There is more than the Swedish System

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Key words: teacher learning, student knowledge, international higher education, land management

SUMMARY

What makes that academic lecturers engage in knowledge sharing and disciplinary knowledge development with their students? In order to find an answer to this question a field study was conducted in May 2013 among academic staff of the International Master of Science Program in Land Management at the Royal Institute of Technology (KTH) in Stockholm, Sweden. The aim of the field study was to obtain a first set of theoretical themes and concepts about academic lecturers' disciplinary knowledge development through the interaction with their students.

The Land Management program was the first international teaching experience for the academic lecturing staff. Over the years the lecturers adapted to the new situation of teaching international students. Some major steps of a learning process kept coming out in the data, each related different dimensions of learning and knowledge development of the lecturing staff.

With this in mind the more concrete learning and knowledge development in terms of learning output was investigated. The data showed a different level of exactness and generalisation, and ranging from awareness being raised towards very concrete knowledge development in the academic domain of the lecturing staff member. However, some clear themes emerged from the data. The interaction with their international students in the Land Management program resulted in: 'a new perspective on Sweden', and the realization that 'there is more than Sweden'. In addition the data analysis brought about two other main dimensions of learning output. The first is the activation of metacognitive and reflective skills among the academic staff. And second, that knowledge was shared in bits and pieces and consciously or unconsciously further integrated in higher levels of pieces of knowledge, labelled 'elements of knowledge'.

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1. INTRODUCTION

Students attending international postgraduate courses represent professional expertise and country specific knowledge. This knowledge can contribute to disciplinary knowledge development and improved curriculum development, as personal experiences with teaching international students in land administration academic education has shown.

Against this background the University of Twente, The Netherlands, has formulated a research project that explores if and how teaching processes, in particular student – teacher interaction, can be more beneficial to other academic processes in order to cope with the increasing demands placed on the academic profession. The research addresses to following research question: what makes that academic lecturers do or do not engage in knowledge sharing and disciplinary knowledge development with their students? The research takes an organizational learning perspective and aims to contribute to the theory on the relation teaching-research and in particular to teachers' disciplinary knowledge development in the teaching process.

This paper presents the outcome of the second part of the analysis of the field study conducted in May 2013 concerning the International Master of Science Program in Land Management (LM Program) at the Royal Institute of Technology (KTH) in Stockholm, Sweden. The aim of the field study at KTH was to obtain a first set of theoretical themes and concepts to address the main research question. A first paper, presented during the FIG Working Week in Kuala Lumpur, reported on the dimension 'challenging and difficult' and how this contributed to learning and knowledge development of the lecturers involved in the international Land Management program of KTH (Groenendijk, 2014). This second paper takes the analysis a step further by focusing on the second emergent dimension of the 'meaning' of student knowledge: 'interesting and rewarding'.

2. MATERIALS AND METHODS

The origin of the research question suggested interpretive research and the use of qualitative - interpretive methods to answer the research question. The case study method is proposed as the main research strategy. Interpretive case study research relies on an underlying interpretive and constructivist epistemology (Schwartz-Shea & Yanow, 2012).

The research context
One of the key tasks in interpretive research is seeking meaning in context (Klein & Myers (1999). Therefore at the start of the field research at KTH, a profile was made of the LM Program, based on program documents; the university's and program website and evaluations. The profile was further elaborated during the fieldwork (Groenendijk, 2014).

Interviews
During the field study open interviews were conducted with eight academic staff members who were involved in the LM Program. Open interviews had the advantage that they are flexible in terms of structure, contents and questions (Kumar, 2005) and were 'the most data dense' (Corbin & Strauss, 2008). For this field study, with an exploratory nature, the open interview was considered to be best suited. The interviews took place from 21st till the 31st of May 2013.

Immediate reflections and memos
Immediately after an interview, one hour was reserved for reflection on the interview. Findings were written down and stored together with the audio-file of the interview. Major findings of the reflection were taken into account for the next interview. It resulted in iterative interviewing giving depth and direction to the interviews over time. After the last interview, the set of 'immediate' interview reflections were reviewed to generate an organized set of emerging themes and issues (Groenendijk, 2014). The 'immediate reflections' or memos (Flick, 2014; Corbin & Strauss, 2008) guided the analysis of the interview transcripts and the development of emerging themes and theoretical concepts.

