

# **Strengthening feedback from and engagement of students**

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## **Introduction**

Receiving feedback from the students is among the most crucial elements and means that a university teacher can use to improve teaching (Horst et al., 2015) and enhance engagement, based on a deeper understanding of students' experiences regarding teaching (Raghallaigh and Cunniffe, 2013). In turn, students' participation, particularly through innovative methods, such as e-tools (Ryan et al., 2023), enhancing the variation in teaching methods (Horst and Holten-Ingerslev, 2015), is argued to be supported by a feedback-driven better teacher's understanding of the teaching process. This essay has a twofold and interrelated aim. It seeks, first, to provide all the students a chance to provide feedback and, then, based on the evaluation outcomes, strengthen students' engagement.

To achieve the research aim, the project employs the case of exercise classes in the course of *Grundlæggende Statistik* in the first year (Block 2) of the *BSc in Geography and Geoinformatics*. The average number of students in every class is around 15. According to the teaching format, students work in groups and respond to 10 questions in each class. Despite the smooth evolution of the class, some issues have been observed: missed opportunities for feedback by some students and restricted engagement from others. These issues could significantly affect teaching experience, thus calling for an intervention.

## **Problem identification**

Arguing that the interaction in the class is largely beneficial for teaching and learning (Raghallaigh and Cunniffe, 2013), the author has been seeking and receiving feedback by the students informally, by asking their continuous evaluation in every class, a quite useful strategy to make teaching productive (Horst et al., 2015). However, there is a risk that the

less confident students have limited participation in evaluation, in the wider lack of participation in class discussion, possibly due to fear of exposure (Bernales, 2016), missing the opportunity to provide feedback that could improve teaching. Therefore, there is a need for intervention that could allow students to provide feedback for the course, which could increase instructor's understanding of the teaching activities (Horst et al., 2015). There is an opportunity for students to enlighten the instructor about possible reasons of limited engagement, thus informing interventions.

Students' participation in the exercise class has been of concern in the first classes of the Statistics course. The structure of the class is as follows. Students work on the questions of the exercise as groups in the first hour every week. The questions have been given before the exercise class and after the lecture in each week. Therefore, the students have sufficient time to work on the exercise before the class. The questions refer to the material discussed in the lecture every week. The second hour of the exercise class includes a discussion among all students and the teacher, debating on the responses, thus combining 'exercise' and 'discussion' modes, and devising an 'active learning' strategy, which is likely to help students engage in the learning process (Prince, 2004). By devising this strategy, students become familiar with the application of theories in statistics, while exchanging opinions on them, in the wider efforts to allow in-depth and collective thinking about issues they address in the course (Bonwell and Eison, 1991). However, in the second hour, only some students used to respond openly to the questions, thus highlighting a limited students' participation in the exercise class. Several students were reluctant to present solutions, missing the opportunity to enhance their ability to defend their arguments and receive valuable feedback (Wassermann, 2010). Potential reasons for this reluctance may stem from individual student traits such as fear of exposure, low confidence and lack of interest (Bernales, 2016).

## **Description of the intervention**

### **Asking for students' feedback**

This project performed a mid-term short, written and anonymous evaluation of teaching from the students during the course, in week 49 of 2023, seeking to improve understanding of the teaching process and enhance students' engagement (Horst et al., 2015). In this way, it provided all the students a chance to provide feedback that might be uncomfortable to do so, openly in the class, while also receiving valuable insights about possible impediments to students' engagement. The questions were: i) Are you satisfied by the quality of teaching in terms of understanding solutions to statistical problems? Why? ii) Are there any changes that could improve teaching? iii) Are there any reasons that restrict your participation in the class? iv) Are there any suggestions of how to increase your participation in the class? The results could inform decisions for interventions regarding class structure. The number of students participating determined the success of the intervention, while the feedback was in-class discussed in the following week.

