The following guide (overleaf) was drafted for use in CCTL’s workshop for new undergraduate supervisors: ‘Introduction to Undergraduate Supervision’. This guide aims to support new supervisors by bringing together insights on effective feedback from educational literature and by providing new supervisors with examples of actual feedback practices and activities used by current Cambridge supervisors across all disciplines. As you will see, the guide is full of reflections and examples of practices from current supervisors.

Dr Mary Beth Benbenek
Senior Teaching Associate, CCTL
Six Tips for Effective Feedback Practices in Undergraduate Supervisions

A Cambridge undergraduate wrote the following about one of their supervisors who had been nominated for a teaching award:

Her friendly nature, patience, and encouragement always created an atmosphere in supervisions that allowed us to ask any questions without hesitation. This, coupled with her detailed and effective marking of our work, ensured we were always sure of how to improve our writing and inspired to explore the topics in more depth.

It is significant that among this student’s accolades for their supervisor was a particular emphasis on the ‘detailed’ feedback that made them feel ‘sure of how to improve’. A new supervisor on Cambridge’s Natural Sciences Tripos recently reported a similar view on the effects of the detailed feedback they gave their students:

My feedback on students’ essays was always extensive, with numerous comments and one long concluding statement which identified two to three specific action points for the student to address. I could really see how [the students] thoroughly applied the feedback in future essays.

These quotes capture what educational studies have long evidenced: formative feedback can be one of the most important factors contributing to student learning. It can yield gains in achievement that are “among the largest ever reported for educational interventions” (Black and William, 1998, p. 61). Why is formative feedback so effective for student learning? Formative feedback provides students with bespoke advice on their understanding of and facility with their discipline’s knowledge and academic conventions and it shows them what good work and deep engagement in their field looks like. In other words, good feedback shows students how to improve.

Undergraduate supervisions must have a robust focus on feedback, as this small-group teaching format is centred on students’ individual learning and academic development. While the two examples above focus on supervisor’s comments on students’ supervision work, there are actually several things to consider about feedback in order to create an effective learning environment in supervisions.

This guide outlines six tips for effective feedback practices in undergraduate supervisions. It is written for new Cambridge supervisors in all disciplines and will provide the basis for discussion in the workshop ‘An Introduction to Undergraduate Supervision’ offered by the Cambridge Centre for Teaching and Learning (CCTL).

This guide aims to

- stimulate thought and reflection on how effective feedback leads to student learning by bringing together insights from educational literature; and
- provide new supervisors with examples of actual feedback practices and activities used by current Cambridge supervisors in order to consider whether and how such practices could be tried out or adapted in their own teaching contexts.

1. Understand how learning works and how supervisors are expected to support it

Thinking about teaching involves thinking about how learning happens. One of the most influential theories on how learning occurs at the level of higher education is constructivism. There are different theoretical perspectives within constructivism, but a common thread throughout all of them is the understanding that learning is an active process of construction—it is not something done to students, but rather it is something that students themselves do. In other words, teachers do not simply impart
or transmit knowledge to learners. Rather, learners have to actively construct knowledge, make sense of it, link it to what they already know and build new knowledge structures.

This process of actively constructing knowledge is not linear. Learning is a continuous, recursive process of confirming and modifying existing knowledge, and it is influenced by numerous factors, including what learners already know or think they know; how they have been taught or approached learning in previous contexts; their beliefs, values or assumptions; and how they interact with teachers or peers. Evidence suggests that the construction of knowledge is enhanced in settings where students are engaged in active learning (inquiry driven by the student) and active dialogue about their learning (Ashwin et al, p. 27).

The Cambridge model of undergraduate education is designed to facilitate both active learning and active dialogue. From the earliest days of their studies, Cambridge undergraduates begin a cycle of: 1) exposure to new material; 2) independent thinking about and working with that material; 3) receiving feedback on that work and engaging in dialogue on it; and 4) reflecting on feedback to deepen their understanding and to inform future work.

