, psychological and social health resources used by the individual in working life collaborative acts, e.g. teamwork, health resources which also are shaped by this collaboration. Expressed in another way collaborative health is synonymous with health aspects within a working group of intensively collaborating individuals. An optimal collaborative health is developed if the fundamental and necessary conditions simultaneously and balanced are satisfied for the resource culture, the mission culture, the human value culture and the relational culture of collaborative health.

Trustworthiness of the study

The research process described in this article has been judged from the perspective of trustworthiness as described below.

The concepts of credibility, dependability and transferability have been used in qualitative research to describe trustworthiness (e.g. Polit & Hungler, 1999). Credibility is taken into account, as in this study, when using participants with various experiences that increase the possibility of shedding light on the phenomenon in focus from a variety of aspects (Adler & Adler, 1988). According to Firestone & Herriot (1984, p. 69), having informants from different areas of working life, multisite qualitative research, optimize description and generalizibility. As shown in table 2, the analysis is first conducted within each case. According to Yin (1989, p. 121), this methodology makes it possible to compare the cases and leads to a reasonable thick description.

The credibility also depends on the amount of data necessary to satisfy the aim of the study. As Graneheim & Lundman (2004) state, credibility also deals with how well categories and themes cover data and how to judge similarities and differences between data. One way to approach this, used in this article, is to use representative quotations from the transcribed text. The interpretative work has also been influenced from the agreement by research colleagues in a working paper and at a seminar.

When data is collected extensively and the data collection extends over time, there is a risk for alterations in the researcher's way of implementing the research during the research process (Lincoln & Guba, 1985). As a comment to this aspect of trustworthiness, dependability, the data collection and the analysis were implemented during a few months.

Trustworthiness is also about transferability, in Polit & Hungler (1999) described as the extent to which findings can be transferred to other settings. To facilitate transferability, a clear description of the participants, data collection and analysis as well as a clear presentation of the findings in the study will enhance transferability. Conclusively, further studies focusing collaborative health are necessary to really be sure about its transferability and at the same time gain a continuous conceptual development.

Finally, qualitative research is always facing questions about the saturation of data. The links or connections in the data might not be immediately apparent and for this reason constructing theory in qualitative research is a highly creative act (Morse, 1995).

References

Adler, P.A. & Adler, P. (1988) Observational techniques. In: Denzin, N.K., Lincoln, Y.S. (Eds.) Collecting and interpreting qualitative materials. Sage Publications Inc., Thousands Oaks, London, New Delhi: 79-109.

Asplund, J. (1987) The elementary forms of social life. (In Swedish: Det sociala livets elementära former.), Bokförlaget Korpen, Göteborg.

Atkinson, R (1998) The life story interview, Sage Publications, Thousand Oaks, CA.   Berger, P. L. & Luckmann, T. (1966) The social construction of reality, Doubleday, New York

Berlin, J., Carlström, E. & Sandberg, H. (eds) (2009) Teams in caring and treatment (In Swedish: Team i vård, behandling och omsorg.), Studentlitteratur, Lund.

Carlström, E. & Berlin, J. (2004), The book about teamwork. A knowledge overview about team and teamwork within health services (In Swedish: Boken om team. En kunskapsöversikt om team och teamarbete inom hälso- och sjukvården.), Landstingsförbundet, Stockholm.

Dahlberg, K., Drew, N. & Nyström, M. (2001) Reflective lifeworld research, Studentlitteratur, Lund.

Elo, S. & Kyngäs, H. (2008) 'The qualitative content analysis process', *Journal of Advanced Nursing,* 62 (1): 107-115.

Firestone, W.A. & Herriot, R.E. (1984) Multisite qualitative policy research. Some design and implementation issues. In D.M. Fetterman (Ed.) (1984) Ethnography in educational evaluation. Sage, Beverly Hills, pp 63-88.

