Analysing the Impact of Differences in Academic Cultures on the Learning Experiences of Overseas Students

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Abstract.

Problem: As teachers at BTH, we observe that students from overseas partner universities can experience difficulties in participating with learning and assessment activities. We hypothesise that one cause is the difference in academic cultures between the students' home universities and BTH.
Outcomes: Our objective is to understand the challenges and barriers to effective learning faced by overseas students from partner universities as a result of differences in academic culture.
Relevance: Understanding the impact of differences in academic culture, both positive and negative, will assist students and teachers to be better prepared to accommodate these difference at course, programme, and institution levels.
Context: The context of the study is overseas students from partner universities in China and India taking the MSc in Software Engineering programme at BTH.

1. Introduction

Many universities actively recruit relatively large number of international students to their study programmes, but courses in which the participants come from different academic cultures can create a number of challenges for both teachers and students. Several studies have identified the issues affecting these international students: prominent examples include a series of studies in the 2000s that focused on students from East Asian countries who study on programmes in Australia [1]–[3]. The majority of these studies acknowledge that the problems encountered are not just simply because of general cultural differences, e.g. between Confucian Heritage and Western cultures but because of the difference in academic cultures.

Swedish universities have also acknowledged these type of issues and some -- such as Kristianstad University [4] -- have published guidelines to assist both teachers and students.

At BTH, the MSc in Software Engineering is an example of such a programme: participants include students from partner universities in China and India; students from Sweden; students from Europe on Erasmus programmes; and a small number of students from other countries. Our experience as teachers and examiners on this programme is that students from partner universities in China and India appear to experience more difficulty in participating in some learning activities and assessments than, for example, students from Sweden and other European countries. Our desire to understand the reasons for these difficulties is the motivation for this study.

Our hypothesis is that a significant cause of the difficulties experienced by these students are differences in the academic cultures between BTH (and in general any Swedish universities) and the partner universities the students attend before taking the programme at BTH, and it is this hypothesis we wish to explore in this study

We note that the context at BTH is different from many existing studies. The students from Chinese and Indian partner universities form the vast majority (sometimes over 80\%) of participants in many of the course in the MSc in Software Engineering programme. In contrast, the proportion of overseas students in the studies mentioned above at Australian universities was 20-30%. These studies showed that the effect of differences in academic culture were mitigated relatively quickly - over a few months- through the knowledge gained from local students. We are concerned therefore that the opportunity from learning from Swedish and European students is diminished on the MSc at BTH and thus the impact of any differences in academic culture may remain longer into the programme.

1.1. Purpose

The main goal of this study is to analyse the problems faced by students coming to BTH from partner universities that limit the ability of students to engage in the MSc in Software Engineering programme. Specific areas of interest include:

- course content, e.g. are examples and case studies culturally relevant, do the students have the prerequisite knowledge;
- pedagogy, e.g. can the students effectively engage in teaching activities;
- assessment, e.g. the emphasis on demonstrating learning objectives.

Our intention is that the outcomes of this study are feedback to programme and course responsible on the MSc in Software Engineering programme, with the aim of giving us, as teachers, a better understanding of the challenges faced by this cohort of students, and enabling us to modify our teaching practice to mitigate these challenges.

1.2. Research Questions

We formalise this goal as the following research questions:

- **RQ1:** What are the differences in academic culture between BTH and partner universities in China and India that are experienced by students from these partner universities taking the MSc in Software Engineering programme at BTH?
- **RQ2:** How do students perceive the impact – either positively or negatively -- of these differences on their learning at BTH?

2. Research Method

2.1. Data Collection: Focus Group Interviews

The data was collected by interviewing MSc students using focus groups. There are three main reasons why focus groups were chosen instead of alternative methods such as interviews and surveys.

Firstly, the objective of this study is a broad exploration of challenges faced by overseas students at BTH. Although we, as researchers, will have prompting questions related to possible activities in which challenges could arise, a focus group offers the opportunity for the discussion to move into new areas that we had not initially considered. The same could occur in a semi-structured interview, but the interaction and discussion between participants in the focus group is likely to lead to greater breadth than would arise in an interview.

Secondly, we wish to collect input from as wide a number of students as possible. Within the time constraints in which the study was carried out (i.e., cfthe last weeks of the last semester of the course), the use of focus groups enables us to gather data from a broader sample of students than would be possible using single participant interviews.

Thirdly, we believe that a focus group consisting of fellow students from similar backgrounds will be more comfortable for the participants than an interview setting. This is particularly important as both of us may be lecturers and/or examiners on courses that some participants have taken or will take. Our concern was that this relationship could inhibit discussion in general because of any perceived difference in status between teacher and student; and of some particular topics, such as quality of lecture materials or usefulness of feedback from examiners, that might involve us personally. By having such discussions in a group setting, our aim was to reduce the reluctance of the participants to offer their opinions.

2.1.1. Participants

The pool of potential participants in the focus group were drawn from the Master of Science in Software Engineering programme. This programme has a high proportion of students who take the programme as part of an agreement between BTH and partner universities in China and India. Both authors teach courses on this programme.

Our pool of participants consisted students who have been at BTH between six and eighteen months on this programme on the basis that they will have experience of adapting to the academic culture at BTH that is both relatively recent and extensive. Students from partner universities in China will have been at BTH since August 2016, while students from partner universities in India will have begun their studies at BTH in January 2016.

Within each focus group, the participants were recruited so that they came to BTH from the same partner university. The intention was to facilitate discussion amongst participants by ensuring they had a similar experience at their partner universities against which they could compare their experiences at BTH.

Given these constraints, the numbers of students from which we could potentially recruit participants, categorised by the programme and partner university, is shown in Table 1.

Table 1. Cohorts and Potential Focus Group Participants

Start Date at BTH	Partner University	Cohort Size	Group Id
Aug 2016	*University of Science and Technology, Beijing*	*10*	*C1*
	Qingdao University	11	
	Zhejiang University of Technology	7	
Jan 2016	*Jawaharlal Nehru Tech. Univ. Hyderabad*	*11*	*I1*
	Jawaharlal Nehru Tech. Univ. Kakinada	6	

Our original intention was to hold a series of focus groups, ideally one for each combination and university and programme. However, after initial analysis of the data collected from the first focus group, we decided to limit the number of focus groups for the purpose of this study to two[1]. We realised that we were unlikely to be able to complete the data collection and analysis of four focus groups before the semester finished. However, the quality and accessibility of the data from the first group was sufficiently good that we felt that we could obtain answers to our research questions using only two focus groups.

The two focus group from which data was collected for this study were:

- **Group C1**: 4 students from the University of Science and Technology, Beijing, China.
- **Group I1**: 5 students from the Jawaharlal Nehru Technological University, Hyderabad, India.

In addition, the focus group interview was piloted with 4 PhD students from the Department of Software Engineering whose studies prior to their PhD took place in a non-Swedish academic system.

[1] We do, nevertheless, intend to hold additional focus groups in the next few months, as discussed in Section 6.

2.1.2. Method

Participant Recruitment: Participants were recruited via a short presentation at the end of one lecture; by personal emails from the researchers; and in the case of Group I1, by a reminder email from the programme coordinator responsible for the partner university. Participants were asked to confirm their attendance -- and in the case of Group C1, their choice of two possible dates -- using a Google Form.

