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Peer-review-based examination in a PhD-level course: ”Introduction to Research”

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Introduction to Research, 8 HEC

- Enrolls all PhD students at the Sahlgrenska Academy (160/y)
  - medicine, odontology, health care sciences, and pharmacology
    - preclinical PhD students (biologists, chemists, physicians, engineers, physicists, pharmacologists, …)
    - clinical PhD students (physicians, nurses, physical therapists, speech therapists, pharmacologists, …)
- To be taken early in PhD education (preferably 1st year)
- Given twice a year (60-90 PhD students/course)
- New since spring of 2012

Main ideas

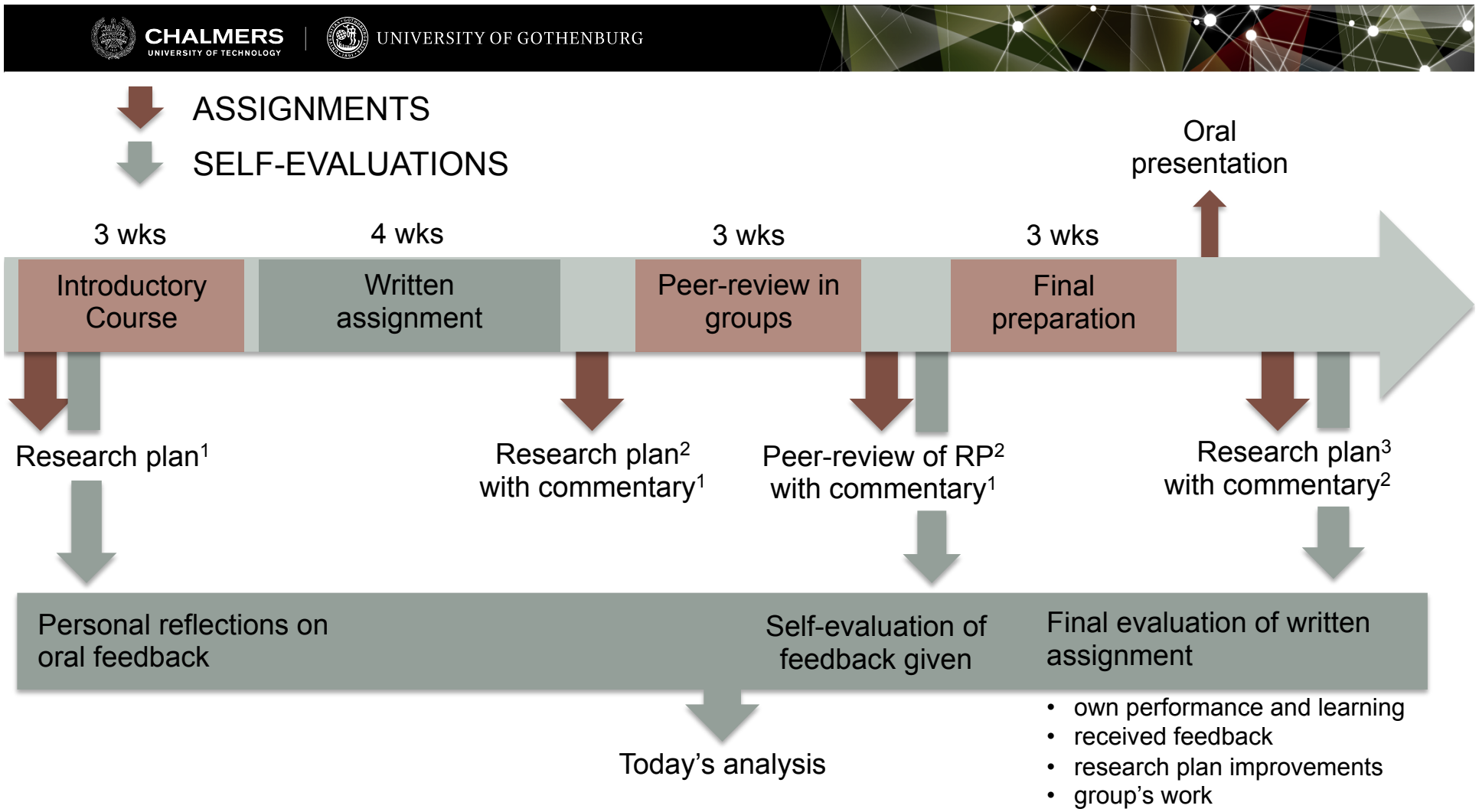
- To integrate the teaching of different subjects using one, integrated examination assignment
  - Theory of Science
  - Research Methodology
  - Research Ethics
- To utilize the different backgrounds and research areas of the PhD students for peer development
- To expand elements of generic PhD skills

