Professional development: giving effective feedback in higher education

Eindhoven University of Technology (TU/e) Bachelor College project on 'Giving effective feedback to students'

Manual giving effective feedback

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Introduction
This manual was developed during an innovation project commissioned by the Bachelor College of the Technical University of Eindhoven (TU/e). The overall aim of the project was to support teachers in providing effective feedback in their educational settings when they interact with students.

The focus is on *formative feedback*: feedback for learning, during the learning process. It is not about written feedback on reports; this feedback mostly focuses on content and structure and requires other skills of the teacher than described in this manual.

The manual can be used by novice teachers, teachers with little didactical knowledge and skills and experienced teachers.

This manual is not a recipe for providing effective feedback. It is an instrument to make the teacher aware of all the ways he is already giving effective feedback, and gaining inspiration to expand these skills.

Model
In the model presented in this manual, feedback means everything the teacher does with the intention to narrow the gap between the current and desired situation of the student. Feedback can be explicitly given individually to the student by saying 'I'm going to give you some feedback on the work you've performed.'

However, the teacher can also narrow the gap between current and desired situation during lectures, tutorials or other teaching activities in a more implicit way: asking a question to let the student think of the next step to solve a problem, giving a hint to help solving the problem, using clicker-questions during a lecture so the student can diagnose his own level… This model is about providing feedback in different teaching situations, where teacher and students are in contact with each other.

If a teacher wants to gain more insight in his own feedback skills, he can use the (self-)assessment form which is based on the same model.

Giving effective feedback

Feedback is found to be one of the most important influences on learning. In other words: providing effective feedback is a powerful tool to reinforce student learning. However, providing effective feedback (i.e., reinforcing learning) is not easy and won't always result in learning. For example, the effectiveness of feedback depends on the type of feedback and the way it is given.

The most important *goal* of feedback is to reduce the gap between the current and desired situation. That is: reducing the gap between what students know or can do and what students should know or do in terms of learning outcomes. This means that students should know what is desired of them, where they are, and what they can do to close this gap.
In the words of Hattie and Timperley (figure 1): effective feedback should answer three important questions:

1. how am I doing (feed-back): that is knowledge of and insights into the current situation
2. where am I going (feed-up): that is knowledge of and insights into the desired situation
3. where to go next (feed-forward): that is knowledge of and insights into how to close the gap between current and desired situation
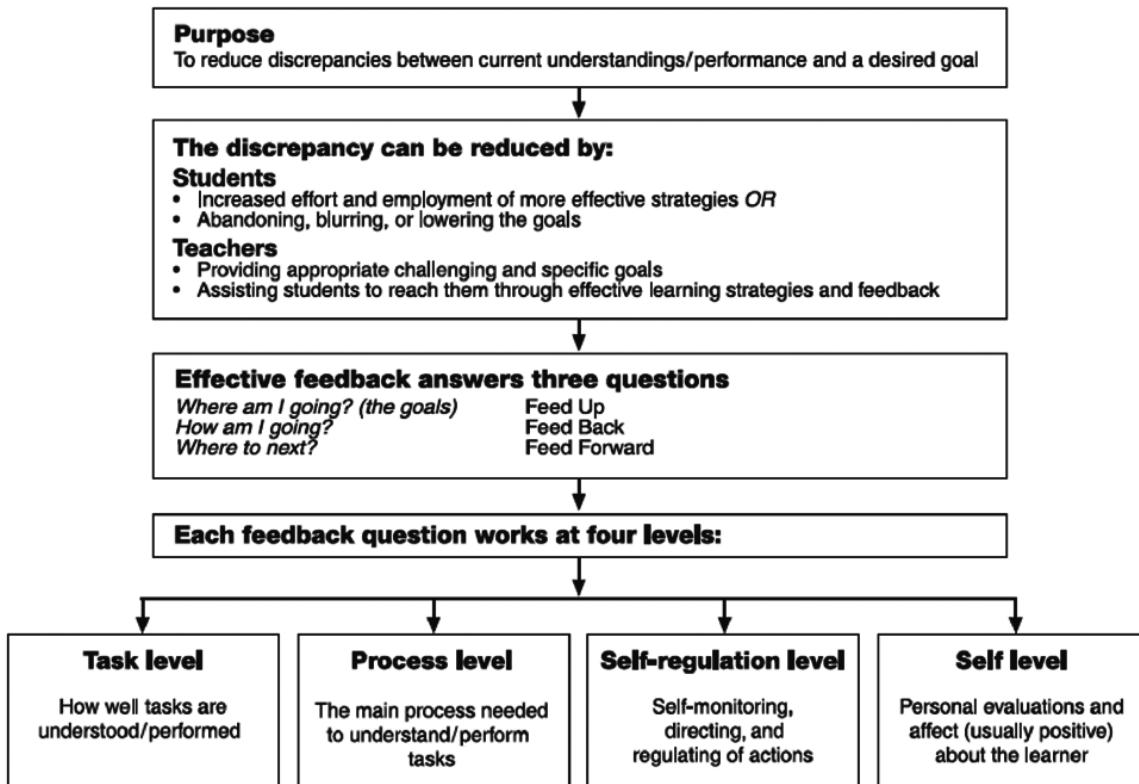

