Reflective learning allows analysis of an individual’s experiences and facilitates learning from this experience. It also encourages critical thinking, a questioning attitude and leads potentially to greater learner autonomy. This issue of CDTL Brief on Reflective Learning discusses the benefits of incorporating reflective learning strategies in the classroom.

Teaching ‘Process as Practice’ Using the Model of Reflective Thought

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John Dewey, the twentieth-century educator and philosopher who pioneered the pedagogy of reflective learning, defined the objective of such practice as follows:

Reflection involves not simply a sequence of ideas, but a con-sequence—a consecutive ordering in such a way that...“thinking,” in its best sense, is that which considers the bases and consequences of belief. (Dewey, 1910:2–4)

Similarly, one of the goals of a module I teach in USP—UWC2101R “Writing and Critical Thinking: Multidisciplinary Perspectives on ‘Mind’”—is to encourage students to adopt a stance of “active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it tends”—an orientation to the processes of knowledge and its creation that Dewey claims “constitutes reflective thought” (Dewey, 1910:6).

To demonstrate the value of such reflective analysis both as a method for thinking critically about the course’s content and as an approach to the process of academic writing, I not only teach the skills part of the module using a reflective learning model of writing as iterative revision, but I also present the content portion of the module on a reflective learning model of thinking as iterative ‘re-vision’ as well. The overall goal of the course is for students to realise that these two process models—one for creation of academic writing and one for creation of new ideas—describe, in fact, one and the same method of reflective thought.

How does such a double-loop process model look in action?

To give my students hands-on practice in the process of reflective analysis, I ask them to spend a whole semester considering the question: What is the nature of the human mind? The history of this question and its proposed answers constitute a case study in the principles of reflective thought. And by examining some of the answers to this question proposed by researchers in the fields of philosophy, neurobiology, anthropology, sociology, psychology and dynamics systems research, students come to realise that both the advancement of the sciences
as well as the ongoing dialogue of humanities rest upon an iterative process of provisional assertion, questioning and revision.

**Virtuous circle 1: process as the product of thinking**

The students' first ‘jump’ into *experiencing*, rather than just reading about, reflective analysis comes when they realise that they, too, must engage in the practice of questioning their previous understandings which they are satisfied with. I have set up the readings in this module in a such way that students will first encounter manifestly reasonable arguments that they find convincing initially, only to discover in the next class session, equally reasonable arguments which contradict, problematise and complexify the understandings that students have gained from their previous reading. In this way, students—like the scientists and humanists whose works they are reading in the course—come to see that their current understandings, while hard-earned, are yet provisional and are subject to ongoing questioning and revision in light of later knowledge and understanding.

Within the first few weeks, my students begin critically analysing the texts and sharpening their own skills in mounting reasonable arguments and counter-arguments by themselves. As they attempt to articulate and to defend their newfound insights during in-class discussion with their peers, they too experience the recursive process of assertion, questioning and revision. Suddenly the problem of the scientist and the humanist is now their problem as well.

Faced now with the twin problems of formulating and communicating their ideas clearly about a question whose answer they will *not* find in their college textbooks, my students are thus forced to ask themselves: How do I establish a reasonable argument? What conclusions can and cannot be drawn from this evidence? What are the entailments of my asserting x? How do I know when I have considered enough variables? What are possible alternative ways of framing this same question?

What assumptions underlie this claim and what are my justifications for making these assumptions? What are the bases and consequences of considering this belief?

Now that Dewey’s ‘theoretical questions’ have become the students’ own *experiential problems* to struggle through, these issues take on a *practical* urgency for my students as they face the task of expressing their own thought and defending it against the reasonable objections of others. As they are no longer passive spectators of the on-going intellectual debate, students find that they must now learn to become players in the game. It is at this point that ‘learning about’ becomes ‘learning to’ as iterative practices of reflective thought cease to be intellectual abstractions for my students and become instead, *everyday tools* on which they need to build their understandings and to communicate clearly what they have understood to others.

**Virtuous circle 2: thinking as the product of process**

The design of the course’s writing component also emphasises process and reflection as integral *constituents* of articulate thought. Accordingly, my students’ second cognitive ‘re-organisation’ comes when they realise that their new-found understanding about the nature of their own thinking (and the iterative creation of knowledge) also applies to their own writing (and the iterative creation of argumentative texts). Here, students’ own engagement with the writing process gives them hands-on practice with the tools of reflective questioning and revised analysis. Now they must iteratively re-fashion multiple drafts of their essays over the course of many weeks as they continue to discuss with one another their ever-developing understandings and *confusions* in class. Each student gives and receives individual feedback during peer review meetings and teacher-student conferences, and at the culmination of these processes-within-the-process, recursively incorporate the resulting feedback and reflection into their ever-developing writing assignments.
Reflective Learning and the ‘Dis-covery’ of Knowledge

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What is reflective learning?