Peer-review in mixed groups

- Students are divided into groups of 4, mixing students with different…
  - educational backgrounds
  - occupations
  - research areas
  - research cultures
  - methodological knowledge
- Teaching and workshops are provided to support the writing and peer- review processes

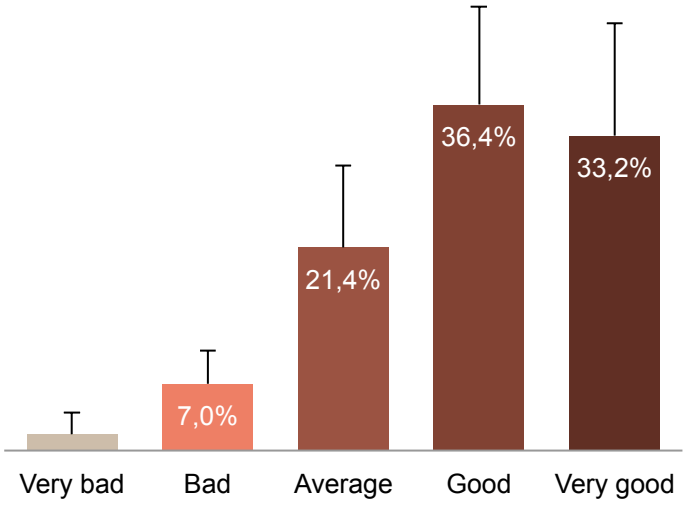
Written assignment

- The basis was an existing text, the research plan
  - This text is part of the PhD application and can be utilized in teaching from the beginning of the course
  - The original author may be the PhD student or the supervisor
- Complementary to the research plan is a Commentary
  - Expanded sections on the course subjects, focused on the research area of the PhD student's project
  - Supported by suggested foci and questions on each subject
  - Expected length 4-5 pages
- The assignment is evaluated by student self-assessment

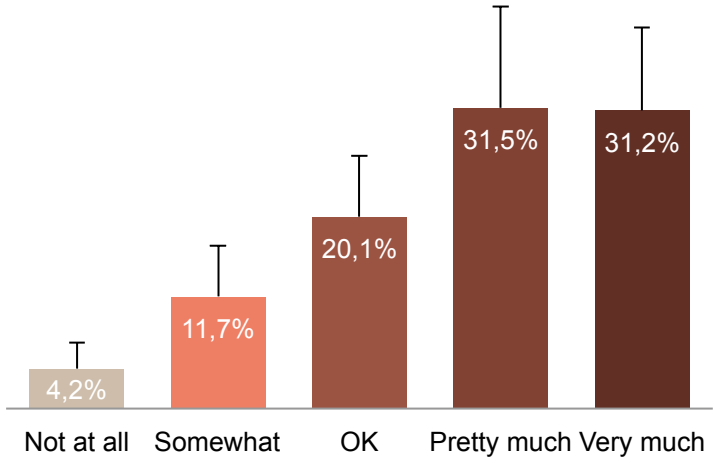

ASSIGNMENTS
SELF-EVALUATIONS
Oral presentation
3 wks
4 wks
3 wks
3 wks
Introductory Course
Written assignment
Peer-review in groups
Final preparation
Research plan1
Research plan2 with commentary1
Peer-review of RP2 with commentary1
Research plan3 with commentary2
Personal reflections on oral feedback
Self-evaluation of feedback given
Final evaluation of written assignment
Today's analysis
own performance and learning
received feedback
research plan improvements
group's work

Course evaluation (2012-2015)

What is your overall impression of the course?



What is your opinion on the written assignment, was it useful?



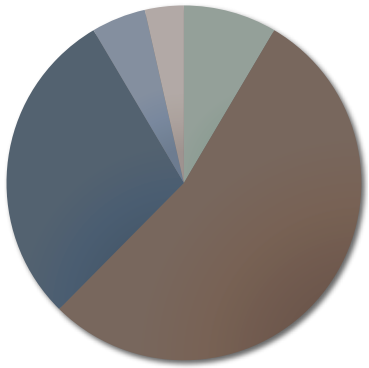
Framing today's presentation

- Is the assignment design effective?
- What happens to the research plans?
- Is the cross-disciplinary character of the assignment beneficial or a drawback?
- Are the limited learning activities on feedback and peer assessment sufficient to give visible effects, given the student profile?
- Is the self-assessment procedure productive?

