

A GOOD TEACHER LOOKS FOR PROBLEMS!

Interviewer: Julie ROBERGE, member of the *Pédagogie collégiale* Editorial Committee and French teacher at CÉGEP André-Laurendeau



Élie MILGROM is Professor Emeritus of Computer Science at the Université catholique de Louvain, in Belgium. With colleagues from the École Polytechnique de Louvain and in cooperation with educational researchers, he took part in an in-depth examination of instructional approaches and practices. As a result of these deliberations, major academic reforms, based on active learning, were designed and implemented. While in Montreal in June 2015 for UQAM's Journées sur la pédagogie universitaire, Professor Milgrom gave a lecture that was extremely well received. *Pédagogie collégiale* took advantage of his stay to conduct the following interview.

PÉDAGOGIE COLLÉGIALE:

Professor Milgrom, you began your lecture by saying that the worst thing is being deemed as “good” teachers because we don’t question what we do. What did you mean by that?

ÉLIE MILGROM:

Because we’re all very busy, we have a natural tendency to deal with what is most urgent first, often ignoring what is “merely” important: in other words, we’re often kept busy “putting out fires”. Educators who have no teaching issues—or who are oblivious to any they might have—will be inclined to spend their energy on the numerous other issues that interest them or demand their attention. They are encouraged in this by an erroneous but far-too-widely-held view that a lack of teaching issues necessarily implies that instruction is of high quality—i.e., there is an inverse relationship between problems and teaching. According to this view, high quality in teaching is practically defined as a lack of problems!

What I meant, therefore, is that this perception very often puts paid to any penchant for questioning our practices, hindering the self-examination of our methods and attitudes despite the fact that this type of reflection is vital if we wish to improve. I hope to show that we can always do better.

The teacher’s role is not to instruct, but rather to establish conditions conducive to learning. Even if this seems self-evident, why is it important that educators be reminded of it?

em The terms commonly emphasized in our field are “education”, “teaching”, and “instructor”. Unfortunately, this does a disservice to the most important participants in any educational system: learners (i.e., students). The image conveyed by everyday language (and sometimes by that of *legislators* and *government departments*) is that

teachers are the ultimate source of absolute knowledge, which they then transfer to their students. From this perspective, teachers are at the centre of the action, and what they do is key.

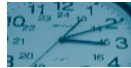
This concept of education has made many an instructor believe, for example, that developing his or her communication techniques will help students learn better. Now, while we certainly all need to communicate effectively, we mustn’t focus solely on the source of the message: this would be to the detriment of the receiver, especially as we want the receiver to learn! It’s absolutely vital that we concern ourselves with conditions conducive to learning before worrying about putting the finishing touches on a PowerPoint presentation!

I feel we must really put learning front and centre, and, more importantly, not just repeat these words like a mantra. Rather than concentrating on how they can teach better, educators must focus on how they can help students learn, on establishing the conditions that enable them to do so.

What is the “instructional mechanism” to which you refer?

em For me, the terms “education” and “curriculum” refer more to content, and not enough to the main participants involved, i.e., learners and teachers. I use the phrase “instructional mechanism” to describe the academic experience. In system view (this is an engineer talking!), students who enter a program are transformed by the instructional mechanism; when they graduate, they have developed knowledge, skills, abilities, and attitudes thanks to that mechanism (at least, this is the goal).

A certain number of **parameters** influence the impact of the instructional mechanism: course content (subject matter) and activities, instructional approaches, organization



of student time, logistics (for example, room layout), faculty conduct, feedback, and so on. By acting on these parameters, we can modify the added value of the instructional mechanism and establish conditions allowing students to attain the required exit profile. By increasing the number of informal activities for students and helping them use their time as profitably as possible, for example, we can stimulate their capacity for independent action.¹ Educators, in particular, but also the administration, students themselves, and sometimes government departments, can all act on parameters to influence this profile.

Of course, the question we must ask is how to ensure that students gain the required exit profile. The answer is simple, provided we know exactly what is expected at the end of the academic experience. **As long as the de facto exit profile is significantly different from the required exit profile, the parameters in question must be adjusted. Simple to say, but often difficult to do!**

This leads to another question: How can we determine if the de facto exit profile differs from the required profile? To answer that question, three conditions must be met. We must: (1) know exactly what is expected at the end of academic experience; (2) know exactly what each student has achieved at the end of that experience; and (3) be able to compare the two.

