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## Quality in context – embedding improvement

**Author(s)**

**Name:** Stephan Hamberg

**Position:** Head of evaluation and development

**Organisation:** The Norwegian Agency for Quality Assurance in Education (NOKUT)

**Country:** Norway

**E-mail address:** Stephan.hamberg@nokut.no

**Short bio (150 words max):** Stephan Hamberg (born 1975) is a political scientist. He received his PhD from the University of Washington in the United States. Between January 2015 and August 2016, he worked as a senior advisor in the department of analysis and development at NOKUT. His primary duties were designing, running and analyzing results from the Norwegian national student survey (Studiebarometeret.no). He has also been a key contributor in the design of the first evaluation of research and education in Norwegian higher education, and with Norway's first national assessments in higher education. Starting September 2016, he will be head of section for evaluation and quality development at NOKUT.


**Name:** Marie-Louise Damen

**Position:** Senior advisor

**Organisation:** The Norwegian Agency for Quality Assurance in Education (NOKUT)

**Country:** Norway

**E-mail address:**

**Short bio (150 words max):** Marie-Louise Damen (born 1974) is senior adviser in the department of analysis and development at the Norwegian Agency for Quality Assurance in Education (NOKUT). Her primary duties concern the Norwegian national student and teacher surveys (studiebarometeret.no). She received her Ph.D. in sociology at Utrecht University in the Netherlands and worked as postdoc researcher at the University of Amsterdam and VU University Amsterdam. Her research areas of interest are educational sociology, higher education, social inequality, political protest, arts education and cultural participation, and assessment in the arts.


**Name:** Harry P. Andreassen

**Position:** Dean

**Organisation:** Hedmark University of Applied Sciences

**Country:** Norway

**E-mail address:** harry.andreassen@hihm.no

**Short bio (150 words max):** Harry P. Andreassen (born 1962) is a professor in ecology. He received his PhD from the University of Oslo in Norway. His scientific work has mainly been dedicated to the population dynamics of mammals. Since 2003, he has been the dean at the Faculty of Applied Ecology and Agricultural Sciences at Hedmark University of Applied Sciences. Andreassen has been responsible for the analyses and report of the institutional student satisfaction survey since it started in 2007.


**Name:** Stine Grønvold

**Position:** Pro – Rector for Education

**Organisation:** Hedmark University of Applied Sciences

**Country:** Norway

**E-mail address:** stine.gronvold@hihm.no

**Short bio:** Stine Grønvold (born 1974) is educated as political scientist and appointed as Pro – Rector for Education in Hedmark University of Applied Sciences (HUAS). Grønvold previously worked in the position as vice – dean of Education in one of the Faculties of the University before appointed as Pro – Rector. Grønvold started her early career working as a teacher in the Norwegian primary and secondary school followed by positions in the administration and later in position as Rector for the secondary school in the city of Elverum. A major concern in her position as Pro – Rector is to encourage student participation and to ensure student democracy in the various processes and activities of the institution.

**Stephan Hamberg will present the paper at the Forum.**

## Proposal

**Title:** Student satisfaction surveys as a quality enhancement tool: How many surveys and questions do we need?

**Abstract (150 words max):**
There is an increase in number of overlapping student satisfaction surveys in the higher education sector. Here we present results from a national and an institutional survey. The national survey for higher education in Norway started in 2013 and has been conducted for 3 years. The institutional level, represented by Hedmark University of Applied Sciences in SE Norway, has had its own student satisfaction survey for 10 years. We show that the results from the surveys are similar, stable over time and that a further increase in number of questions seldom improve our understanding of student satisfaction. Furthermore, we show that student satisfaction is associated to academic performance. We suggest that a tighter collaboration between the national quality assurance agency and HE institutions may allow us to reduce the number of surveys and questions we ask students.

**The paper is based on:** research

**Has this paper previously been published/presented elsewhere?** No

**Text of paper (3000 words):**

Student satisfaction surveys as a quality enhancement tool: How many surveys and questions do we need?

