

Peer Assessment of Oral Presentations on the History of Life

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I am responsible and the sole teacher of a first year bachelor compulsory course in Basics and Invertebrate Palaeontology. This course is given in Block 2 with an average of eight hours a week for the student (four hours of lecture and four hours of practicals). In average, a little bit more than 40 students participate to this course and that means that I generally teach 16 hours a week, students being divided into three groups for the practicals. The first two years were really tough to prepare and I did not reach the level of satisfaction I expected from the students. The academic “Susan-type” students (Biggs & Tang 2007) enjoyed the course but clearly, I could identify many problems with the rest of the class. One of the many reasons was the lack of active teaching and participation of the students during lectures.

The goals of the lectures can be divided into two main parts: (1) providing the very basics of Palaeontology for which I designed new class activities this year and (2) providing some knowledge on the History of Life and raising their interest in Palaeontology and Evolution. Typically, History of Life pretty much falls within story-telling meaning that it is quite difficult to design in-class activities when you basically have to tell a story. So the past years, I ended up giving long two-hours lectures in a (too) silent classroom. Moreover, the preparation of these lectures was quite time-consuming for a non-satisfactory result. The idea of this project was thus to make this teaching fully active, to make students responsible of their own learning, and to prepare them for oral examination. Therefore, students were divided in groups and had to prepare an oral presentation and an essay on a topic. Ex-

pert and multiple peer assessment was attempted by providing an oral peer assessment form to the classroom.

Material and methods

At the beginning of the course, each group of three students had to choose one subject among a list of 15 different topics which nearly covered the whole History of Life (Origin of Life, Prokaryotes to Eukaryotes, Ediacaran fauna, Cambrian explosion, and so on). The material on History of life was provided in the text-book and with the addition of relevant literature on the different subjects uploaded on Absalon. Students were also advised to crossreference multiple Wikipedia webpages and other web resources which are very informative and quite dense in the field of Palaeontology.

For peer assessment, an oral assessment form (Appendix A) was built using criteria from several web resources¹(Howarth n.d., Draper 2010). The assessment form was uploaded on Absalon at the beginning of the course so that each group knew the criteria of evaluation and what they should focus on for their presentations. Students were then asked to write an individual essay on their topic and were advised to use the peer-reviews on the content and structure of their oral presentation to correct and/or update their essay. Assessment was only formative. To align this teaching with the final examination of the course, every student was asked a question about their topic.

This project was tested in the course Grundlæggende og Invertebrat Palæontologi during Block 2 of 2011-2012. A survey on the appreciation of this teaching by students was made online on Absalon as well as with an interview of seven students.

Reasons for the choice of oral presentations and peer assessment

On the Oral presentation in groups

As long as I could not expect first year Bachelor students to learn the whole History of Life in eight weeks besides fundamentals of Palaeontology and

¹ Peer evaluation sheet for oral presentations with summary of pros and cons.
<http://isucomm.iastate.edu/oralpeereval>

the main invertebrate fossil groups, it made sense to design teaching that would not be fully part of the penum but would still be useful to train students' skills, raise their interest in Palaeontology and give them the will to go deeper into this discipline. Knowing that "most people learn 95% of what they teach someone else, as opposed to 20% of what they hear" (Biggs & Tang 2007), dividing my students in groups and asking them to prepare their own lecture on a given subject was soon imposed as the best way to teach this part of Palaeontology. The reasons for the choice of these oral presentations by the students is thus summarized below:

- Making the teaching fully active.
- Making students responsible for their own teaching.
- Students learn 95% of what they teach someone else.
- Simplifying the teacher's job. No more lectures to prepare on this subject. The teacher must only prepare relevant literature.
- Enhancing the ability of the students to research and synthesize various information sources in the literature and web resources.
- Familiarizing students with oral examination.
- Students often find group projects more interesting than traditional methods of teaching (Conway et al. 1993)

On peer assessment

Alternatives in assessment forms have been introduced and tested in higher education in the past two decades. Among them, the use of self- and peer-assessment have proved to encourage students to become more responsible and reflective (Dochy et al. 1999). In particular, peer-assessment contributes to more involvement of the students and is beneficial for their learning (Orsmond et al. 1996). The reasons for the choice and benefit of peer assessment in this project are listed below:

- Favorizing more focus and concentration: the peer review assessments forces the students to pay more attention to the presentation (Howarth n.d.).
- Enhancing students' abilities to formulate an issue and structure their presentations (Dochy et al. 1999, Biggs & Tang 2007, Cho & MacArthur 2011).
- Providing immediate feedback and enhancing critical feedback skills (Dochy et al. 1999, Draper 2010).