Figure 1: Model of Hattie & Timperley (The Power of Feedback, 2007, p.8)

Second, Hattie and Timperley explain that feedback can be given at four different levels: task, process, self-regulation and person. Feedback at each single level will have a different effect. Feedback on the person-level usually won't result in learning, but is often present in educational settings. It is not very effective because it usually contains little task-related information. Hattie and Timperley recommend NOT providing feedback at the self-level, because in a way it can be interpreted as judging. However, feedback at the self-level might be effective *if* it contains information on strong characteristics or skills of a student that supports self-knowledge, for example in case of personal coaching on bachelor end projects. Important is, not to use general words, but make your message to the student specific and justified.

Table 1 (p.4) shows the definitions of the four levels, explains teacher feedback behavior and provides examples.
The teacher should always try to give feedback at the level on which the student needs feedback to reduce the gap between his current and desired situation. Feedback will namely be most effective when given on the level the student needs at that specific moment. This need depends on the learning process of the student and of the gap the teacher diagnoses. For example, when a student does not understand a concept of mathematics, the teacher should provide instruction instead of giving feedback. If the student is working on a task with the same concept, the teacher could provide feedback on the performance of the student: are his answers correct or wrong (task level)? If the student is more familiar with the concept and working on tasks, the teacher could also provide feedback that supports the student in using certain strategies to work with the task (process level). For example, how effective is the student's strategy, are there other possible strategies, and how would that influence their progress on the task (process level)? Then, imagine the student applying the same concept in his bachelor project. As a teacher, your feedback could be more at the self-regulation processes: supporting the student in performing the project in a confident, self-steering manner.

Furthermore, Hattie and Timperley suggest that over the course of a module, feedback needs to move up the levels. So, first feedback is given at the task level and if students master the task, feedback is given at the process level. Third, feedback moves up one more level: to self-regulation where students steer their own learning process. See also the example we gave in the former paragraph. Of course, choosing the level of providing feedback also depends on the time available, and on aspects such as where in the module you are/the student is. One could also imagine that feedback in the start of an education is more at the task level (consider first year students), while students who are working on their bachelor or master projects might benefit more from feedback at the process and self-regulation level. Or, when problem based education is the educational model, feedback on the process and self-regulation level is important for students to learn how they can achieve the learning outcomes.

Table 1: levels of feedback. Appendix 1 contains a table with illustrative examples of each cell.

	Person directed at the student himself; it rarely contains relevant task-information is and therefore hardly effective. Teacher praises without specifying the behavior the praise is about.	**Task** feedback about how well the task is being accomplished or performed, feedback on content of assignments, i.e. right/wrong calculations, right/wrong understanding of definitions.	**Process** feedback specific to the processes underlying the tasks, providing deeper understanding. Teacher provides feedback on thinking activities (how to apply, how to analyze)	**Self-regulation** feedback to the way students monitor, direct and regulate actions towards the learning objective. It involves interplay between commitment, confidence and control to achieve the learning outcomes. The teacher provides feedback on how the student manages himself to find the right answers, how many help he needs in this process and how he can do this independently next time.
Where is the student going?				
How is the student doing?				
What to do next?				

Applying the model

Ideally, teachers should give feedback on the task, process and self-regulation level during teaching activities. However, for example, giving feedback on the self-regulation level in a large group during a lecture is not that easy.

When designing a teaching activity, it is therefore important that the teacher thinks about the next questions:

- What is the current situation of the students, according to prior teaching activities?
- How can I check the current situation of all the individual students? (intermediate test, clicker questions, assignments, intermediate presentations/reports, reflections, peer-assessment,….)
- How can I give the students individual and immediate feedback? (answer models, computerized reactions, meetings in which the products and processes are being discussed, peer-feedback, ….)
- On which levels the feedback is most effective during this teaching activity?
- How can I help the student answer the questions "where am I going", "how am I doing" and "what to do next"?
- How can I check the effects of the feedback?

Being aware of the different levels of feedback and the three central questions should improve the effectiveness of feedback activities of teachers.