Diagrams
From the start of the field study, simple diagrams were prepared to visualize emerging major concepts and their relations, for example after the immediate reflections (Corbin & Strauss, 2008; Groenendijk, 2014). It enabled the researcher to guide further data analysis, to better understand the data and to visualize the theoretical generalizations and formulate new questions for deeper understanding. Like the immediate reflections they supported the analytical process. The diagrams developed as a result of the field study at KTH should be considered intermediate results as part of the larger research study.

Transcribing
The audio files of the interviews were transcribed using the transcribing software tool F4. This tool allowed the researcher to link both audio and text files (transcripts), which supported data analysis. Audio files, transcripts and immediate reflections were imported in ATLAS.ti, a software tool for qualitative data analysis.

Coding
Interview transcripts were coded, using both open coding as in grounded theory analysis (Corbin & Strauss, 2008; Myers, 2009) and thematic coding (Flick, 2014; Myers, 2009). This strategy for combing two approaches is called thematic analysis (Braun and Clarke, 2006; Flick, 2014). Codes were derived from the main research question (thematic codes), and themes and issues identified during the interviews (open codes). During coding, conceptual labels are put on blocks of raw text. Additional codes were added during the analysis of the transcripts, when new themes emerged (open codes) or were provided by the respondents (in-vivo codes). The initial code list contained 33 codes.

Analysis
Text blocks in the interviews, or quotations, attached to the codes were analyzed for the ideas

and concepts contained within. These concepts represented the different properties or dimensions of the theme being analyzed. The list of identified properties and dimensions was further interpreted resulting in the emergence of categories or patterns. Diagrams were developed depicting the identified concepts and dimensions and their relations. The analysis has been an ongoing iterative process, but with several key moments of data interpretation and analysis.

Intermediate findings
From the interpretation of the immediate reflections, after all the interviews had taken place, a first set of major themes emerged (diagram 1). These were summarized as the concept 'teaching the international students' and two identified dimensions 'challenging and difficult' and 'interesting and rewarding' (Groenendijk, 2014).

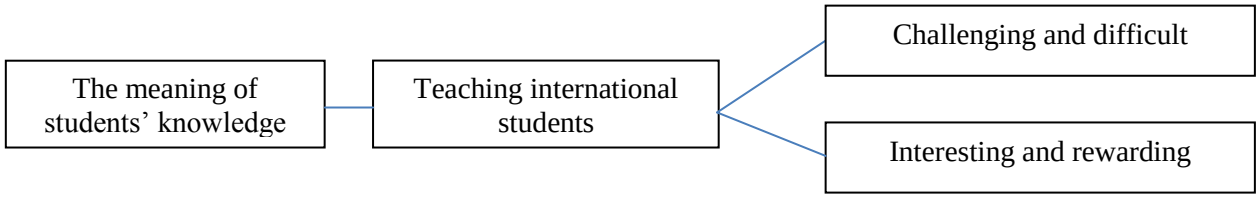

Diagram 1 The meaning of students' knowledge: emerging dimensions

This outcome was used to guide the next phase of the research and structured the transcript analyses. The interview transcripts were analyzed using code reports and code family reports based on thematic codes and emerging open codes. Both open or grounded theory analysis and thematic analysis is applied. First the dimension 'challenging and difficult' was analyzed and documented (Groenendijk, 2014). This was followed by the exploration of the second dimension 'interesting and rewarding' which is presented in this paper.

3. FINDINGS

The concept 'interesting and rewarding' represented the positive perspective of teaching the international students in the LM Program. The researcher decided, guided by the thematic interest and emerging themes, to treat the analysis in two parts: 1) views and attitudes and 2) knowledge development (diagram 2).

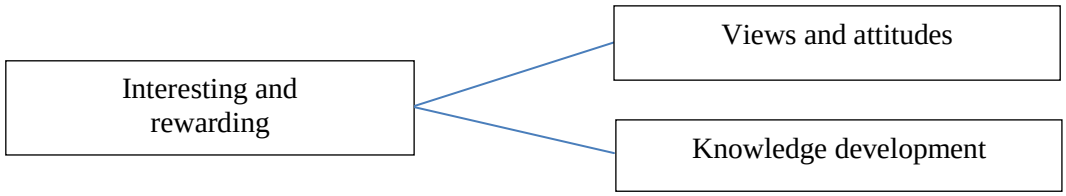

Diagram 2 The dimension 'interesting and rewarding' and the two thematic areas being recognized and further analyzed.