Glaser, R. (1962) Psychology and instructional technology, in R. Glaser (ed.) Trainy research and education, University of Pittsburg Press, Pittsburg.

Graneheim, U.H. & Lundman, B. (2004) 'Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness', *Nurse Education Today,* 24: 105-112.

Heinskou, T. (2005) The small working group (In Swedish: Den lilla arbetsgruppen), in T. Heinskou och S. Visholm: A psychodynamic organizational psychology (In Swedish: Psykodynamisk organisationspsykologi), Liber, Stockholm.

Howard, R., Amir, Z., Borril, C., Dawson, J., Scully, J. & West, M.A. et al (2003) 'Breast cancer teams: The impact of constitution, new cancer workload and methods of operation on their effectiveness', *British Journal of Cancer,* 89: 15-22.

Katzenbach, J. R. & Smith, D.K. (2003) The wisdom of teams, Harper Collins Publishers, New York (third ed.).

Kivimäki, M. Elovainio, M. Vahtera, J. & Ferrie, J.E. (2003) 'Organizational justice and health of employee: prospective cohort study', *Occupational Environment Medicine,* 60 (1): 27-33.

Kuoppala, J., Lamminpaa, A., Liira, J., Vainio, H. (2008) 'Leadership, job well-being and health effects – a systematic review and a meta-analysis', *Journal of Occupational Environment Medicine.* 50 (8): 904-915.

Kvale, S. (1996) Interviews: An introduction to qualitative research interviewing, Sage Publications, Thousand Oaks California.

Krippendorff, K. (1980) Content analysis. An introduction to its methodology, The Sage Commtext series, Sage Publications LtD, London.

Lennéer Axelsson, B. & Thylefors, I. (2005) The psychology of the working group. (In Swedish: Arbetsgruppens psykologi), Natur & Kultur, Stockholm (fourth ed.).

Leihtinen,U. (1998) Underdog shame – Philosophical essays on women's' internalization of inferiority, Göteborgs universitet (Ph D Thesis).

Leiter, M. P. (2007), 'Deepening the impact of initiatives to promote teamwork and workplace health: A perspective from the NEKTA study', *Healthcare Papers,* 7 (sp): 79-84. Leiter, M.P. & Maslach, C. (1988) The impact of interpersonal environment on burnout and organizational commitment, *Journal of Organizational Behaviour,* 9, (4): 297-308.

Lincoln, Y.S. & Guba, E.G. (1985): Naturalistic inquiry. Sage Publications Inc., Newsbury Park, London, New Dehli.

Mickan, S.M. & Rodger, S.A. (2005), 'Effective health care teams. A study of six characteristics developed from shared perceptions', *Journal of Interprofessional Care, 19*: 358-370.

Morgan, G. (1997) Images of organization, Sage Publications , Inc., *,* London, New Delhi.   Mores, J.M. (1992) Introduction, in J. Morse (ed), Qualitative health research, Sage Publications, Newsbury Park, CA

Morse, J.M. (1995) The significance of saturation, *Qualitative Health Research, 5*, (2): 147-149

Nyberg, A. (2009) The impact of managerial leadership on stress and health among employees, Karolinska Institutet, Department of Public Health Sciences, Stockholm (Ph D Thesis).

Patton, Q.M. (1987): How to use qualitative methods in evaluation, Sage Publications Inc., Newsbury Park, London and New Delhi.

Patton, Q.M. (1990) Qualitative Evaluation and Research Methods, Sage Publications Inc., Newsbury Park, London and New Delhi.

Polit, D.F. & Hungler, B.P. (1999) Nursing research. Principles and methods, J.B. Lippincott Company, Philadelphia, New York, Baltimore (sixth ed.).

Sandberg, H. (1995) The freedom to breathe and the ability to meet. Conditions for goal-oriented work in out-patient child and youth psychiatry (In Swedish: Att få andas och kunna möta. Förutsättningar för målorientering inom öppen barn- och ungdomspsykiatrisk verksamhet), Uppsala Studies in Education, 60, Almqvist & Wiksell, Stockholm (Ph D Thesis

Sandberg, H. (1997a) Teams in development (In Swedish: Team i utveckling), Studentlitteratur, Lund.

