MAKING QUANTITATIVE EVALUATION DATA MORE USEFUL TO TEACHERS

A CASE STUDY AT THE TECHNICAL FACULTY AT LUND UNIVERSITY

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CEQ står för Course Experience
Questionnaire och är en enkät som
används för kursutvärderingar vid LTH.
Denna enkät skickas ut efter varje
avslutad kurs i obligatoriet och de
synpunkter som här lyfts fram är vad
som kommer ligga till grund till hur man
ska förbättra kursen. Studierådet
använder enkätsvaren för att göra din
utbildning bättre och det är därför
otroligt viktigt att fylla i de utskickade
enkäterna! För mer information gå in på
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på http://www.ceq.lth.se/rapporter/? DS
CEQ
The Force on your side
TEKNOLOGKÅREN
VID LUNDS TEKNISKA HÖGSKOLA
Expeditionens öppettider:
Måndag-fredag: 11.00-14.15
Tel: 046-14 03 90
E-post: expen@tlth.se
Hemsida: www.tlth.se
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Abstract

Student evaluations at institutions for Higher Education became mandatory in Sweden in 2003 and the Technical Faculty at Lund University (LTH) decided to implement an adapted version of the research-based Course Experience Questionnaire (CEQ) that focuses upon in-depth learning. The questionnaire at LTH consists of 26 quantitative and two free-text questions. Teachers receive the summarised data in a Work Report, and studies at the Academic Development Institution, Genombrottet, at LTH have revealed that teachers primarily focus on the qualitative replies and neglect the quantitative data. The visualisation of the quantitative data is clear, so it is unlikely that it is a lack of understanding, which prevents teachers from using a comprehensive dataset in order to improve their teaching. Neither a lack of pedagogical interest. The empirical data in this paper is based on focus group interviews with teachers from LTH and they have revealed that they disregard the Work Reports as soon as they can. They feel uncomfortable about the evaluations and especially about the inconsiderate comments that they often receive from students. This paper examines how to stimulate a culture in the organisation that will make teachers increase their use of their quantitative data and pave the way for expansive learning in terms of more openness and knowledge sharing regarding evaluations. Engeström's Actitivity Theory has been used to analyse the organisational structure and solutions in terms of new tools including short video tutorials aimed at teachers and students respectively. An adjustment of the questionnaire. A revision of the Work Report and End Report and finally an interface that makes it possible for teachers to work with their own quantitative data by comparing them to their previous ones or to selected averages of equivalent data at LTH.

1. Introduction

It is horrible every time I open the mail and I don't have much to be afraid of, but I'm still really scared – Teacher at LTH

This thesis is about evaluations. My empirical data is collected at the Technical Faculty at Lund University (Lunds Tekniska Högskola, henceforth LTH) and consists of focus group interviews where I have spoken to teachers about evaluations and their ways of dealing with a comprehensive dataset that is orchestrated (among other things) with the intention to help the teacher to improve their teaching. All informants had an interest in academic development and wanted their students to learn as much as possible, but internal reviews at LTH has revealed that teachers make very little use of their evaluation data and especially the quantitative feedback is ignored (Roxå & Mårtensson, 2011, p. 11).

During the interviews, it appeared to be a common pattern among the informants that when they received the Work Report, which contains a summary of their evaluation data, they would only skim the summarizing quantitative data at the front page and then turn to the qualitative data in terms of free-text answers. It was a returning issue spoken of more or less openly that those evaluations were often written in a tone that was so disagreeable that teachers had to stop reading them. All informants had suffered from negative responses and even though they knew that they had acted correctly, they could remember the worst ones years afterwards. Research at the Royal Institute of Technology in Stockholm confirm the observations at LTH and document that for many teachers the compulsory evaluations constitute a stress load. Some suffer from being exposed to inconsiderate student comments even to the extent that it can be a workplace health issue (Edström, 2008, p. 97)

There are plenty of reasons to have reservations regarding evaluation data:

- Course evaluations are anonymous and in general have a very low response frequency (usually below 40%). Thus, we cannot be sure that the students answering are representative of the whole class.
- Evaluations are teaching and teacher-focused and consequently the teacher's attitude influences the evaluation and a feel-good factor is rewarded (Edström, 2008, p. 97).
- Student judgment is affected by class size and study level (Roxå & Mårtensson, 2011, p. 13).

- LTH's in-house studies of the first five years of using the evaluation system (2003-2008) reveal that the education programme that a student belongs to affects the outcome of the course evaluation and there is a significant difference between how the different programmes experience the same course (Björnsson, Dahlblom, Modig, & Sjöberg, 2009, s. 1).
- Evaluations have a tendency to be gender biased. A study at LTH revealed that teachers tended to receive higher ratings in subjects that were less typical for their gender than in subjects that were more typical for their gender (Price, Svensson, Borell, & Richardsson, 2017, p. 281).
- Good evaluations do not necessarily reflect how much the students learned. A teacher that makes it easy for students to pass a course without a heavy workload may be popular, but the lack of challenge made the students learn less (Edström, 2008, p. 99)

Despite answers given by students are likely to depend on a wide range of different factors out of which only a fraction lies under the control of the teacher or the course coordinator (Alveteg & Svensson, 2010, s. 1). Evaluations have been mandatory in Sweden since 2001 (and implemented at LTH in 2003). In other words, evaluations have to be executed and as a worldly-wise saying goes: *Life may not be the party that we hoped for, but while we are here we might as well dance!*[1]. How do we turn evaluations to our benefit, bearing in mind that the underlying intention is to improve the teaching so students learn more? The strength of evaluations is that they offer the possibility of measuring progress, which is key aspect of higher education (Alveteg & Svensson, 2010, s. 1) and evaluations provide intelligence on how to improve the effectiveness of materials and teaching methods and to remove the elements that are not (Edström, 2008, p. 105).

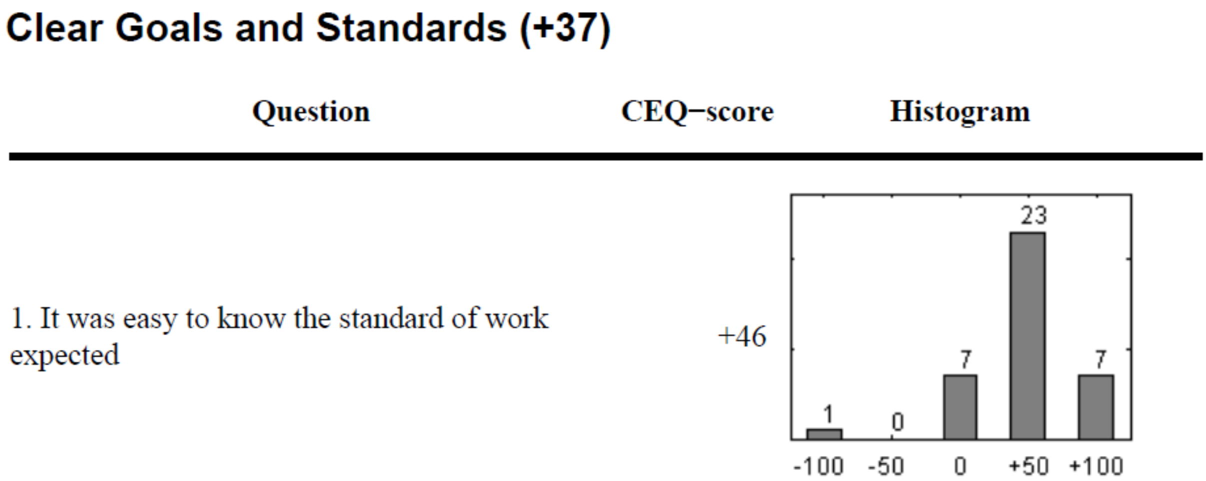
The process of evaluations involves two dimensions; gathering data and then using the data for judgment and decision making with respect to agreed-on standards (Talukdar, Aspland, & Datta, 2013, s. 27). When evaluations became mandatory at all higher educations in Sweden, the institutions were free to decide which system they wanted to use. At LTH they focused upon development rather than control and they chose the research-based *Course Experience Questionnaire* (henceforth CEQ) that measures in-depth learning. The management also communicated that neither positive nor negative results would influence a teacher's salary. During the interviews, teachers confirmed that the management had kept their promise and none of them feared losing their job because of poor evaluations. They also corroborated that the

[1] Several personalities take credit for this quotation, so I have not attributed it to anyone

official processes, where the evaluation data were being discussed, focused upon analysis and discussion rather than control and registration of the data. How come teachers practically ignore the evaluation data and especially the quantitative part?

When I began looking for reasons why teachers did not use their quantitative evaluation data, my pre-understanding was that it was a question of visualizing the data in different and more intuitive ways. However, a closer study of the present data-visualization revealed that it would be difficult to present the data in a clearer and more readable way. In the questionnaire students can answer a question through a five-step scale that ranges from fully disagree to fully agree. In the data-system the steps are given points from ÷100 (fully disagree) to +100 (fully agree).

In the Work Report the answer to a question is presented in this way:



It is apparent what the question is, the number of answers to each step on the scale and the average score (+46) and I concluded that it was not the lack of understanding, which made teachers dismiss their quantitative results.

As written in the beginning teachers feel uncomfortable about the inappropriate comments by students that are anonymous. Comments that are often not related to the content of their teaching, their pedagogical abilities and how much the student learned. Students have a freedom to say what they want to without a matching responsibility. This feeling is intensified, because evaluations are not private, and teachers from the same course, student representatives and the programme director have access to them. This was a reason for several teachers that I interviewed that looking at evaluations was simply something that you just had to get through. At the same time the teachers made a strong effort constantly to improve their teaching and since evaluation are mandatory and contain a richness of data, the question is how to pave the way for teachers to increase their use of especially the quantitative data? My research question is:

How can we make the quantitative evaluation data more useful for teachers to increase the use of or work on their evaluations?

The suggested solutions have the overall aim of moving from private to organizational learning, but has as a starting point to respect the privacy regarding evaluations. Proposed solutions imply video tutorials aimed at both students and teachers. An adjustment of the questionnaire, the Work Report and the End Report and most important a simple interface that makes it possible for teachers as well as the administration to work with the quantitative data and compare them to either their own data from previous years or equivalent averages from LTH.

2. Methodology – Empirical Data

In the research about how to make quantitative data more useful to teachers, it was clear that teachers should be an integrated part of the process. I thus take starting point in Participatory Design using Engeström's Chage Laboratory methodology (Engeström, 2001). I gather the data through focus group interviews that meets the principles formulated by Greenbaum and Kyng in the book Design at Work (1991).