In the Cambridge system, this cycle translates to: 1) attending lectures; 2) doing supervision work related to topics in those lectures (writing essays or completing problem sheets); 3) attending supervisions to get feedback on work and engage in dialogue on the topic; and 4) making sense of and applying this feedback as the cycle begins again. This cycle repeats often as students are expected to engage in high levels of active learning, completing up to three essays or problem sheets a week in term time. Indeed, Cambridge students are in a continuous process of actively constructing their own learning, deepening their knowledge and practicing and developing the academic conventions of their discipline.

The role of undergraduate supervisors is to support this active learning process. Through regular contact with supervisors, experts in the discipline, students get immediate feedback and learn to gauge the quality of their work and the depth of their understanding—and how they can improve both.

The work on learning by Russian psychologist Lev Vygotsky provides a helpful framework for thinking about what undergraduate supervisors do. While students work actively to construct their learning, the supervisor, via feedback and interactive learning, helps them ('scaffolds' them) to move through 'zones of proximal development' towards new knowledge and abilities, as illustrated below.
The feedback students get from supervisors and the learning that occurs from interactions in supervisions both play key roles in helping them transition from the outer circles of the diagram to the inner circle. Again, this is not a linear journey, but one in which students construct and reconstruct knowledge and experience trial and error as they practice academic conventions and come to understand what constitutes quality and expertise in their field.

2. Ensure students understand the purpose of supervisions

For the Cambridge learning system to work as intended—exposure to new material, independent and iterative work in that material, feedback and dialogue about it, and reflection on feedback in order to progress—students must understand these intentions. It is easy to assume that students know how to learn and act in a supervision, what they are meant to do and even why they are expected to engage in intense levels of productivity. However, it is rarely the case that students, especially in their first year, will have an implicit understanding of the overall educational structure at Cambridge, how the different parts fit together and how it is designed to support their learning. As a recent first-year undergraduate in science noted:

It took me a while to realise that supervisions are a learning opportunity, rather than a test of knowledge.

This is not an uncommon misunderstanding of the purpose of supervision among first-year students. Even though students are likely to hear multiple explanations of the supervision system from college or from their Directors of Study, they are nevertheless in the process of building a contextual understanding of how teaching and learning is structured at Cambridge. Being reminded by supervisors themselves of how the system is intended to work—that supervisions are a context to scaffold the students’ learning and to help them iteratively shape and practice their disciplinary knowledge and skills—can help achieve clarity and facilitate better engagement on their part.

The danger of not making the implicit explicit, that is, of not ensuring that students understand how learning is structured at Cambridge, is that students might experience confusion that hinders their ability to engage. The disorientating experience of ‘Emily’, an AHSS undergraduate, illustrates this (Gaston and Duschinsky, 2020, p. 1224):

Why are [supervisors] testing my ability to articulate my ideas in speech, when that is not necessarily something that comes naturally to me, because I haven’t had training in public speaking or debating? That is not something I can do necessarily as well as other people who have done that before, or are used to that.
Emily was not only confused about the purpose of dialogue in supervisions, misunderstanding it as a ‘test’ of her ability rather than as a pedagogic tool to deepen learning, she also did not have a clear understanding she could use supervisions to build her disciplinary writing skills:

I don’t know how to [explain my essay]... It’s not that I don’t know how to say it... It’s that I don’t know how to say it in the way that I feel like they want me to say it.

Clearly, Emily understood supervisions as a version of formal assessment where she was meant to demonstrate certain levels of competency, rather than as a context for bespoke learning and development. Emily’s supervisors might have been very well-intentioned and wanting to help her, but a lack of clarity about the purpose of supervision work and discussions might have left her unaware of how to engage.

What are some ways to make the implicit explicit?

- Discuss with students that the purpose of supervisions is to help them deepen their knowledge and their understanding of academic conventions
- Explain that discussion and interaction are tools to deepen learning and understanding
- Clarify that supervision work is meant to help students build and practice their disciplinary knowledge and skills

These conversations are helpful for all undergraduates, but they are especially necessary for first-years, as one Cambridge supervisor notes:

Many first-year students arrive in Cambridge not having experienced this style of discursive teaching before and often feel overwhelmed by the intensity of discussing their ideas and work.