Materials and Methods

- Data
  - 586 students have completed the assignments (2012-2015)
  - Analysis was performed on data from two cohorts (140 students), with permission
  - 10% of the students (14) were randomly selected for analysis
  - Primary data consists of written self-assessment
  - The total text amounted to more than 10,000 words
- Analysis
  - The 10,000+ words were analyzed for specific and isolatable comments
  - The comments were coded and grouped according to thematic connections

Oral feedback



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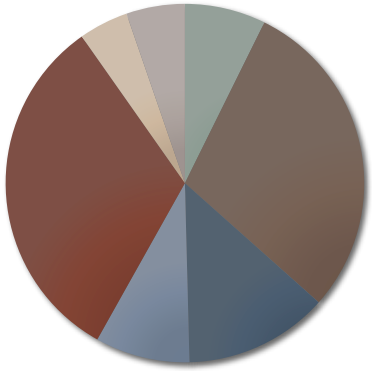
Giving feedback



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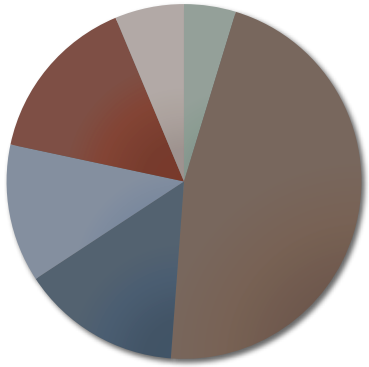
Receiving feedback



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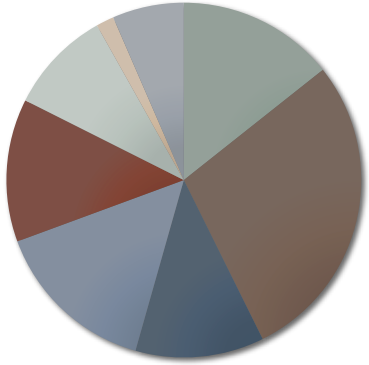
ISL* impact of the assignment



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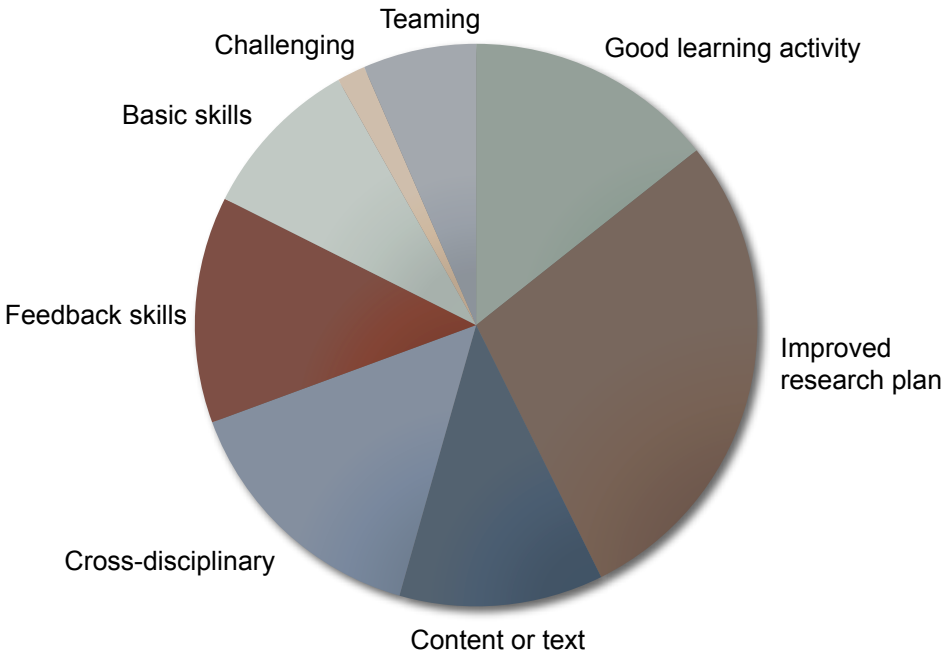
- Good learning activity
- Improved research plan
- Content or text
- Cross-disciplinary
- Feedback skills
- Basic skills
- Challenging
- Negative
- Teaming