2.1. Participatory Design

Participatory Design (henceforth: PD) came into existence in Scandinavia in the 70s when computer based technology was used as a way to efficiency improvement and automation primarily in the production industry. Especially Scandinavian researchers criticized the traditional approach to implementing computer-based technology. Researchers and trade unions united and undertook projects with the declared aim to develop workers competence and knowledge about computer based technology with the long-term goal to strengthen democracy in the workplace. (Christensen & Pedersen, 1999, pp. 28-29)

During the 1980s PD-research changed from the explicit political projects to focus upon “design for the skilled worker”. Focus was upon the user participation in itself and how you could give the users in an organization influence upon the implementation of computer based technology. It was the development of the “tool-perspective”, where the technology has to be a tool for the skilled worker. It is through the highly specialized knowledge about these tools that the workers will obtain influence and democracy in the workplace. The methodology changed, when designers realized that they had to use experiments in order to gain insight into the user’s “hidden” knowledge about their work. In the experiments, through reciprocal learning, designers and users could show each other the technological possibilities and the core of the working processes that technology could support. This change in the methodological focus was because of a change in the areas, where the PD-projects were now conducted. From the production industry to office-environments and the service industry (Christensen & Pedersen, 1999, pp. 32-33).

In 1991 Joan Greenbaum and Morten Kyng published *Design at Work*, which has contributions from the majority of the dominating specialists in Scandinavian PD. The experience from the PD-projects are gathered and the authors present a number of design ideals that they consider central in the design of computer systems to support working situations. These are:

1. Full participation of the users, which imply that users participate in the whole design-process and not just act as informants for the designers
2. Computer systems must strengthen the professional competences at the work place – not undermine it
3. Computer systems are a tool that has to be designed to the people that in the end have to use it
4. Design of computer systems cannot just aim at higher productivity, but also the quality
5. Conflicts are a part of the design process and must not be ignored, but has to be dealt with and solved.
6. Design of computer systems has to focus upon the actual user situation (Christensen & Pedersen, 1999, p. 34)

The aim of my research is through participatory design that meets the six principles make teachers use their quantitative evaluation data to improve their teaching and thus make students learn more.

2.2. Focus Group Interviews

As methodology for gathering the empirical data, I have chosen focus group interviews, because the source of the data is the social interaction. The knowledge about the complexity of creating meanings and social practices will be produced during the group processes when the participants compare their experiences and understandings. This knowledge will be more difficult to obtain in an individual interview where the group is a means to obtain more complex data (Halkier, 2015, s. 139).

In comparison with field notes and participatory observation, it is considered a weakness for the focus group interview that there is a lot of interesting things that you can only access by being present in people's existing social context (Halkier, 2015, s. 140). However, particularly concerning evaluations, they are generally kept very private and rarely discussed in public. A small group of teachers that has accepted an invitation to participate in a focus group interview about evaluations is more likely to share experiences, understandings and actions they would otherwise have kept to themselves.

In order to be able to generalize analytically based on empirical patters you normally have to make sure that important characteristics regarding the problem area are represented in the selection of informants (Halkier, 2015, s. 140). In collaboration with Academic Developer (henceforth: AD) Dr. Torgny Roxå we discussed, if the selected teachers should be representative in terms of their branch of scholarship? If they should represent a negative, a neutral or a positive attitude to evaluations – or one of each? We decided to focus on teachers who had shown an interest in the evaluation process and shared a general interest in pedagogy, believing that it would reduce the number of disturbing factors, such as a general lack of willingness to use evaluations, no matter which changes were suggested.

The preliminary PD process was structured the following way:

1. Focus group interview with three teachers about the evaluation system at LTH. Due to fully booked calendars, this interview ended up being split in two with one interview with two teachers (who knew each other in advance) and one with the third teacher. The informants had a minimum of 14 years of working experience at LTH.
2. Focus group interview with the same three teachers discussing suggested prototypes to increase and improve the use of quantitative data.
3. Focus group interview with another three teachers discussing revised and new prototypes based on the response in the second interview. Among the informants were two younger teachers, who had

been teaching for less than 7 years and none of them were Swedish. The last informant were also Programme Director and had been teaching at LTH for 18 years

A set of final prototypes were adjusted and developed based on the third interview.

The focus of the interview was upon the content of the discussions and not about the social interactions among the participants. During the interviews, I used the tight model for structuring and my involvement as moderator. This model can also be used explanatorily as I wanted as many different viewpoints expressed as possible (Halkier, 2015, s. 142)

3. Analysis – Change Laboratory

In order to categorize the empiricism I use the four learning questions, which the finish researcher in educational sciences Yrjö Engeström claims, should be a part of any theory about learning:

- *Who is learning?*
- *Why are they learning?*
- *What are they learning?*
- *How are they learning?*

Combined with the aspects; Activity system, Multivoicedness, Historicity, Contradiction and Expansive cycles it forms a matrix (see appendix 6) based on the focus group interviews (appendix 9-16).

I will be using Engeström Change Laboratory model *Strategic learning actions and corresponding contradictions in the cycle of expansive learning* (Engeström, 2001, s. 152):

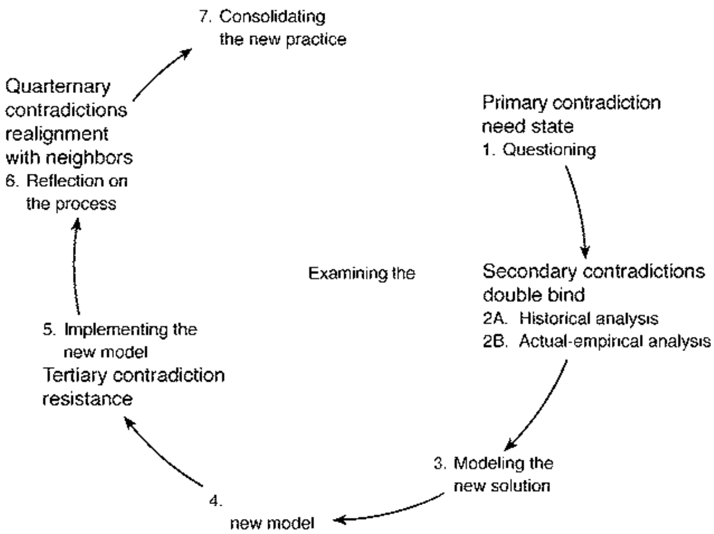


Fig 1:

Strategic learning actions and corresponding contradiction in the cycle of expansive learning

(Engeström, 2001, s. 152)

I will go through the first 3 stages with an adjustment of the appellations that is compatible with the principles of participatory design:

1. Charting the situation (recognizing the need for development)
2. Analyzing the situation (history and present troubles and contracdictions)
3. Creating a new model (Virkkunen, 2013)

4. Charting the situation – The CEQ-system at LTH

The Swedish Higher Education Ordinance 2000 requires that all students, who have completed a course, should be given an opportunity to express their opinion in a course evaluation organized by the institution. However, there is no regulation on how the evaluations should be designed. Neither what purpose they should fulfil, nor how they are going to be used. Except that the results should be made available to the students. In addition, there is no clear picture of how all this data are utilized for improvement purposes (Roxå & Mårtensson, 2011, p. 62).

4.1. The structure of the CEQ at LTH

LTH has a strong tradition for academic development practiced by the department Genombrottet. Based on their recommendations the CEQ was selected as evaluation system. It was originally developed at Lancaster University in the 1980s and subsequent research has confirmed the validity and usefulness of the CEQ as a performance indicator of university teaching quality (Wilson, 1997, p. 33). As a performance indicator the CEQ has especially been used in Australia, where the development of their version of the CEQ has its origin in the educational research base. The antecedent was the Course Perceptions Questionnaire (CPQ). The developers Ramsden and Entwistle intended it for use to identify factors in the learning environment that influenced how students approached their learning. However, the CPQ intended to measure how students perceived the quality of teaching at a whole course level, and the CEQ provided a source of data, which enabled performance indicators to be implemented for comparisons between institutions and over time (Talukdar, Aspland, & Datta, 2013, s. 29).

The CEQ questionnaire at LTH focuses on five areas of the teaching process, which according to Ramsden have been shown to relate to quality in student learning:

1. Appropriate workload (is the workload manageable?)
2. Appropriate assessment (is the examination supporting understanding?)
3. Generic skills (is the development of generic skills supported?)
4. Good teaching (is there support and encouragement from lectures?)
5. Clear goals (do lectures make an effort to help students understand what they are supposed to learn?)

Additional scales have been developed recognizing that there are many factors beyond the classroom or the teacher that can have an effect on learning. E.g. the quality of the university's learning resources and infrastructure, the student support and administrative systems, and the role played by formal and informal social contexts in which learning takes place (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 30).

The standard questionnaire at LTH contains 26 quantitative questions, where question 17 and 26 are added by Genombrottet;

Q17: *The course seems important for my education*

Q26: *Overall, I am satisfied with this course*

The different categories are mixed to obtain a more truthful response by the students, just as some questions aim at a negative reply, i.e.: Q13: *It was often hard for me to discover, what was expected of me in this course*. It is the intention that the variety will keep the student more attendant and thus give a reply that they have been giving more thought (Alveteg, Malm, & Sjödell, 2018, s. 3).

Besides the two quantitative questions (Q17+Q26) LTH has added two qualitative questions:

1. *What do you think was the best thing about this course?*
2. *What do you think is most in need of improvement?*

4.2. CEQ and university teaching

The full CEQ-questionnaire can be seen in Appendix 1. Below is a table that illustrates how the five main categories are distributed in the questionnaire and their overall pedagogical aim. The questions in bold aim at a negative reply:

No.	Aim
Clear Goals	
Q1, Q6, **Q13**, Q25 E.g.: *Q6: I usually had a clear idea of where I was going and what was expected of me in this course*	This scale indicates if the students regard that the teachers have established clear goals and assessment criteria. This implies aspects like the students possibility to know which quality is expected of their work, their ability to know what is expected, how easy it is to understand as well as clearly defined aims and goals. It is not sufficient to refer to course schedules. Goals have to be communicated, specified and exemplified by the teacher. Clear Goals is a separate category despite that it is among the aspects of Good Teaching, but research has shown that Good Teaching can achieve a high score despite goals and expectations are unclear (Borell, 2008, s. 15-16)
Good Teaching	
Q3, Q7, Q15, Q18, Q19, Q21 E.g.: Q19: *My lecturers were extremely good at explaining things*	The scale consists of questions about how much feedback the students get. The teachers' ability to explain things, make the subject interesting, motivate the students and understand their problems with the course. However, good teaching cannot be exactly and indefinitely defined. Reality requires a pragmatic prioritization based on well informed reflection and it is demonstrated how the CEQ can contribute to that, when they focus upon the variables that in the course are critical for the control of the teaching and through that the quality of the results (Borell, 2008, s. 15)
Appropriate Workload	
Q4, Q14, **Q22, Q24** E.g.: ***Q4: There was a lot of pressure on me as a student in this course***	This scale is based on the assumption that overloading the students with work can have a negative effect on the quality of their learning, because it can spoil their attempts to in-depth learning and instead focus upon surface learning such as memorizing.