### Introduction
Norwegian regulations generally requires that higher education institutions conduct student satisfaction surveys as part of their quality assurance system. In 2013, the Norwegian Agency for Quality Assurance in Education (NOKUT) conducted their first annual student survey at the national level. With a national level satisfaction survey in addition to multiple institutional level satisfaction surveys (institution, campus, and class level) there is a potential risk of survey fatigue amongst students, and a risk of data overload at the institutional level. In other words, rather than getting better data which in turn can be used to improve the quality of education, we risk getting less robust data that the sector as a whole is unable to use in productive ways.

These potential problems require careful coordination and information sharing between quality assurance agencies and higher education institutions. In this paper, we present information from the Norwegian national student survey and the local student survey at the Hedmark University of Applied Sciences (HUAS). We show that many of the results are similar and overlapping and we find no sign of a survey fatigue. Yet, we ask to what degree we can make the data collection effort more efficient.

### The National Study barometer
In 2012, the Norwegian Ministry for Education and Research commissioned NOKUT to conduct an annual national student survey in Norway. NOKUT completed the first survey called the Study barometer in 2013, and completed additional surveys in 2014 and 2015. The data collection for the 2016 survey takes place in October and November 2016. Information and results of the survey is available at www.studiebarometeret.no. In this section, we briefly describe basics of the survey: the goals of the survey, the population and response rates, type of development of questions and some of the main findings.

*The aims*
The aims of the survey are to provide relevant information to prospective students when choosing a study program. In addition, the survey provides comparative data that the institutions, government, NOKUT and other stakeholders may use to assure and enhance the quality of higher education. Even though a clear aim of the survey is to provide information for prospective students, user statistics of the web-portal indicates that relatively few prospective students use the information available to them. This has led NOKUT to focus more on the development of questions that the institutions themselves can use in their quality enhancement work.

*The population and response rates*
The population consists of all second year bachelor and master students at Norwegian higher education institutions. Institutions can choose whether they want to participate, but since the first year, nearly all institutions offering bachelor and/or master degrees participate. There has been a steady increase in the response rate over the three years (Fig. 1).
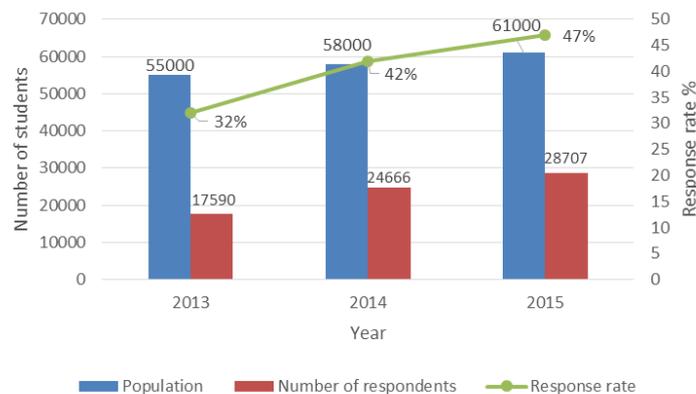
**Figure 1.** The population of potential respondents (blue bars), the number of respondents (red bars) and the response rate in percentage.

*Type and development of questions*

The survey focuses solely on the quality aspect of study programs, and not at the course or institutional level, neither does it include questions about student welfare.

All students, independent of degree level and subject area, receive identical questionnaires, but every year NOKUT adds new questions and remove others (Table 1). There are multiple reasons for the changes. Some changes are because the questions are poor, while other changes happen because NOKUT is interested in particular topics and the national survey allows NOKUT to gather data on these topics. NOKUT does not make changes without careful consideration and NOKUT holds several meetings with multiple stakeholders before questions are changed, added or removed. To avoid increasing the length of the survey, NOKUT attempts to remove questions before new ones are added. Still, the number of questions has increased from 83 in 2013 to 113 in 2015.