For those who will supervise just one topic or one module and thus might see students for only one or two supervisions, it might not be appropriate to address these broader topics around the learning process. In this case, clarifying learning aims of both the topic and the specific work would be a useful way to achieve clarity with students.

When students understand the purpose of supervisions they are better able and usually more motivated to engage in the setting. A humanities supervisor found that clarifying aims and structure with students and building in ways to check their understanding quickly yielded positive results:

Looking back at my earlier teaching, I focused on sustaining intellectual conversation and assumed that the student naturally knew what to do in the supervision. I believed it was up to them to make the most of the conversation that was taking place. I now see the importance of not making assumptions about students’ ability to intuit how to engage with a particular learning environment, and I now make clear the aims and structure of any teaching and learning session at its outset, and build in ways of checking students’ understanding. This is essential to ensuring that there is no disadvantage to those who might not be best placed to instinctively know the ‘rules of the game’ as well as others. In paying greater attention to this, I have seen quick results – students are able to better articulate the purpose of teaching and learning sessions themselves, and to apply principles from one session to the next.

3. Gauge students’ current level of understanding and ability

Reflecting on working with students in supervisions, a Linguistics supervisor wrote:

I’ve come to the realisation that teaching and learning in the supervision setting is best seen as a co-constructive process wherein the supervisor’s role is to (do their best to) know their students’ level of understanding/ability at a given point and give the necessary scaffolding along the way.
Supervisions are a setting for personalised teaching and learning and, as a small-group teaching and learning format, they are meant to address student’s specific learning needs in order to, as Vygotsky would say, help them transition through ‘zones of proximal development’. This means supervisors need to gauge each student’s current level of understanding and ability. The main sources for gauging this are students’ work and the way they engage in supervisions.

A Physics supervisor does this by writing brief notes on students immediately after each supervision and then using these to consider how to address their different needs:

My students (second years) have very different characters and, after working with them for the last few weeks, I now have slightly different goals for each of them:

- **Student A** has committed a lot of material to memory and can recall it correctly, but often has not developed any deeper understanding of “why”. They are also quite disorganised on the whiteboard. I’m aiming to ask them questions which can help them to reflect on the material, and also if possible help improve their presentation skills.
- **Student B** hands in meticulously polished answers, but in the supervisions is quiet (in particular they will often not speak while writing on the whiteboard, so we cannot follow what they are thinking). I would like to encourage Student B so they have more confidence talking about their work and the material.
- **Student C** has read ahead in many areas (far beyond the level of this course), but consistently makes careless errors. I would like to stretch Student C further in the supervisions, but also make sure that they focus on the right material and concentrate on picking up all of the marks in the exam.

This attention to each student’s particular strengths and needs allows this supervisor to plan how to engage each of them in the supervision and how to give each student relevant bespoke feedback on their work. This example is also a good illustration of how this supervisor incorporates into the supervisory experience the development of the skills students need for supervisions. ‘Student B’, as is noted, is ‘quiet’ and not engaging the discursive aspects of the supervision. The supervisor’s aim is to scaffold the student in developing the ability to participate effectively in discussions. There is no assumption that the student should already have this capability only an aim to help them develop it.

A Biological Sciences supervisor uses a similar technique:

I keep an individualised record of my students’ work and I reflect on each student’s activity after every supervision. I use my notes to structure my feedback for each learner and to prioritise specific areas of the course for further discussion. This record gives me a long-term view of each student’s progress that I use to write termly reports.

By gauging students’ current level of understanding and ability, supervisors display investment in their students and consideration of them as individual learners. This can have a positive influence on students’ own sense of self-efficacy—their beliefs about their capabilities to achieve academic success—as this reflection from a Cambridge undergraduate shows:

In first year, all my supervisors helped me a lot to develop skills that I didn’t have prior to coming to Cambridge. They did it through very detailed feedback and were very positive about it (e.g. told me it was completely fine to not be that well prepared in first year and that I would improve fast with time).