Appropriate Exam	
Q8, Q12, Q16, **Q20** **E.g.:** **Q20:** ***Too much of the assessment was just about facts***	As students often see the exam as defining the real goals of the course, they tend to prepare themselves in order to pass the exam. It is important that there is an accordance between the exam and the learning objectives of the course. Otherwise you risk that students establish a poor understanding with fragmented knowledge of only a part of what the course is supposed to cover (Borell, 2008, s. 16)
General Skills	
Q2, Q5, Q9, Q10, Q11, Q23 Q11: *The course has improved my skills in written communication*	This scale is designed to measure to what extent the course develops a number of general academic skills and knowledge that are necessary for the graduates in order to act as professionals. These skills imply problem solving, analytical abilities, group work, confidence in managing unfamiliar problems, the ability to plan one's work and written communication (Borell, 2008, s. 17)

Rixon and Ramsden, who developed the CEQ, recommended that evaluation results became a reason to ask questions rather than to consider them as conclusions and that all comparisons and assessments implies well-informed considerations (Borell, 2008, s. 13). LTH ran a follow-up study 3 years after the 2000 Higher Education Ordinance Regulation came to effect. It revealed that student evaluations were introduced in most courses, but the use of the results was defective and so was the communication to the students about actions taken as a result of the course evaluations (Roxå & Mårtensson, 2011, p. 63). Today LTH has organized a standard evaluation process with a focus upon analyzing and discussing the results, which is demonstrated in the 7-step process below. As it appears students have a central role in the process

4.3. The evaluation process at LTH

The evaluation process at LTH runs in seven steps:

1. Teachers are asked if the survey has to be paper og web based and if they would like to add 1-4 supplementary free-text questions to the questionnaire
2. Students fill in the questionnaire (paper og web based) and add comments in free-text

3. Student assistants go through the free text answers and are supposed to remove unpleasant comments that do not contribute to course development
4. The computer system transforms the data into a work report including a data visualization of the separate quantitative questions and a histogram summarizing the categories
5. The data in the Work Report is discussed as well as how the course was implemented and how to develop it in the future. The meeting is obligatory and the participants are the course coordinator (CC), student representatives (SR) and a Programme Director (PD), who is responsible for the whole programme, which the course is part of.
6. The End Report is created containing the statistically processed data (now including the number of pass/fail) and the three concluding remarks from CC, SR and PD respectively.
7. The End Report is published on the faculty web (available behind log-in) and sent via e-mail to all students who participated in the course (Roxå & Mårtensson, 2011, p. 66)

4.4. Recognizing the need for change

Ramsden claims that *the most significant and challenging aspects of evaluation comprise interpretation of results and the action that follows to improve teaching*[2] (Borell, 2008, s. 12). It has been the intention at LTH since the implementation of the CEQ in 2003 that emphasis should be upon quality enhancement (i.e. analysis and matching actions to improve teaching) rather than quality assurance (i.e. control based on the data) ((Andersson, 2018, p. 1).

The administration at LTH has acted on their word and never used evaluations as an instrument of control, but as a tool for development. Students have been integrated in the process, teachers and course coordinators' arguments have been listened to and evaluations have never been used as a reason for salary increase, or – worse – an excuse for dismissal. However, despite the best of intentions, evaluations are still a delicate matter. During the interviews I never explicitly asked the informants, how they felt about studying their evaluations, but it was nonetheless a returning issue through all the interviews how badly they often felt, when reading the students feedback. When an informant told about a negative evaluation comment from 2003 another informant complemented: *We sit here and even though we laugh, you still*

[2] Unless otherwise stated it is my translation of titles or quotations that are not written in English

remember it. And you remember exactly what year it was. And I know people, who have been devastated and as a result no longer want to read their CEQs (Alveteg, Malm, & Sjödell, 2018, s. 9)

The informants kept returning to their difficulties about reading the free-text answers and apart from one informants, who had been working thoroughly with statistical analysis, related to the CEQ, the rest skimmed their Work Report and practically ignored 2/3 of it. *I look at the category Good Teaching and Q26 about satisfaction and then I go to the free text. Then I look a bit at the standard deviation and some of the other figures at the front graph. Then I'm done* (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 9). Bearing in mind that I only interviewed teachers with an interest in teaching and academic development, i.e. teachers that wanted to improve their teaching, so students could learn more; it is significant that they did not use evaluations as a volume of information for developing their teaching.

One of the informants was Head of Department and former AD and for several years he had tried to establish a more open dialogue about evaluations, but so far without prevalent success. He referred to a colleague, who used to say that *asking a teacher about their evaluations is equivalent to asking about their personal hygiene!* (Alveteg & Malm, 2018, p. 11). Evaluations are private and something that you only share with colleagues that you rely on.

In the following chapter through the historicity of implementing the CEQ-system at LTH and present troubles and contradictions in the evaluation process, I will study what prevents teachers from using their quantitative evaluation data and which steps can be taken to change these habits. Steps which based on the interviews and research about evaluations are the most likely to succeed.

5. Analyzing the situation

5.1. Historicity

Historicity is the third principle in Activity Theory. *Activity systems take shape and get transformed over lengthy periods of time and their problems and potentials can only be understood against their own history* (Engeström, 2001, s. 136)

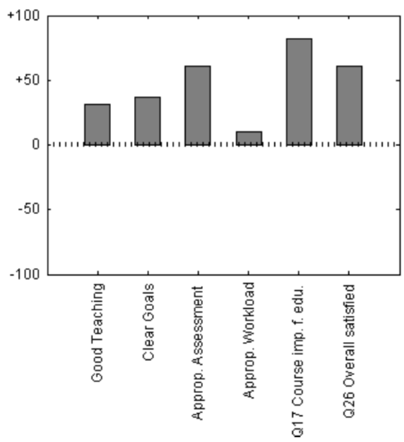
When evaluations at higher educations became mandatory in Sweden, the institutions had the autonomy to choose which evaluation system they wanted to use and the procedures that followed them. They selected the CEQ-system and the intention was to make the working process flexible for teachers and not to waste time on completing questionnaires and writing reports (Andersson, 2018, p. 1). The purpose of the student feedback on teaching and course evaluation at LTH is formulated in a policy document *This policy describing the system of evaluation of undergraduate educations at LTH shall contribute to a process where the quality of teaching is consciously and systematically enhanced*. To achieve this, student feedback at LTH is collected for operational and reporting purposes respectively. The operational purpose (the formative evaluation) refers to the feedback that a teacher can organize during a course in order to gain a better understanding of the learning of the students and then adjust the teaching accordingly. The reporting purpose (the summative evaluation) is the data collected by the end of the course in order to produce a document describing the quality of the course. The purpose of this document is to enhance the dialogue between the programme boards, the department and the students (Roxå & Mårtensson, 2011, p. 65).

5.1.1. From questionnaire through Work Report to End Report

A teacher from LTH suggested the structure of the **Work Report**. The system administrator, who is still in charge of the CEQ-system, adjusted it, and the form has remained almost unchanged since the beginning (Andersson, 2018, p. 2)

The Work Report is computer generated based on the results from the questionnaire and has the following structure (please, see appendix 2 for a full Work Report):

<table>
<tr><th>Page</th><th>Content</th></tr>
<tr><td>Front Page</td><td>Basic facts to identify the course
Presence at teaching (self-reported by students)
Average points and standard deviation from the five main categories + Q17 and 26
Summarizing histogram of the main categories (except General Skills) + Q17 and 26

CEQ–scales & special questions
<table>
<tr><th>Scale</th><th>CEQ–score</th><th>StdDev</th></tr>
<tr><td>Good Teaching</td><td>+31</td><td>38</td></tr>
<tr><td>Clear Goals and Standards</td><td>+37</td><td>35</td></tr>
<tr><td>Appropriate Assessment</td><td>+61</td><td>39</td></tr>
<tr><td>Appropriate Workload</td><td>+10</td><td>44</td></tr>
<tr><td>Generic Skills</td><td>+28</td><td>33</td></tr>
<tr><td>Special questions</td><td></td><td></td></tr>
<tr><td>The course seems important for my edu.</td><td>+82</td><td>34</td></tr>
<tr><td>Overall, I am satisfied with this course</td><td>+61</td><td>39</td></tr>
</table>


</td></tr>
</table>

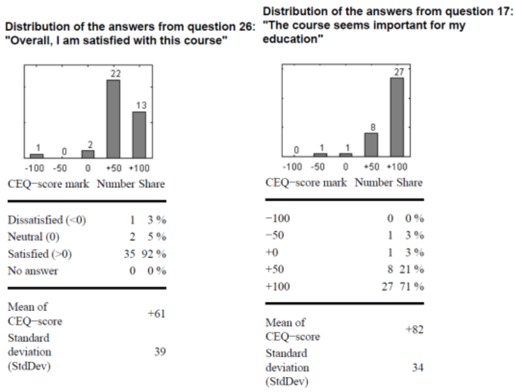
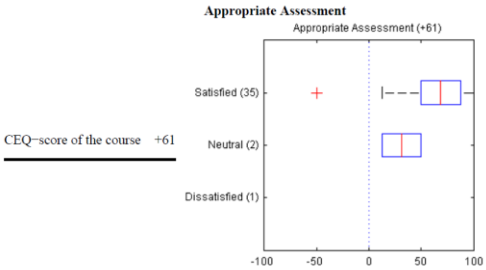
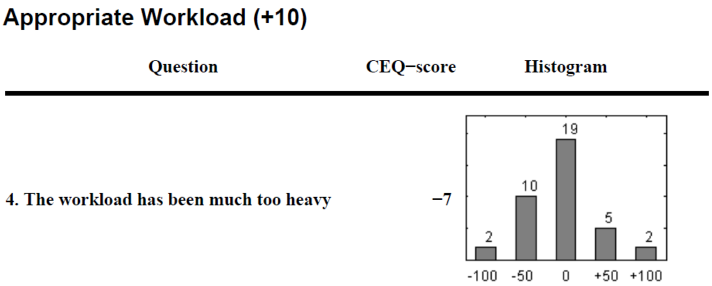
<table>
<tr><td>Page 2</td><td>Summarizing histograms of Q17 (relevance) and Q26 (satisfaction)

</td></tr>
<tr><td>Page 2-4</td><td>Summary Scales divided on Satisfaction (one example)

</td></tr>
<tr><td>Page 4-8</td><td>All quantitative questions illustrated in separate histograms:

</td></tr>
<tr><td>Page 9 -</td><td>Assembled free-text answers</td></tr>
</table>

Table 1 *Summary of the content of the Work Report*

As it appears statistical data are dominating the report, which is due to mathematicians-statisticians objected strongly to the whole idea of having evaluations about pedagogy. They considered it against nature (!) to have reports that did not comprehend statistics, which is why the standard deviations and the summary scales have been included (Andersson, 2018, p. 4)

As a starting point, SRs and teachers in a course have access to the Work Report of the given course. The Head of Department has access to all Work Reports and the system administrator keeps a summarizing excel-sheet of all the quantitative data (see appendix 3) – a modified version of the excel sheet is available with the delay of a year at ceq.lth.se (see: http://www.ceq.lth.se/specialrapporter/)

The **End Report** (see appendix 4) has the same front page as the Work Report including the summarizing histograms of Q17 and Q26, concluding remarks by SR, CC and PDs about the teaching and future actions to improve the points of dissatisfaction. When administration is monitoring the CEQ-data it is one of the central elements that all representatives have written a comment in the report though it is not always the case (see appendix 3). All End Reports are published at ceq.lth.se and accessible to all staff at LTH with a log-in (Andersson, 2018, pp. 6-7).