Let us return to the distinction between learning as ‘covering’ and ‘dis-covering’. In the case of ‘covering’, the instructor demarcates a field of study which s/he wants students to cover. Knowledge, on this account, is contained within preset parameters—it is there, it simply has to be accepted as self-evident and transmitted into more-or-less empty receptacles (students). I am sure many of us have had experience of professors who viewed us (their students) as empty vessels to be filled by them—the ‘superior fountains of knowledge’.

But such a view is problematic for a number of reasons: it takes for granted the validity of existent knowledge, discourages critical assessment of that knowledge, and results in a stagnant, dogmatic mindset in which the received knowledge becomes ossified. Such a lump of knowledge drags one down under its weight and discourages critical thinking and creativity. If everything about a topic is already known and must simply be inserted into the student’s vacant mind, what incentive is there for the student to be creative, to expand, to adjust and to develop the knowledge s/he is getting?

Having experienced the processes of reflective thought first-hand, my students gain the critical experiential knowledge that no good piece of writing spontaneously ‘pops into the world full-blown’ from the writer’s pen but that it is through what Dewey calls “active, persistent, and careful” (Dewey, 1910:6) participation in the iterative process of reading-thinking-writing-questioning that students, like all writers, accomplish and discover what they think.

Reference

Another problem with this approach is that it tends to occult (hide) the historicity of knowledge—the fact that it is, like everything else, never simply a completed product but an entity that underwent (and is still undergoing) a process through which it was (and is still being) brought into existence. In other words, approaching the process of learning as ‘covering’ an existing field of knowledge tends to make us lose perspective and forget both its and our places in the world. Again, it should be evident that such an approach is ultimately unproductive as it is likely to discourage critical thinking, creativity and generation of new knowledge. While we should never neglect the importance of transmitting received knowledge (e.g. methods, concepts) and inherited traditions, we should be careful not to inhibit the expansion or amending of those traditions and the generation of new knowledge. This can, in the end, only occur through reflective learning: the ‘dis-covery’ of knowledge.

‘Dis-covery’

To ‘dis-cover’ knowledge is not to un-cover it. It is neither peeling away layers of detritus that obstruct our view of reality nor making apparent a body of pre-existent knowledge (a mystified, pseudo-divine entity which we need to accept and in turn pass on to a new generation). The prefix ‘dis-’ is related to ‘duo’, which means ‘two’. It thus implies the process of dividing, disturbing and prying apart. In short, it implies analysis—literally, a breaking up, a loosening of the object of study into its different, constituent parts. For analysis, nothing is in principle not subject to close examination and a questioning attitude.

Analysis involves reflection, a word that suggests the action of bending repeatedly. The object of study is considered closely, bent, twisted, broken up into parts. The parts are then considered in relation to one another and questions arise, for instance the following:

- Do the parts fit?
- How are the parts related to one another?
- Is there a part that especially deserves our attention (e.g. something striking about the object we are studying, something which does not quite make sense but is an important constituent of the object)?
- How do the parts function in order to make up a meaningful entity?

In the module I teach in the University Scholars Programme (USP), UWC2101H “Writing and Critical Thinking: Reading Landscapes”, as in other “Writing and Critical Thinking” modules taught in the USP, these are the kinds of questions we ask in order to ‘dis-cover’ meaning. The above questions usually follow the close examination of and reflection on an object such as a piece of written text or an image, and help students generate specific analytical questions about the object.