3.1 Views and attitudes

The thematic area labeled 'views and attitudes' covered outcome related to awareness,

assumptions, perceptions, beliefs and attitudes of academic staff towards the international students and in particular their knowledge.

Learn a lot, great fun and nice to have

Respondents after overcoming the initial challenges of teaching international students for the first time, appreciate their involvement in teaching the 'foreign' students:

> *I can add that I was very happy to have the opportunity to teach in the LM Program. Because I felt that it was very interesting [....] it is very nice to have them. Yes, to have them ...and as I said you learn a lot…and it is very nice to have different students from different countries.*
>
> *... We had great fun…..*

Interviewed staff recognizes the diverse cultural and country background of the students and are aware of the professional knowledge and experiences of their students.

> *So, you got all these...you learned a lot about all of these countries.*

Awareness of one's own knowledge limitations

Lecturers were aware of the differences in students' cultural, country and organizational background and its impact on learning. Teachers felt the need to inform themselves better about students' cultural and organizational backgrounds in order to be able to deliver better training, fitted to the needs of the students and their organizations.

> *I had no idea, in the beginning, what kind of background students had. But, when you know, you can change; you try to change your presentations or your lectures in a way that they can be more interested for a bigger group. Or you try to relate, if you can, try to relate to their home countries. I think, then you can have a better dialogue because they find something they are familiar with and then we can discuss.*
> *I felt I don't know enough about those countries…*

As part of the LM Program the staff, basically the program manager and staff involved in program administration, made visits to the partner countries for the LM program. Although initially with the purpose of selecting the candidates for the program, these visits were considered beneficial travels for participating staff, to get a better understanding of the countries of origin and their organizations. Self-study and reading publications was another way for some of the respondents to learn more about their students' background:

> *.....the normal reading of articles etcetera. So it was a lot of difference sources, I mean, to update my own knowledge. My interest was mainly how to find systems for different questions: system for mining, system for real estate, system for subdivision, a system for purchase of property etc. As to widen my own view on...*

This interest in learning seemed to be driven by a desire from the part of the lecturers to stay 'ahead' of the students, to be/remain more knowledgeable than the students. Most respondents mentioned they eventually learned a lot from the students themselves.

> *So we tried to show the students how different it can be in different countries. And of course then if I had had 13 different batches I learned a lot of them during the years. We had a variety of different views, during the years, explained. And of course also through different kind of theses you have learned a lot.*

One respondent showed a complete other attitude towards students' background and knowledge. He is aware of the differences among the students and their background but considering the differences in teaching would result in an unequal learning environment. He stressed the importance of students having equal opportunity to complete the program.

In Box 1 the identified views and attitudes are summarized so far. On 'valuing' and the 'perceived benefits' of students' knowledge the data showed different categories of responses and where further interpreted.

- Learn a lot
- Great fun and nice to have
- Limitation of one's own knowledge
- Aware of students' background
- Aware of students' professional knowledge
- Valuing students' knowledge
- Benefitting from students' knowledge

Box 1 Views and attitudes on students' knowledge

Valuing students' knowledge

The teaching approach of the LM program has been described as being a 'gap-approach' (Groenendijk, 2014). When developing the LM program, academic staff involved perceived students' knowledge as 'something that is not there':

> *… I should say …it is in a way negative knowledge. The weakness of their systems: weakness of registration system, the weakness of expropriation system, the lack of mass valuation system. (…) Mainly this kind of knowledge, where something is 'not functioning' in the society.*

In this case student knowledge is viewed as negative knowledge, the lack of knowledge or the gap of knowledge, and has been labelled as a 'negative view'.

Another way of looking at students' knowledge is illustrated by the following conversation:

> You looked then at student knowledge, there is a lot of tacit knowledge. Teacher has more explicit, formal knowledge? How would you compare?

Well. Me as a teacher has a lot of tacit knowledge, of course, as well. And the student has another set of tacit knowledge which I don't know anything about. You understand. But, I am sure there is.