The personalised support this student received from supervisors clearly made them feel confident in their ability to learn and thrive at Cambridge. However, this display of investment in students as individual learners does not always take place in supervisions, as another reflection from a Cambridge undergraduate illustrates:

I think [supervisors] could focus on skills that might not come easily to students from a state-schooled or first [generation] background. My parents didn’t go to university, no one in my family is involved in academia, so I had no idea how to read and take notes efficiently. Often at Cambridge it’s assumed that
we understand certain terms, or we are able to comprehend high-level texts. But that’s not the case for everyone.

These two quotes, capturing two very different student experiences of supervisions, both illustrate the importance of gauging students’ different levels of understanding and ability. According to the advice of one supervisor:

Get to know your students, what their interests are, try to get them to incorporate these interests into their work, and most of all, find ways to nurture their capabilities while appreciating their differences.

4. Give specific and actionable feedback on students’ work

The comments supervisors make on students’ work constitute a direct, one-to-one avenue for dialogue between supervisor and student about the student’s knowledge and skills. One supervisor captured what is perhaps the most important piece of advice on giving effective feedback on student work:

When you give feedback, be sure that you are clear about what you are asking the student to do differently next time.

Research into student learning confirms this claim. The most vital aspect to consider about feedback on student work is use, that is, how the student can use the feedback to improve learning and understanding (Carless and Boud, 2018). It is thus very important when feeding back on student work to help students see what to do with feedback and how to take it forward into their next supervision work. Knowing how to use feedback is a skill in itself, and supervisors should support students in developing this skill.

Four helpful steps to follow when preparing feedback are:

1. Ask yourself: what are the strengths of this work?
2. Assess the work’s limitations
3. Ask yourself: what one or two steps would make the most difference to the student’s next piece of work?
4. List those one or two steps as ‘action points’ at the end of your feedback commentary

It is vitally important to identify the strengths of students’ work not only to encourage positive motivational beliefs and self-esteem, but also because identifying strengths is, indeed, a form of feedback. Students need to see what they are doing well as they develop their disciplinary knowledge and skills and explore different topics.

Equally important is distilling feedback on how to improve into action points. As already noted, Cambridge students produce high levels of supervision work for the purpose of deepening their knowledge and practicing the academic conventions of their discipline, and thus they have the opportunity to immediately put feedback to use. When supervisors provide specific, actionable feedback, it helps students focus their efforts on closing the gap between current and desired performance in the short time they have before producing the next piece of supervision work.

Supervisors in all disciplines have found this approach to feedback useful:

The strategy of highlighting two general positive features of the work and two points that could be improved worked well. I received positive feedback on this from students and Directors of Study.

A supervisor in the Social Sciences reflected at more length on this:
In terms of feedback on written work, I use the track changes feature in Word to give a running commentary on essays and follow this up with a written summary that has questions for the student and action points, often about how they can improve their writing in terms of academic conventions, for example, signposting in essays. I share this formative feedback with students prior to a supervision and ask them to come to supervision with their reflections and responses to feedback. This helps them to understand what the feedback is for and how they can act on it.

**From a supervisor in the Humanities:**

I give extensive written feedback on specific content points, on essay structure, and on avenues for further exploration, but I do not offer specific grades – to do so would detract from the formative, exploratory opportunities presented by the supervision essay, and it is more important that students have a clear idea of the next steps to take. My students frequently tell me that they find the feedback I give on essays helpful, and its effectiveness is reflected in the improvements they make subsequently, and in ultimate exam performance.

**Another Humanities supervisor describes their practice:**

When giving students weekly feedback on their written work, I use a consistent format to help them track their progress. This feedback is divided into 3 comment sections: what has gone well that week, with particular reference to their progress in areas previously identified for improvement; points to think about in relation to the content; and suggestions for improving essay style and structure. The rationale for these sections is based on the need for students to recognise the importance of both content and the construction of argument in writing.