- Providing a good teaching atmosphere: an empathy may be created between the teacher and the student through the challenges of assessing (Dochy et al. 1999, Biggs & Tang 2007, Draper 2010).

Results of the survey

An online survey was uploaded on Absalon on motivation and teaching climate, usefulness of the oral presentation, values and usefulness of peer assessment, learning and effective feedback through a series of 18 questions, ten of which are treated below with statistics (Q1 to Q10). The survey is based on the answers of 18 students and results are shown in percentages. In addition, an interview with seven students was conducted to provide feedback, hear the opinion of students on this form of teaching and get suggestions for improvement.

Intrinsic motivation and teaching climate

Q1: Did you find the lectures on the History of Life more, less, or equally enjoyable than the rest of the lectures in Palaeontology?

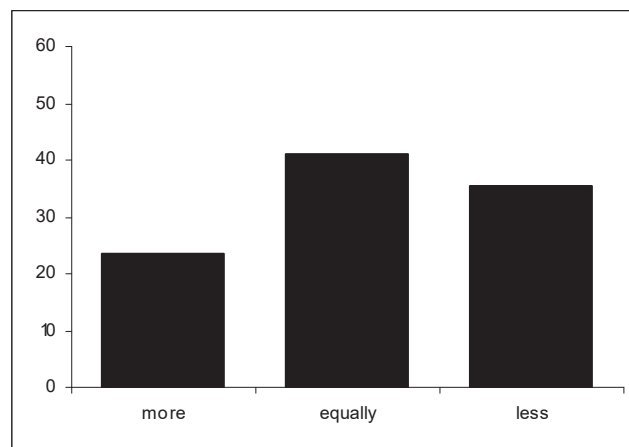


Fig. 21.1. Percentage of students in the different categories for Q1.

Students' answers to the question "Why?":

- "You have to focus on one specific area"
- "We had to go deep into our subject"

- “It was fun working and gathering information for.”
- “Once you’ve presented something, you’re definitely more keen on the subject and you know it better.”
- “It was nice to see different approaches to the task and learn from fellow students.”
- “It was actually more enjoyable because some of the subjects were explained in a very very simple way”.

These answers delineate more involvement of the students in the learning process of their topic and creation of a good climate atmosphere. But they did not particularly prefer that exercise to the traditional lectures.

Q2: Would you rather have lectures on the History of Life given by the teacher?

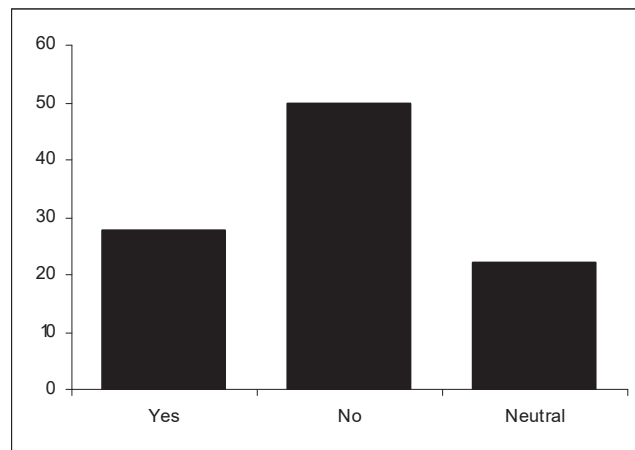


Fig. 21.2. Percentage of students in the different categories for Q2.

Specific remarks with respect to this question:

Pros:

- “There are pros and cons. It’s very good idea with us presenting our topics”
- “No, I wouldn’t. It is nice trying to make presentations and you have to study your topic very well, so I learned a lot, both about my topic, history of life in general and how to make presentations”
- “No, it was a chance to get deep understanding within one subject of the history of life”

Cons:

- “Not all presentations were well prepared. It was difficult to get an understanding of a lot of the different subjects.”
- “The way it was done was not a home run. It would have been better if done by the teacher. Uncomfortable, unsecured and stuttering students do not work well as teachers. Me included. I’m not supposed to be the teacher. I’m here to learn.”
- “I feel I would get a better overview if done by the teacher.”
- “Yes, simply because the students’ presentations were at such a low level from some of the groups. I had expected better presentations of university students.”