*improving student learing

ISL impact of the assignment



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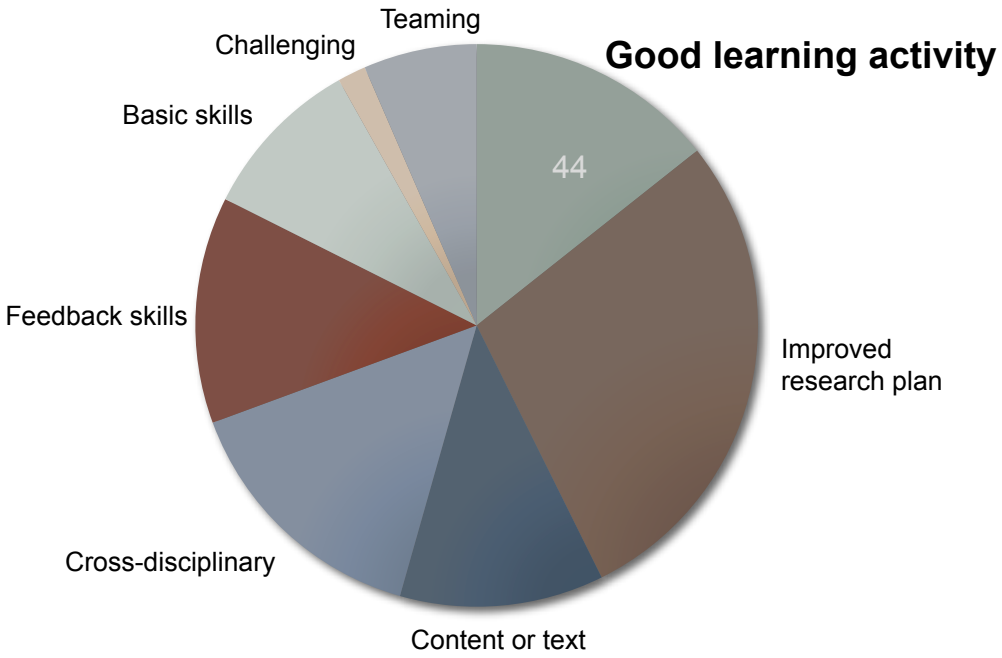
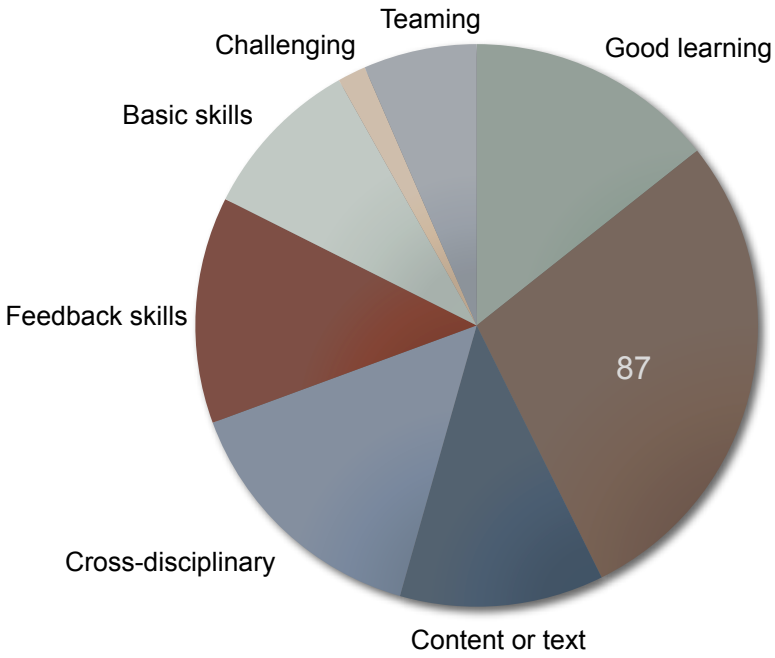
ISL impact of the assignment



"I could in fact connect new knowledge from many lessons to different parts of my research work, and I believe the course with the assignment exercise was very relevant in the phase I am in my research."

"I think the task was very interesting and I learned a lot about both giving and receiving feedback. By seeing what other people commented on concerning all the research plans in my group, I believe I got a deeper understanding of the process of research."