**A Mathematics supervisor places particular emphasis on being positive with students:**

I aim to engineer an encouraging emotional environment, by engaging students emotionally with the course content (showing my passion and connecting with them as a human being) and by giving positive feedback (praising every improvement or effort rather than criticising mistakes) in addition to identifying specific points to improve.

**A Natural Sciences supervisor, whose students also do problem sheets as supervisory work, flags action points on students work to be discussed in supervisions:**

I give constructive, encouraging written feedback to build their confidence while highlighting areas that they need to improve. I sometimes choose to flag a particular topic to be discussed in person, as this gives an opportunity for lasting learning through direct engagement with the topic rather than simply being a correction to their work that can be overlooked.

In order to have time to provide specific and actionable formative feedback on student work, supervisors need to set clear guidance on when students must submit their work ahead of a supervision.

5. **Support students to be reflective learners**

While the feedback supervisors provide students is important, it is just as important for students to feedback to supervisors on how things are going. Indeed, feedback in supervisions should be a two-way dialogue between supervisor and student. Thinking of feedback as dialogue allows supervisors to support the development of students’ self-direction and agency as independent learners.

Cambridge supervisors use a variety of methods to help students practice a reflective approach to their learning and work. A supervisor in the Social Sciences encourages reflective practice in students as it leads to deeper learning on their part:
I try to support students to build their confidence by getting them to realise that education is a journey, and that self-reflexivity is an essential quality and skill for this journey. I therefore engage them in activities of reflecting on their own ideas and the quality of their written work. Once students grasp that there is no ‘right answer’ that I am looking for, they are able to engage with the subject content in much more depth.

A supervisor in the Humanities uses a specific activity, ‘cover sheets’, to encourage reflection and feedback on learning from students:

I give students the opportunity to shape the agenda for their weekly hour-long supervisions by encouraging them to fill in a "cover sheet" which they hand in alongside their written work the day before our meeting. This cover sheet allows them to detail skills they have been working on and areas they have found interesting that week, as well as inviting them to identify what they would most like to discuss during their supervision. I use this, in combination with my assessment of students’ skill and knowledge-levels as expressed through their written work, to plan a teaching session around the needs and interests of the particular students.

A Mathematics supervisor also has students include commentary on their supervision work:

I get my students to annotate their work where they have found a question particularly challenging and I invite them to suggest topics that they want to discuss in the supervision ahead of time. These tools allow me to target my feedback and to focus our discussion to make best use of the limited supervision time.

A supervisor in the Social Sciences has a simple approach to prompting self-evaluation among students:

I ask students to identify the strongest and weakest parts of their essay writing when they send their essays to me. By comparing their self-evaluation and my evaluation, I understand better the areas that they found challenging and the problems that they might not be aware of. This practice has been very useful for me to identify students’ ‘zones of proximal development’ and to plan my supervisions.

Another supervisor in the Social Sciences finds it useful to facilitate a reflective discussion on disciplinary skills in the first supervision with students:

Through experience and from student feedback I have learned that students often struggle to comprehend what the expectations and conventions of a good essay and good argumentation are, which some students tend to conflate with bringing their own opinion to the fore. I address this challenge by spending time in the first supervision with a new group to openly reflect on what kinds of practices are academic convention and ask students about what conventions they are already familiar with and which ones they do not know yet. This enables me to assess the specific training needs of each student. At the same time, this allows students to reflect on the different types of skills they are required to develop and to recognise the difference between creative, independent thinking and fulfilling requirements of academic conventions regarding the formalities of academic text production.

Having students reflect on the evolution of their own work is also a constructive exercise, as one supervisor has come to understand:

Another technique is to demonstrate to students the evolution in their work after two terms into the course. When students look over their initial work, they are able to see their own trajectory of improvement and they begin to realise their own potential for ongoing improvement and challenge themselves to improve further. All of this relies on developing a deeply empathetic relationship with students and their personal strengths and weaknesses, and understanding their individual contexts.
These reflective activities, which prompt students to feedback to supervisors on their learning and work, provide an opportunity for students to begin to develop a vocabulary and criteria for evaluating their work through dialogue with their supervisors.