Introduction and Provision of Informed Consent:

At the beginning of each focus group session, the interviewer explained:

- the general purpose of the focus group and how the data will be used;
- that the session would be video- and audio-recorded;
- that the recordings would be used only by us as researchers in order to transcribe the discussion and then destroyed;
- that transcript of the discussion would be available to only us as researchers for the purpose of analysis;
- the analysis presented in any report or publication would not make it possible to identify individuals who participated;
- that the transcript and any analysis would be shared with the participants;
- that participants would be free to withdraw their participation and consent to use their data at any time (including before, during, and any time after the focus group);
- participants were asked to speak in English wherever possible, but also permitted to briefly clarify, for example the interviewer's use of specific terminology, with their fellow participants in a different language should this be necessary;
- that the focus group was a voluntary activity that was entirely independent of their study programme;
- participants were encouraged to feel able to give critical feedback, both positive and negative, on courses on which the researchers had been their lecturers and/or examiners.

Participants were asked to sign a form to show that they were giving their informed consent to participate in the focus group and regarding our use of the data we would collect from them. This form is shown in Appendix A.

Logistics: Once consent had been given by the participants, one researcher began the video and audio[2] recording equipment, and monitored this equipment during the session, while the other researcher led the discussion with the participants. Participants were supplied with drinks (water, soda) and snacks during the session[3].

Focus Group Discussion: Each focus group discussion was timed to last approximately 60 minutes. During this time, the researcher leading the discussion would initiate new topics using a series of prompting questions. The questions used for Group C1 are listed in Appendix B. For the second group, I1, we extended the set of questions with new questions to prompt discussion of new topics that emerged in the discussion during first session. Specifically, we added questions regarding the teaching and learning, the communication patterns with teachers, how the students cope with the different roles in courses, the structure of the programme and the courses. The revised set of the questions is listed in Appendix D.

[2] The separate audio recording using a high-quality omni-directional microphone acted as a backup in case of problems with the video-recording, or poor quality in the sound track of the video.

[3] Our original intent was to also offer gift cards, e.g. for the local cinema, as both an inducement for participation, and to acknowledge the time the participants have given us voluntarily. However, our thesis supervisees from China -- who would not be asked themselves to participate in the focus groups -- advised us that this could be interpreted as an encouragement for the participants to provide only positive feedback.

The questions were prioritised so that if there was insufficient time to cover all topics, the information that we were most interested in was collected first. However, in both focus groups, all the topics were covered. In addition, some prompting word associations were prepared in case it was necessary to stimulate discussion (see Appendix C), but it was not necessary to use them. The researcher also followed and encouraged discussion around other relevant topics when they occurred in the conversation, returning to the prompting questions only once the discussion had been exhausted.

Transcription: After each focus group, the discussion was transcribed by the researchers. Each researcher independently transcribed approximately half of each video. The video (rather than audio) recording was used for this purpose since the sound quality was sufficiently good; it was easy to identify which participant was speaking; and, it enabled us to note in the transcript any relevant non-verbal communication.

2.1.3. Ethical Considerations

We identified the following ethical considerations in the context of data collection and strategies to address them:

Subsequent Student Assessment: Both researchers may be lecturers and/or examiners for some of the participants in the future. The ethical consideration is whether we will act differently to such students based on their participation in and their input to the focus group; and whether we may be privileging participants over non-participants by discussing (including revealing our opinions on) the nature of assessment at BTH. To some extent, the use of focus groups rather than interviews, is likely to minimize any subsequent bias towards individual students. In terms of our privileging participants over non-participating students, we believe the risk to be minor.

Data Privacy: The data we obtained (the video recording, audio recording, notes, transcripts etc.) is kept securely; we will not make it available to others (without subsequent consent of the participants); and it will be deleted when no longer required. Any report or other publication will not use the data in a manner that will enable individual participants to be identified. At any stage, the participant may withdraw from the experiment, and the participant's data will be deleted. We have made these policies clear to the participants, and ask them to acknowledge that are participating by signing the informed consent shown in Appendix A.

2.2. Data Analysis

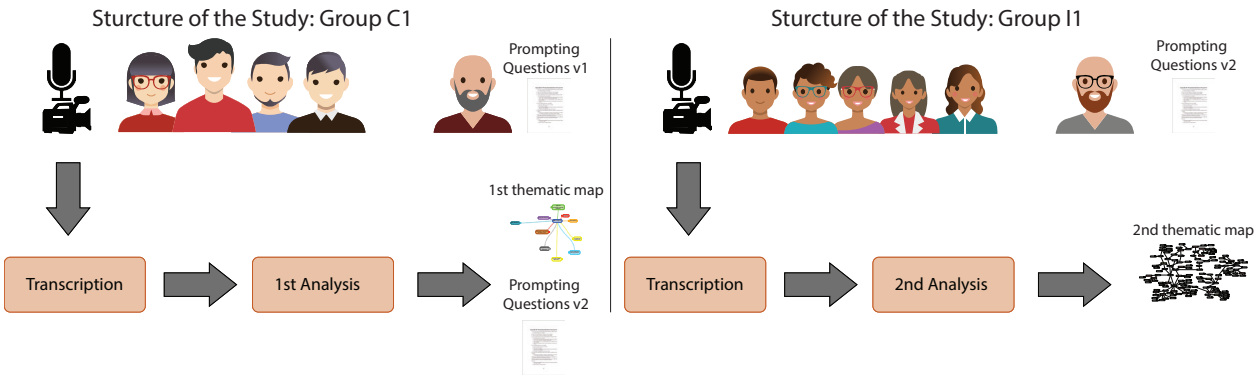
Our original intention was to use *Grounded Theory* [5] to analyse the data collected from the focus groups. Grounded Theory is a research methodology that provides a systematic framework for conducting qualitative studies with a systematic, inductive and comparative basis, with the purpose of constructing theory [6], [7].

However, after an initial analysis of the data from the first focus group (C1) we re-considered our analysis approach and decided instead to apply *Thematic Analysis* following the guidelines by Braun and Clarke [8]. Thematic Analysis is a widely-used approach for identifying recurring patterns (termed *"themes"*) across qualitative data but without the need---in the words of Braun and Clarke---*"to fully subscribe to the theoretical commitments of a 'full-fat' grounded theory which requires analysis to be directed towards theory development"*. This argument in favour of thematic analysis is consistent with our context: to answer our research questions it is sufficient to identify and evaluate the effect of academic cultural differences, i.e. providing evidence in support of a theory rather than necessarily developing a novel theory from the data.

Braun and Clarke recommend six phases, which we applied as follows. The first three phases were applied after first focus group (C1) data before collecting data for second focus group (I1). After the second focus group, the first two phases were applied to the data collected from that group, before continuing with phases 3 to 6 on the combined data collected from both groups. The organization of the data collection and analysis is shown schematically in Figure 1.