### **Strengthening students' engagement**

Based on the evaluation results, the project adopted the following intervention in the second half of the course, from week 50 of 2023. First, students were asked to work on the exercise as groups during the first hour of the class. Second, they were informed, before starting to work, that in the second hour, each group would respond to a specific question from the first six ones they have been working on during the first hour, thus encouraging them to engage with the course content openly in the class. Third, the students were asked to argue and explain how they solved each of the last four questions by posting suggestions on Menti. After having gathered all answers, students were asked to explain them in the classroom. This intervention was assessed by observing the posts on Menti and students' participation in class discussions, during the second half of the class.

## Results and outcome of the activity

Analysing and presenting the results from the evaluation allowed a deeper understanding of the need and obstacles of students to engage with the exercise class. From the 15 students, 11 (73%) participated in the mid-term evaluation, which took place on 6 December 2023, thus highlighting the success of the intervention. The evaluation was written, with the questions being printed and distributed to the students in the last 15 minutes of the class, thus allowing sufficient time for the students to respond to the questions. Several quotes of the evaluation enabled and called for a change and improvement of class structure.

Most students were satisfied with the quality of teaching, as (Student 7)

*“I really like when we do a little theory or background setting in the teaching because we often connect it with the lecturing”*

and (Student 9):

*“I am very satisfied. I am not afraid of asking questions, and then I am sure I will take good and well-thought answers”*

However, some issues were raised, such as (Student 4)

*“sometimes it is difficult to understand the connection between lectures and practice sessions”*

Highlighting (Student 10).

*“[the] need for more understanding what the different forms mean and do”*

Crucially, students indicated important obstacles to their engagement, related to concerns of exposure and limited confidence (Bernales, 2016), including (Student 2)

*“it can feel a little formal and awkward if we don’t understand a question”*

or (Student 5)

*“I face difficulties to understand statistics and general mathematics. So, if I am not sure, I do not say anything”*

Then, students made useful suggestions about ways to increase their participation in the class. Indicatively, Student 1 argued for

*“possibly doing more as a whole in the class, less in smaller groups”*

While Student 9 stated,

*“To overcome my personal issues and participate more”*

Indicating that alternative methods of participation, with a possible use of e-tools, could be effective for students' engagement (Ryan et al., 2023). Based on these findings, the teacher decided to implement the second intervention, changing the class structure, as explained above. Initially students' participation via Menti was not encouraging (Appendix 1), with just two out of the eight groups participating (25%), one week after the evaluation. Most students focused on discussing possible answers to the first six questions, within their group, and particularly the specific question that they have been asked to address.

However, students' participation via Menti gradually increased (Appendix 2). All the eight groups participated and posted on Menti, two weeks after the evaluation, possibly highlighting the need to get familiar with the e-tool (Ryan et al., 2023), which some of them were not aware of, before. In the classes of week 51, most students discussed the first six questions in their groups, followed by within-group debate on the four last questions with a parallel articulation of a possible response on Menti.

Considering that the number of students increased, the intervention was considered successful. This outcome is enhanced by the insights provided through classroom observation method, where the teacher observed an increased participation of students in discussions on the exercise questions, during the post-evaluation period (three weeks). That is, the alternative teaching methods, whose need for implementation was brought up by the substantial participation of students in the mid-

term evaluation, proved crucial in teacher's efforts to enhance students' engagement.

## **Conclusion**

This essay sought to improve teachers' evaluation from students and engagement of students in the class, by testing respective tools, pertaining to these two procedures. It first implemented a mid-term, short and written evaluation of teaching for an exercise class teaching method, seeking an opportunity to all students to provide feedback and comments on the teaching process. Then, based on the results of this evaluation, it sought a change in the class structure, introducing e-tools, in order to enhance students' participation in class discussions. The findings indicated that the mid-term evaluation could provide important insights for a deeper instructor's understanding of the teaching procedure and obstacles to students' engagement and the improvement of teaching. These findings provided insights on ways to change the class structure and support students' participation, by introducing e-tools and asking students to respond to particular questions and post ideas for solutions on Menti. These interventions indicate that continuous evaluation of teaching may provide valuable insights for effective interventions in class structure to increase students' engagement. However, pertaining to the limitations of this paper, the interventions were not evaluated as to whether they help the students. This calls for a discussion with the students in the future, about whether and how they helped them to engage with the course and improve the learning experience.