Condition 1 is met when there is a clear, precise, and complete statement of the learning objectives involved. In Europe, we speak of “intended learning outcomes”; in Quebec, “objectives and standards”. Some parties use the term “competencies”, but this term is too vague to be useful, unless given a truly specific definition. To simplify matters, let’s just say that competencies are, for me, a particular type of intended learning outcome.

Condition 2 is satisfied when assessment mechanisms (exams, quizzes, tests, etc.) provide a reliable measurement of the exit profile of each student. The ability to establish such mechanisms is not inherent: it must be learned, and forms part of educators’ professional development.

Condition 3 is fulfilled when the criteria used to express what is expected and what has been achieved are identical.

I regret to admit that there are very few curricula—and very few instructional mechanisms—that meet all three conditions. I therefore leave it to each individual instructor to examine the issue. Very often, the learning objectives in question are lacking, or so general and vague that it

is impossible to use them in a serious comparison with those actually attained. As to determining the latter, this depends on exams that, unfortunately, frequently measure something other than the attainment of objectives.²

Constructive alignment is achieved when each learning activity is explicitly and solely geared toward helping students reach their learning objectives...

Does the concept of “instructional mechanism” apply only to entire program?

em The beauty of the concept is that it applies to any portion of a program of study. The above mentioned ideas can be implemented for an entire program, a part thereof (year or semester), a specific subject, different teaching units of that subject, a teaching-unit activity for a given program topic, and so on.

Take the case of a one-and-a-half hour class that’s part of a teaching unit (on whatever topic) for a Quebec history course. Wouldn’t it be preferable for instructors to have an exact idea of what objectives students should meet at the end of the class? Wouldn’t it be reasonable to confirm, at the end of the class, if those objectives have actually been met? And, if not, wouldn’t instructors obviously have to make adjustments to the individual class, and therefore the course (instructional mechanism) as a whole?

If we don’t often proceed in this manner, it is because, while teachers may know what they intend to do during a class, they don’t have an exact idea of what they want students to achieve. Perhaps they’re afraid of discovering that the lecture is not the correct way to reach these objectives, which would mean they might have to rethink the entire teaching unit. Do they always have the will? Is it always possible? They might really enjoy “showing off” their knowledge. We’ve discovered, however, that it can be just as enjoyable (and even more so) to *design opportunities for learning* instead of merely transmitting knowledge!

¹ Other conditions may also be necessary to reach this objective, in particular situations that require independent work.

² Editor’s Note: In Quebec, the various curriculum documents and framework plans developed by the colleges on the basis of government objectives clearly and precisely define the learning objectives for each course.



Why is it so important to correctly word the objectives involved in course design?

em Of everything I've discussed at this point, I hope your readers will understand that clear, specific, and operational learning objectives are indispensable at all levels of any curriculum. This is a necessary condition if we are to be able to deliberate adequately on the curriculum and its components and, where applicable, make adjustments to the instructional mechanism so the exit profile is the one required. What never ceases to amaze me is that we've known for a long time why properly worded learning objectives are so important; we also know what "properly worded" means. One merely needs to look at the Websites of a few European postsecondary institutions to see that very few actually post clear, specific, and operational learning objectives for their programs and courses. What I've been able to read on the competency-based approach at the college level seems fine, but I have not examined the competencies selected for the various curricula in any depth.³

Furthermore, an indispensable quality of any educational program/experience is **constructive alignment**, a concept introduced by Biggs in 1999. Constructive alignment is achieved when each learning activity is explicitly and solely geared toward helping students reach their learning objectives, and when each evaluation, test, quiz, and exam measures solely the extent to which those objectives have been met.

Where an academic program/instructional mechanism is constructively aligned, this basically means the instructor guarantees that, if students properly carry out all the learning activities involved, they will reach their learning objectives and be able to prove they have done so by successfully completing their evaluations. One might say there is a contract of trust between teacher and student, and this contract constitutes an essential component of student motivation.