- **Phase 1** In this phase the objective is to familiarise ourselves with the data. We achieved this through sharing the transcription of videos of the focus group, and then each researcher reading the entire transcript.
- **Phase 2** The objective of this phase is to generate and apply initial *"codes"* that label relevant aspects of the data. We re-read the transcript of the focus group and applied *"sticky-notes"* with codes (labels) to a printed copy in order to identify parts of the transcript that were relevant to our research questions.
- **Phase 3** In this phase the process of organising the coded data into broader "themes" begins. For the purposes of our study, we used a tree-like mind-map to organise the coded data derived from the first focus group, C1. After applying phases 1 and 2 to data from the second focus group that took place after the interim study, we supplemented this mind map with additional codes and themes arising from the second focus group.
- **Phase 4 and 5** During these phases, the themes are refined and more clearly defined. This was achieved through discussions involving both researchers, during which we also identified the need to represent the data visually as a more flexible graph-like *"thematic map"* in place of the tree-like mind-map so that themes and codes could be related to more than one other theme. This re-organisation also facilitated the consolidation of themes and the clearer identification of sub-themes directly related to the research questions grouped into broader topic-related main themes. We validated this refinement by cross-checking the sub-themes that emerged against our intuitive interpretation of the key topics that arose in the focus groups.
- **Phase 6** The final phase is the communication of the final thematic analysis -- in this case, as Section Analysis below. We have followed the recommendation of Braun and Clarke to present the themes, as a thematic map, supported by selected examples from the data.

Figure 1. Procedure followed for the Data Collection and Analysis



3. Results of the Thematic Analysis

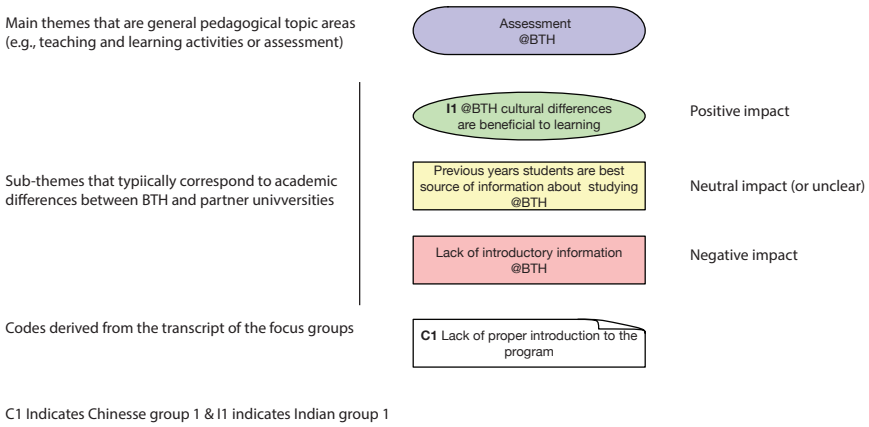
In this section, we summarise the results of the thematic analysis of the data collected in the two focus group interviews. Since the whole thematic map is too complex to be visualized in the paper[4], in the sub-sections below, we identify cohesive clusters of themes for discussion. We will present the corresponding section of the thematic map in a readable form, and discuss the themes identified and the evidence in the data that supports these themes.

[4] The whole thematic map is available for download at:
http://www.gonzalez-huerta.net/wp-content/uploads/2017/10/Thematic_Map.pdf

All the thematic maps shown in the following sections share the following legend, whose graphical syntax is described in Figure 2:

- **Blue rounded-rectangles:** main themes that are general pedagogical topic areas (*e.g.,* teaching and learning activities or assessment); the network of main themes may be thought of as a scaffold on which sub-themes are organised.
- **Green ellipses, yellow rectangles, red rectangles:** sub-themes that typically correspond to academic differences between BTH and partner universities. The colour and shape notation indicates the impact: green ellipses indicate positive impact, red rectangles negative, and yellow rectangles neutral impact (or where the impact is not clear from the data).
- **White "document" icons:** codes derived from the transcript of the focus groups. It is not typical to show the codes within a thematic map, but we do so here to provide evidence for both our identification of sub-themes and the positive or negative impact of them.
- **Labels *C1* and *I1*:** indicate which focus group was the source of the data. Sub-themes that are derived from the data of only one focus group contain one of these labels as a prefix to the description of the sub-theme. Sub-themes without such a prefix are derived from the data collected from both focus groups.
- **Notations *@BTH* and *@host*:** within themes and code descriptions, these indicate the academic culture experienced by students when studying at BTH, and at the host (partner) university, respectively.

Figure 2. Thematic Maps Graphical Syntax



3.1. Teaching and Learning Activities

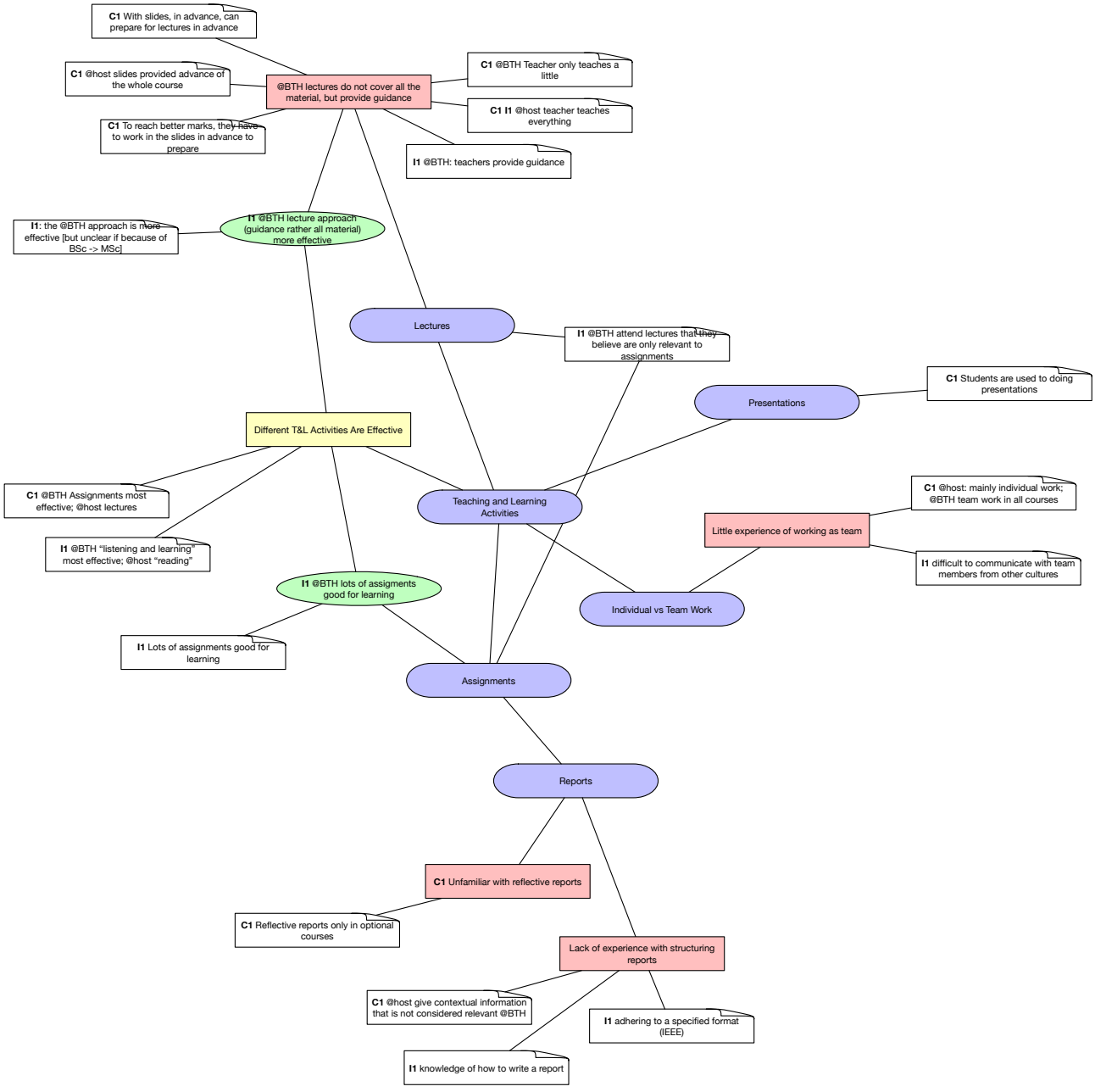
One of the biggest theme clusters that arose is the differences and challenges regarding teaching and learning activities. Figure 3 summarises the most relevant themes, sub-themes and codes discussed around this theme-cluster.