The main topics of the questionnaire have remained the same including the same questions to these main topics. NOKUT combines multiple questions within a topic to generate a satisfaction index for each topic. The topics are:
- Learning outcomes
- Student assessment
- Working life relevance
- Stimulation and coherence
- Participation
- Study environment
- Teaching and advising

In addition, NOKUT includes the statement: "I am, all things considered, satisfied with the study program" to monitor the overall satisfaction with the quality of the study program.

**Table 1.** Evolution of questions and topics in the national Study barometer.

| Topic | 2013 | 2014 | 2015 | Comments |
|---|---|---|---|---|
| *Main topics* | | | | |
| Overall satisfaction | Yes | Yes | Yes | |
| Learning outcomes | Yes | Yes | Yes | |
| Student assessment | Yes | Yes | Yes | |
| Working life relevance | Yes | Yes | Yes | |
| Stimulation and coherence | Yes | Yes | Yes | |
| Participation | Yes | Yes | Yes | |
| Study environment | Yes | Yes | Yes | |
| Teaching and advising | Yes | Yes | Yes | |
| *Other questions* | | | | |
| Goals | Yes | Yes | Yes | Grade expectations/goals |
| Teaching and learning methods | Yes | Yes | Yes | One battery of questions related to use of different teaching methods |
| Teaching and learning methods | Yes | Yes | Yes | One battery of questions related to contribution of different teaching methods |
| Workload | Yes | Yes | Yes | Wording changed in 2014 |
| International exchange opportunities | Yes | Yes | No | Removed questions in 2015 |
| Choice of study program | Yes | Yes | No | Removed questions in 2015 |
| Structure of study program | Yes | No | No | Removed questions in 2014 |
| Vocational practical training | No | Yes | Yes | New questions in 2014 |
| Motivation | No | Yes | Yes | New questions in 2014 |
| Expectations | No | No | Yes | New questions in 2015 |
| Factors important for overall Satisfaction | No | No | Yes | New question in 2015 |
| Social background | No | No | Yes | New question in 2015 |
| Amount of feedback and academic counseling | No | No | Yes | New questions in 2015 |
| Satisfaction with feedback and academic counseling | No | No | Yes | New questions in 2015 |

*Results*

The results have been remarkably stable over time. If we look at the mean response for the main topics over time, we see little change from one year to the next (Fig. 2).[1]
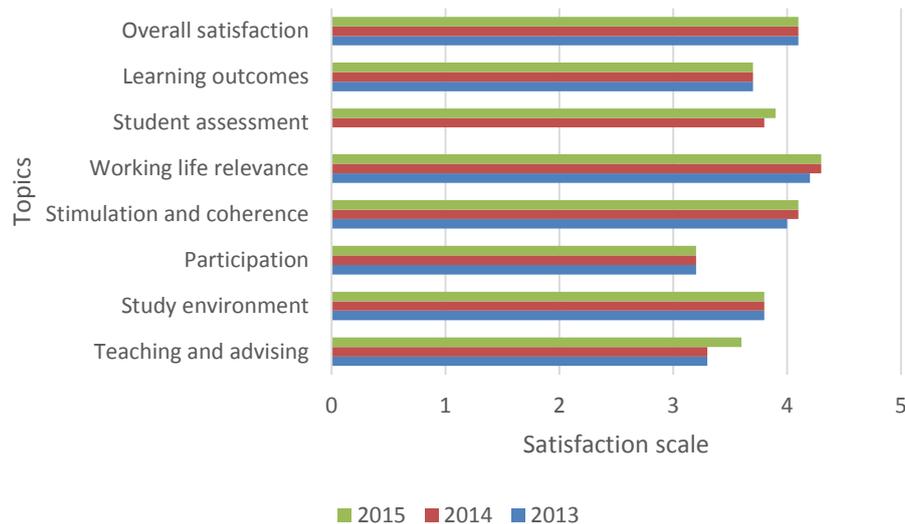


**Figure 2.** The mean response for the main topics for the 3 years of the survey.

Norwegian students are remarkably satisfied with the overall quality of their study programs (Fig. 2). An important question for all stakeholders is what explains this satisfaction? To answer this question we have run numerous regression models, and the