5.1.2. Central student roles in the development and execution of the evaluation system

One of the central decisions was that students from the start was given considerable influence upon the evaluation process. When a working group was established in order to lay the foundation of the coming evaluation system, it included a student representative (Karim Andersson), who later came to be the one to programme the system. Andersson studied Civilengineering, but never completed his thesis, as he was employed at LTH together with another student assistant (Jonas Borell), who studied Psychology and had considerable understanding of pedagogy. Borell worked with the questionnaire and how to present the information, whereas Andersson attended to the programming part (Andersson, 2018, p. 1).

It has been an explanatory statement that no one else at LTH had the time (Andersson, 2018, p. 1), and it reflects that students have played a considerable role in the development and execution of evaluations at LTH. Paid student assistants are filtering the free-text answers in order to remove unpleasant comments that serves no purpose in terms of improving the teaching. Comparing to a Danish context raw evaluation data are considered confidential material that students do not have access to[3]. Elected SRs take an active part in the evaluation process, and interviews have revealed that students in general demand (or expect to have) influence during a course. *Students come, and if there is a disaster, I have this group of students outside my office*, as an informant expressed it ((Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 11)

[3] Information from supervisor Lars Birch Andreasen, Aalborg University

5.1.3. Continuous Research-based studies of the CEQ-system

By autumn 2003 the CEQ system was introduced at LTH after some preliminary test rounds. Over the years suggested modifications have generally been rejected by the administration justified because the CEQ is research-based and because the administration now possesses very long data-sets ready to be analyzed (Andersson, 2018, pp. 1-2)

The CEQ-system was monitored from the start and quantitative evaluations of how the system worked.

- When the evaluation changed from paper to being mainly web-based they tested if students evaluated differently depending on the media. (No difference could be registered) (Alveteg & Malm, 2018, p. 3)
- Did evaluations differ in terms of satisfaction, if students completed the questionnaire immediately or after the first or second reminder? (No difference could be detected) (Alveteg & Malm, 2018, p. 3)
- Study of a possible compliance between the quantitative and the qualitative response. AD divided the free-text answers into groups that corresponded to the quantitative questions and demonstrated an accordance in the pattern of the datasets (Alveteg & Malm, 2018, p. 9)

Among others the CEQ-datasets have resulted in the following publications:

- *The evaluation system CEQ at LTH: Is the intended aim fulfilled?* (Björnsson, Dahlblom, Modig, & Sjöberg, 2009)
- *On the Usefulness of Course Evaluation Data in Quality Assurance* (Alveteg & Svensson, 2010)
- *University Teachers experience of course evaluations – Emotions and consequences* (Roxå & Bergström, 2011)
- *Systematic Couse evaluations – Academic Teachers experiences and the organization's ability to develop* (Roxå & Bergström, Kursvärderingar i system - akademiska lärares upplevelser och organisationens förmåga till utveckling, 2013)
- Moreover, researchers at LTH have carried our several gender studies based on CEQ data. This implies:
- *The Role of Gender in Students' Ratings of Teaching Quality I Computer Science and Environmental Engineering* (Price, Svensson, Borell, & Richardsson, 2017)

- *Do women perform better than men at LTH, or the contrary, or neither, or both?* (Hell, 2013)[4]

The general interest in gender-related aspects results in returning statistical analysis with a gender focus. This has recently led to a disclosure of a #MeToo-teacher because of a follow-up action, when statistics revealed that male-students consequently evaluated the teacher better than the female-students (Sjödell, 2018, p. 3).

5.1.4. From paper to web-based evaluations

From 2006 LTH changed from paper to web-based evaluations. Teachers can still request a paper-based evaluation, but as a starting point, questionnaires are completed electronically (Andersson, 2018, p. 2). Considering LTH convenes approximately 1000 courses per semester, it resulted in a sizeable reduction in terms of administration, paper and waiting time. A negative consequence was a reduced response frequency, but from a cost-benefit perspective, the reduction in administration compensated (Alveteg & Malm, 2018, p. 2).

However, paper-based evaluations have a specific advantage because you can study the connection between the quantitative and the qualitative responses on an individual basis. In the web-based form the free text is assembled, e.g. it does not appear if the five items of complaint come from the same student. This is one of the reasons that some teachers still stick to the paper-based form or carry out their own paper-based evaluations (Sjödell, 2018, p. 2) and (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, pp. 2-3).

5.1.5. Evaluations as part of the psycho-social working environment

During the past 15 years, there has been an awareness at LTH of evaluations possible influence upon the psycho-social working environment among teachers, e.g. (Roxå & Bergström, 2011) and (Roxå & Bergström, 2013). When it turned out that many teachers had their holiday ruined because of negative free text responses, the publication of the Work Reports were postponed until the break had ended, (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 16). The front page of the Work Report is now dominated by a summarizing histogram, which in 2011 replaced a pie chart that illustrated the response to Q26 (*Overall, I am satisfied with this course*) divided into the three categories *dissatisfied, neutral, satisfied*.

[4] *On the Usefulness of Course Evaluation Data in Quality Assurance* and *The Role of Gender in Students' Ratings…* are the original titles. The other titles are my translation

Fig. 2: *Former Pie-chart illustration in the Work Report and End Report that has now been replaced with a histogram*

If all students were dissatisfied, the teacher would be facing a black diagram at the very first page, which left many teachers unnecessarily offended. A working group was established with the eloquent name “Operation Schwarzwald Cake” that suggested the summarizing histogram as a more diplomatic illustration (Alveteg & Malm, 2018, p. 8). In general, through its staff policy LTH has demonstrated an extensive consideration for teachers’ feelings regarding evaluations. Nevertheless, it was a recurrent issue in all interviews that teachers were extremely affected by evaluations and especially the free text answers. I consider it one of the main reasons that teachers do not study the quantitative data. They disclaim fevaluations as soon as they can and instead rely on the information they obtain through immediate reactions from the students during class and informal dialogues with their colleagues and students during breaks and feedback sessions.

5.1.6. Sub-conclusion – the historicity of the CEQ-system at LTH

The overall aim of the evaluation system is to enhance teaching and student learning, but a local study at LTH (Roxå & Mårtensson, 2011) revealed that the aim had not been received and integrated by a large section of teachers within the faculty. They criticized the system for not being sensitive to disciplinary differences and for having a hidden agenda of controlling teachers at the time when the system was implemented (Roxå & Mårtensson, 2011, p. 67). I cannot recognize this pattern, when I study the historicity of the CEQ-system at LTH. It generally reveals an extensive consideration for the teachers and for respecting their wishes. When the system was developed the Work Report, where the CEQ-data were assembled, got a major focus on statistics to comply with the mathematicians-statisticians who had particular reservations about the evaluation system. When the pie-chart that visualized student satisfaction on the front page of the Work Report turned out to arouse negative feelings, it was considered a psycho-social working environment problem and the pie-charts was replaced with a more balanced histogram. Continuous research based on CEQ-data substantiate the professional standards of the system. The management has given the students a democratic voice in the process. Generally, the implementation and consolidation of the evaluation system reveals a willingness to listen to employees and students and try to meet their requests. Changing from a paper- to a web-based system can be argued was a top-down decision. A decision that can be justified by the time-consuming administration that was saved, when somebody did not have to register the replies electronically. It reduced the response frequency, and teachers lost the possibilities of seeing the connection between quantitative and qualitative replies on an individual basis. However, teachers still have the opportunity to execute the evaluations on paper, so those wishes were accommodated by the management too.

5.2. Empirical analysis – What are the present troubles and contradictions?

The fourth principle of Activity Theory is the central role of contradictions as sources of change and development. They are not the same as problems or conflicts. Contradictions are historically accumulating structural tensions within and between activities (Engeström, 2001, s. 137).

Some people are more difficult to please than others are, as an informant sarcastically said, when he referred to a lecture given by an external teacher, who had begun by asking the students, if they knew *The Planning and Building Act*? When no one said anything, he gave a summary of the law, but several students wrote in their evaluation that the teacher had wasted their time since they had been taught *The Planning and Building Act* in the previous semester! (Alveteg, Malm, & Sjödell, 2018, s. 17). Through the interviews I have identified the following troubles and contradictions related to the summative evaluations at LTH, which will be discussed and clarified in the subsequent chapters. The topics are: The consequences of negative evaluations. New teachers special challenges about being exposed to student feedback. Problems related to student participation. Teachers designing their own evaluations and how to interpret the category *Appropriate Workload*. Being affected by negative student feedback was a returning issue, when the different subjects were discussed.

5.2.1. Negative evaluations – *who cares?*

Several informants articulated that they did not know enough about the CEQ-system in itself. Some was not even aware that it was research-based (Lindholm, Gomez, & Nilsson, 2018, p. 9). Others had difficulties seeing the point of distributing the same questionnaire repeatedly, when it did not seem to be used for any statistics analysis, which should be the reason for reiterating it:

Informant I: *These CEQ-questions are a small extract of the original CEQ, which is far more comprehensive. There are so many questions that it's getting too much. In Australia, they use it at many educational institutions, but in which from and which context we don't know.*

Informant II: *That's interesting, because if I could choose, I would probably select some of the other questions, because I feel that LTH is demanding standard evaluations, so they can compile the statistics. Then it is important that we get the same question in order to be able to compare, but we don't really know, what we want to use the statistics for*[5] (Alveteg, Malm, & Sjödell, 2018, s. 11).

None of the informants had been confronted by the management due to negative evaluations (or at least no one revealed so). This could be because I was interviewing teachers that were very dedicated to their teaching and all had a strong interest in pedagogy. Less enthusiastic colleagues might have experienced otherwise, but there definitely did not exist an official procedure about evaluations. It appeared more like a fire alarm rather than systematic control:
The system administrator had an excel-sheet (appendix 3) with all the quantitative data from the CEQ sorted in descending order according to student satisfaction (Q26). It appeared that one teacher had a score of ÷90 (out of ÷100) and even managed to achieve the same impressive average the following semester! The system administrator answered evasively, when I asked, if teachers knew that this type of document existed, and if he would report such a negative result. I assume that the system administrator despite (or maybe because of) his reluctance to answer my question gives a hint to the relevant people (e.g. the Head of Department or Programme Director), but the absence of an official procedure underlines the feeling of a fire alarm. In the meantime I have found the excel-sheet at ceq.lth.se (see: https://www.ceq.lth.se/specialrapporter/ - CEQ-data för samtliga läsår), but despite the document being available, you have to know what you are looking for (e.g. the course code) in order to be able to deduct information about teacher performance.
Despite that the informants that had a management position would read all the Work Reports related to their department or programme, a considerable part about evaluations is apparently *heard through the grapevine* (Alveteg, Malm, & Sjödell, 2018, s. 17) and dealt with through alternative channels:

[5] The interviews with Mattias Alveteg, Jan-Olle Malm, Charlotte Sjödell and Karim Andersson were all conducted in Danish/Swedish. All quotations from these interviews are my translation. The interview with Federico Gomez, Christin Lindholm and Sandra Nilsson was conducted in English and quotations are original.