One of the main themes in this cluster was the switch to team work-centric courses, both for Chinese and Indian students. In their previous experiences as bachelor students in their home universities, students were more used to mainly work individually. When the students arrive at BTH, they have to first adapt to work in teams, but also understand and get used to be assessed for their performance as a team.

Another main theme was the report-writing skills, highlighted as a challenge both by Chinese and Indian students. Indian students discussed their lack of knowledge on how to write reports, and how to adhere to a specific formatting templates (e.g., IEEE). The Chinese students acknowledged that they are not familiar with writing reflective essays and reports, since this is only included in some optional courses in the bachelor degree. Another interesting theme, which is aligned with the findings by [4], is the fact that Chinese students are used to include lots of contextual information in their reports, before discussing the main topic. This contrasts with their perceptions about the intended

structure of reports in Sweden, where they perceive that they should be brief and go to the point as quick as possible.

Figure 3. Subcategories regarding the Learning and Teaching Activities



Their perception of the lectures was another big theme in this theme-cluster. Both Chinese and Indian Students perceive that in their home university the lectures cover all the material, whereas in Sweden provide *"only"* guidance. For example, one Chinese student said that *"In China the teacher teaches us everything"* whereas here at BTH *"teacher only teaches us a little"*. Chinese students perceive that they have to dig in the topic by themselves while preparing their assignments. They also perceive as a challenge the fact that they do not have access to the slides in advance. In their home university they have access to the slides for the whole course, and they can prepare themselves for the lectures in advance. They acknowledge that this was the main vehicle to get higher marks in China *i.e.,* working in the slides beforehand to prepare for the lectures. Similarly, the Indian students perceive that the teachers provides mainly guidance, although they also acknowledged that the BTH approach is more effective in terms of learning[5].

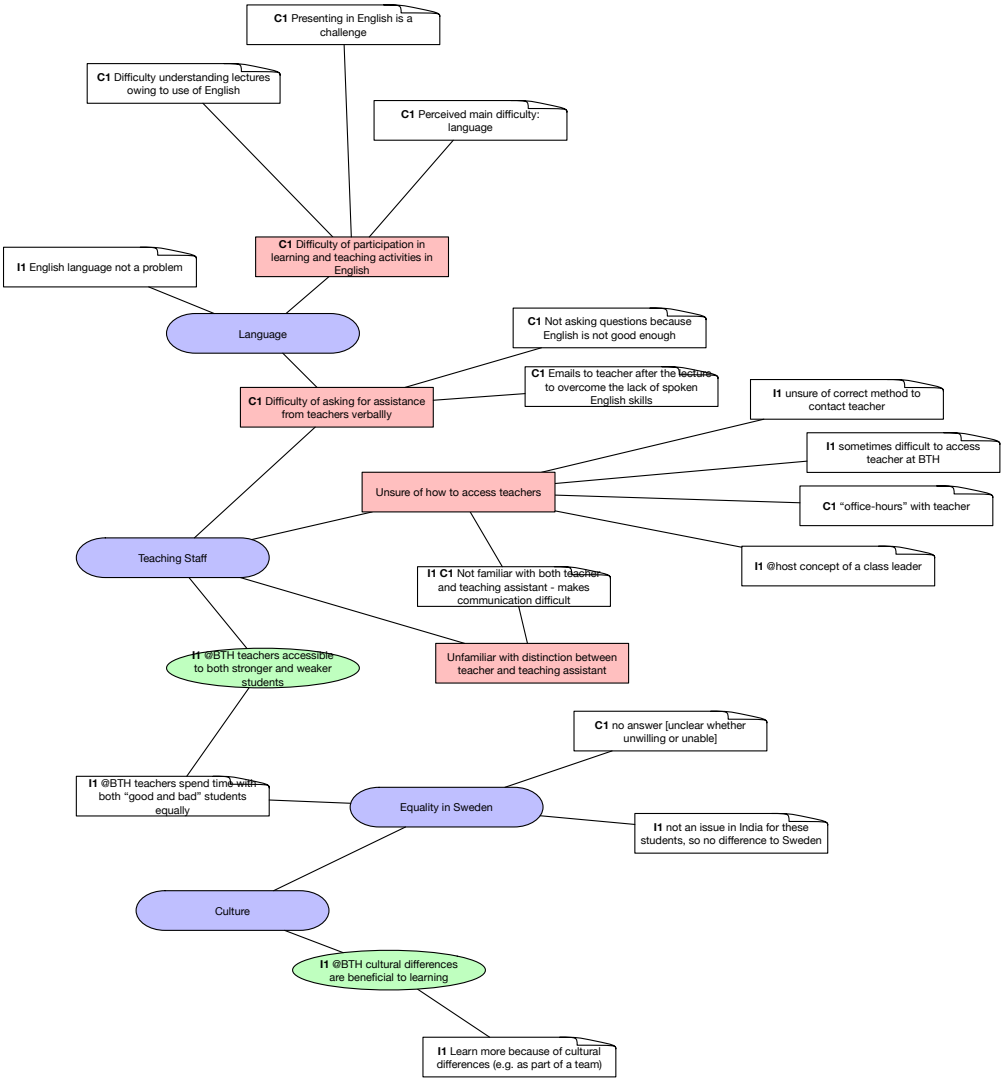
[5] It was unclear if the difference was due to the fact that now they are in MSc level.

There is also a theme covering the students' perceptions regarding the most effective teaching and learning activities. Chinese students perceive that the most effective learning activity in Sweden are assignments and that this is what helps them to understand the topics. Similarly, for some Indian students, having several assignments that spread all along the course was good for their learning. Other Indian students expressed that they find more effective *"listening and learning"* referring to the fact that in Sweden attending to the lectures is the most effective way of learning for them . This contrasts with their perception about their Indian university, where they perceive that they learn more by reading the materials while preparing for their exams.

3.2. Language and Cultural Aspects

There is also a theme cluster around language and cultural aspects and their effect on the students' learning. Figure 4 depicts the main themes, sub-themes and codes in this topic cluster.