Sandberg, H. (1997b) Research based team development (In Swedish :En forsk-ningsbas för teamutveckling), Mälardalens University Press, Västerås.

Sandberg, H. (2004a) Working climate and team work (In Swedish: Arbetskli-mat och teamarbete), Mälardalens Högskola, Centrum för Välfärdsforsk-ning, B nr 31, Eskilstuna. Sandberg, H. (2004b) 'University continuing edu-cation as teamwork – three case studies', *Journal of Adult and Continuing Education,* 10 (2): 114-133.

Sandberg, H. (2006a) The development of the clinical lecturer. An evaluative and explorative study. Final report (In Swedish: Den kliniska adjunkten på väg. En utvärderande explorativ studie. Slutrapport), Mälardalens Högskola: Institutionen för Vård- och Folkhälsovetenskap, Eskilstuna.

Sandberg, H. (2006b) The good team. Teamwork, working climate and collabo-rative health. (In Swedish: Det goda teamet. Om teamarbete, arbetsklimat och samarbetshäls)*,* Studentlitteratur, Lund.

Sandberg, H. (2010) 'The concept of collaborative health', *Journal of Interpro-fessional Care,* 24 (6): 644-652.

Sandberg, H. (2011a) Collaborative health. Effective collaboration and wellbe-ing (In Swedish:

Sandberg, H. (2011b) Four cultures of collaborative health – an explorative em-pirical study (In Swedish: Fyra kulturer av samarbetshälsa – en explorative empirisk studie), Mälardalen university, The school of health, care and so-cial welfare, Eskilstuna.

Sebrant, U. (2000) Organization and identity Working organization in geriatric hospital care (In Swedish: Organiserande och identitet. Om arbetsorganisat-ionen i geriatrisk sjukvård), Stockholms universitet, Pedagogiska institution-en, Stockholm (Ph D Thesis).

Starrin, B., Forsberg, E. & Rantakeisu, U. (1999) Following unemployment – Economic stress, shame and unhealth. (In Swedish: I arbetslöshetens spår – Ekonomisk stress, skam och ohälsa), in A. Härenstam, U. Lundberg, E. Lindbladh & B. Starrin (eds) In the traces of powerlessness (In Swedish: I vanmaktens spår), Borea förlag, Umeå.

Styhre, A. (2002) Postmodern organizational theory (In Swedish: Postmodern organisationsteori), Studentlitteratur, Lund.

Theorell, T. & Karasek, R.A. (1996) 'Current issues related to psychosocial job strain and cardiovascular disease research', *Journal of Occupational Health Psychology,* 1 (1): 9-26. Thylefors, I. (2007) Leading human-service organi-zations (In Swedish: Ledarskap i human-service organisationer), Stockholm: Natur & Kultur.

Tjosvold, D. (1995) 'Cooperation Theory, Constructive controversy and effec-tiveness: Learning from Crises', in Guzzo, R.A. & Salas, E:: Team Effec-tiveness and Decision Making in Organizations. Jossey-Bass Publishers, San Francisco.

Yin, R.K. (1989) Case study research. Design and methods. Sage, Newsbury Park, CA. Åkerlind, I., Schunder, S. & Frick, K. (2007) 'Health and.work organization', in U. Johansson, G., Ahonen & R. Roslender (eds), Work health and management control, Thomson Fakta, Stockholm.

Note

[1] These statements rest in a scientific position where quantification and statistical significance are dominating analytical tools. Research on human action though can have its take off from a social science position in which qualitative studies dominate. This article describes generally a qualitative study and approach, but refers in some part in this section to quantitative studies with relevance for this study and in order to widen the understanding of the result of this study.