Students admit a stronger involvement in the learning of their own subject but some regret a lesser understanding of other topics than if delivered by a teacher. However, probably because of the good teaching climate created by the exercise, a majority would not have preferred lectures by the teacher.

Q3: Did you find the peer assessment enjoyable or annoying?

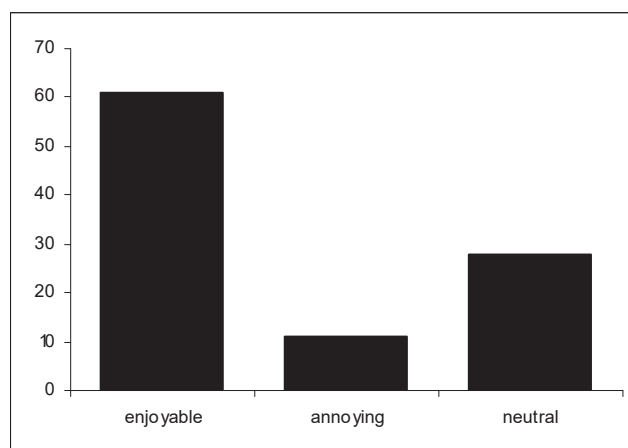


Fig. 21.3. Percentage of students in the different categories for Q3.

It seems that peer assessment participates to the construction of a good atmosphere.

Usefulness of the Oral presentations

Q4: Did you find it useful to have to prepare your own lectures?

Specific remarks on the preparation of students’ lectures:

Pros:

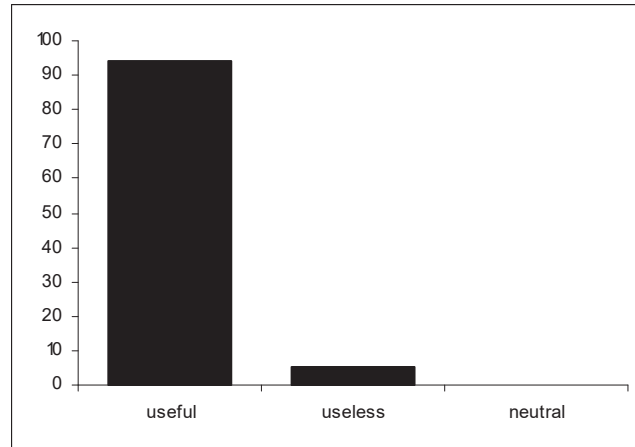


Fig. 21.4. Percentage of students in the different categories for Q4.

- “Have to go deep into the stuff”
- “you’re forced to get to know your topic”
- “It was an interesting process to figure out what was the most important to say and what could be left out”
- “The exercise was useful for learning to communicate a scientific subject.”
- “It also gives some preparation for the exams”
- “I learned more about my strengths and weaknesses”
- “I became interested in the subject. I was an active part of my learning. I had to prepare more”
- “The preparation stage was fun to work with the subject in my own hands”
- “It was something I was not familiar with and it was great exercise for future teaching”
- “Learned more. And group work was a good way to discuss the topic”
- “I feel like I definitely got an understanding or the different hypotheses and controversies pertaining to my subject – and I also got to gain insight into how hypotheses are formulated and tested”

Cons:

- “No, it added extra stress.”

Once again, these answers mainly delineate more involvement of the students in the learning process of their topic and creation of a good climate atmosphere through the group work.

Usefulness of peer assessment

Q5: Did you feel that doing this oral peer assessment was useful?

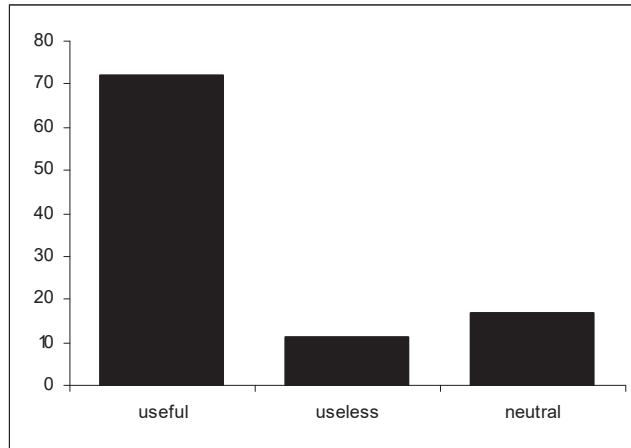


Fig. 21.5. Percentage of students in the different categories for Q5.