I talk about (my) evaluations in the coffee room. When something has grated a bit, I try to talk about it with the teacher, but there are also course coordinators who come to me on their own initiative, and then we try to talk about it. As Head of Department I get all course evaluations. I go through them and if I have heard rumors I look specifically for something, but I have never had to go to see somebody because of bad evaluations (Alveteg & Malm, 2018, p. 12).

Considering the different types of monitoring and the lack of official procedures called forth because of negative evaluations, it is difficult to say, if continuous negative feedback has any other consequences than optional courses close, because no one wants to attend (Andersson, 2018, p. 7). However, it is a possibility that all the unofficial procedures is in fact the best way of dealing with evaluations, if you want to obtain the overall aim of improving the teaching. When you have the frame of an official evaluation system, then small talks in the corridors and chit-chats with colleagues and the students about the methods and content of the teaching can be the most efficient tools. Just as a systematic procedure, where negative evaluations automatically lead to AD supervision or an invitation to the manager's office will be considered stigmatizing and as a result have a negative impact on the teaching, despite the intentions were the opposite.

5.2.2. New teachers are particularly vulnerable

Experienced teachers appear to be more relaxed or less affected by student comments, but admit that even after many years of teaching and corresponding evaluations, negative remarks can still ruin their weekend (Alveteg & Malm, 2018, p. 12). *I suppose that I've read most of what can be said, but for younger and less experienced teachers it is more difficult. In addition, because it's a document that circulates a bit and then it becomes even more important that the inappropriate response is being removed* (Alveteg & Malm, 2018, pp. 4-5). Expressed by a teacher, who has taken it upon himself to remove inappropriate comments, before the student feedback is passed on to new colleagues. Just as he makes sure that he goes through the evaluations with them, so they are not left on their own to deal with them. Again, this is not arranged through official channels, but a personal responsibility that he has assumed.

Don't take it too hard, was the best advice that (young) informants would give to colleagues that had just begun teaching, and they both said that they had not received any support, when it came to relating to evaluations (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, pp. 15-16).

Whereas experienced teachers working for several years in the same institution, usually have a network to reassure them, when the negative feedback is overwhelming (Alveteg & Malm, 2018, p. 12), teachers with only a few years of experience in the same workplace do not have these networks, and may not even know the value of them yet. Systematic AD supervision offered to new teachers should be able to compensate for the missing network and it will not be stigmatizing as long as it is done consequently and not only because of negative feedback.

5.2.3. Student participation – a double-edged sword

Whereas all informants often engaged in dialogues with students about their teaching with the intention to improve it, their attitudes differed regarding student participation and especially the extensive influence that students have at LTH.

From the very beginning, students were given a central role in the implementation of the evaluation system. Student assistants had access to raw evaluation data when filtering the free-text comments. Student representatives had access to Work Reports and participated in the CEQ-meetings along with course coordinators and Programme Directors. Moreover, student assistants programmed and developed the pedagogical presentation of the data. Even though they were student assistants, who knew the institution as they had been working there for several years, had special skills through their educational background and as student representatives had been engaged in different working groups, they were nonetheless student assistants. One could argue that it was a challenge without the responsibility that comes with being a permanent member of staff.

5.2.3.1. Upgrading of student skills is required

Whereas nobody problematizes that student assistants have access to raw evaluation data that can contain very inappropriate comments about teachers that they know, informants opinion about students abilities to filter out unsuitable negative feedback differ. Some informants acknowledge that they do it to take care of the teachers (Alveteg & Malm, 2018, p. 4), but others pay attention to how much actually slips through (Alveteg, Malm, & Sjödell, 2018, s. 9) and (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 6). *I have had to call the system administrator a couple of times and told them that they are too careless in terms of the text that gets through*, says one of the informants and suggests that the instructions that the assistants presently get from the system administrator is supplied with specific examples of unacceptable comments. This will give the assistants an indicator of the text that needs to be removed (Alveteg, Malm, & Sjödell, 2018, s. 12)

An upgrading of student assistant skills was a recurrent suggestion – often in connection with the presentation of prototypes that I had aimed at teachers. When I presented the prototypes for two video tutorials "Be specific and constructive". One video contained examples of inappropriate comments shared by the teachers from LTH, who had experienced them. The second video had an identical set up, but showing constructive examples (see Appendix 5). Especially the first video was intended for teachers with the underlying message "*you are not the only one*", but an informant immediately suggested that this would be a good tutorial for all students. For student assistants it was a reminder of what they had to delete and it could be a reminder send to all students along with the questionnaire (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 7).

Another informant wanted to upgrade the student representatives. She pointed out that they needed to become aware of proportions; *They look at lot at the free-text and consider it the truth. They don't take into consideration that it may only be three comments and that there are 200 students in the class* (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 7). Other informants expressed satisfaction with their cooperation with student representatives – especially at the CEQ-meetings, where they could clarify points of complaints and explain that this was a widespread feeling in the class – or the contrary that the specific remark only represented a few of the students. When representatives had been elected, there was also the possibility that they could carry out the mid-term evaluation and that there would be a continuous dialogue with them during the course. This made it possible to identify contingent problems, while the course took place (Alveteg & Malm, 2018, p. 5).

5.2.3.2. The experience of student participation might depend on gender, experience, status and/or nationality

However, the informants that were most content with the cooperation with student representatives were both very experienced teachers. One was professor, the other Head of Department. They were men and they were Swedish. I cannot generalize based on six informants, but it is a possibility that they by virtue of their age, experience and nationality are being more respectfully treated than teachers are with fewer years of experience. Especially if they in addition come from another country, which was the case for two of the informants. Statistical analysis of the CEQ at LTH (Price, Svensson, Borell, & Richardsson, 2017) cannot substantiate my statement, but I nonetheless would like to accentuate the recurrent frustration expressed by the other four informants about the hardness in the comments and the need to tighten up for all students (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, pp. 6-7).

Though the attitude to student participation in the evaluation process varied, all informants expressed a genuine interest in seeing their students develop. All referred to the more informal dialogues as more educative in terms of improving their teaching: *Talking about the informal chat*, *sometimes I do that, because my course is the last one before the master-thesis, so some of the students are working in the labs and continue after the teaching…and if they have passed the course, sometimes they feel more free to give me their personal opinion. Sometimes we have nice chats about what was more rewarding both when it comes to happy and unhappy people* (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 5). Another teacher: *I talk to students during breaks. They come and ask for help. And they ask questions. I talk to teaching assistants, so I mean the information gets to me in one way or another. I try to talk to students about the course* (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 5).

5.2.3.3. Communicating through informal dialogues are less binding

Teachers' hesitation towards student participation regard that student assistants often are not doing their job properly (i.e. too many inappropriate comments slip through). Secondly, that students' influence does not come with a matching responsibility. They are free to criticize (often anonymously), representatives participate in CEQ-meetings and their comments are registered in the End Report that are public. However, nothing happens, if they do not show up at the meetings, do not write any comments or do not make an effort to increase the response frequency among their fellow students (Alveteg & Malm, 2018, p. 6). Informants generally preferred the informal dialogues, which seemed to have a much bigger imprint on their teaching than the official dialogues. One can argue that informal dialogues are less binding, i.e. teachers are free to select the suggestions and comments that they agree with in comparison to official evaluations, where the suggested actions in the End Report preferably should be executed. It is understandable that teachers prefer the communication, where they are free to choose, rather than official meetings, where they have less influence, but nonetheless have to follow the decisions that are passed.

5.2.4. When teachers go solo – Improvements or alternatives to the CEQ

It was a recurrent issue in the interviews that the CEQ might be too general to be informative for a course. Is it the standard that rules, rather than what is best for the programme? However, LTH encourages interdisciplinary courses and in general, that students can follow courses outside there programme. As a consequence, there are usually students from different programmes in the same course and it is important that everybody completes identical questionnaires (Alveteg, Malm, & Sjödell, 2018, s. 11).

5.2.4.1. Students are reporting to the teacher's superior

Evaluations are mandatory for courses with more than 25[6] students – and optional for the ones that has fewer. Students are requested to specify *to what extent you have participated in the various course activities* (0%, 20%, 40%, 60%, 80% or 100%) and the quantitative questions has teaching or the teacher(s) as their starting point. They are formulated so students are forced to reflect upon their own learning (e.g. Q21: *The teachers on the course worked hard to make the subject interesting*). However, the free text questions set the stage for reporting to a higher court rather than the teacher, who prepared and taught at the course:

Informant III: *I can see from the language and the form that they are writing that they really don't expect that it is me who reads it. Because of how they write about me it is written for someone else, so maybe the students could be made aware of that it is actually the teacher, who is reading it.*

Informant IV: *…students write to the board or to the student representatives. I agree with that* (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 7).

The above dialogues reflect the problem of writing about the teacher in third person, which can affect the tone, as it is more likely that students would modify their strictures against a teacher, if they addressed them directly to him or her. Moreover, it indicates a second problem: if there is more than one teacher in the course, students rarely specify whom they are referring to.

5.2.4.2. Teachers make their own evaluations

When teachers cannot deduce the required information from the evaluations that they want to, they either stick to the informal dialogues during class (Lindholm, Gomez, & Nilsson, 2018, p. 5), or they make their own evaluations: *If the CEQ is for the students, we cannot differentiate which answers come from my students about my part of the course, so I send them my own evaluations. Then I summarize their evaluations and send it to the other teachers and to the board …..Now we have separated the course, so from this year, I'll have my own course and my own CEQ and then I can look at the CEQ, because I will know that it is only my students that have been giving feedback* (Lindholm, Gomez, & Nilsson, 2018, p. 2).

[6] During interviews with the system administrator and informants that are involved in the administration of the CEQ-process the limit of 25 students is consequently being used. However, official documents at ceq.lth.se consequently write 30 students. I have mailed the System Administrator, but not received an answer, so in the meantime I stick to the 25 students, but am aware that it could be 30.

Another informant had made her own questionnaire by combining some of the learning objectives of the course with specific questions from the CEQ, the reason being that she could use the results to a greater extent than the replies from the standard CEQ (Alveteg, Malm, & Sjödell, 2018, s. 10). It almost caused an argument during the interview as one of the other informants in his capacity as academic developer had had to act upon the courses, where no students had completed the CEQ. Students cannot be bothered to complete two questionnaires, and in situations when a teacher has his or her own, it is the CEQ that is deselected by the students (Alveteg, Malm, & Sjödell, 2018, s. 10). From a programme perspective, it upsets the strategy of uninterrupted datasets of the CEQ for all courses at LTH with more than 25 students.