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[1] Even when we examine the response distribution, we see very few changes (See Damen et al. 2016 for more results).

results of these models are remarkably stable over time and irrespective of the models we run. In figure 3, we show the results of an ordinal logit model.[2]

Figure three displays the predicted probabilities of a student answering, "fully agree" to the question: "I am, all things considered, satisfied with the program I am currently attending", when each variable in the model moves from the minimum value to the maximum value, holding all other variables constant. In substantive terms, we see from the model that a student is approximately 35 percent more likely to be very satisfied with the overall quality of her program when she is very satisfied with how stimulating the teaching is, than when she is very dissatisfied with how stimulating the teaching is.

The model presented in Figure 3, shows that academic stimulation and the coherence of the program has the strongest effect, while feedback has no effect. Individual counselling does have a small positive effect, but it is the least important of the quality indicators we ask students to assess.

Of the other control variables, we see that females and older students are less likely to be very satisfied with the overall quality of the program. Interestingly the program size has no effect on students' perception of the overall quality of the program, and neither does it matter whether students attend a college or a university. Finally, we see that attending a prestigious program has a small positive effect on students' overall satisfaction.

The most interesting finding is perhaps that feedback and academic counselling have very little or no effect on student's overall satisfaction. Prior research has shown that formative feedback and individual advising can have a positive effect on student skills and knowledge acquisition, learning, motivation, retention, and overall satisfaction (see for example Evans 2013; Shute 2008; Black and William 2009; Bjorklund et al. 2004; Hattie and Timperley 2007; Nicol and Macfarlane-Dick 2006; Narciss and Huth 2004; Wigfield and Eccles 2000; Lepper and Chabay 1985; Astin 1993; Kuh and Hu 2001; Endo and Harpel 1982; Thompson 2001; Kuh 1995; Pascarella and Terennzini 1980, Tinto 1987). Yet, based on the national Study barometer and interviews NOKUT has done with students at seven different study programs, shows that feedback and academic counselling have no effect on Norwegian students' overall satisfaction. Hamberg et al. (2015) argue that the reason for this missing link is that Norwegian students are unaware of the positive effect feedback and counselling have on student outcomes and that the students have very low expectations about receiving feedback and counselling. Thus, while they are dissatisfied about the feedback and counselling they receive this dissatisfaction does not reduce the students' overall satisfaction.