You talk about the "usefulness" of education. In Quebec, we hesitate to use that term, as it suggests students be taught only as a function of labour-market requirements. Could you explain what you mean by "useful"?

em I use the term to characterize education, in particular as regards the instructional mechanism. As I see it, an instructional mechanism is all the more *useful* when it enables the greatest number of students to reach learning objectives the best way possible, and demonstrate they

have done so (a condition for effectiveness) to the best of their ability, with an acceptable consumption of resources (a condition for efficiency).

I emphasize the term "usefulness", because I do not mean it in the sense normally intended. In popular parlance, the usefulness (without quotation marks) of education refers to the benefit derived by an individual or society as a whole, which corresponds to the concept of utilitarianism. In Belgium, for example, it is fairly common to hear disputes over the usefulness of Latin for secondary students.

The term "quality" often comes up in discussions on education. In Europe, since the *Bologna Declaration* was signed in 1999, there has been constant talk about the quality of higher education. This has inevitably led to the conclusion that some programs are of good quality—i.e., "good"—and others are not, or not to the same degree. I find this discourse dangerous, as it is extremely simplistic: it encourages rash judgments on an issue that is incredibly nuanced.

It should be noted that the satisfaction of students, teachers, and even society at large has no place in the definition of usefulness: while such satisfaction is certainly important, for me, it cannot take precedence over the concept of usefulness. Very often, it passes for a major criterion when used to characterize a curriculum or an instructional mechanism. I feel usefulness should be our primary concern, as satisfaction without usefulness is a delusion, and usefulness is a good way to guarantee satisfaction.

You'll also notice that my insistence on learning objectives and constructive alignment is strongly linked to the concept of usefulness!

So, why is it important that we enhance the *usefulness* of a college education?

em Not having examined the level of Quebec college-education *usefulness* in any detail, I wouldn't dare say what needs to be improved! What I am prepared to say is that each curriculum should be reviewed on a regular basis, and a decision made as to whether changes are required. The reason is very simple: don't we have a duty to do so in order to meet society's expectations? It seems to me

³ Editor's Note: In Quebec, the competencies and learning objectives for each course are usually described in a curriculum document to which students have access; the learning objectives should also be in the syllabus. (However, this information is not always available to the general public on the Websites of the colleges concerned.)



that this is the only way to show stakeholders (students, parents, funding bodies, and society at large) that we will never stop trying to provide the best service possible with the means at our disposal. If we fail to do so, some parties may feel they have not “gotten their money’s worth”, and be tempted to reduce (even further?) the budgets earmarked for higher education.

How should postsecondary institutions show appreciation for educators’ professional-development? What would be the advantage?

em May the engineer in me indulge in some two-bit psychology? It seems we all try to gain satisfaction from the kind of work we do. Not having any type of job satisfaction quickly becomes an ordeal. When, in 2000, we radically reformed the two first years of training at the École Polytechnique de Louvain,⁴ one of our goals was to ensure that students and faculty got more pleasure out of their respective roles (we had the very strong impression that this had not been the case previously!).

Some educators find satisfaction in themselves (taking personal pride in a job well done); others need outside encouragement. Many feel the need to know what their institution “thinks of their work”; however, in many cases, that institution (in the shape of the administration or academic staff) provides feedback only in the case of a problem; when everything is going well, nothing is said. Over time, some faculty members who would benefit from positive reinforcement end up experiencing a lack of motivation, which leads to discouragement and a change in priorities. I believe that postsecondary institutions should mobilize faculty members if they want to enhance the *usefulness* of the education dispensed.

Showing appreciation for commitment is a way for institutions to explicitly encourage their academic staff to improve their pedagogical skills and enhance the courses they teach, and, as a result, maintain their motivation. This is not optional: it is a necessity.

The forms such appreciation can take depend on the context of the institution and country involved: promotions and bonuses, additional personnel, awards of excellence, sabbaticals, funding for participation in conferences, and so on: there is no lack of options. However, in view of the challenges that exist, government departments and college and university administrations must be capable of creativity: faculty commitment (and therefore the appreciation shown them) is indispensable, in particular

to encourage and maintain students’ motivation, which is vital for their success.