While it is important that we ask students questions about an object or a topic to help them formulate questions about it, I have never in this module presented students with an assignment that consists of a question to which they need to provide an answer. Instead, through a process of interrogating the object and reflecting on it, students have to pose their own question about it and then offer a thesis that attempts to resolve the question they have generated themselves. They then need to present their analysis of the object in the form of a coherent argument. Later on in the module, students learn to use other sources to present evidence in support of an initial thesis and consider whether it is appropriate or needs modification. Through generating questions of their own and not responses to questions about existing knowledge, students participate in the production and the ‘dis-covery’ of new knowledge.
In *Making the Most of College: Students Speak Their Minds* (2001), Richard Light of Harvard University proposed using the last five minutes of class meetings to find out what students have learned and/or with which topics they still struggle. The goal is enhanced learning insofar as the instructor is able to tailor the next lecture or assignment according to students’ strengths and trouble-spots. While the results are easily managed (since little can be written in five minutes) with a group of 20 to 40 students, in a larger module, the agreement could be that the instructor will respond to a random sampling of, say, 25 replies. Recently, I adapted Light’s (2001) idea by using the end of a class-meeting to encourage students to reflect not on the content of the module but on their own learning. The prompt was two half-sentences: “I feel I’m learning when... ” and “I’m sure I’ve learned something when...” Upon being asked to complete both prompts and to hand in the results unsigned, some students stared blankly into space while others started writing immediately. Here are some of the things my students wrote:

- “I feel I’m learning when discovery brings feelings of satisfaction and desire to know more.”
- “I feel I’m learning when I fail. I learn the lesson completely when my mistakes stare at me in the face. That is what motivates me not to repeat my mistakes.”
- “I feel I’m learning when I can see from different viewpoints/angles besides the conventional ones.”
- “I feel euphoric when I’ve learned a new concept, just like a sudden release of tension.”
- “I feel I’m learning when I can clear my mind after feeling confused for at least half of a day. If I need to learn something, I have to put a lot of ideas in my mind, and then be confused.”
- “I feel I’m learning when my mind gets tired. It’s always a sign that it has been used.”
- “I feel I’m learning when I go ‘wow! I have never thought about this before’ and there’s a breath of fresh air in the room. I feel I’m learning when I’m trying to grasp a certain difficult concept and people reaffirm that what I think is right. In other words, when people say, “Yes, I think you’re going in the right direction” and I go on and on with more new ideas popping up in my head.”

The last remark notwithstanding, few respondents wrote, “I know I’ve learned something when there are good grades to show for it.” Instead, most students opined in terms of applying new knowledge, grasping ideas more firmly than in an ‘out-of-the-memory’ superficial way, and expending less energy in the learning process: “I know I’ve learned something when something that previously took me much effort to understand becomes ingrained (i.e. a second nature).”

Several students mentioned that opportunities to ‘output ideas’ help them measure learning. One person wrote:

“I’ve been giving tuitions and I realise that when I’m imparting my knowledge to tutees, the concepts become much clearer and I tend to understand them better. This situation also occurs in group discussions when I’m throwing up ideas and things that I’ve learned.”

Another student mentioned that learning occurs when one discovers new linkages between different pieces of information:

“I feel I’m learning when I’m given an idea that I’ve never had before, or led to think...”
about something is new or strange to me. This of course would include being spoon-fed information, but the true learning comes by engaging the information to make connections no one has made before (at least not that I know of). This is similar to the difference between hearing and listening: a personal element is added.”

True learning creates considerable pleasure, indicated by students’ responses to the second prompt:

- “I’m sure I have learned something when I walk out of the classroom feeling happy and thinking the class has met its purpose.”
- “It’s (literally) as if a light bulb goes on in my head.”
- “I’m sure I have learned something when I have chided myself quietly for my inadequacy and/or shortfalls, then made a resolution to learn from this and use it next time.”
- “As long as I’ve made improvements in one way or another, I feel that I’ve learned something.”
- “I’m sure I’ve learned something when I actually apply the concept in real life and it somehow works practically.”
- “I’m sure I have learned something when I have tried something out of my ordinary: then, success or failure doesn’t count.”
- “I know I’m learning and learning well when I can laugh with myself, not at myself, and move beyond the initial failures.”

Though these responses reflect the sentiments of a minute portion of NUS students, they do suggest avenues for further inquiry into:

1. the ways in which instructors might fashion lectures, assignments and class-discussions so as to bring out qualities such as personalisation, communicability and pleasure; and
2. the merits of providing opportunities to debate these qualities’ validity, as a gauge of intellectual growth.

In my own module, UWC2101Q “Writing and Critical Thinking: Civility in the World City”, I will continue to note students’ reflection on the Integrated Virtual Learning Environment (IVLE) as they share thoughts on topics such as writing a rough draft, the acts and attitudes involved in thorough revision, and perceptions about mastering new material and/or skills. This brief and simple exercise shows how a little encouragement can spur lively minds beyond data-accumulation—as unmistakably important as that aspect of education must always be—so as to embark on deeper probes.

References