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[2] Since the data are clearly hierarchical — that is, students are enrolled in programs at different universities — we also run multilevel regression models as robustness checks. The main results of these models are very similar to the ordinal logit models. (See Damen et al. 2016 for additional models).
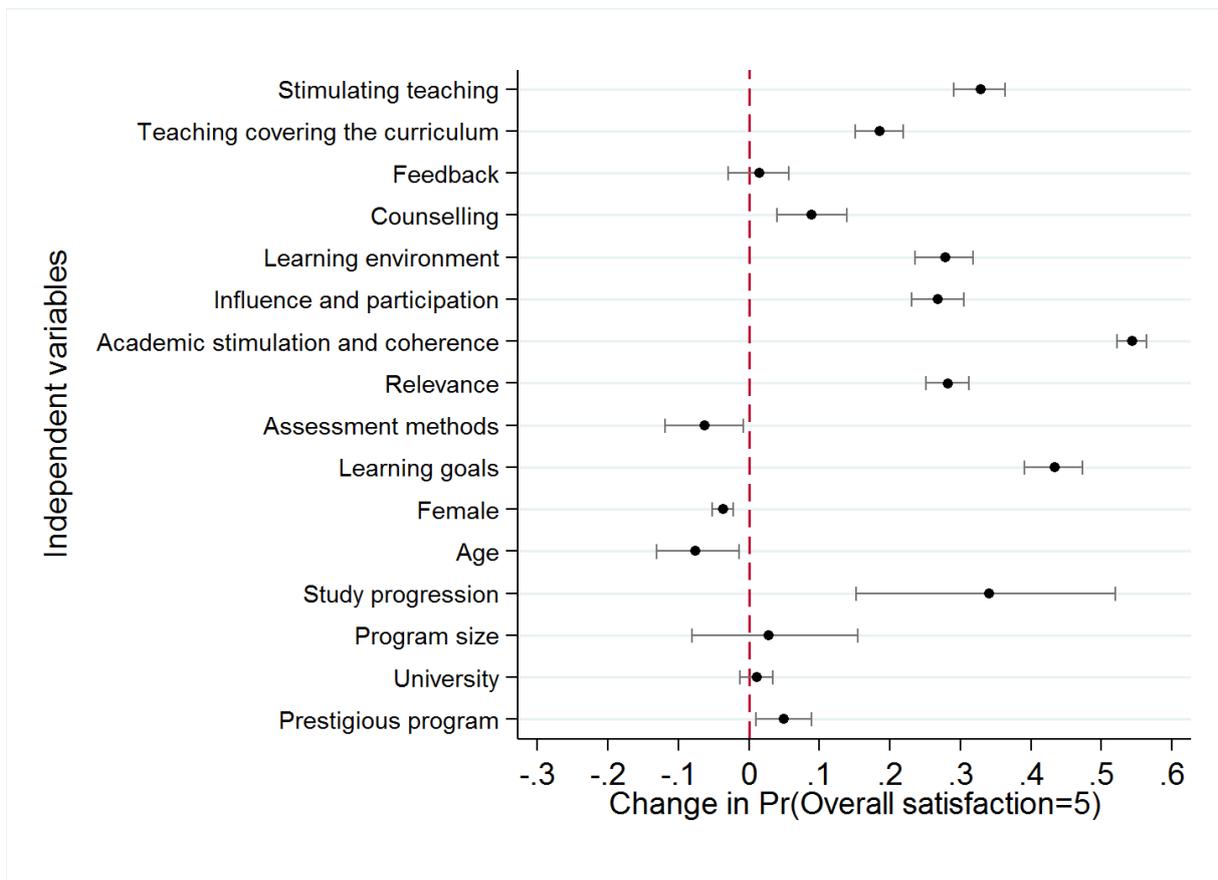
**Figure 3.** See text for detailed explanation of the figure.

The national Study barometer provides NOKUT, the Ministry of education, higher education institutions, and other stakeholders with important information. In order for the institutions to use this information, NOKUT sends each institution all responses they collect from each institution. However, many institutions find that they need more information than NOKUT collects in order to improve the quality of their education. This means that in addition to the national student survey, many institutions conduct their own student survey at the institutional level. Sometimes the results from these local surveys contradict the results from the national survey, while other times the results correspond. In the next section, we discuss the local level survey at HUAS and some of the results from their survey.

**The Institutional Student satisfaction survey**
*The aims*
HUAS in the Southeast of Norway is a medium size university with about 8000 students. In 2007, as part of the institutions quality assurance system, the administration developed a student satisfaction survey (Andreassen 2016). The aim was to gain information about student satisfaction on a range of issues so that the institution could improve its quality of education and increase student satisfaction. In contrast to the national Study barometer, HUAS have not changed any of their original questions during the 10 years the survey has been collected. The main reason for not changing any questions is that HUAS do not focus on the absolute satisfaction, but on the change in satisfaction from one year to the next. By keeping the questions the same, HUAS can

check if mitigation efforts results in improved satisfaction. Another reason is that HUAS seeks to avoid focusing too much on differences in satisfaction between campuses or between academic disciplines, since disciplinary cultural differences rather than objective differences can explain variations in student satisfaction between disciplines.

*Type of questions*
The survey consists of 33 questions related to the learning environment grouped into four main topics:
- Learning outcome
- Service and information
- Physical conditions
- Student social environment

For each of these four topics there is an overall question: "All in all, how satisfied are you with learning outcome / service and information / physical conditions /student social environment?" In addition, the survey ends with an overall satisfaction question similar to the Study barometer stating: "All in all, how satisfied are you with the study program and the study place?"

There are some identification questions like age, sex, campus, discipline of the study program, and if the student is a full time campus student or following some kind of flexible study program. In total, the survey consists of 42 questions.