Figure 4. Subcategories regarding the Language and Communication with the Teacher



One big theme in this cluster were the language difficulties. Language was the main topic mentioned in the interview with the Chinese students when asked about the challenges they face when arriving to Sweden. They perceive their main challenge / problem was the use of English as the language of instruction. They perceive that it is hard for them to participate in some of the learning and teaching activities due to their lack of language skills. However, during the interview they pointed out that this is something that has improved over time (a perception that we can confirm after

discussing with them 6 months after having met them in our courses). According to them, the main problem they have are their listening skills and they acknowledged having problems understanding the lectures. They also pointed out that the different accents of the lecturers represent a problem for them.

Another sub-theme in this topic is the difficulties to communicate with teachers (particularly, verbally). Since the speaking skills of the Chinese students were limiting them, the communication with teachers also represents a challenge. They explicitly mentioned that sometimes they do not ask questions "because our English is not good enough". They solved this problem by communicating with their teachers by email. They pointed out that communication through email make them lose some of the interaction face-to-face provides, but also highlighted as beneficial that they can ask questions at any time.

The access to teaching staff is another big theme in this theme-cluster. Having different roles involved in the courses i.e., teachers and teaching assistants, and the differences between pedagogic cultures make students being unsure how to access the teachers. Indian students explicitly mentioned that sometimes they feel unsure about the correct method to contact the teachers. Chinese students pointed out that in China teachers have *"office hours"* just after their lectures, and they usually interact face-to-face with the teachers during these office hours. Here they perceive that the teacher is not as available as in China. Similarly, Indian students mentioned that sometimes they find difficult to access teachers at BTH, and they find the procedure of making appointments not very effective. In India they have the concept of class leader to help other students and ease the communication flow.

Interestingly, Indian students highlighted the fact that in Sweden teachers spend the same amount of time both with *"good and bad"* students, and this was perceived as a positive aspect of the education at BTH.

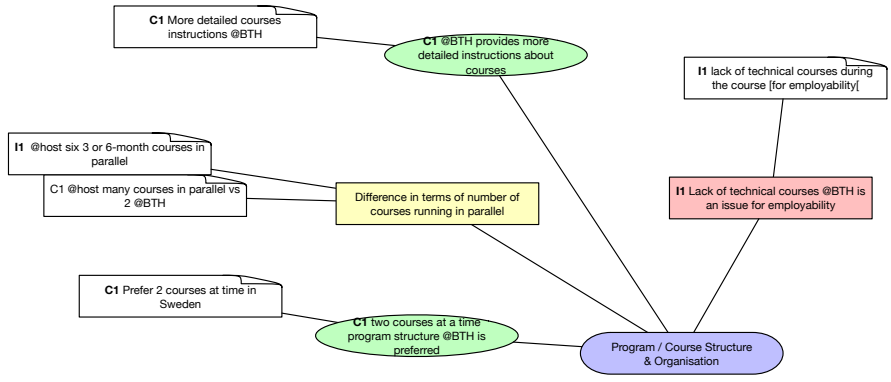
As part of the cultural aspects we wanted also to investigate a theme around equality in Sweden, which was suggested by the Programme Manager of the MSc in Computer Science. With this theme we wanted to investigate whether the Swedish emphasis on equality had any impact on their education. The Chinese students deflected the question, no answers were given, and was unclear whether they were unwilling or unable to answer this questions. On the other hand, Indian students claimed that they do not recognise equality as an issue in their home cities in India either.

The last cultural-related theme was the fact that cultural differences are beneficial for learning. Indian students highlighted the fact that having this mixture of cultures at BTH, as part of their teams allowed them to learn *"more"*.

3.3. Course and Programme Organization

Course and programme organization is another theme-cluster highlighted during the analysis, and whose decomposition in themes, sub-themes and codes is shown in Figure 5.

Figure 5. Subcategories regarding the Course Structure and Programme Organization



The structure of the programs at BTH, with two courses in parallel and two study periods is one of the main sub-themes that arose. Indian students mentioned that at their home university they have six 3-month or 6-months courses running in parallel. Similarly, Chinese students mentioned that they

have many courses running in parallel as opposed to the two at BTH. Chinese students highlighted that the BTH structure with only two courses in parallel per study period, and two study periods per semester, helps them focus on the courses and keeping the pace. They perceive this structure supports their learning better.

The quality of the instruction and information was a sub-theme that was found doing the thematic analysis. The Chinese students highlighted the fact that there is much more detailed information and instructions here at BTH, and they perceive this as a positive difference. They highlighted that in general, here in Sweden they have more clearer instructions for the course organization and for the different assignments. They said literally: *"In China when we have to write a report, the teacher gives just us a topic and the number of words e.g., 2000 or 3000"*, and they perceive having clear instructions, as they do here, helps them to succeed in their assignments.

Finally, the lack of technical courses and it is impact on the students' future employability is the last sub-theme related to programme and course organization. Indian students agreed that the lack of technical, hands-on courses during the programme can be hindering their future employability, since they will not be able to show the technical skills during the years they were studying their Masters. However, this could be perhaps a misunderstanding regarding the required skills for a Software Engineer in industry.

3.4. Assessment, Plagiarism and Collusion

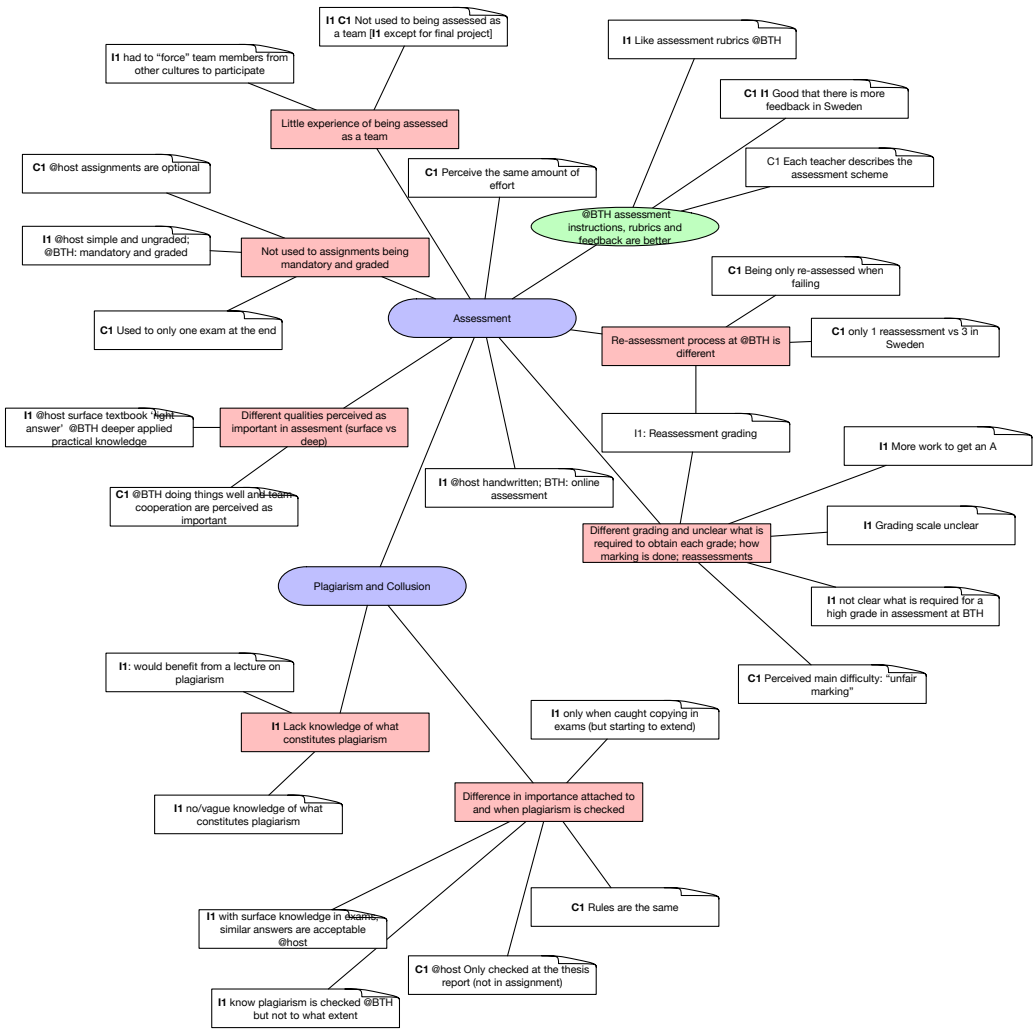
Assessment, plagiarism and collusion is a big theme-cluster that emerged during the analysis. In this theme cluster, shown in Figure 6 we categorise the main themes around problems and challenges regarding assessment and the students perceptions regarding plagiarism and collusion.