Students' answers to the question: "In which ways was peer assessment useful?"

Pros:

- "It was good to get some constructive criticism after."
- "It is fun to share the teacher's own conclusions on assessing"
- "I became aware of different criteria that are important when presenting."
- "The good comments and bad comments were very helpful"
- "I can make my next presentations much better"
- "Yes, but I would have liked more space to write comments."

Cons:

- "Knowing that you have to fill out the oral peer assessment kind of takes the focus a little bit away from the presenting team and the topic they are presenting because some people fill it out during the presentation."
- "It was very inconsistent between teacher and students assessments for our group."
- "It was hard sometimes since I don't like being too harsh against my fellows and yet, I don't want to be too soft. . . it's difficult"

- “Again, not really. We’re not here to become teachers. We’re not here to get comfortable in front of an audience. We’re here to be taught Geology.”

Most of the students found it useful but only few of them were actually able to explain why. The few answers I got fall into constructive criticism and empathy with the teacher, which again, participates in building a good teaching climate.

Q6: Did you rely on the oral peer assessment form to design your own presentation?

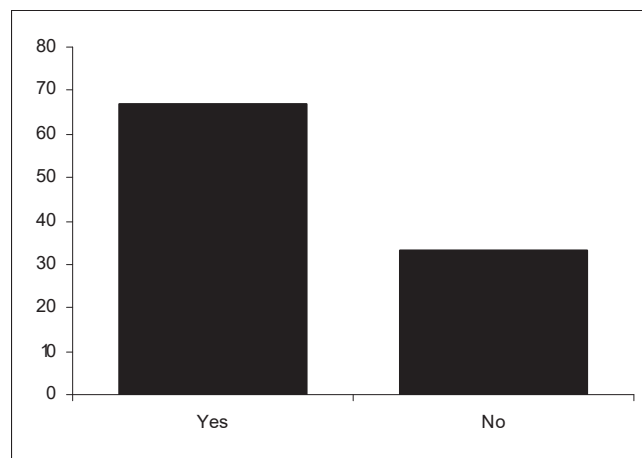


Fig. 21.6. Percentage of students in the different categories for Q6.

Students’ answers to the question “In which ways?”:

- “We knew how to structure the presentation with introduction, conclusions and perspectives or how to formulate an issue”
- “We could focus on the delivery, on how to present an oral in front of a crowd. I feel more prepared to do that now”

Most students instinctively identified the criteria in the oral peer assessment form as a guide to prepare their presentation, which of course, was one of the objectives.

Q7: Did the peer assessment help you focusing your attention on your fellows’ presentations?

Specific remarks with respect to this question:

Pros:

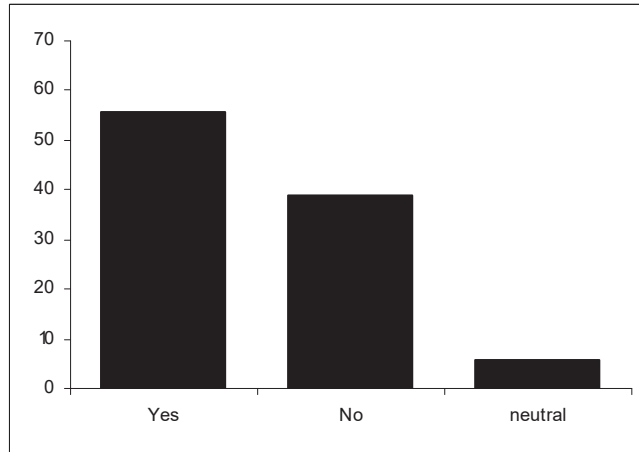


Fig. 21.7. Percentage of students in the different categories for Q7.

- “I was more actively listening to the other presentations, as I had to assess them.”

Cons:

- “Knowing that you have to fill out the oral peer assessment kind of takes the focus a little bit away from the presenting team and the topic they are presenting because some people fill it out during the presentation.”

Most students found it helpful to focus their attention but some actually found it distracting.

Q8: Did you find the feedback from your peers useful?