*The population and response rates*
While the national Study barometer solely focus on the quality aspect of study programs and only asks second-year students, HUAS try to cover all aspects of the learning environment and ask all students registered on campus. Interestingly, the introduction of the national Study barometer does not seem to have led to any survey fatigue amongst the HUAS students, and in 2015 HUAS got an all-time high response rate - 48% of the students responded the survey (Fig. 4).
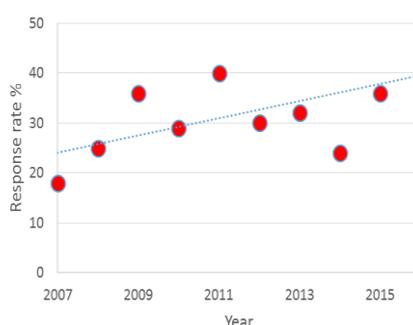


**Figure 4.** The trend in response rate during the 10 years of the survey.

*Results*
Here we focus on three results: (1) the consistency of the results; (2) the association between questions related to satisfaction; and (3) How satisfaction correlates with student performance.

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*1-Consistency of results*

With regard to the five main questions, there is little variation from year to year. The first year the response rate was low and student satisfaction was the lowest HUAS has observed (72% of the students were satisfied with the study program and study place). Since then HUAS mainly see variation at the campus level when there has been large upgrades in the physical infrastructure. Such changes can result in up to 30% increase in the proportion of students who are satisfied with physical conditions. At the institutional level, students are overall very satisfied, and since 2008, between 81 and 86 percent of the students answer that they are satisfied with the study program and study place.

*1-Association between questions*

Overall satisfaction has the highest correlation with learning outcome, then with service and information, then with physical conditions and least with student social environment. These correlations are very stable and consistent from year to year.

If we look at the association between all questions, we see that questions related to the same main topic cluster pretty well in a factor analysis (Fig. 5). For instance, physical conditions are all clustered, indicating that the students answer all questions related to physical conditions similarly. Thus, adding a new question about physical conditions will probably not give us more information. This is the case for most questions within a main topic (Fig. 5).
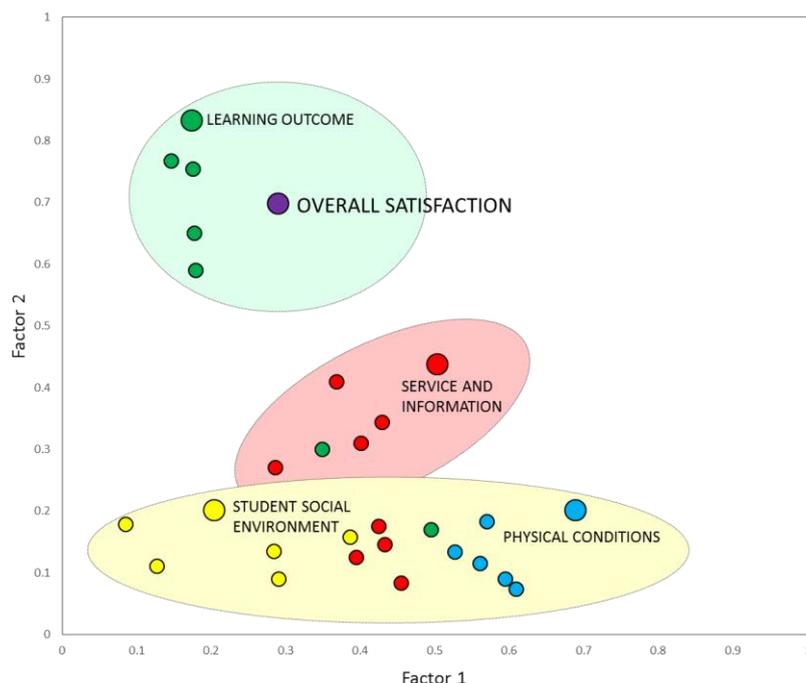


**Figure 5.** The two first factors in a factor analyses lumping data from all 10 years and using all questions related to the learning environment. Location for questions related to learning outcome in green, service and information in red, physical conditions in blue and student social environment in yellow. The location of the overall question to each topic shown with a larger circle, and the overall satisfaction with the study and study place shown in purple.