One of the main sub-themes, that can have a big impact on the initial performance of the overseas students when arriving to Sweden is the fact that both in India and China they hardly ever have mandatory written assignments. In China, if they have written assignments, those will be always optional and these written assignments only represent a small proportion of the final grade (if any). In India written assignments are simple and ungraded, whereas at BTH the assignments are mandatory, most of the times with hard deadlines and always graded. Another interesting finding is the fact that Chinese students are used to only attending lectures, and then demonstrate their learning and understanding through a written exam. The presence of written assignments (also referred to as "Homework" during the interview) is anecdotal, and therefore the main component of the final grade is the written exam.

A sub-theme with impact on their performance when arriving is the different qualities perceived as important in assessment i.e., how to show learning and understanding (surface *vs.* deep-learning). Indian students highlighted the fact that in their home university their responses to the exam should be as verbatim to the book as possible, whereas here in Sweden they perceive that we ask for more reflective, deep and applied practical knowledge. Chinese students discussed that here they perceive that what is important here is *"doing things well"* and cooperation within the team. However, this latter point might be affected by their impressions around the courses taught by the researchers conducting the interviews.

Another important sub-theme was the different grading and whether it is unclear what is required to get each grade. Indian students highlighted the fact that the grading scale is unclear, and they do not know what is required for a high grade, and in any case more effort is required to get an A. The Chinese students discussed the differences in the effort required to pass and to get a high grade. Initially some of the participants were arguing that they perceive the amount of work to pass the course was higher in Sweden as compared to China. But then one of the participants made an interesting comment, and all the participants agreed: to pass the course you must work harder here in Sweden, but if you want a high grade they perceive the amount of work required is the same (everywhere they said). The unfair marking was highlighted as a main difficulty by the Chinese students, who suggested that the teachers here in the introduction of the courses explain the assessment schema.

Figure 6. Subcategories regarding the Assessment and Plagiarism and Collusio



The number of reassessments and their grading was a main difference that emerged during the analysis. Chinese students highlighted as positive having multiple reassessment opportunities (3 here in Sweden vs only 1 in China). On the other hand, they perceive the Swedish policy "reassessment only when fail" is not totally fair (although is a common practice in most countries in Europe). Similarly, Indian students felt unfair only being able to get an E after an FX (complementation required) whereas you can get an A after an F. All these issues show that perhaps there is a lack of information or understanding on the grading.

On the other hand, a related sub-theme that emerged was the amount of feedback and its role in their learning and the use of rubrics. Chinese and Indian students both perceived that here in Sweden they get more feedback. Indeed, Chinese students said that here they get feedback, as compared to China where they do not receive feedback at all. They highlighted the fact that they believe this feedback is important and helps them in their learning process. Indian students pointed out the use of rubrics as positive for their learning, since helps them recognizing what is important and what they should concentrate on.

Finally, plagiarism and collusion is the last theme in this theme-cluster. During the discussion it was clear that, among the Indian students, there was a lack of deep knowledge regarding what constitutes plagiarism. The Chinese students acknowledged that this was not new for them: that in their home university the concept and the regulations regarding plagiarism are essentially the same. However, in the home university of the Chinese students the anti-plagiarism checking is only applied in the final thesis, and not at the assignment level. They do not expect that we do checks in every single submission, and this could be the cause of the high rate of plagiarism cases among Chinese students at BTH. Indian students were aware that plagiarism was checked at BTH but not to what extent and this might constitute a problem on itself. In general, it seems that there is a difference in

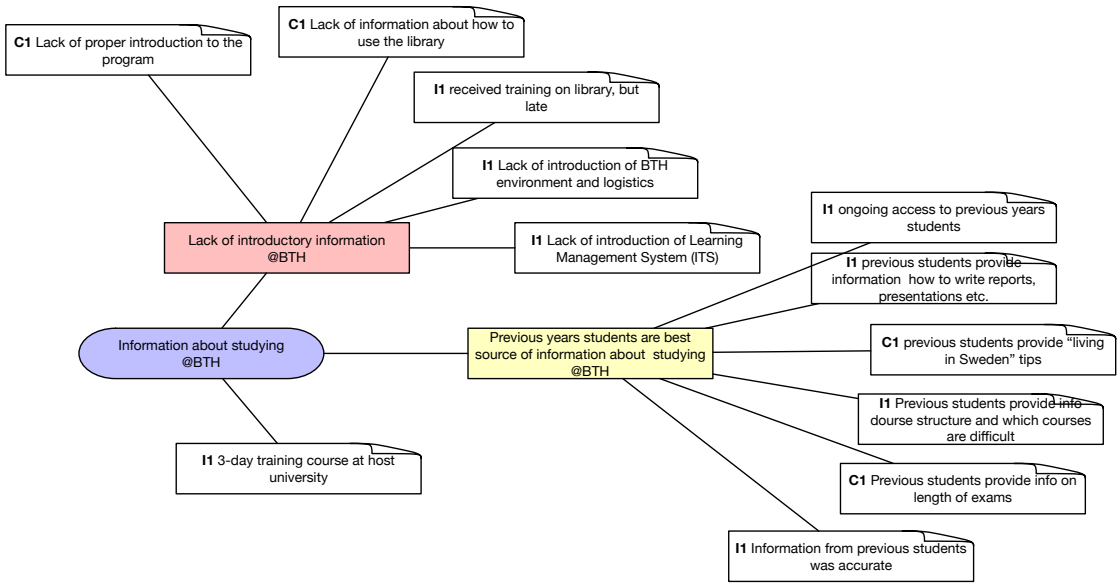
the importance given to plagiarism and in their expectations regarding when plagiarism is checked at BTH.