ISL impact of the assignment

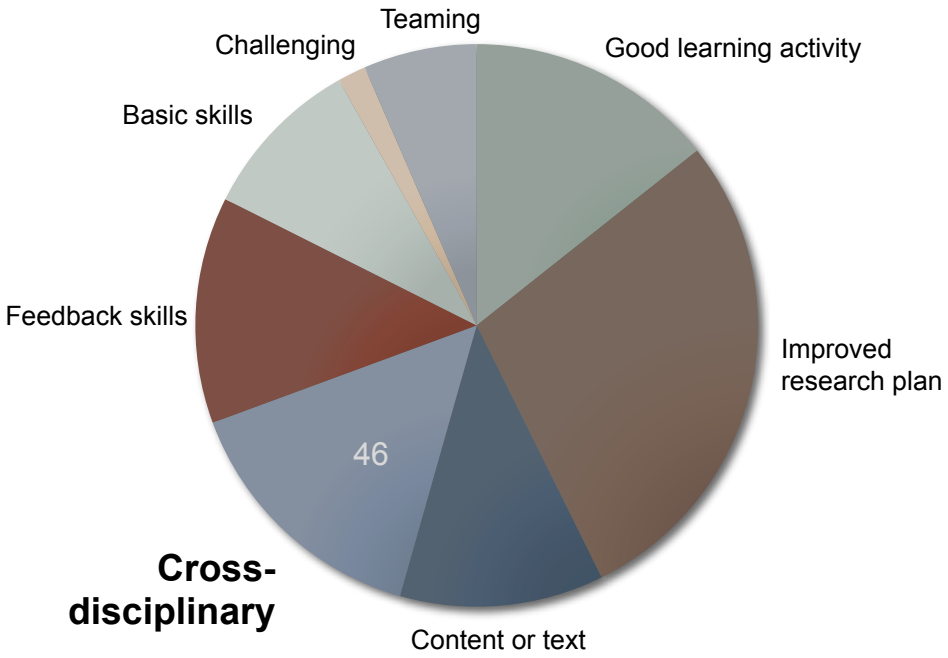


Improved research plan

"You often interact with people in your own field and forget to explain the basics. Now I had the opportunity to really take some steps back and explain my field. It was very useful, as it is our (researcher) responsibility to be able to explain what we are doing to the society."

"I was asked to explain some of the concepts that are very obvious to me but apparently not to everyone. In doing so I was forced to think of what they really meant and not only use them in a routine manner."

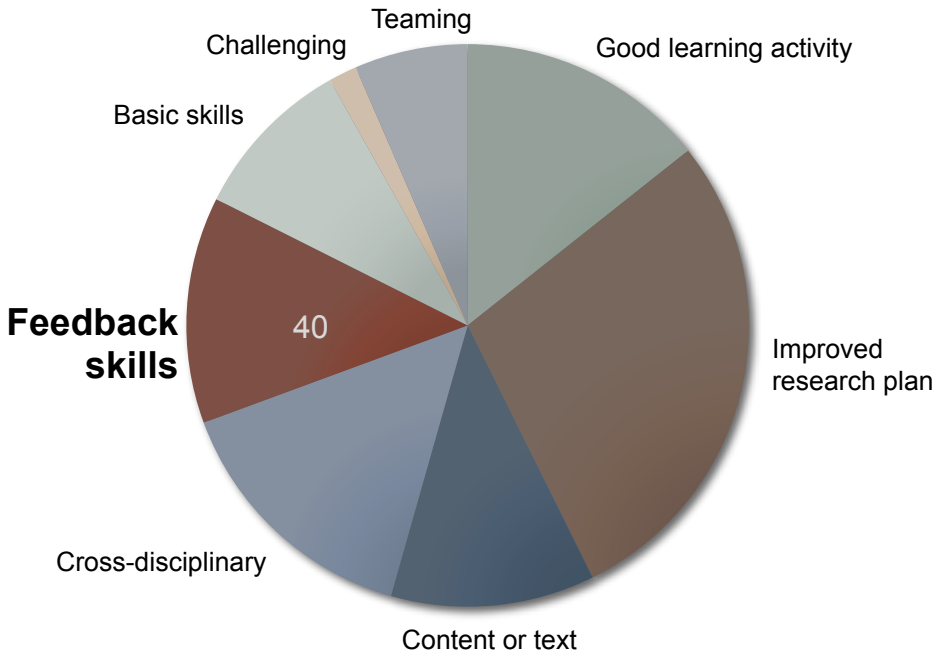
ISL impact of the assignment



“Our group members differ a lot regarding age, experience and background. One may think that this fact would make the work difficult and that this might, in some cases lead to misunderstandings, because of different views on the specific subject. On the contrary, I have found this inspiring and vitalizing because you know that the comments will differ and contain other aspects that you haven’t thought of.”

“What I found difficult, more in one of the plans than the other, was when I am not familiar with the subject and therefore do not understand, despite several readings.”