5.2.4.3. The possibility of adding 1-4 free text questions

Course coordinators receive an e-mail a couple of weeks before the course ends reminding them that they can add 1-4 extra free text questions. One informant had made use of that and asked very specifically to how students had improved:

1. Their creative skills
2. Their ability to communicate orally
3. Their ability to communicate visually
4. Had they had sufficient access to the facilities at the school in order to be able to complete the course elements (Sjödell, 2018, p. 2)

She expressed the problem of having to resend the same questions every semester and not being able to keep them as a permanent part of the CEQ-evaluation for her course (Sjödell, 2018, p. 2).
None of the other teachers had made use of the possibility of adding extra questions. One had encouraged students to write about specific issues in the free-text section (Alveteg & Malm, 2018, p. 4), but in general, it appeared that emergent questions were better clarified immediately by asking the students in class.

5.2.4.4. Should students be reminded about the learning objectives?

Informant II: *it is a fact that the present CEQ-evaluation is not combined with the learning objectives, and in that case the CEQ doesn't help anything. The internal evaluations do, because they are goal oriented. The CEQ has a number of general questions, but nothing about if specific objectives have been met. It can even be that some students believe that certain goals have been fulfilled, but they don't know, because they can't refer to the course description.*

Informant I: *This is one of the points of criticism about the validity of the questionnaire to ask the students if the learning objects have been met, because a correct answer implies that students are aware of, what these are, which is not always the case* (Alveteg, Malm, & Sjödell, 2018, s. 10).

Presently it is only the aim of the course that figures at the head of the questionnaire and there was a debate if students should be reminded of the learning objectives of the course and the usefulness of evaluating according to those (Alveteg, Malm, & Sjödell, 2018, s. 10-11). Adding the learning objectives to the questionnaire (e.g. students are presented to the objectives before they begin to complete the questionnaire), does not imply that students actually read them.

I perceived the discussion between the two informants as an illustration of the disciplinary differences between teaching a subject and a subject serving as a tool for further study. Learning objectives concentrate on competences and thus it was in the interest of the informant who was a teacher from Industrial Design to have increased focus upon the tools or competences she was teaching. The first informant was a teacher from the Institute of Chemistry, who had more interest in the subject on its own and thus attached less importance to the learning objectives.

5.2.5. Appropriate Workload – when is my evaluation positive?

The reason that the students are asked about their workload is based on the knowledge that if the work pressure is too heavy, students stop studying in order to understand and instead memorize the subject-matter. Except for one informant – everyone could agree that they were in doubt about how to interpret the category “Appropriate workload” – in Swedish *Lämpelig arbetsbelastning* which is not exactly the same. The system administrator suggested the term *inte for hög arbetbelastning* (Andersson, 2018, p. 5), but everyone agreed that it would not solve the doubt about what to be considered good – or at least acceptable results. An informant also pointed out that as teacher she would define projects, where students worked extremely hard to reach the goals they had set for themselves, but it was not her, who had demanded that they worked flat out (Alveteg, Malm, & Sjödell, 2018, s. 2).

According to informant, who previously worked as AD, the theory behind the CEQ says that the higher the Workload the better, but his opinion/experience is that it should not exceed +50 and it should not be below 0. In connection with this he called attention to that especially in terms of the category Workload student evaluations are biased based on their experience from previous courses, i.e. if the workload was very easy in the first course, they might experience the following course as overloaded. If they felt overloaded in the previous course, they will experience the following course as easier, despite the teaching and the required workload remains unchanged (Alveteg, Malm, & Sjödell, 2018, s. 3). How students experience and thus evaluate workload is thus uncertain and the only thing that is possible is to have a guideline that indicates the acceptable interval. The informant told that when he was Programme Director, he would react if the Workload was less than ÷20 and above +40.

5.2.7. Subconclusion – troubles and contradictions

In the article *Doing course evaluations as if learning matters most*, Dr. Kristina Edström argues that the purpose of an evaluation process must be determined from the beginning, because quality enhancement and quality assurance on a practical level need rather different investigations. Edström quotes Patton, who has observed that: *The same data seldom serves both purposes well* (Edström, 2008, p. 99). If the purpose is enhancement then teachers will try to identify problems, where there is a need for improvement, but if the purpose is quality assurance then the aim is to create a basis for fair judgment. As a consequence it can be dangerous to focus on problems as they can be turned against the teacher. If the two objectives are combined in the same evaluation activity, the quality assurance part will unavoidably become the focus, because of the risk. In this case it does not matter much what the aim of the institution is, if that is the way that the individual teacher sees it (Edström, 2008, p. 100)

The five present troubles and contradictions that I have identified during the interviews reveal an insecurity about what is an acceptable standard to achieve in your evaluations. Or rather an insecurity about when your teaching has been good enough. The management has in all ways kept their original promise and not used the evaluation system for quality assurance except for aiming at high professional standards, when it came to statistical analysis of the large CEQ -datasets. By giving teachers the responsibility to enhance the quality of their teaching in their own way, they have simultaneously left especially new teachers in a vacuum, where they find it hard to navigate and know when their teaching and the students learning have been satisfactory . This tendency is reinforced because teachers in general keep their evaluations to themselves and only share in private with a few trusted colleagues. And it is suddenly even more understandable that the two experienced teachers are the ones that are most satisfied – also with the cooperation with the students. The two teachers were professor and Head of Department respectively – in other words, they had received an official stamp of approval from the management that they do a good job. If the management presents a number of quality parameters, you know which criteria to meet in order to say that you have done well. If you disagree with the criteria – at least you can agree to hate the management. It is more difficult to define you own set of criterias for good teaching – especially because you have to re-develop them if you want to improve your teaching. At LTH it can be very difficult to hate the management, simply because they haven't defined criterias of quality. For want of something better, you can always agree to be annoyed about the students.

In the next chapter I will be analyzing the evaluation system at LTH through Yrjö Engeströms third generation of Activity Theory with two interacting Activity Systems (in this case the teachers and the management) as the smallest unit of analysis. By studying who is learning and why, what and how they are doing it, I can identify the dynamics of the learning in the organization (LTH). By means of the acquired knowledge, I can create models/changes that can pave the way for expansive learning because of quantitative evaluation data being used to a greater extent to improve the teaching and thus the student learning.

6. Engeström's third generation of Activity Theory

In the article *Expansive Learning at Work: toward an activity theoretical reconceptualization,* the educational researcher Yrjö Engeström Introduces the third generation of activity theory, where takes two interacting activity systems as its minimal unit of analysis. This makes it possible to focus research efforts on the challenges and possibilities of inter-organizational learning (Engeström, Expansive Learning at Work: toward an activity theoretical reconceptualization, 2001, s. 133). In order to examine activity theory and its concept of expansive learning I use the four questions that according to Engeström any theory of learning must answer at least four central questions:

1. Who are the subjects of learning – how are they defined and located?
2. Why do they learn – what makes them make the effort?
3. What do they learn – what are the contents and outcomes of learning?
4. How do they learn – what are the key actions or processes of learning?

Engeström presents five central principles of activity theory, i.e. the activity system as a unit of analysis, the multi-voicedness of activity theory, historicity of activity, contradictions as a driving force of change in activity, and expansive cycles as possible forms of transformation in activity – in this case aiming at extended use of quantitative evaluations to improve teaching. The four questions and five principles form a matrix that I have completed based on the interviews (see appendix 6)

6.1. Who are the subjects of learning?

The subjects of learning are in this case the teachers and the management/administration that represent the two sides of the activity system as they are facing each other with what could be conflicting interests of quality enhancement (teachers) and quality assurance (administration) though both share a common object that students learn more.

Academic Developers are an integrated part of both systems though mainly the management, where they are a tool or mediating artefact to implement research-based standards for educational theory and practice that becomes official guidelines for good teaching.

Students are of course a subject of learning too, but since they are not the subject-matter of the research and because it is the institution that defines their learning objectives, they will not be included as a separate activity system. The focus will be upon teachers and the administration

6.2. Why do they learn? – What makes them make the effort?

For situated learning theory (Lave & Wenger) *motivation to learn stems from participation in culturally valued collaborative practices in which something useful is produced* (Engeström, Expansive Learning at Work: toward an activity theoretical reconceptualization, 2001, s. 141). This could be the case for new teachers entering into a cooperation, but Engeström also points out that *novices gradually gaining competence in relatively stable practices is not equivalent to motivation for risky expansive learning process* (Engeström, Expansive Learning at Work: toward an activity theoretical reconceptualization, 2001, s. 141-142). However, the intention of this project is not to initiate expansive learning process, but rather to pave the way for them by making quantitative data more accessible and thus more useful to teachers.

6.2.1. It makes sense to teachers that students learn as much as possible

All teachers that I spoke to expressed a genuine interest in their students learning as much as possible. It was a meaningful objective to them. The question was if evaluations was a sufficient measurement for the extent of student learning. Some considered it as bricks in a larger puzzle that constituted the picture of the student learning (Alveteg & Malm, 2018), whereas others found it hard to see the proportion between the large datasets that were accumulated and the (very little) statistics that was carried out on the basis of it (Alveteg, Malm, & Sjödell, 2018, s. 11). Two teachers had made their own questionnaire. One in order to evaluate her own specific learning objectives (Alveteg, Malm, & Sjödell, 2018, s. 10), the other because he wanted to get his own evaluations knowing that they were specifically addressed to him. He was a part of a larger course and it did not appear from the CEQ-data which feedback concerned him (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 2)

6.2.2. Evaluations will be presented to the management

Whereas several informants every now and again expressed an irritation over students' non-binding participation in the evaluation process, no one said anything about a possible problem of regularly having to discuss your evaluations with a representative from the management. Even if it is true that none of them feared losing their job due to negative evaluations, it can still be a central reason for optimizing your teaching that you are being assessed by the end of each course and the management will know about your results. To qualify as a senior lecturer you also have to pass your portfolio, where teachers are encouraged to refer to their evaluations. Whether teachers like it or not, they have to present their evaluations to authorities, which most likely can make them make the extra effort to do well.

6.2.3. Vanity – The devil's favourite sin

During the interviews, the informants were presented to a Work Report containing very positive evaluations and one of the informants commented *If I'd gotten a report with these results I would take it easy, because it doesn't appear as if there is any dramatic problems in this course. I would read the report, when I'm in a good mood* (Alveteg & Malm, 2018, p. 7). It reflects an element of vanity, which teachers have and which should not be neglected as a driving force for improving your teaching. It is good, but not sufficient, if they can see that students have learned a lot. It is also important to achieve the acknowledgement that you did well. To be confirmed personally by students learning. An informant pointed out that students should be reminded of proportions, if they focused on three negative free-text comments, when there were 200 students in the class. And she later said that it was also necessary that she reminded herself of it (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 7). Vanity can be a driving force for making better teaching, but there also appears to be an unspoken consensus among teachers that it is acceptable to be upset by even minor complaints.