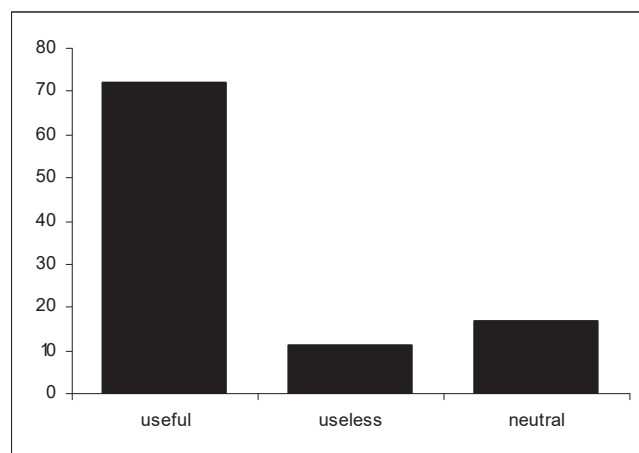


Fig. 21.8. Percentage of students in the different categories for Q8.

Specific remarks about the usefulness of their peers' feedback:

Pros:

- “It gave me confidence to see the positive remarks and feedback from the others. I can also use some of the critique they gave for later.”
- “Definitely. People were really good giving constructive criticism”
- “Yes, good to hear some good and not so good things on our work”
- “Good In terms of preparing lectures and ppt”
- “Yes, for future, I know some issues and how to stand in front of a crowd.”
- “It’s actually the kind of exercise I will now try to use the next times I have to do a presentation”

Cons:

- “Most of the interesting feedback was from you”

Students mostly value constructive criticism here but some were doubtful about the fairness and accuracy of their peers' assessment.

Q9: Did you consider correcting your essay after getting the feedback from your peers?

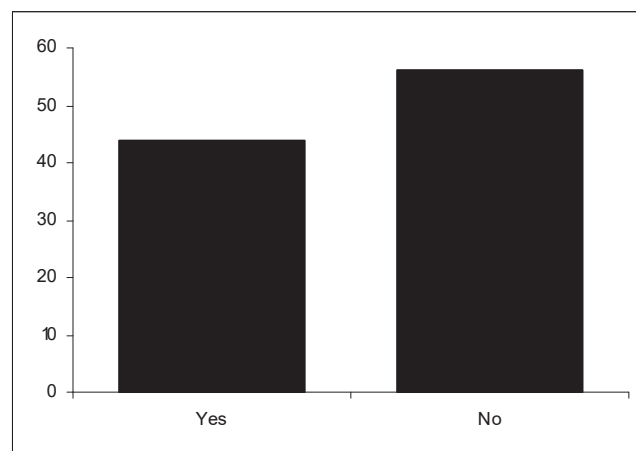


Fig. 21.9. Percentage of students in the different categories for Q9.

Specific remarks about using the feedback for correcting the essay:

- “Yes, I corrected the structure and sequencing”
- “I understood that the main purpose of the feedback was to correct the essay. Unfortunately, I got absolutely no feedback from my fellows to do so.”

Less than half of the students used the feedback to correct their essay and those who did remarked that they only corrected the overall structure. Several students deplored that they did not get more feedback on the content from their fellows.

Students' learning

Q10: Do you think you learnt more, less or equally with this form of teaching than if you had lectures given by the teacher?

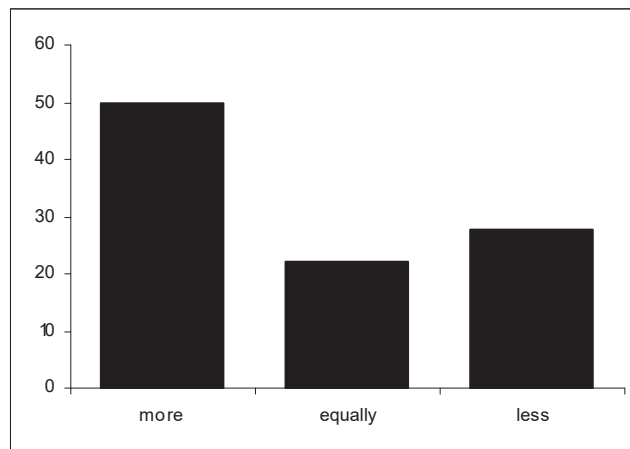


Fig. 21.10. Percentage of students in the different categories for Q10.

“What did you learn from peer assessment?”