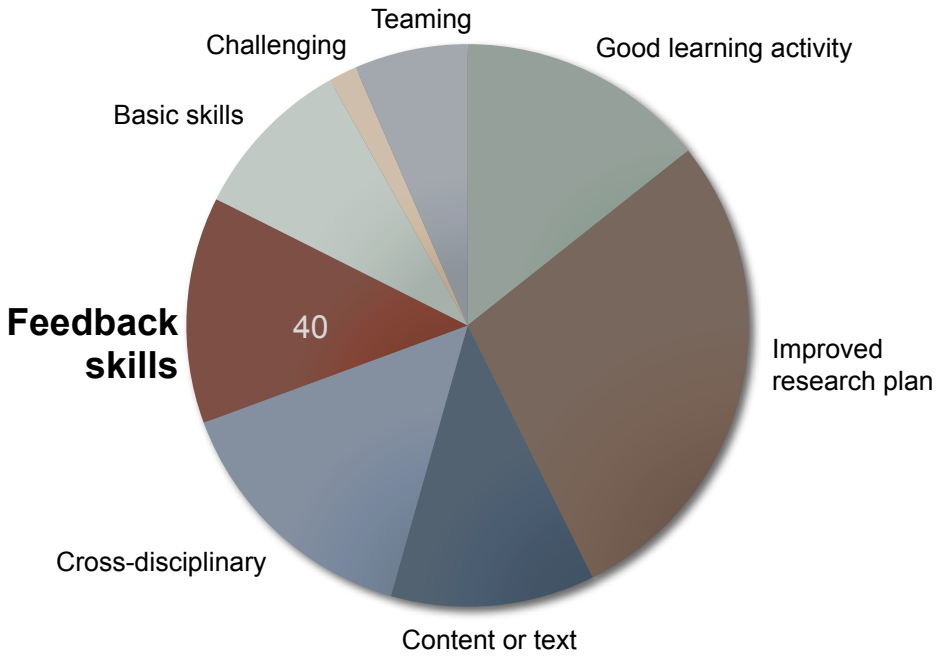
ISL impact of the assignment



"Reviewing and assessing other people's work was rather difficult at first, but with the tools given during the course I now have a more structured way of thinking regarding this."

"By assessing others work I have also discovered the flaws in my own work. In several cases I myself had made the same mistake in my own research plan as I critiqued my peers of doing. "

ISL impact of the assignment



"The hazard with an unbalanced feedback with regard to positive and negative comments is that the receiver might interpret the feedback as having done a worse work than he/she actually has done. I am inspired by my peers that did well in emphasizing good parts in the text, balanced with questions and statements indicating need for improvement."

"I also think that I will minimize cheering, because this wasn´t, for me so very constructive and didn´t lead to improvements."

Concluding today's presentation

- The assignment design is found relevant
- The students appreciate the opportunity to assume ownership of and improve their research plans
- The cross-disciplinary character of the assignment is largely beneficial but is also challenging
- The students seem to have aquired greater awareness of and ability to perform feedback
- The self-assessment procedure helps articulate and guide the learning process

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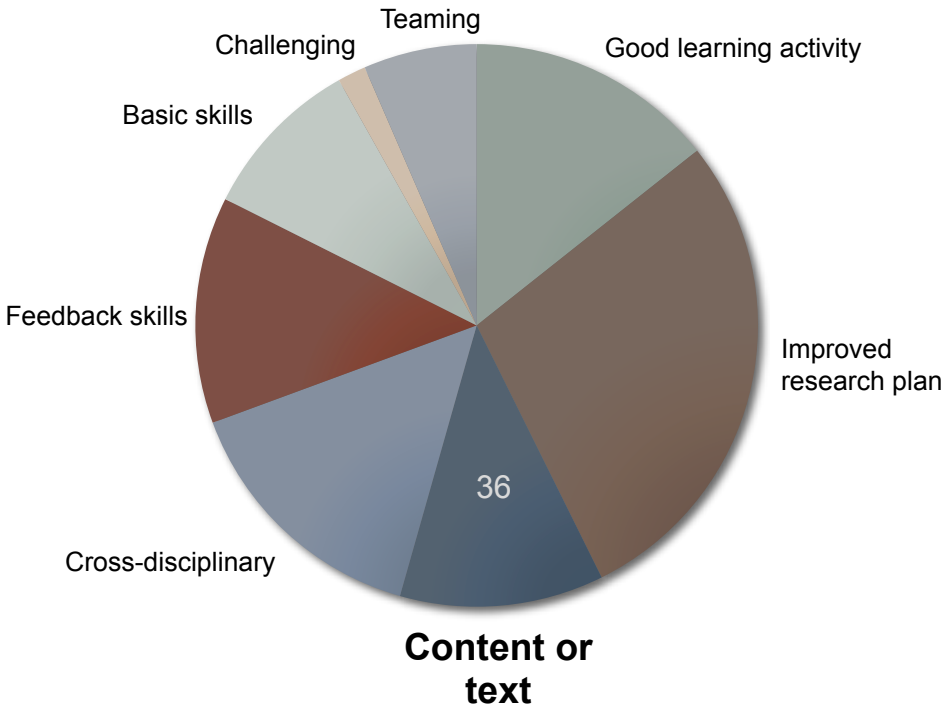
Thank you!