6.2.4. Evaluations contributes to ensuring the reputation of LTH

The management will have an objection about maintaining the high professional standards at LTH to consolidate the good reputation of LTH in subject fields. One of the means of achieving this is by systematically monitoring the teaching through (among other things) evaluations. By means of academic developers they can identify possible needs for supervision and academic development among the teachers (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 3).

6.2.5. Studying evaluations is closely related to looking for progression

It has to be noted that several of the informants belonged to both parts of the activity system as they at the same time were teachers and (vice) Programme Directors. The interviews revealed a common interest in using evaluations to monitor a progression, but the kind of progression they were looking for varied. Whereas teachers would look into details about specific elements in their teaching, the administration were looking for more general progressions in the main categories for a longer time span (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, p. 13).

6.3. What do they learn? – What are the contents and outcomes of learning?

According to the informants, they only skimmed the quantitative part of the Work Report, but that does not necessarily imply that the quantitative data are not affecting their attitude to teaching – both in terms of current reminders of the standards for teaching and learning at LTH and as incitement for the free-text response.

6.3.1. Evaluations as recurrent reminders of guidelines for learning and teaching

By regularly having to complete the same questions that require that students reflect upon their learning, they are recurrently reminded of a focus in their learning process (e.g. the general academic skills they must require and that they are supposed to understand, not memorize the subjects they are introduced to). Likewise, for teachers; by regularly having their teaching evaluated, they are reminded of the (CEQ) standards of good teaching. That they need to specify the learning goals. That they need to teach their students general academic skills. That they should aim at constructive alignment between the teaching and the corresponding exam and finally that they do not overload their students so they start memorizing rather than try to understand.

6.3.2. The quantitative questions incite the free-text replies

Students respond to the 26 quantitative questions before they get to the free-text questions, which means that their mindsets are incited on the standards they have responded to. This does not prevent them for adding inappropriate comments and relieve their feelings, whether it is justified or not. Speaking from own experience, removing the quantitative questions, only to maintain the qualitative ones, results in fewer and more unfocused comments.

6.3.4. Teachers learn to survive through their informal networks

My colleague has also been working many years as a teacher, but we had to take a debriefing, where we clapped each other on the back and re-assured one another (Alveteg & Malm, 2018, p. 12). A CEQ-meeting lasts 20 minutes, but the main part of the evaluations are being discussed in informal networks, where a part of it is re-assurance. These informal networks are gradually developed and it is something that new teachers learn in the course of time that they can find reassurance among other colleagues, whether they are new as themselves (Lindholm, Gomez, & Nilsson, 3rd Focus Group Interview, 2018, pp. 15-16) or an elder colleague takes the responsibility upon him/her self (Alveteg & Malm, 2018, p. 5)

6.4. How do they learn - What are the key actions or processes of learning?

Since Vygotsky defined the original Activity Theory the cultural-historical approach was primarily a discourse of vertical development toward "higher psychological functions", but Engeström accentuates that the third generation of activity theory needs to develop conceptual tools to understand dialogue, multiple perspectives and networks of interacting activity systems (Engeström, 2001, s. 135). In this case I am aiming at a movement of the object 1 from quality enhancement from the teachers side and quality assurance on the other side to Object 2 of better teaching – or consolidation of reputation to meet in a shared perception of better teaching (Object 3).

6.4.1. The Management is learning through formal networks

In his role as Head of Department an informant talks about especially looking for evaluations, where he *has heard rumours* (Alveteg & Malm, 2018, p. 12). Through their access to all evaluations in their department, the CEQ-meetings that follows them and possible dialogues with academic developers, a substantial part of the management's learning about the evaluations take place in formal networks were the results are being processed. It is also through the knowledge of the distribution of grades or the averages that students have obtained that the management gets an impression of how students have developed academically.

6.4.2. Learning regarding student development primarily happens through informal networks

When it comes to processing students' learning, teachers learning primarily have its source in the sensing that takes place in the class, when they are teaching (Lindholm, Gomez, & Nilsson, 2018, p. 11) and otherwise in the informal networks that is gradually being developed. There are the dialogues with students as part of the paperless mid-term evaluations, during the breaks and cosy chats as part of supervision (Alveteg & Malm, 2018, p. 1). Or incidental meetings after a course has ended (Lindholm, Gomez, & Nilsson, 2018, p. 5). There are conversations with teaching assistants during lunch-breaks about the progression of a course (Lindholm, Gomez, & Nilsson, 2018, p. 5) and maybe small confidences to trusted colleagues during coffee-breaks or the like.

One of the informants was a former AD and had tried to establish informal chats about evaluations during breaks, but never succeeded (Alveteg & Malm, 2018, p. 12). Apparently, teachers want to be in control, when discussing their evaluations and this is the advantage about informal meetings that they can be cut short, if somebody feels a need for it.

6.4.3. Studying specific replies. In private.

Some teachers look at the basic facts – especially presence – to see, if there is an accordance between the answers and their own impression during the course (Lindholm, Gomez, & Nilsson, 2018, p. 9). Despite most of them are reluctant to study the quantitative replies, some admit that they can be looking for specific questions, if they have taught something that relates to it (e.g. written communication) (Alveteg & Malm, 2018, p. 9). It is a common denominator that studying your evaluations is something that is done in private and there is a general reluctance to share those data and definitely a need to be in control, if you do.

6.4.4. Writing comments for the End Report forces teachers to relate to their data

A complete End Report requires that course coordinator as well as student representatives and Programme Director write a comment based on the Work Report and the CEQ meeting. At the meeting central issues are being discussed, and it is decided which actions needs to be taken in order to make the teaching and learning better. That CC, SR and PDs have to write those comments is a requirement that is monitored and considered one of the major issues about evaluations (Andersson, 2018, p. 6). Having to be present at a meeting, where evaluation results are being discussed and afterwards having to write a comment about the actions that will be taken, forces the participants to relate to their data. Perhaps that is the best way for the management to ensure that evaluation data are being studied and used to improve the teaching so that students learn more.

Based on the interviews and the following clarification of who is learning, why, what and how they are learning I can now specify Engeström's Activity Theory when using it for the evaluation process at LTH:

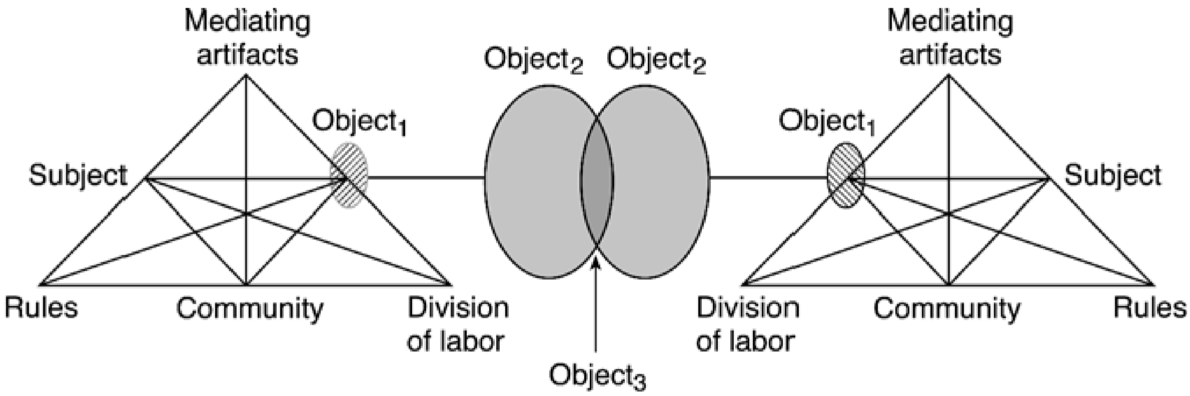


Fig x Engeström's third generation of Activity Theory with two interacting activity systems as its minimal unit of analysis

In the third generation of activity theory the minimal unit of analysis is two interacting activity systems, which makes it possible to focus research efforts on the challenges and possibilities of inter-organizational learning (Engeström, 2001, s. 133). Notice that the lines in the illustration are in fact arrows that point in both directions as an indicator of the mutual dependence between all the different aspects. The objects are depicted as ovals, the shared object (3) being that students learn more, which emphasizes that the object-oriented actions are always characterized by ambiguity, surprise, interpretation, sense making, and potential for change. Just as the object(2) that are Better teaching (teachers)/consolidate the good reputation of LTH

Subject	**Teachers at LTH**	**Management at LTH**
Object(1)	Quality enhancement of the teaching	Quality assurance of the teaching
Object(2)	Better teaching	Better reputation/consolidate the good reputation of LTH
Object(3)	Students learn more	Students learn more

Mediating artefacts / Tools and signs	• Mid-term evaluations • Personal assessment of the learning of the class • Informal chats with students • Self-evaluation • Supervision • Peer-reviews • Exams/assessments	• CEQ-system • Academic Development unit (Genombrottet) • Exams/official assessments • The website ceq.lth.se containing the majority of documents related to the CEQ since 2003!
Rules	Unwritten rules: • Teachers do not discuss evaluations unless somebody explicitly would like to • Teachers do not interfere in each other's teaching unless explicitly requested to • Evaluations are something that you have to get through as fast as possible	Written/official rules • Evaluations are mandatory • Focus in the evaluation process is supposed to be upon analysis and discussion of the courses with the aim of attaining better teaching. Time should not be spent on gathering data and writing reports (Andersson, 2018, p. 1) • CC, SR and PD have to write comments for the End Report based on the CEQ-meeting.
Community	Informal networks • Colleagues • Other teachers • Academic developers	Formal network • Teachers • Academic Developers • Management
Division of labour	• Course coordinators • Student representatives • Student assistants • (Academic Developers)	• Programme directors • Course coordinators (teacher) • Student representatives • (Academic Developers)

7. Creating a New Model

The firth principle of Activity Theory proclaims the possibility of expansive transformation in activity systems. According to Engeström *Activity Systems move through relatively long cycles of qualitative transformations. As the contradictions of an activity system are aggravated, some individual participants begin to question and deviate from its established norms. In some cases, this escalates into collaborative* *envisioning and a deliberate collective change effort* (Engeström, 2001, s. 137). In this case the aim is not an expansive transformation, but to pave the way for it, by making quantitative evaluations more useful to teachers so they actively begin using them as a rich data source for making their teaching better and students learn more. To make small changes that hopefully reduces the number of inappropriate comments and make the quantitative data more accessible by being able to work with them in order to study possible progressions. In general creating a more comfortable atmosphere around evaluations by reassuring teachers that they are not the only ones to have been exposed to inappropriate comments.