*3-Correlation between satisfaction and performance*

The four questions related to learning outcome has the highest association to students' overall satisfaction: The academic content (r=0.63), quality of teaching (r=0.59),

supervision (r=0.51) and contact (r=0.48) with the teacher (i.e. the four green circles closest to overall satisfaction in Figure 5). These four satisfaction factors are also highly associated to the students' academic performance measured as final grades (the four green markers within the yellow circle in Fig. 6). Hence, high satisfaction at the university with these four factors in February when the survey is conducted, is related to a high proportion of A's and B's in June, four months later.

However, satisfaction with library services, student guidance (red markers in the yellow circle in Fig. 6), as well as good physical conditions in the canteen, group rooms and classrooms (blue markers in the yellow circle in Fig. 6) also correlates highly with student performance (Fig. 6). These factors are not highly associated to overall satisfaction (all r<0.30, except for the correlation between overall satisfaction and service connected to student guidance = 0.48). Hence, factors not necessarily associated with overall satisfaction may also be important for academic performance.
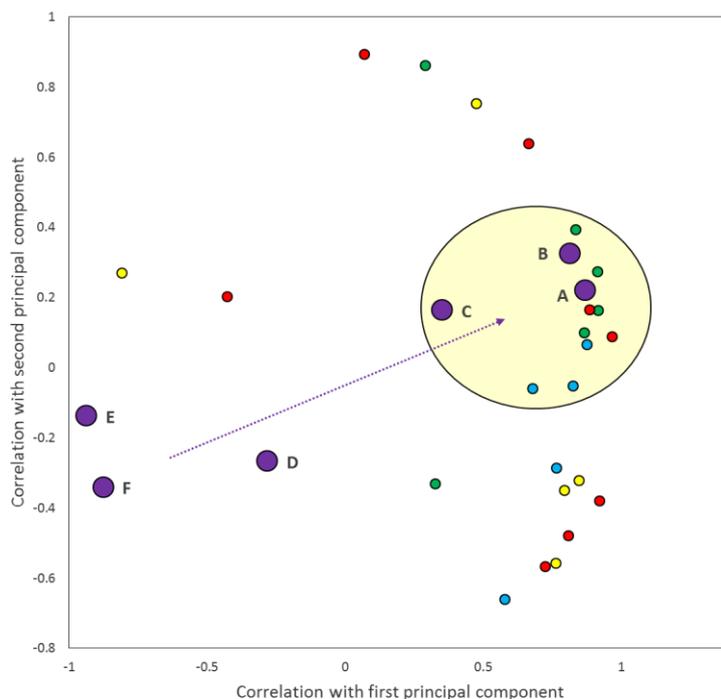


**Figure 6.** The scores from the two first principal components in a principal component analyses showing the association between satisfaction factors and student academic performance measured grades (proportion of A's, B's … F's). Location for questions related to learning outcome in green, service and information in red, physical conditions in blue and student social environment in yellow, grades in purple.

In a regression model including the grades in the fall semester (December) before the survey as covariate we found that the proportion of A's and B's at HUAS in June correlates highly with overall satisfaction ($r^2$=0.93). Among the specific factors it was satisfaction with learning outcome in February that had the highest correlation with the proportion of A's and B's the following June ($r^2$=0.84), while it was satisfaction with service and information in February that gave the highest negative correlation with the proportion of the grade F in June ($r^2$=0.90). The grades in December before the survey was conducted did not explain satisfaction in February (all p>0.17).

**Conclusion**

This paper is the result of a brief collaboration project between NOKUT and HUAS. This is the first time NOKUT staff has collaborated with staff from an institution of higher education regarding data analyses of the national student survey. NOKUT holds regular meetings with stakeholders from the HE sector, but these meetings rarely produce the quality of information this project has. In essence, the paper and the project as a whole, has produced four main findings.