Our research questions

- Does comparing the ’feedback you provided’ to the ’feedback received’ stimulate analysis of student feedback proficiency?
- Has the assignment resulted in improved feedback skills? In what ways?
- Does the peer-review assignment enhance the learning process? In what ways?
- Has the assignment resulted in an improved research plan? In what ways?
- How are eventual improvements related to the peer-review process and the enhanced skills, respectively?

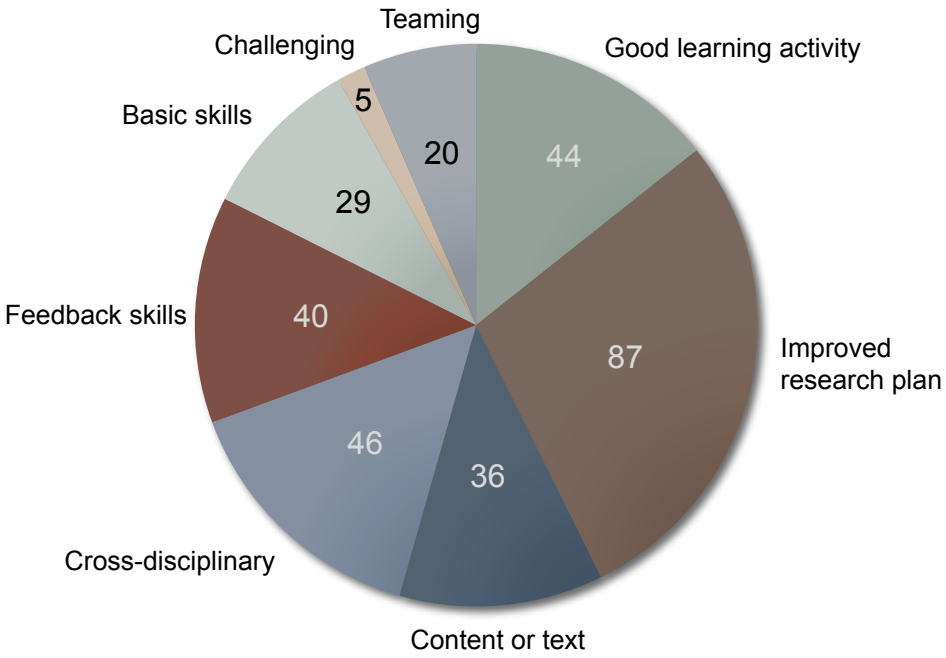
ISL impact of the assignment



"I think I had an idea before that scientific articles were supposed to be somewhat "impenetrable". But during the course I have realised that by writing readable/ understandable I will be able to get my message through in a better way."

"My writing skills has somewhat changed in that I have become more "explicit" in my writing, explaining important concepts more thoroughly, not use abbreviations as much etc. I have also reflected on how figures and tables can be very informing in an otherwise dense text and how/ if I could include that more in my scientific writing."

ISL impact of the assignment



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ISL impact of assignment 2012:1

negative comments

did enough to pass
dealing with idiosynchracies
research article more useful

pressed for time
group's area too broad
errant foci

research plan intact

appreciate peer response
learnt a lot
slides were useful
worked hard

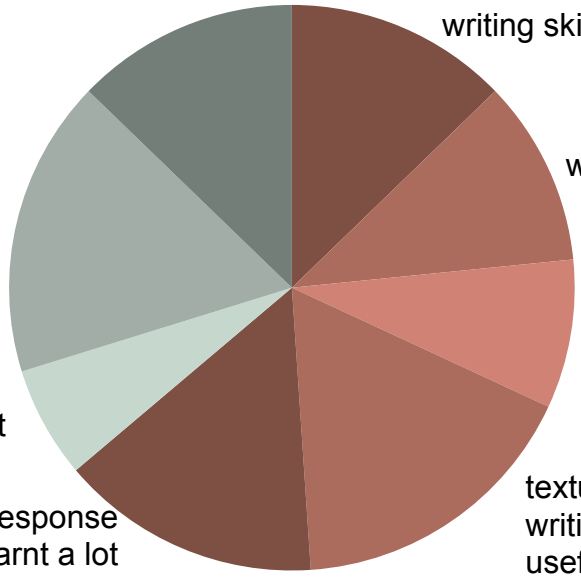
positive comments

writing skills improved

writing process awareness

specific topics

textual awareness
writing in English
useful for research plan
assignment an opportunity