When providing feedback, take the next topics into account:

- **Timing of feedback:** in general the effects of immediate feedback seem larger than the effects of delayed feedback, so give feedback as immediate as possible. Different learning theories show different opinions about the timing of feedback, but they all state that feedback should be provided frequently and when appropriate. Appropriate means that feedback should be provided when the learner still can use it to improve his work, for instance before the final exam.
- **Effects of positive and negative feedback**: both positive and negative feedback[1] can be powerful tools in learning. Positive feedback on the self-regulation level can improve the commitment to the learning outcomes and thus motivate students to take responsibilities in achieving them. Corrective (negative) feedback has been noted to be very effective on the task level. Try to balance the positive and negative feedback on the different levels.

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[1]**Positive and negative feedback:** *"Strictly speaking, negative feedback does not imply 'bad,' and positive feedback 'good.' Negative feedback indicates that you should do less of what you are doing or change to something else. Positive feedback encourages you to increase what you are doing, which can go out of control (over excitement at a party, fighting or having a row). If you are crying, feedback from those around may cause you to dry your eyes and put on a brave face (if feedback is negative) or weep unashamedly (if feedback is positive)."*
(David Gill and Bridget Adams, ABC of Communication Studies*, 2nd ed. Nelson Thomas, 2002)*
Examples of negative feedback on task level: written corrections on a concept report, describing the works weaknesses, or giving a (negative) grade on work.

- **Feedback in (large) groups**: mostly feedback in large groups is on the task level and on the person level. Feedback on the person level contains no relevant task- or process information. Compliments can be given ('good job'), but should always come together with feedback on other levels. Feedback is being given in different ways, but also being received in different ways. Especially in large groups (i.e., a lecture) and/or in groups with great diversity [2] the teacher is not able to interpret how every individual receives the feedback or what the individual process and self-regulatory skills of the students are. For example, students from a collectivist culture prefer to have implicit feedback, and students from an individualist culture prefer to have direct feedback. Therefore, it is hard to find the right way and level of feedback in large groups. Be transparent in your way of giving feedback, so every individual knows what to expect. Transparent means, that the learner knows he receives feedback, that the feedback is related to the learning outcomes, and that the learner can ask for more information if necessary.

General rules

Be specific, clear, concrete and invite feedback receivers (i.e., the student) to join in a dialogue concerning the feedback.
Feedback is found to be most effective when given on the level the student needs at that moment. As a teacher you have to interpret the needs of the student and adapt your feedback to that.

Examples of feedback

Applying the model in different educational settings shows that you can use different levels in one feedback moment. Appendix 2 gives some examples of feedback on one or more levels. Also the quality of the feedback is analyzed.

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[2] Diversity occurs in many ways: a variety in prior knowledge, age, motivation but also diversity in cultures. In this manual, the cultural aspects of feedback are not described. A general advice for teachers in multicultural settings is that they describe the way feedback is given and what they expect from students in giving/receiving feedback. If possible, ask the students what they are used to and how you can help them to give and receive effective feedback.

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Appendix 1

Table 1: Illustrative examples of the combination of questions and levels of feedback

	Self directed at the student himself; it rarely contains relevant task-information is and therefore hardly effective. Teacher praises without specifying the behavior the praise is about.	Task feedback about how well the task is being accomplished or performed, feedback on content of assignments, i.e. right/wrong calculations, right/wrong understanding of definitions.	Process feedback specific to the processes underlying the tasks, providing deeper understanding. Teacher provides feedback on thinking activities (how to apply, how to analyze)	Self-regulation feedback to the way students monitor, direct and regulate actions towards the learning objective. It involves interplay between commitment, confidence and control to achieve the learning outcomes. The teacher provides feedback on how the student manages himself to find the right answers, how many help he needs in this process and how he can do this independently next time.
Where am I going?	- giving encouragement	-discussing the learning outcomes with the student -discussing the criteria with the student	-discussing the learning outcomes with the student on process level: how to achieve the learning outcomes? -discussing strategies students used or can use to perform a given task	-discussing the learning outcomes with the student: how to achieve the learning outcomes independently? -asking the student how he is going to achieve the learning outcomes -asking the student what he needs to achieve the learning outcomes
How am I doing?	-giving affirmation -praising -giving information about the self as a person	-distinguishing correct from incorrect answers -giving feedback on the content, structure or other criteria such as the quality of work, neatness and depth related to the task accomplishment -asking questions and give statements	-giving information about students' strategies for error detection -helping students learning from errors -giving information and asking open questions in relation to the procedure, method or process used to accomplish a task or create a product -giving information about possible alternative strategies	-giving information related to a task or performance that leads to greater skills in self-evaluation -giving information that promotes confidence to engage in more challenging tasks or to advance a deeper understanding of the task -giving information about the way the student monitors, directs and regulates actions to accomplish the learning outcomes -stimulating the student to ask questions
What to do next?	-motivating	- helping building more knowledge, I reteach if necessary -helping to acquire more or different information -helping to find ways/ next steps to accomplish	-motivating the learner to look for different strategies -motivating the learner to find errors himself -asking open questions to help the student to	-helping students dealing with feedback and translating it into new/better ways for self-regulation