- “It is fun to share your own conclusions on assessing”
- “I became aware of different criteria that are important when presenting.”
- “That way, we wanted to make our presentation the best as possible”
- “It was good to be more than one assessing on the same sheet. We could discuss that. It helped me overcome the problem of being too soft/too harsh”

These answers delineate more involvement, better understanding of the overall oral exercise and a good teaching climate.

Suggestions of students for improvement

On the organization of Oral presentations

- “The articles given were difficult. We managed but it would have been nice with an introduction to how to read an article from Science, Nature or another scientific journal. I also don’t know how to use references, it would be nice to know how to present the information in the presentation and in the essay.”²
- “It was difficult to know whether the other groups covered well their subject or not because I don’t know enough on other subjects. Every group should prepare one page of summary on their topic to be provided before their presentation.”
- “Students should upload their powerpoint presentation on Absalon in advance, maybe two days before their presentation.”
- “We need more guidelines to do our presentations because our topic was huge and it’s difficult to synthesize.”
- “Oral presentations should be longer, maybe 15 to 20 minutes instead of 10. We managed to stay in time but it was frustrating we could not go deeper in our subject. There was a lot more we had to tell.”
- “It would be great to get some sort of compendia of all the work that we had done on the History of Life. Either something you made or a collection of what each group has written and presented on their topic.”

On the oral peer assessment form

- “There should be more focus on personal remarks and suggestions on the assessment form. The scale 1 to 5 of the assessment form is not that useful.”
- “I’m not sure the scale of 1 to 5 works well. At least not without the possibility to add extra remarks below each category. It would have been nice to know why we got that specific mark.”

² This 1st year bachelor student actually went so deep into his topic that he was already ready to learn how to prepare professional presentations and writing. Guidelines on essay writing and presentation of references will be furnished next year.

Discussion

Students' perceptions of the oral exercise

Overall, students were quite positive about the oral exercise. More than half of them found it more or equally enjoyable than teacher's lectures and would not have preferred having lectures given by the teacher on the History of Life. Almost all of them valued the usefulness of preparing their own lectures by digging deep into the subject and preparing them for oral examination. Many of them found this preparation stage in groups truly enjoyable. A majority of the students do not think they would have learnt more with lectures given by the teacher and many of the remarks made by students in the survey valued how much they learnt on their own topic but also on how to structure, build and deliver an oral presentation. With respect to intrinsic motivation and quality of learning, it appears clear that the exercise created a very good teaching climate and that students learned a lot. Complaints about the low level of some of the presentations and the feeling that the teacher might have given a better overview are of some concern, but since I do not expect the students to have a detailed knowledge of the whole History of Life, it seems that overall, there are more benefits than disadvantages. Also, providing a better overview to all students can be easily overcome by a reorganization of the exercise as suggested in the perspectives for improvement.

Students' perceptions of peer assessment

A vast majority of the students also found the peer assessment very useful although it does not appear clearly from their answers what exactly were the outcomes of this exercise apart from focusing their attention on their fellows on which 60% of them agreed on. One of the main advantages of peer assessment in this project appears to be that students become more involved. A few of them actually mentioned constructive criticism, extensive feedback and empathy with the teacher as already mentioned in the literature (Dochy et al. 1999, Biggs & Tang 2007, Draper 2010). Several of the students' answers about peer assessment also show that it participates actively into building a good teaching climate. Few students found the peer assessment useful to correct their essay. Some corrected the structure and sequencing only. Fellow students lacked the knowledge to provide feedback on the content of the different topics.

Fairness and accuracy of peer assessment

From the survey, it appears very clearly that this form of oral peer assessment should not be used in a summative way. Fairness and accuracy were seen by students as some of the negative aspects of this exercise. Actually, fairness and accuracy of peer assessment are well-known issues in the literature (Stefani 1992, Conway et al. 1993, Orsmond et al. 1996).

Perspectives for improvement of this exercise

There were some issues with respect to the organization of the presentations and peer assessment. Also, I deplored the lack of discussion after oral presentations. Students did not dare asking questions to their fellows and I was the only one doing so. All the suggestions for improvement I got from my supervisors were also raised by the students and many more came from the survey and the interview. This shows the importance of feedback from the students during and after a course. Students could identify very accurately what worked and what did not work and they provided a lot of good ideas for improvement.