6. Understand the value of peer learning and feedback

In addition to facilitating a feedback dialogue between supervisor and student, facilitating peer learning and feedback is also highly effective as it helps students see their peers as a community of learners who contribute to each other’s education. Indeed, Cambridge students learn a lot from hearing how their peers approach supervision work:

Talking through ideas we’ve had in our essays and expanding on them in supervisions really helps me. We discuss different ways of writing an essay, share ideas as a group and allow them to change and adapt with other people’s ideas.

When they are off completing supervision work independently, students construct their own understanding of the material. Then, discussing their own understanding with peers in supervisions exposes students to differing interpretations and involves them in a process of critically evaluating these competing perspectives in a way which enhances their own understanding.

Many supervisors make discussion of individual approaches to work a regular practice in supervisions:

One thing that has worked well in my supervisions is asking students to share their thinking and writing process for an essay. This always leads to a good discussion and elicits thoughts that didn’t necessarily make it to the written essays. It also seems to help students find common ground and share their doubts.

A Physics supervisor uses a similar technique by having students discuss how they went about solving different problems:

I have students take turns up at the whiteboard explaining and showing how they solved a specific problem. The other students are able to hear the problem-solving approaches one of their peers used, which can be a helpful way to reflect and evaluate their own approaches. The student at the whiteboard also benefits when students ask them questions or share a different approach they might have used.

One STEMM supervisor has students prepare brief presentations to each other:

I introduced ‘peer feedback and PowerPoints’ on a weekly basis, where students present to each other the key points they had learnt from the sessions during the previous week. This worked marvelously well, it allowed them to reflect, think deeper and to gain self-confidence for scientific discussion. They were a bit reserved in the beginning but towards the end they had mastered the skills.

Another approach to facilitating peer learning is to use exemplars as a basis for developing students’ discussions with peers. A History supervisor finds this a particularly useful practice:

One of the central skills that students need to develop in History is the ability to put together – and to recognise – a well-structured and persuasive argument. From observation of the progress that students make in their essay writing, I have found that students develop this skill more easily if they can first learn to identify the qualities of a good argument in other people’s writing. In planning supervisions, I frequently dedicate a segment of time to providing students with examples of historians’ and other students’ writing (anonymised, with permission), which we analyse together, before giving students a chance to evaluate the structure and composition of their own writing. This is an approach underpinned
by the desire to develop students’ ability to work independently: identifying for themselves what a ‘good’ essay looks like facilitates a deeper understanding of what they are aiming for with their own writing.

Some supervisors have students exchange supervision work and feedback to each other. Another History supervisor helps students structure the feedback they give to each other:

When supervising small groups rather than one-to-one, I ask students to read one another’s essays, and to pick out two things to praise and one piece of constructive criticism for each. I see students thinking about effective argument and use of evidence through others’ work.

A Natural Sciences supervisor, who also asks students to exchange supervision work and feedback to each other, has discovered that, while very effective, peer feedback does not suit every supervision group:

I ask students to swap essays and give feedback to each other in addition to my own, which helps to build trust between students and a collaborative atmosphere. It is noticeable that the college student groups who work together outperform college groups with poor peer dynamics. Whilst this technique works well for supervision groups with mixed ability, it is less effective when all students in a small group are struggling, which can certainly happen in small supervision groups. In this scenario, I provide example essays of a higher standard for students to analyse together and to benchmark against.

By facilitating peer feedback and learning, supervisors help students form relationships whereby they can learn from each other. This requires setting expectations for students around peer feedback and collaborative learning, and it calls for “more pedagogic attention to fostering such student dispositions as willingness to take risks, ability to work in groups, humility to learn from others and preparedness to share with others” (Ashwin, 2020, p. 123). Effective peer feedback can help students develop more self-directed and independent learning, as it is a tool, similar to their own reflective practices, they can use to customise their learning environment.
References