This attitude can be interpreted that for the respondent student knowledge is not important for him to consider, although he agrees there is. This view has been labelled as a zero view.
One or two academic lecturers always had a positive interest in students' knowledge. But for most of them the awareness changed over the years the LM program was running. It had an impact on teacher's perceptions and changed the lecturer's attitude towards students' knowledge. In particular in the beginning teachers had to reconsider their assumptions about their students, as is illustrated by the following lecturer:

Because the first time I started lecturing, I was as blind as they were to the underlying culture in the different countries; and I thought it was obvious when I started to explain our ideas, and why we did as we did, and the importance of land, real property register, what rights were registered and why and so on. It wasn't at all of this.

This quote also tells something about the assumptions of the lecturer about his students; he was '*as blind as they were to the underlying culture in the different countries'.* So, he assumes the students were blind (to the underlying cultures), and he was not. But he realizes that he is at the same level with his students with respect to the knowledge of the different 'cultures'. Sweden is just one of the countries and one of the cultures, and the 'Swedish system' upon which the LM program was based, one of the many systems in the world.

The following 'views' or perceptions towards students' knowledge were recognized: 1) a zero knowledge view (students have no knowledge of importance), 2) negative knowledge view (students lack knowledge), or a 3) positive knowledge view (students represent knowledge) (diagram 3).

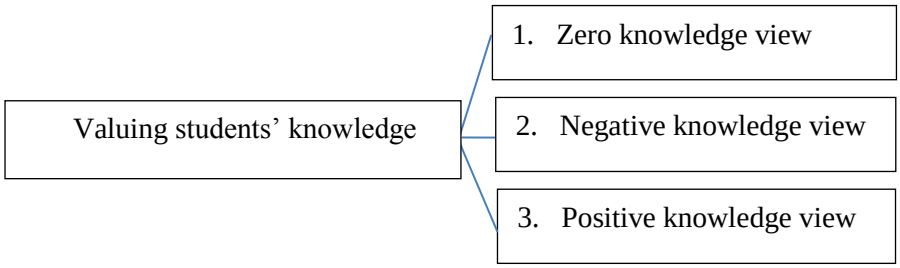

Diagram 3 Valuing students' knowledge: three different views.

Perception on benefits

If and how lecturers benefitted from students' knowledge for their academic tasks was one of the thematic issues to be investigated. The following respondent strictly separated teaching and research.

It was the teaching approach that I still use. Provide theory; provide the methodology, to provide a real case. I am working at the moment in a course that I have with a construction company [.....] we have real projects that they are working with [....]. And then they (students) write a report. [...] It is presented here at KTH together with employees of the company. And they will have the report from the students. The company was grateful for the reports. They actually, because it provides them with information, they cannot provide by themselves. They don't have that skill.

So, you developed new knowledge together with the students?

No, no. Not new. We don't develop new knowledge. That is research task.

In the perception of the respondent, student' knowledge was not regarded of significance for himself as a scientist or researcher. But he states that is of benefit for the company where the students did their project and presented their reports. And it was of benefit for the students, and thus for him as a teacher, but not for him as a researcher.

During the interviews I asked the respondents if they could have benefitted more from the students' knowledge. Almost all responded positively.

Can we use the knowledge of the students more… for our own research…? It is time!

I think, it is important to use the knowledge of the students, I think we should try to use it more. It is just of lack of time, of lack of resources and whatever. But, al time I think about it in the future I could use it more in my courses.

We have so much knowledge from our Master Theses, degree projects. We should do something with this, to make some research products, we should write articles, use the experiences. But there is no time for it, because of lack of financing.

But it is difficult. Because, I mean, you have certain amount of teaching time. And, if you have for example small groups, we have tried to, more and more to let the students work on projects on their own then they come to us, just for questions. But, we are not there in the class all the time, simply it is not possible and also I mean it is not just with the formal group assignments, it can also be quite often the student study together before exams, and then they of course share their knowledge.

The academic lecturers were interested in the knowledge the students represent. However they faced many obstacles in getting more benefit out of it: allocated time, general workload, the way research is organized and financed, university management and limited contact with students.

From the data three types of academic teachers emerged: 1) teachers that see teaching and research as two separated activities; 2) teachers who are aware their research could benefit from student knowledge (teaching), if resources permit (time, money, official assigned task, exposure to students) and 3) teachers who learn continuously from their students and integrate

this in their teaching and in their research work (diagram 4).