To that end, however, there are two conditions that must be met: instructors must be compensated based on objective, recognized criteria that, to prevent cronyism, are made public.

There is great personal satisfaction in becoming better at one’s profession—and knowing why.

Pedagogy plays a significant role in higher education, and is not necessarily in conflict with mastery of a given discipline. What happens when educators with years of experience never really examine their teaching practices? Don’t they risk “operating by instinct”?

em Creating the conditions required for students to learn in order to reach objectives and determine whether or not they have been achieved (which I call “teaching”) is an art in itself. Of course, there are musicians who are virtuosos without ever having had a lesson, but they are rare indeed. Similarly, there are doubtless educators who are the prodigies of the teaching world without having ever taken any formal training, but I fear they are even rarer than self-taught musicians.

It’s strange that, in many countries, you can’t teach elementary or secondary school if you don’t have the appropriate training and degree, but the only criterion for teaching at the postsecondary level is mastery of a given discipline. I repeat: teaching (in my definition of the term) is an art in itself. If an institution of higher learning hires faculty with no teacher training, it is up to that institution to establish the conditions for them to receive it, and up to the individuals in question to do everything necessary to learn as quickly as possible.

Once properly trained, instructors must be capable of in-depth reasoning on the subject of learning and teaching; of no longer relying primarily on their opinions, intuition, and beliefs or on the imitation of others, but rather on established facts (in particular, those based on experience or educational research); of making judgments founded on what does and does not work, and of explaining why; of designing and implementing useful instructional mechanisms; and of collaborating with others in the field

⁴ Relying on the experience and assistance of UQAM professor Yves Mauffette.



to ensure curriculum consistency. These are the learning objectives of any good teacher-training program.⁵

Is it possible to train oneself? Most assuredly. Our FA2L⁶ cooperative has helped several hundred educators in various different countries take that first (difficult) step, and go on from there. But, above all, teachers must accept that they need to be trained! They have to be willing to leave their comfort zone. Here again, it is the responsibility of universities and colleges to clearly inform faculty members that their professional development as teachers is an obligation, and to give them the means to do so. It is curious that many such institutions have continuing-education budgets for administrative and technical personnel, but that often, very little funding is available to faculty. Funding may even exist, but be rarely used. If institutions do not demonstrate openly that teacher training is a priority, the urgent concerns of instructors will again take precedence over what is “merely” important.

Do instructors need to be evaluated in order to make progress?

em I think that, above all, instructors must be able to assess their *performance themselves*. It isn't necessary to have such evaluations conducted by a third party, unless you're thinking about a show of institutional appreciation (see above). This is true both for students and for academic staff: while learning, we all need benchmarks to know if we're making progress, if we're on the right track, and what remains to be done to reach our objectives. Accordingly, the appropriate measuring instruments must be available.

How can instruction and educators be assessed constructively? What was your experience at the Université catholique de Louvain in this regard?

em At UCLouvain, there are three pay grades for professors, and anyone interested in moving up the scale can submit a file describing his or her performance in the following areas: research, teaching, and “other” (services rendered to the institution or society). As is the case everywhere, there are many applicants and relatively few successful candidates (budget constraints often being the explanation offered).

For a long time now, the committees in charge of classifying candidates has considered themselves capable of evaluating research quality; I can't really comment on the criteria used. On the other hand, they had considerable difficulty assessing teaching, and tended to treat a lack of problems as a guarantee of quality (see above).

The science and technology sector felt it needed a means as reliable and objective as possible to assess instructor performance, in order to properly deal with the *teaching* aspect of promotion applications. The sector committee therefore established a grid consisting of six criteria and four levels of performance. The six criteria in question (others are obviously possible) are:

1. the way in which the applicant designs educational activities (e.g., objectives stated as intended learning outcomes, constructive alignment);
2. the way in which the applicant implements educational activities (e.g., an instructional mechanism tailored to students);
3. the applicant's reflections on education and the way they are integrated into the educational activities he or she organizes;
4. the applicant's involvement in the educational activities for which he or she is responsible (e.g., periodic review of mechanisms);
5. the professional-development actions undertaken by the applicant;
6. the applicant's acceptance of education-management responsibilities (e.g., for a given discipline or curriculum).