3.5. Sources of Information

The sources of information are the next theme-cluster from the analysis. Although this was not one of the main hypotheses of the research, it became a theme that might explain some of the issues we experience as teachers, and that can be solved by discussing and including more information in the introductory lectures. This theme-cluster contains themes related to how and from whom overseas students get information about the Swedish system. The summary of its structure, and its organisation in themes, sub-themes and codes is shown in Figure 7.

The first main theme was the previous year's students as source of information about studying at BTH. Both Chinese and Indian students pointed out that the main source of information are their seniors (previous year's students). Chinese students get practical information about day-to-day living in Sweden, but also specific information about the different courses and the main difficulties they will face. Indian students get information about the course structure, which courses are difficult, which classes can they skip, and how to write reports and presentations. Both Indian and Chinese students believe this information to be accurate, although we believe this represents a problem since if a course is changed it will take time for them to notice these changes.

Figure 7. Subcategories regarding the Sources of Information



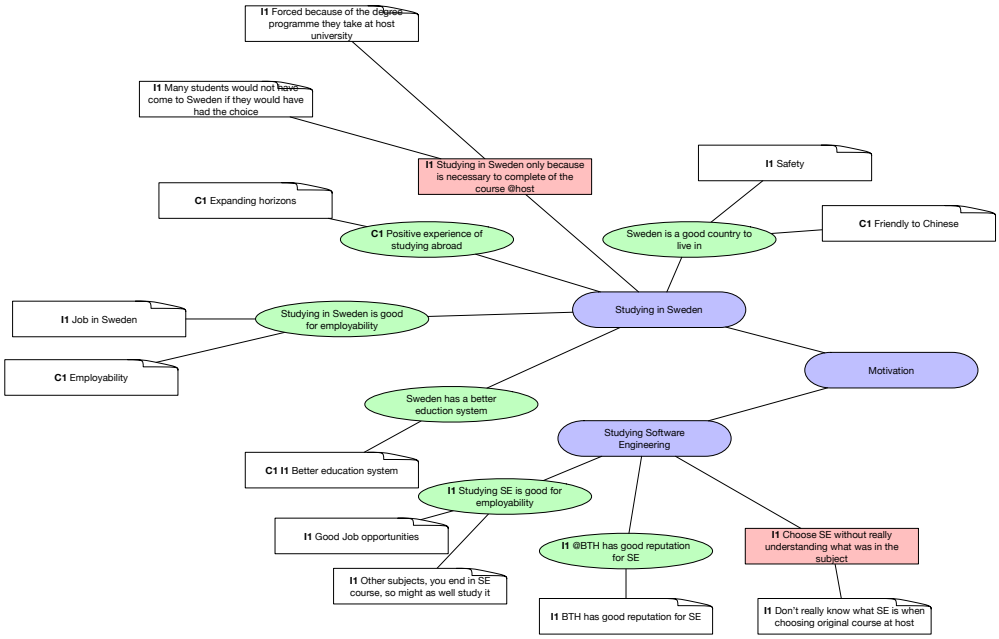
The second main theme was the lack of introductory lectures about the particularities of studying at BTH. Both Chinese and Indian students pointed out the lack of a proper introduction to the program. The Indian students also highlighted the need of an introductory lecture to the ITSLearning management system.

The Chinese students emphasised the lack of an introduction about how to use the library. However, this information might not be accurate since the librarians at BTH offer this type of introductory talks. Perhaps they are not always aware of these events. Indian students acknowledged that they had an introductory lecture to the use of the library, although this was too late for them, since they start using in the first course they take just after their arrival.

3.6. Motivation

The last theme-cluster that resulted from the analysis of the responses to some of the prompting questions regarding their motivation to come to Sweden and why to study Software Engineering. The categorization of themes, sub-themes and code is shown in Figure 8.

Figure 8. Motivation Thematic Map



There were two main themes: the motivation to study in Sweden, and the motivation to study software engineering.

As regards to the why choosing Sweden, both the Chinese and the Indian students highlighted as main motivation to come to Sweden their future employability. Chinese students believe that having an international experience might help them getting a job back in China (but they also mentioned finding a job here in Sweden). Indian students mentioned finding a job in Sweden as motivation to come.

Another sub-theme that arose is the fact that some students are at BTH only because this is a requisite to complete their degree in their home university. Some Indian students acknowledged that they are here only because this was part of their BSc/MSc integrated degrees in their home university. The host university is one of the best universities in their country and the only way for some of these students to access to that university is to be enrolled in these integrated degrees. Many students acknowledged that they would not have come to Sweden if they have had the choice.

The Chinese participants highlighted the fact that they perceive that Sweden has a better education system and that Sweden is friendly and respectful towards the Chinese community as factors to choose Sweden as the country to finish their studies.

Regarding the motivations to study software engineering, being good for employability turned out being one of the main motivations for choosing this topic for their MSc degree. One of the main motivators for Indian students to choose MSc in Software Engineering is the reputation that BTH has in the area. They also made an interesting reflection: chances are that you will end working in a software-related work, regardless of what is your formal background, so might turn out being a good idea to study it as well. However, one sub-theme arose that might explain some of the knowledge and skill gaps: Indian students exhibited certain lack of knowledge on what is software engineering when choosing their degree at the host university.

4. Discussion

In this section, we discuss the thematic analysis results presented in Section 3 in the context of our two research questions:

> **RQ1:** What are the differences in academic culture between BTH and partner universities in China and India that are experienced by students from these partner universities on the MSc in Software Engineering (and related programmes) at BTH?
>
> **RQ2:** How do students perceive the impact -- both positively and negatively -- of these differences on their learning at BTH?

The thematic maps presented in Section 3 was organised in such a way as to facilitate answering these two research questions. The main themes (blue rounded-rectangles in the figures) are related to the general topic areas that arose during the focus groups (and in turn, are influenced by the prompting questions used during data-collection). But many of the sub-themes (red and yellow rectangles, green ellipses) identify specific differences in academic culture between BTH and the partner universities in China and India (addressing RQ1). Moreover, the notation identifies the impact as positive (green ellipses), negative (red rectangles), or neutral/unknown (yellow rectangles).

We consolidate the relevant sub-themes that provide an answer to RQ1 in Table 2. The main cluster of sub-themes that are omitted from this table are those related to motivation for studying software engineering and in Sweden, since although valuable, is not directly relevant to the research questions.

Table 2. Sub-themes from the thematic analysis that relate to academic differences (RQ1), and their impact (RQ2)

Academic Difference	Impact
Unfamiliar with distinction between teacher and teaching assistant	-
Difficulty of asking for assistance from teachers verbally (C1 only)	-
Teachers are accessible equally to both stronger and weaker students (I1 only)	+
Difficulty of participation in learning and teaching activities in English (C1 only)	-
At BTH, lectures do not cover all the material exhaustively, but instead provide guidance	-
Different teaching and learning activities are regarded as the most effective	neutral
At BTH often required to work as a team, but little experience from host university	-
At BTH often assessed as a team, but little experience from host university	-
Many more assignments at BTH - and this is good for learning (I1 only)	+
Unfamiliar with how to write reflective reports (C1 only)	-
Lack of experience with structuring report assignments	-
At BTH, assignments throughout the courses are mandatory and are graded	-
At BTH, assessment instructions, rubrics, and feedback are much clearer	+
Re-assessment process at BTH is different, and unclear to students	-
Marking and grading process at BTH is different, and unclear to students	-
Different qualities are perceived as being important in assessment: show deeper learning at BTH	-
Difference in importance attached to plagiarism and when it is checked	-
Lack knowledge of what constitutes plagiarism (I1 only)	-
Cultural differences at BTH are beneficial to learning (I1 only)	+
BTH provides more detailed instructions about course structure and organisation (C1 only)	+
Difference in the number of courses running in parallel	neutral
Two courses at a time is better structure for the programme at BTH (C1 only)	+
Lack of introductory information at BTH	-
Previous years' students are the best source of information about studying at BTH	neutral

We also indicate how the students perceive the impact in the column *Impact* in this table, taking this information directly from colour/shape notation used in thematic map. The data in this column addresses RQ2.