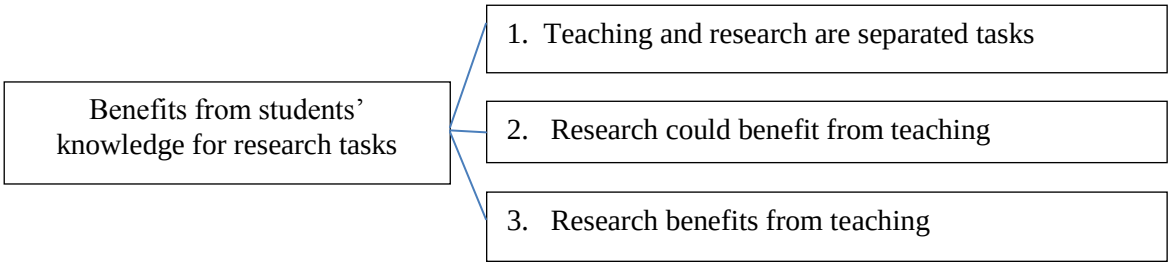

Diagram 4 Benefits form students' knowledge for research tasks: three different perceptions

3.2 Knowledge development

Under the thematic area labelled 'knowledge development', the emerging issues are presented related to learning of the lecturers in terms of their subject and field of expertise, the content of their lectures. The earlier paragraphs already showed that the academic lecturers adapted themselves over time to the new situation of the international students. Different moments or steps in a learning process were identified. Because of its prominent place in the data the 'learning process' will be discussed first.

The actual learning or knowledge developed by the lecturing staff in interaction with their students has been labelled 'knowledge output' (diagram 5).

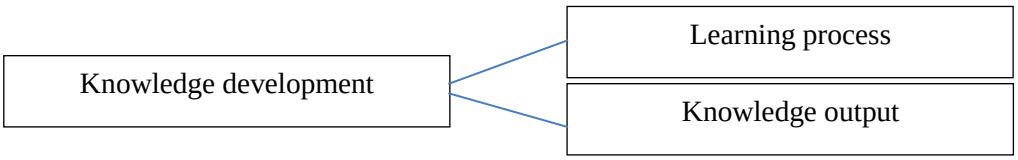

Diagram 5 Knowledge development and the two related aspects being addressed: learning process and knowledge output.

During the analysis, learning in terms of knowledge development has been, as much as possible, separated from learning in terms of improved teaching or adaptations in teaching approach and methods.

3.2.1 Learning process

Some major moments or steps related to learning and knowledge development of the lecturing staff involved in the international LM program, kept coming out in the data. Each of these steps relate to different dimensions of learning and knowledge development of the lecturing staff at KTH. This pattern of related steps has been named learning process. From the analysis the main elements of a learning process emerged. Diagram 6 illustrates this learning process among the KTH lecturing staff involved in the LM program.

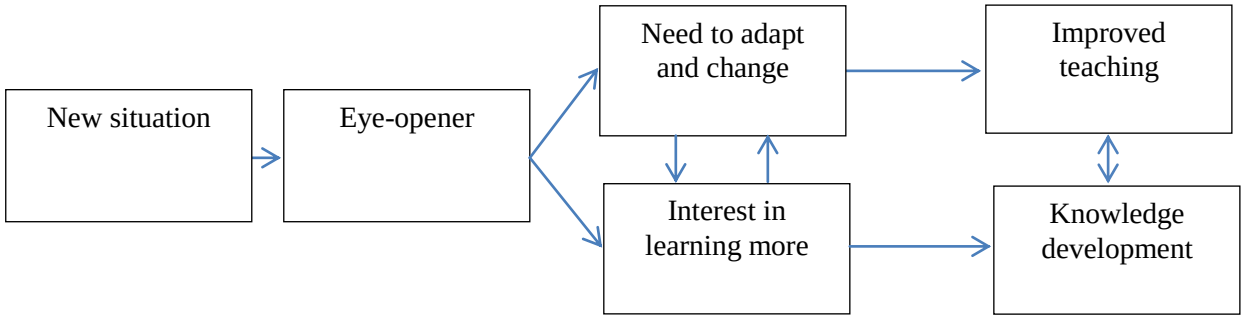

Diagram 6 Learning process of the lecturers at KTH when involved in the LM Program.

3.2.2 Learning output

Further probing and analysis of the data was needed to get an answer on what the academic staff learned from their students. This was initially not easy to answer for the respondents.