For each criterion, the committee identified what is required to reach each of four levels, with ratings going from the acceptable minimum (+) to excellence (++++).

By and large, the levels are defined as follows:

The applicant performs the duties assigned **without any apparent problems.** (+)

The applicant demonstrates regular efforts to improve his or her teaching and takes student surveys into account, but essentially **on an intuitive basis.** (++)

The applicant examines his or her teaching **critically** from both a reflective and a prospective viewpoint, and develops and implements a plan to enhance its *usefulness*. (+++)

The applicant **takes an active role** in giving other educators the benefits of his or her experience. (++++)

⁵ Editor's Note: A skills profile for college teachers was developed a few years ago by a PERFORMA working group. A 1999 article on the subject by Sophie Dorais and Jacques Laliberté, entitled “Enseigner au collégial aujourd'hui. Un profil de compétences du personnel enseignant du collégial”, was published in Vol. 12, No. 3 of *Pédagogie collégiale*.

⁶ [FA2L.be].



Criterion 1, for example, would look something like this:

CRITERION 1: DESIGN OF EDUCATIONAL ACTIVITIES

+	The applicant has provided descriptions of his/her teaching, without necessarily demonstrating evidence of in-depth reflection.
++	The applicant has provided descriptions of his/her teaching; these descriptions are of high quality, especially as regards learning objectives, which are truly learner-centred.
+++	The applicant has demonstrated evidence of constructive alignment among learning objectives, learning activities, and learning assessments.
++++	The applicant plays an active role in helping other faculty members achieve constructive alignment among learning objectives, learning activities, and learning assessments.

We can see that this grid can easily be used by instructors to determine their level with respect to this criterion (as well as the five others) as honestly as possible. The same grid is used by the committee charged with judging faculty members' classroom performance, for example when processing applications for promotion: this judgment is made exclusively by the individual's peers (and then submitted to the administration), on the basis of published criteria. Professors can then conduct a "self-diagnosis" and decide

where their strengths and weaknesses lie. The committee may also provide applicants with feedback on which criteria they need to improve.

Anecdotally, I will add that the committee for the science and technology sector found this type of tool so useful that it has established and now uses two others, as well: one for research, and one for services.

Could Quebec import this method for use in its colleges?

em If we go back to the idea that a good teacher *looks* for problems, the means to do so must exist. Given that, I'm told, Quebec college teachers are not compensated on the basis of merit, they must be able to find personal and professional reasons for improving. Let's view this as the need to be responsible for one's own professional development: educators cannot reasonably be expected to be the same leaving the profession as they were going in. The natural acquisition of experience and greater self-confidence is not enough. There is great personal satisfaction in becoming better at one's craft—and knowing why. Personally, I see no reason to think that the ideas and approaches that I just described would not be applicable in Quebec, but isn't that up to *you* to tell *me*? ◆

REFERENCE

BIGGS, J. 1999. *Teaching for Quality Learning at University: What the Student Does*. Buckingham: Open University Press.

ADDITIONAL INFORMATION

College teachers who would like to participate in a self-evaluation can meet with their institution's educational advisor or contact their professional-development office. Assessment questionnaires on teaching (or teachers, depending on the language used by a particular college) likely already exist. A few *Pédagogie collégiale* articles have also tackled this topic, in particular:

DORÉ, A. 2007. Entering a Profession: Occupational Integration Strategies for Teachers. *Pédagogie collégiale*, vol. 20, no. 2 (Winter). Available at [aqpc.qc.ca/sites/default/files/revue/Dore-Vol_20-2A.pdf].

LEFEBVRE, A. 2013. A Tool for Developing Reflective Practice. *Pédagogie collégiale*, vol. 26, no. 4 (Summer). Available at [aqpc.qc.ca/sites/default/files/revue/Lefebvre-Vol_26-4%28A%29.pdf].

MÉNARD, F. 1998. Le fantôme de l'évaluation de l'enseignement. *Pédagogie collégiale*, vol.12, no. 1 (October). Available at [aqpc.qc.ca/sites/default/files/revue/menard_fabien_12_1.pdf]. In French only.

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