It is not the evaluation system in itself that produces the positive effects. Studies have shown that improvement of the teaching is possible when the evaluation is combined with interventions such as support such as academic development supervision to teachers or otherwise is used as part of an aligned set of strategies (Edström, 2008, p. 102). Based on the interviews and my analysis of the data, I will suggest a number of tools for the teachers, where some of them will also be useful for the administration. Other tools are aimed at students with the intention to affect their feedback to teachers so among others free-text answers become more constructive and useful in planning and executing the teaching.

During the interviews, the possibility of arranging workshops about evaluations as part of academic development was discussed several times. Every time the idea was dismissed on the ground that it was not very likely that people would like to share their evaluations (e.g. (Lindholm, Gomez, & Nilsson, 2018, p. 8)). They already felt uncomfortable about the evaluations being shared with several during the CEQ-process and the End Report being available to all their colleagues (Lindholm, Gomez, & Nilsson, 2018, pp. 5-6). Experienced teacher revealed that they would keep the Work Report to themselves to make sure that new teachers were not on their own, when receiving it. Instead, they would go to see them and talk about the response they had gotten – the credit, when it was good and the reassurance and how to move forward, when the feedback was less positive (Alveteg & Malm, 2018, p. 5). Making it a permanent arrangement (e.g. like a mentor) did not seem to appeal to anyone.
In general evaluations are private and to pave the way for evaluations as part of organizational learning, it is a starting point that privacy has to be respected, so teachers only have to share to the extent they feel comfortable about it (except for the CEQ-process that is already taking place). Below are listed a number of solutions that has privacy as starting point:

Adjustments of CEQ-questionnaire – Are you satisfied with your own performance?

The quantitative questions remain unchanged, but the initial quantitative questions (e.g. sex, year of birth, year of study etc.) also contains the question: *To what extent have you participated in various course activities?* One could add: *Are you satisfied with your own work performance?* (Answer: 6-step scale from 0-100%). The aim of the added question is to make students reflect upon their work performance and later be able to study possible statistical correlations between answers and the student's attitude to their own performance.

Adjustment of CEQ-questionnaire – Extending the free-text question

In order to encourage students to be more considerate when answering the free-text questions the question *What do you think was the best thing about this course?* could be rephrased:

What do you think was the best thing about my course?

Or

What do you think was the best thing about our course (please, address the teacher you are writing to)?

The second question *What do you think is most in need of improvement?* could be rephrased:

What do you think is most in need of improvement and why? (Alveteg, Malm, & Sjödell, 2018, s. 12)

The rewordings are inviting students to give reasons for their complaints and they will be more likely to write in a proper tone, when they address the teacher directly.

It was suggested that students were reminded of the learning objectives (e.g. they were presented to them in the beginning of the questionnaire). Based on experience that students do not read them anyhow I will recommend against it.

Adjustment of the Work Report

Remove the *Summary scales divided on satisfaction*. All informants were asked to explain the scales and no one except the system administrator was able to do it. The most experienced teacher had an understanding of the information you could deduce from the scales – the rest said that they never looked at them. It was a common routine by all informants to skim the front page, read the free-text answers, maybe skim the histograms for the quantitative replies and the scales added to the feeling that the Work Report contained an overload of unnecessary information. Since the scales were introduced to please math-statisticians 15 years ago and the majority of the ones that protested has retired in the meantime, it does not seem a loss to remove them.

Adjustments of the End Report

By the time the End Report is ready to be published (i.e. the CEQ-meeting has taken place and the participants have written their comments), student have been graded and it is definite how many has passed and failed the course. It will put the result into perspective to add this information to the End Report. To challenge the students workwise can increase their professional development, but the heightened pressure of work often results in (temporarily) dissatisfied students and negative evaluations.

Systematic AD supervision – especially for new teachers

The interviews reveal that new teachers receive no systematic support, when it comes to addressing their evaluations. It is only if more experienced teachers independently take the responsibility upon themselves that they are given any assistance. *Don't take it too hard*, was the best advice one of the informants could give to new teachers, which reveals that it is tough reading one's first evaluations. Especially if you are left on your own (Lindholm, Gomez, & Nilsson, 2018, p. 15). A solution could be systematically to offer new teachers AD supervision about how to interpret and use the quantitative data (including that a response between ÷20 and +40 is acceptable for the category "Appropriate Workload"). How to use the constructive comments in the free text to improve the teaching. And to be aware of that everybody receives negative comments in their evaluations and they should focus upon the constructive and positive comments.
Note: Vanity figures among the seven deadly sins and the supervisions are not intended as "a shoulder to cry on". We can also demand that teachers as grown-ups have a sense of proportion and do not attach great importance to one drop of criticism in an ocean of positive remarks.

Tutorials in Swedish and English available at Kompetenceportalen at LTH.SE

An informant suggested to look to ICA for inspiration, at they had their own system for upgrading the skills of their employees consisting of small tutorial videos, which were compulsory to watch (Alveteg, Malm, & Sjödell, 2018, s. 14). Another informant added that videos should last no longer than 3 minutes and be available in both Swedish and English. Not because of the Swedish students, but because a surprising number of the foreign students did not speak English (Alveteg, Malm, & Sjödell, 2018, s. 18)

The following subjects are suggested as a starting point:

Content	Aim
What is the Course Experience Questionnaire (CEQ) • Research based – what is it measuring • Why did LTH select the CEQ-system? • The main categories and why LTH selected the specific five categories • Why did LTH add the questions about relevance (Q17) and satisfaction (Q26)	An introduction to the CEQ aimed at both teachers and students to understand the research that the system is based on in order to study in-depth learning. Several informants expressed that they did not know what justified the CEQ as evaluation system and by understanding the research and intentions behind the CEQ it is the aim that both teachers and students will develop a greater interest in using the CEQ. (Please, see Appendix 7)
The CEQ-system at LTH 1. Mandatory to do evaluations when more than 25 students in a class (optional if fewer students) 2. Optional to add 1-4 extra free-text questions 3. When is the CEQ carried out? 4. What does a Work Report contain? 5. The CEQ-meeting 6. The End Report (including remarks by SR, CC and PD) 7. Where to find the CEQ documents (ceq.lth.se)	An introduction to the CEQ-system or process at LTH aimed at both teachers and students. Teachers in order to understand what to expect and what is required of them. Students in order to understand how their statements are being considered and used in order to develop the teaching so they learn more. That their evaluations are taken seriously and not just archived or left in a pile on a desk. (Please, see Appendix 8)
Be specific and constructive (negative) Teachers working at LTH tell one by one a specific example of an inappropriate comment they have received in their evaluations	The stories are mainly aimed at students to make them understand that malevolent comments does not improve the teaching.

	The second target group is other teachers – indirectly communicating that they are not the only ones to have received negative response. (Please, see Appendix 5)
Be specific and constructive (positive/constructive) Teachers working at LTH tell one by one a specific example of useful comments that had helped them improve their teaching.	Students are the primary target group with a direct request for constructive criticism with specific suggestions for the teacher about what they think would make the teaching better. Second target group is other teachers – it is a possibility to show the tutorial just before the CEQ is completed – or when the CEQ is mailed to the students to attach a link to the tutorial. (Please, see Appendix 5)

An informant suggested the tutorials could be available at Kompetenceportalen (Alveteg, Malm, & Sjödell, 2018, s. 19). The advantage about tutorials is that you can go back to them, when you get the evaluations and re-study them in private, when it is relevant for you (Lindholm, Gomez, & Nilsson, 2018, p. 8).

Upgrading of Student representatives / Student assistants

As discussed in the chapter about **present troubles and contradictions** the problems with student participation was a recurrent issue in the interviews and though the system administrator gave the student assistants lessons before they started filtering the comments, apparently too many inappropriate comments slipped through (Alveteg, Malm, & Sjödell, 2018, s. 12). A start could be to watch the tutorials "Be specific and constructive" – both the negative and the positive, to get an understanding of which comments should be removed.

Secondly a workshop, where the participating students are given the assembled free-text answers from a course. Each students make their own filtering and afterwards the participants compare and discuss their selections and rejections mutually. An academic developer could supervise the session.

Simple interface/dashboard where teachers can work with their quantitative data

At the very end of the first interview an informant expressed that he would like a shadow column showing the result from last year to measure a development. This lead to a number of different prototypes: Shadow columns representing data from the previous 1-3 years; histograms from the previous year placed next to the present histogram showing the data as either numbers or percentages; columns in different colours and patterns and general discussions about, which data would be relevant to compare (e.g. the summarising histogram or the histogram representing a single question). Quantitative data becomes more informative, when you can compare them, but it was individual, which data the teachers saw a point in comparing and for how long a time span. This led to the idea of developing an interface where teachers could work with their quantitative data either comparing them to their previous results or to relevant averages at LTH.

One can argue that teachers will only present the data, where there is a progress in their results, but while they are comparing the data (maybe in search of a progression) they will also be facing the ones without a progression thus being reminded (but in private) of areas they should attend to.

8. Conclusion

Evaluations are mandatory and thus must be undertaken, but we shall avoid the reconfirmation of the views of students who see themselves in a (passive) consumer role, which is the risk when evaluation focuses on teaching in itself (Edström, 2008, p. 103).

Surprisingly little research has been done about how teachers are affected by evaluations although it was a dominant and recurring issue during the interviews. Genombrottet at LTH is one of the few institutions that has studied it. It reveals a pattern where teachers are strongly affected by student comments and in the worst cases remember them for years. Whereas experienced teachers have their informal networks to reassure them, new teachers do not have these networks to rely on and are generally left on their own to deal with it.

To answer the research question: ***How can we make the quantitative evaluation data more useful for teachers to increase the use of or work on their evaluations?***

A precondition for teachers to make more use of their evaluations is to create a comfort zone, where especially new teachers are offered support both professionally (e.g. supervision with an AD) and from more experienced colleagues. One of the main issues is to create tools to provide all teachers with a basic understanding of what the CEQ measures and to make it clear that they are not the only ones being exposed to negative criticism. Standard documents should be adjusted so the questionnaire prepares the ground for more constructive comments. The statistical analysis in the working report that no one seems to understand should be removed and the end report should include the numbers of pass/fail and the distribution of marks in order to put the evaluations into perspective. A simple interface where teachers can work in private with their quantitative data and compare them to either their own or equivalent averages at LTH could be another tool. Finally, an increased focus on qualifying student assistants as well as student representatives to pay more attention to inconsiderate comments – both in order to remove them and to remind their fellow students to be constructive in their criticism. Keeping in mind that the reason for evaluating is to get better teaching.

The suggested solutions are intended to pave the way from private to organisational learning regarding evaluations, but we must always remember that evaluations are guidelines for quality enhancement not quality assurance. There are simply too many uncertainties related to evaluations for them to be considered as more than indications. Evaluations represent the students' perception of the teaching and learning and we cannot assume that this apprehension is shared by the teacher, which is why evaluations are only a starting point for questions to be asked rather than to be considered the nominal truth about the teaching and learning in a course. So much the more it is reason for creating an environment that stimulates organizational learning, where evaluations are an integrated part of.

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