- There is a great deal of overlap between local satisfaction surveys and the national student survey.
- Results from the local and national survey are very similar, indicating that the surveys are highly reliable.
- Fortunately, the introduction of the national student survey has not led to a survey fatigue amongst students.
- Today, HUAS management, as well as program leaders, and academic and technical staff use both the local and national survey to improve performance across a range of issues. However, it is worth asking how much added value two surveys have.

In sum, these findings raise an interesting question. What would it take to create one national level survey so that each institution could free up resources to conduct more in-depth analysis of the survey, as well as developing new measures to improve the quality of education. Based on this project we believe the following would be necessary in order to achieve this:

- Significantly closer collaboration between NOKUT and the individual institutions.
- A mechanism to survey all students, not only second-year BA and MA students must be developed.
- A mechanism for institution-specific questions must be developed.
- A mechanism regarding ownership of data must be developed.

We hope that this project between HUAS and NOKUT is the beginning of a process that will make the collection of student satisfaction information more efficient, and consequently allow both NOKUT and HE institutions to better use the data to improve the quality of higher education in Norway.

**References:**

Andreassen, H.P. 2016. Student satisfaction survey 2016: 10 years with student satisfaction surveys. Hedmark University of Applied Sciences Report 2016: 1.

Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass.

Bjorklund, Stefani A. et al. (2004). Effects of Faculty Interaction and Feedback on Gains in Student Skills. *Journal of Engineering Education*, 93(2): 153-160.

Black, Paul and Wiliam, Dylan. (2009). Developing a theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21:5-31.

Damen et al. (2016). Studiebarometeret 2015: Hovedtendenser: Rapport 1-2016. NOKUT.

Endo, Jean J. and Harpel, Richard L. (1982). The Effect of Student-Faculty Interaction on Student Educational Outcomes. *Research in Higher Education*, 16(2): 115-138.

Evans, Carrol. (2013). Making Sense of Assessment feedback in Higher Education. *Review of Educational Research*, 83(1): 70-120.

Hamberg et al. (2015). Personal feedback and advising in Norwegian higher education: Explaining student dissatisfaction. Rapport 5-2015. NOKUT.

Hattie, John and Timperley, Helen. (2007). The Power of Feedback. *Review of Educational Research*, 77(1): 81-112.

Kuh, George. D. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, 66(2), 123-155.

Kuh, George D. and Hu, Shouping. (2001). The Effects of Student-Faculty Interaction In the 1990s. The *Review of higher Education*, 24(3): 309-332

Lepper, Mark A. and Chabay, Ruth W. (1985). Intrinsic Motivation and Instruction: Conflicting Views on the Role of Motivational Processes in Computer-based Education. *Educational Psychology*. 20(4): 217-230.

Narciss, S. & Huth, K. (2004). How to design informative tutoring feedback for multimedialearning. In H. M. Niegemann, D. Leutner & R. Brunken (Eds.), *Instructional design for multimedia learning* (s. 181–195). Munster, New York: Waxmann.

Nicol, David J. and Macfarlane-Dick, Debra. (2006). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2): 199-218.

Pascarella, E. T., & Terenzini, P. T. (1979). Student-faculty informal contact and college persistence: A further investigation. *Journal of Educational Research*, 72: 214-218.

Shute, Valerie J. (2008). Focus on Formative Feedback. *Review of Educational Research*, 78(1): 153-189.

Thompson, M. D. (2001). Informal student-faculty interaction: Its relationship to educational gains in Science and Mathematics among community college students. *Community College Review*, 29(1), 35-57.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2d ed.). Chicago: University of Chicago Press.

Wigfield, A. & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25(1), 68–81

**Discussion questions:**

What do we gain by asking more and more detailed questions in our surveys?

Is there a possibility that the students answer more randomly when asked more questions?

To what extent do we analyze student surveys - Do we need more in depth analyses of student surveys to understand what we need?

Should the national quality assurance agency conduct surveys on behalf of all the institutions?

Does collaboration with HE institutions risk the independence of the QA agency?