> *I think it is...it is...this whole… You get, if you think from this... kind of more, more, let say open perspective, that the things can work from different ways, that there is not one way to do things, this is very difficult to isolate, what is related to this and what is related to that.*

The data showed a different level of exactness, ranging from awareness being raised and abstract generalizations towards very concrete knowledge development in the academic domain of the lecturing staff member. Furthermore, the data brought about other dimensions of learning, such as those related to metacognitive skills and/or reflective skills. However, the following major themes emerged as learning output from the interaction with students in the LM program: 1) new perspective on Sweden, 2) there is more than Sweden, 3) metacognitive and reflective skills, and 4) elements of knowledge.

New perspective on Sweden

For the majority of the interviewed lecturing staff the interaction with the international students changed their view on Sweden. Through their students they learned to place the Swedish system in a broader and global perspective, to compare it with other systems and to understand the strengths and weaknesses of their system. This was the major learning aspect kept coming out in the data (box 2).

> *Then of course we learned a lot about how... I think many of us...we got over the years a new perspective on Sweden.*

> *We saw, we thought this always the case that authorities are service minded and universities want to help their students, but we learned that was not always the case.(….) But, in this way we saw that, that from a more global perspective the system*

here is working. Better then what we thought ourselves.

I would say you learned, it was the most interesting thing perhaps. You learned a lot of your own system, we had to analyze it; through their questions.

So, this kind of....you can get a perspective on the Swedish system. I have described this in several articles here in Sweden: how can we...

- the authorities are service minded
- high moral standard
- systems are smooth working and efficient
- less hierarchical relationships
- good infrastructure
- good working monetary system
- less inference of the political system in the market system
- land and buildings in one system
- the system in Sweden is working better than thought of before
- 'by some luck, whatever... we have been able to build up'

Box 2 A new perspective on Sweden

There is more than 'the Swedish way'

With the new perspective on the Swedish system, the lecturing staff became interested in other systems. They realized that there is more than the Swedish system and that these other systems, surprisingly, also work (box 3).

I mean you have your own system, you have the Swedish system. You think that that is how things normally are but then you find out there are a lot of other systems.

And it also it opened up my eyes to the ideas that there are lot of ways to solve problems. You don't have to do it the Swedish way… and then it is not necessarily the Swedish system that is the best, it is just an example how you could solve the problems.

For me it is more like you see the world a little different. Not...not that you...And you get all of these small bits of knowledge picked up through the theses.

One of the first years we had a discussion on this mortgage system. And of course, we, they had not any land registration, that was not working... and, and... (…) and we ask, how, you are buying this and you are borrowing money, and you have, there are no deeds, and you cannot go to court, if you don't pay you cannot go to court...they cannot go to court. How is this working, why are people paying back? Well, they say, 'otherwise you can get shot!' You can get shot. This can also work. This is strong

incentive to pay back. Otherwise you will be beaten up.

- The diversity of different systems
- Weak systems
- Complicated reality
- Importance of corruption, favouritism
- Influence of government and political system in land governance
- Adaptive capacity of societies and systems
- Different interpretation of basic concepts
- Role of history in land management
- Trends and Developments
- Theories and models 'tested'

Box 3 There is more than the Swedish way

Metacognitive and reflective skills development

Whit the realization that there is more than Sweden, the lecturing staff became aware of the limitations of their teaching. Some of the interviews showed how lecturing staff responded to this by critically reviewing their teaching so far. Others started reading and informing themselves about the different countries and their land management systems. In this process the academic staff activated and/or developed what I called their metacognitive skills. Metacognitive skills allowed them to learn more in order to adapt and change their teaching and learning content. Analytic skills and comparative skills have been mentioned to be used in this process of adaptation and change as part of the learning process.

When I first started, I mean, we as lawyers, we are extremely focused on rules, and how we think about rules, and how we apply them to the practical world, and I had to… I think ...to back down, a bit too abstract, too legal, legalistic in my mind, and try to more focus on ... problems and ideas, and how you could solve problems.

I have learned to look at things differently, different aspects and I have learned about other systems.

When there is something that is new to me, some different examples, I mean, 'this I can use', or just to add to the bulk of knowledge. So, I can make comparison of different regions, of different types of models, for different things.