Organization of the oral presentations

- There is a need for more specific but also more accessible literature.
- More guidelines should be provided to help students preparing.
- Powerpoint presentations must be uploaded on Absalon at least two days before the scheduled presentation to avoid stress and allow access to other students.
- A one-page summary of each group's topic must also be uploaded in advance alongside the presentation to provide an overview of the topic to everyone.
- At the end of all the presentations, the teacher should build a compendium.

Oral assessment form

- There should be more focus on personal remarks and suggestions for the different criteria. More blank space should thus be added on the assessment form.

- The ranked criteria on delivery apply to the group and not to the different members of the group. The teacher should try to find a way to re-organize the assessment form so that members get more personal feedback from their peers.

Essay writing

- The essay was considered as too long by many students. Five pages should be more suitable.
- Students should be better explained that the use of peer assessment is not only to help them correct their essay.
- This exercise could eventually be combined in the future with peer review of writing.

Promoting more discussion between students

Setting up a deadline for the uploading of powerpoint presentations and a one-page summary on the different topics long before the orals should help promoting more discussion at the end of the presentations. The students should be asked to read these summaries before coming to the lectures. Another good suggestion made by my supervisors is to appoint a student as a chairman who will be in charge of introducing the presenting group and subsequently chair the following discussion. Some students considered that the History of Life should have been in the pensum so that they could be more aware of the content of their fellow's presentations but since several students commonly complain about the amount of informations they need to know for the exam, I do not think this is a good idea. Several students said that they do not wish to ask questions because they do not want to make their fellows more nervous than they already are. More experience is needed on the overall exercise to test students' discussion.

Conclusions

From the survey and the interview with the students, it appears that the evaluation of this teaching project is quite positive. Group work and peer assessment created a good teaching climate. Active participation of the students in the preparation of the oral presentations fostered more involvement and motivation for the discipline. Students felt they learned a lot on their

topic and only a minority would rather have lectures on History of Life given by the teacher. Students appreciated to be trained for oral examinations and learned on their strengths and weaknesses from the critics of their peers. Peer assessment promoted constructive criticism but is generally not considered fair and accurate by the students. Thus, it should only be used in a formative way, at least for this exercise. Many suggestions were made by the students for the improvement in the organization of the presentations and of the assessment form that will be implemented next year. It is hoped that this reorganization will promote more discussions among students during the lectures. In addition, peer review of individual essay writing will be tested.

A Oral peer assessment form used in this project.

Assessment scores

Overall Structure

Introduction	Clear outline of topic, issue and content	Interesting introduction but purpose of the subject not clear	Unclear introduction		
	5	4	3	2	1
Sequencing	logical, easy to follow, with effective transitions	line of reasoning but with needless digressions	Uncertain, difficult to follow		
	5	4	3	2	1
Conclusion	Clear summary of key points	Uncomplete summary	Inadequate summary		
	5	4	3	2	1
Perspectives	ends on a high note with perspectives	few perspectives	uncertain ending, flat stop		
	5	4	3	2	1

Content

subject well covered with evidence throughout	subject tackles with few angles only	poorly investigated, lacks evidence and key references			
5	4	3	2	1	0

Delivery

Voice	Clear, distinct and projected toward the audience	Loud enough to attract attention	Muffled and inaudible		
	5	4	3	2	1
Body language	Variations in tone and pace with accentuations on key points	Few variations in tone and pace	Monotonous		
	5	4	3	2	1
Visual aids (illustrations, animations)	Maintains eye contact and interacts with audience	A few eye contacts and interaction	Avoids eye contact and interaction		
	5	4	3	2	1
Pace of the presentation	Appears confident in posture	Neutral posture	appears very uncomfortable		
	5	4	3	2	1
Visual aids (illustrations, animations)	Professionally prepared and entertaining	Appropriate	Untidy and unstructured		
	5	4	3	2	1
Pace of the presentation	Clear and concise	Sufficient	Difficult to interpret		
	5	4	3	2	1
Pace of the presentation	Suitable and effective pace, time respected	A little bit too slow or too fast	Too hurried or too slow		
	5	4	3	2	1

Personal remarks

Please, provide three key strengths of the presentation

- 1)
- 2)
- 3)

Provide three suggestions for improvement (aspects that can be improved or developed by the presenters)

- 1)
- 2)
- 3)

All contributions to this volume can be found at:

http://www.ind.ku.dk/publikationer/up_projekter/2011-4/

The bibliography can be found at:

http://www.ind.ku.dk/publikationer/up_projekter/kapitler/2011_vol4_nr1-2_bibliography.pdf/