		the task -giving directions to obtain more information about various sources	find out what the next step is	
Examples	-You are a great student -Well done -Overall very good -Keep up the good work -You've put a lot of effort in the assignment	-Explain your graphic to me -I agree with your data, but try to consider alternative conclusions also -Your report wouldn't pass the assessment right now, let's take a look at the criteria -What would make your report even better is… -You've passed the test -You need to include more about… -You could add some quotes -You focused on one point and concluded well -Your handwriting is neat -Good proof reading and writing of words and sentences	-Where did you find all this information? -What could you do to make your arguments more convincing? -I didn't receive your assignment. Can you tell me what happened? -This passage may make more sense if you use the strategies we talked about -A more detailed description is needed to explain the process -If you do this again, you could use more examples	-What would be your next step? -How did you come up with that idea? -You know the criteria of a good argument. See if you have implemented all the criteria in your argument. -Do you know what to do to improve your report? -What are you going to do next week, what products you will deliver on our next appointment? -What would you do differently next time? -If you had to do this assignment all by yourself next time, which steps would you take then?

Appendix 2

Table 2: examples of feedback (Based on Brookhart, 2008)

Feedback	Level(s) and quality of the feedback
Each paragraph should have one main idea, and that idea goes in the topic sentence.	*Task* This is an example of good feedback if the student needs this information about what paragraphs should contain.
Your details strongly support your claim that we should recycle newspapers. That's great. Where did you find all those facts?	*Task, process, self-regulation* This is an example of good feedback. It confirms for the student that the work meets one of the targets (strong supporting details) and connects this success to student effort (the student did research to find out facts, and the teacher noticed).
This report probably wouldn't convince a reader who didn't already agree we should recycle. What else could you do to make a more convincing argument?	*Task, process* This is an example of good feedback for a student who the teacher believes already knows what to do (look up more information in more sources). Such a response makes the student the one to decide on the regulation. It would not be good feedback if the teacher truly did not think the student knew what was missing.
This report probably wouldn't convince a reader who didn't already agree we should recycle. I would want to know more about the effects on the environment and the cost of recycling.	*Task, process* This is an example of good feedback for a student who the teacher believes does not know what is missing in his or her report. It suggests what the student could do to improve the report.
Your report was the shortest one in the class. You didn't put enough in it.	*Task, process, self* This is an example of bad feedback. The teacher aims to communicate the same feedback message as in the previous box. Saying it this way, however, implies that the student is competing with others (as opposed to aiming for a learning target) and that the reason the work is poor is that the student "did something bad." The student ends up feeling judged and not motivated to improve.
This report is better than your last one. You've made it clear you think we should recycle newspapers. What would make it even better is more facts about what would happen if we did recycle—more about how many trees we would save, things like that	*Task, process* This is an example of good feedback that uses self-referenced comparisons in conjunction with descriptive information about the task to show struggling students that their work is making a difference. Then, when the teacher suggests what they need to do next, they may be more likely to think they can do it. Notice too that the teacher makes one suggestion (and probably also made one last time: it's important to be clear about the main point). Giving feedback about small steps helps students who would be overwhelmed by having to improve in many areas at once.
Your report is the best one in the class! You can have a "free pass" for your homework tonight.	*Task, process* This is an example of bad feedback. It does not tell the student what is good about the report. It also rewards the student by changing an unrelated assignment.
Your report is late! What's the matter with you?	*Self* This is an example of bad feedback. Of course there is a problem if work is late. However, put yourself in the student's position. Would this comment really inspire you to finish your work and

	turn it in?
(Name), I don't have your report. Can you tell me what happened?	*Self* This is a better example than the previous one of feedback to deliver the message that work is late. Examples of "bad feedback" are almost never appropriate, but without context, that's as much as we can say about the chart. Even the examples of "good feedback" wouldn't be appropriate for students who didn't need to hear them.
I love the chart that starts with trees and ends up at the recycling plant (instead of back at more trees). It follows the relevant section of your report and illustrates the complete cycle so clearly! How did you come up with that idea?	*Task, process, self-regulation* This is an example of good feedback that does what the previous example may have intended to do. It selects an unusual, positive feature of a good report, notices that this must have been an original idea, and asks the student to reflect on how he or she came up with the idea. Having the student name the strategy used will strengthen this student's self-regulation abilities and probably increase self-efficacy.
You're showing a lot of self-confidence in standing in front of an audience, by your body language	*Self* This is an example of good feedback on the self-level: it contains information about the person, and is justified with specific findings. This can be used in personal coaching, for example in a bachelor end project.