- More reading
- Visits
- Interest in students, MSc theses, PhD
- Analysis
- Comparison
    - Regions, countries
    - Systems, models
    - Trends and developments
- Communication

Box 4 Activated metacognitive and reflective skills

Elements of knowledge

The knowledge from the students reached the academic lecturing staff in different forms. This has been labelled ‘elements of knowledge’. These elements of knowledge could be ‘bit and pieces’ or ‘examples’. Or higher level knowledge elements such as ‘classifications’. An attempt has made to summarize these ‘elements of knowledge’ in box 5.

• Bits and pieces • Examples • Cases • Problem cases • New theoretical aspects	• Classifications of systems • Generalised knowledge (helicopter view) • Validity of theories and models • New course subjects

Box 5 Elements of knowledge

4. DISCUSSION ON LEARNING OUTPUT AND LEARNING PROCESS

The first two categories, ‘new perspective on Sweden’ and ‘there is more than Sweden’, are related to awareness and the first steps in the learning process as presented in diagram 6. The category ‘new perspective’ covers the dimensions defined by the learning of the own Swedish system and practices, and are considered inward looking reflection. The category ‘there is more’ is outward looking. This category is therefore defined as learning output by the lecturing staff about the world ‘outside’ while comparing it with the Swedish situation.

Somewhat problematic is the third category, metacognitive and reflective knowledge and skills. The interpretation of the data showed that lecturing staff started (more actively) using these skills in their teaching practice, when they became aware that the normal routine teaching did not fit the international students. Therefore were considered learning output. At the same time the metacognitive and reflective knowledge and skills are used for further learning in order to respond to the need to adapt and change the courses and the program, both in content and teaching approach.

What has been learned with respect to content or disciplinary knowledge in the scientific domain of land management is covered in the fourth category: elements of knowledge. It is different from category 1 or 2, in that it is universal, generalized knowledge, and not limited to 'what is different from Sweden'. The dimensions, however, are in general abstract, such as 'examples', 'new theoretical insight'. Whereas the lecturing staff could easily and passionately describe the difference with the Swedish system, to present their learning outcome in this fourth category was more difficult.

The first three categories showed that learning, by the lecturing staff, involved much more than 'knowledge development'. For almost all interviewed lecturing staff, 'new perspective on Sweden' and 'there is more than Sweden' are the most important what they learned from their students in the LM Program. A smaller group of staff members developed new content knowledge (category 4) in interaction with their students or triggered by their students, applying their metacognitive and reflective knowledge and skills (category 3).

5. CONCLUSION

The paper addressed the dimension 'interesting and rewarding' of the meaning of students' knowledge for the academic lecturers involved in the international Land Management program at KTH. The emerging themes and categories summarized in the different diagrams and boxes gives us an in-depth picture on student knowledge and teacher learning (what, why, when, how, who) and in particular on the process and outcome of disciplinary knowledge development.

The Land Management program was the first international teaching experience for the academic lecturing staff. Over the years the lecturers adapted to the new situation of teaching international students. Some major steps of a learning process kept coming out in the data, each related different dimensions of learning and knowledge development of the lecturing staff.

With this in mind the more concrete learning and knowledge development in terms of learning output was investigated. The data showed a different level of exactness and generalisation, and ranging from awareness being raised towards very concrete knowledge development in the academic domain of the lecturing staff member. However, some clear themes emerged from the data. The interaction with their international students in the Land Management program resulted in: 'a new perspective on Sweden', and the realization that 'there is more than Sweden'. In addition the data analysis brought about two other main dimensions of learning output. The first is the activation of metacognitive and reflective skills among the academic staff. And second, that knowledge was shared in bits and pieces and consciously or unconsciously further integrated in higher levels of pieces of knowledge, labelled 'elements of knowledge'.

6. FOLLOW-UP

As depicted in the diagram 6 on the leaning process, one main aspect of learning output is improved teaching. This has been coded separately and needs analysis and interpretation.

However, during the interpretation of the 'learning outcome' related codes, it became clear that 'learning outcome' and 'improved teaching' are difficult to separate. The interpretation of the data still needs to be done to complete the interpretation of the fieldwork at KTH.

The outcome of the field study at KTH will be followed by a literature search to relate the emerging concepts to other empirical research. This will add to more insight and theory building. This will eventually guide the next round of data analysis of the second field study conducted at the Technical University Munich (TUM).

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