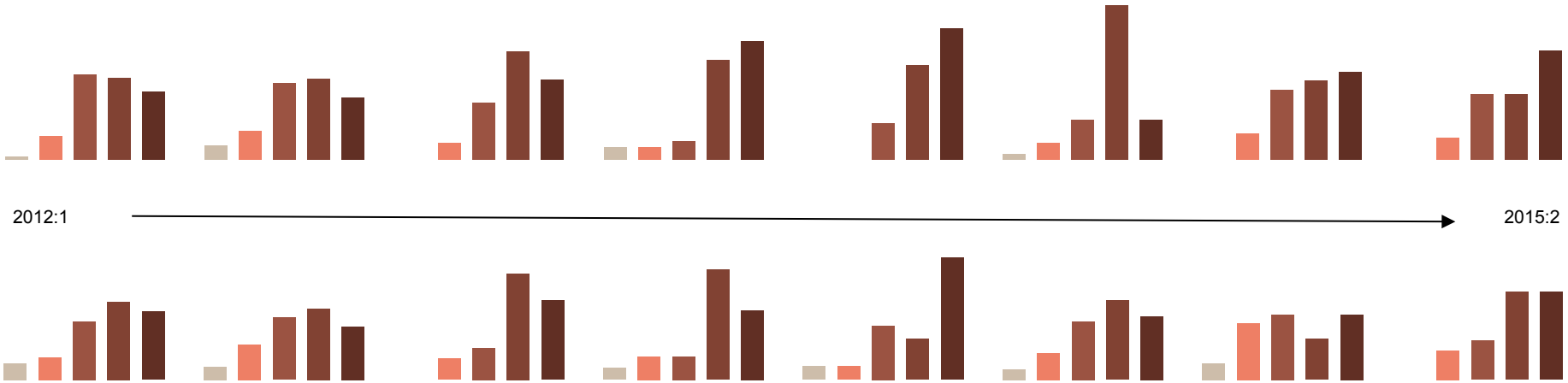


Changes between 2012 and 2013

- Initial problems solved
- Trust in course leader
- Self-trust in course leadership

Over time…

What is your overall impression of the course?



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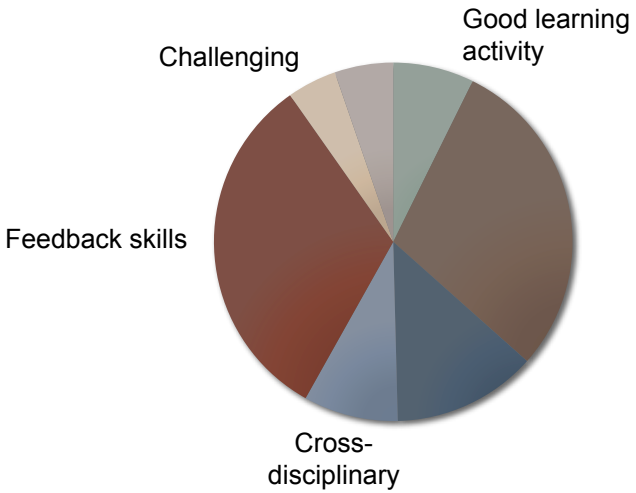
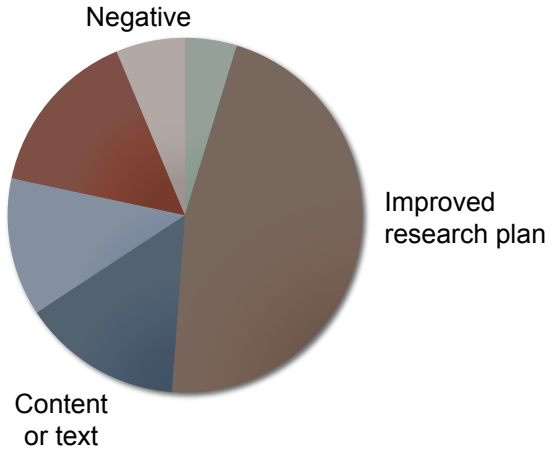
Understanding feedback

Giving feedback



Receiving feedback



Why change?

The previous course was:

- Too long (6 weeks, 15 HEC)
- Criticized in parts, by PhD students and supervisors
  - varied PhD student competence
  - varied PhD student research areas
  - ➔ all students did not benefit from all content