We note that we speculate the existence of two *meta-themes* that could be used to group the listed academic differences: those that could be resolved by providing information to the students, e.g. about course and programme organisation; about the re-assessment process; and those that require additional skills, knowledge, or experience on the part of the students, e.g. how to work in teams; language skills. However, at this stage of our investigation, we do not feel that we are able to make

this classification confidentially. In future focus groups, we will discuss possible solutions with participants in order to provide data to support this classification: the two focus groups conducted so far did not explicitly discuss solutions. In addition, we would like to conduct interviews with programme managers, course responsible, project coordinators, teachers, and other stakeholders regarding potential solutions to those academic differences with a negative impact.

5. Threats to the Validity

In this section, we discuss the main issues that may threaten the validity of the study. We are going to focus in the main three issues discussed in [9] for qualitative studies: validity, reliability and generalisability. We also discuss with more detail the main threats that might have challenged the focus group interviews.

Regarding the general threats for qualitative research we identify the following challenges:

- **Validity:** Validity in qualitative research refers to the appropriateness of the method, data and tools [9]. The main threat to the validity of this study is the appropriateness of the method. We have chosen a method well suited to study the unique phenomena that we are interested in observing. We decided to apply thematic analysis since the data gathered already revealed the main information we were aiming to analyze, and no more profound grounded-theory analysis was needed. Regarding the sampling schema, we contacted the whole population as described in section 2, and encouraged their participation through emails, but their participation was voluntary, although reaching a high response rate (e.g., 40% for C1 and 45% for I1).
- **Reliability:** The main threat to the reliability of qualitative studies refers to the replicability of the process and the results [9]. A margin of variability on the results is accepted when talking about qualitative research [9], since the subjectiveness of the researcher is embedded in the roots of the analysis itself, and also the contexts analyzed are unique and not repeatable. Therefore, the main threat to the validity of this type of studies relies on the consistency. To mitigate these threats, we have consistently followed the analysis guidelines and documented all the different stages of the data collection and data analysis. To mitigate the threats regarding the reliability of the data, we have "manually" transcribed the recordings of the full focus group interviews. Each researcher transcribed roughly half of the material available. We also did a cross validation, by reading the other part of the interview the other researcher have transcribed. We have also performed cross validations during the analysis process, by making sure that each researcher coded the data the other researcher transcribed and by cross-validating and discussing the different categorizations of the thematic map.
- **Generalisability:** We do not aim for any sort of generalisability of the results, since we are analyzing one phenomena in a very specific context, and our aim is to gain an understanding of the differences on academic cultures and its impact on the teaching and learning at BTH. Therefore, generalisability do not represent a threat to the conclusions drafted from this study.

Regarding the main threats that might have challenged the focus group interviews we identify the following threats to the validity:

- **Reluctance to express opinions in front of peers:** Some participants might have reluctance to express their opinion in front of peers. We tried to alleviate this threat by having small focus groups (4-5 participants) from the same university, which increases the chances of them having more close relationships and being more prone to talk openly. We believe that this strategy worked well during both interviews: the students talked honestly and discussed many issues regarding their education at BTH, however it is not possible to assess this in practice.

- **Reluctance to talk about certain problems in front of the professors:** This turned out being the other way around: since we have had direct interaction with them, they apparently were more prone to talk and participate, and express their opinions, sometimes regarding our courses or our own performance as teachers.
- **Participants biased by their opinions regarding the courses taught by the researchers conducting the interview:** Some of the opinions might be more prone to focus on the course taught by the researchers or their opinions biased by their experiences on these courses. We believe the participants were talking in general about the program, and sometimes, when talking about these courses they mentioned it explicitly.
- **Reluctance to talk about unethical or compromising problems:** The fact that some topics are related to compromising or unethical behaviour might represent a big threat to the validity. However, the students were discussing openly compromising problems as plagiarism, collusion, fairness of the grading, support to bad-performing students without any visible reluctance. This might be influenced by the previous factors, the relationship with the participants.
- **Language barriers:** This was one of the main challenges, the misunderstandings that might appear due to the language. We mitigated this threat by trying to speak using more simple constructions and by rephrasing our questions in case there was any trace of misunderstanding. Although no visible misunderstanding occurred, nothing prevents the participants to have misunderstood any of our questions or the interviewers not fully understanding their responses. The other big challenge in this was the interchange of information between the participants in their first language. We mitigated this threat by explicitly asking the participants not to talk in their mother tongue (only for small clarifications). Only in the first interview there were some small word clarifications in Chinese, except for the question regarding equality, that required a long clarification in Chinese by one of the participants.
- **Class leader:** The presence of the "class leader" in the Indian focus group (I1) might have influenced the participants' opinions, towards a more positive discourse regarding the teaching and the BTH system. However, we believe that the participants were in general very honest and they were in any case also criticizing some aspect of the teaching and what they do not see as fair of the BTH system, but again, it is not posible to assess the effect in practice.

6. Conclusions and Further Work

Our main objective in this study was to understand the academic differences between BTH and the partner universities and the impact, both positive and negative, on the overseas students who come from these partner universities to study for a MSc in Software Engineering at BTH.

We chose to collect data from students using focus groups, and these groups proved to be a rich source of relevant and valuable data. Using thematic analysis, we were able to identify from this data a relatively large list of academic differences, understand the impact of these difference on the students' study at BTH, and to start figuring out causes of this impact and potential mitigating solutions.

As teachers on the MSc in Software Engineering programme at Blekinge Institute of Technology, we have been pleasantly surprised as to how much this study has improved our understanding of the issues experienced by our students -- not only from results of the data analysis that addressed the specific research questions we had, but from the entire process of meeting and discussing these topics with students. Our intention is to disseminate the information we have gathered to our fellow teachers, programme managers, project coordinators, and other stakeholders

so that may similarly improve their understanding of the challenges faced by our overseas students and to participate in solving the issues raised.

As future work, we plan to continue this work by conducting additional focus groups where the participants are students from other partner universities of the MSc in Software Engineering and Computer Science programs. The objective will be to consolidate the evidence we have gathered so far as well as to identify new academic differences (which may be specific to one partner university). We would also like to strengthen the reliability of the conclusions by interviewing programme managers, project coordinators, and teachers on courses taken by students on these programs to validate the issues expressed by students, better categorising the root causes, and identifying mitigating solutions. We aim also at triangulate this data with focus group interviews with Swedish students having exchange experiences either in China or India.

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