## References

- Bernales, C. (2016). Towards a comprehensive concept of willingness to communicate: Learners' predicted and self-reported participation in the foreign language classroom. *System*, 56, 1-12.
- Bonwell, C. and Eison, J. (1991). *Active Learning: Creating Excitement in the Classroom. ASHEERIC Higher Education Report No.1*, George Washington University.
- Horst, S. and Holten-Ingerslev, H. (2015). Teaching Environment. In L. Rienecker, et al. (Eds.), *University Teaching and Learning* (pp. 105-113). Samfunds litteratur.
- Horst, S., Johannsen, B., Nielsen, J. and Østerberg Rump, C. (2015). Teaching evaluation. In L. Rienecker, et al. (Eds.), *University Teaching and Learning* (pp. 409-422). Samfunds litteratur.
- Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education*, 93, 223-231.
- Raghallaigh, M. and Cunniffe, R. (2013). Creating a safe climate for active learning and student engagement: an example from an introductory social work module. *Teaching in Higher Education*, 18, 93-105.
- Ryan, O., Fisher, M., Schibelius, L., Huerta, M. and Sajadi, S. (2023). Using a scenario-based learning approach with instructional technology to teach conflict management to engineering students. *2023 ASEE Annual Conference and Exposition, Conference Proceedings*, Code 191615.
- Wassermann, S. (2010). Effective classroom discussions. *Educational Leadership*, 67(5), 1-6.

## Appendices

### Appendix 1


#### Type question number and then your response

7) Vi benytter Chi-i-anden goodness of fit test for at undersøge om de observerede og forventede data ligger langt væk fra hinanden. På den måde vil vi undersøge, hvorvidt de observerede data er norma

#2H0: At vores sample er repræsentativ og at  $\mu_m = 200$ ,  $\mu = \mu_H$ . H<sub>A</sub>: Ikke repræsentativ og at  $\mu_m \neq 200$ ,  $\mu \neq \mu_H$ . Vi laver en to-sidet test (non-directional)

Fig. 1. Participation and responses in Menti, 13 December 2023

### Appendix 2



#### Øvelse 5

1) Laver anova test - da der er målinger fra 3 forskellige grupper og vi ønsker at undersøge om middelmørstørrelse er det samme eller om der er forskel på de tre grupper.	1. Vi skal udføre en Anova test, fordi vi skal sammenligne 3 forskellige stikprøver med antagelsen af, (det bliver så vores nulhypotese) at de forskellige prøver er fra samme population.	2: Der skal være 3 eller flere uafhængige tilfældige prøver. Hver population skal være normalfordelt Hver population skal have samme spredning Variablene skal være målte, ikke antagede	Vi vil benytte en ANOVA test, da vi skal teste om middelmørstørrelsen på de tre strande er den samme.
1. ANOVA-test, da vi har tre stikprøver. Alle observationer er uafhængige af hinanden Hver population er normalfordelt med samme varians. $H_0 = D = H = E$ $H_a =$ mindst en af gennemsnittene er ikke lig med	1) Vi bruger ANOVA-test, da vi har tre samples som skal undersøges for forskelligheder i deres middelværdier ( $\mu$ ).	3) $H_0$ = middelværdien for de tre stikprøver vil være ens $\rightarrow$ stikprøverne kommer fra samme population. $H_A$ = middelværdien vil ikke være ens $\rightarrow$ stikprøverne kommer ikke fra samme side. Non-directional	2)- Der skal være tre eller flere samples- Populationerne skal være normalfordelt - Populationerne skal have ligefordelt varians - Variablen er målt på interval eller ratio skala



 

Fig. 1. Participation and responses in Menti, 20 December 2023