THE IMPORTANCE OF MOTIVATION FOR THE DEVELOPMENT OF METACOGNITION, SELF-REGULATED LEARNING AND AUTONOMY

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CONTEXT

Several years ago I noticed that many of my first-term students, coming from high school, seemed unclear about the methods of intellectual work to put into practice to learn better. Wanting to facilitate their transition into the world of college education, I decided to introduce them to some learning strategies, including note-taking and reading strategies. The students listened to me attentively, and seemed generally interested. However, it seemed clear that my teachings, for the most part, and especially for the weaker students, went unheeded. This led me to take an interest in self-regulated learning and motivation, two concepts intimately linked to the development of student autonomy.

Below I will discuss the methods that I implemented in my classes, in light of my thoughts about these concepts, in order to promote metacognition in my students and help them to develop strategies for learning (or cognitive strategies) that are relevant and effective for them, and that they would be able to mobilize autonomously.

▶ METACOGNITION, SELF-REGULATION AND SELF-REGULATED LEARNING

The learning strategies fall within the realm of *metacognition*. This concept, very often voiced in the educational community, has many meanings depending on the school of thought that employs it. That said, it is normally used to refer to the *regulation* of cognition, the mental activity of a person examining their own mental processes (Gagnière, 2010). In most of the literature on the subject, the regulation of cognition refers to a three-phase cyclical process in the person who must perform a mental task: the anticipation of the task (planning), the control of the task (monitoring) and adjustments made during the task or in anticipation of the next (Pintrich and De Groot, 1990). For example, if I boil an egg for 10 minutes and then notice that it is overcooked (control), I will mentally adjust the cooking time required, meaning that I plan to cook it less next time. This is an example of simple regulation in everyday life.

However, faced with more complex tasks, a person may not know how to adjust when they do not achieve the desired results, which is the case for some of my students, especially in the first term, who often cannot make the necessary adjustments to learn better and more effectively. Since cognitive regulation is the foundation of all learning, teaching strategies to support students in this process thus appears to be useful. It is important to note, however, that the research literature emphasizes that this is only effective under two conditions (Cartier and Butler, 2003): first, the student must be able to evaluate the reasons why they do not achieve expected results (where self-assessment strategies are involved – I will come

back to this). Second, they must be willing to adjust (here motivation plays a major role). In other words, if we consider metacognition in a training perspective, learning strategies form a body of knowledge that a student can refer to throughout the regulating process of their cognition. Teaching note-taking or reading strategies will enhance the repertoire of these cognitive tools that a student possesses. However, this will only have an influence on the regulating process if other elements constituting it are brought together. To use an analogy, it is like putting a more powerful engine in an automobile without adding fuel to start the engine. In other words, it will not go far.

With the emergence of different schools of thought favouring a more systemic approach like constructivism, the design of the cognitive regulation process described above is refined. It is therefore considered to be a competency that falls within a more global vision of the person: *self-regulation*. This takes into account a set of regulatory processes that may influence a student's ability to self-regulate, including metacognitive regulation, of course, but also affective, behavioural as well as contextual regulations (Pintrich and Blazevksi, 2004). In this instance, the importance of the emotional aspect emerges and represents a first step that will lead researchers to consider the link that exists between metacognition and motivation.

Currently, the contributions of socio-cultural theories, notably those of socio-constructivism in education, continue to enrich the concept of self-regulation. Formerly characterised as a competency that can be developed and mastered by an individual, this notion migrates towards that of *self-regulated learning*. This is the self-regulation of learning in a school context considered as a process where the student's interaction with their

environment (social, in particular) allows them to develop their knowledge, through loops of self-regulation (Pintrich and De Groot, 1990). From this perspective, self-regulation naturally belongs to the student, but can be influenced – positively or not – by the student's environment (Bélec, 2018). It is at this moment that it becomes interesting for us, the teachers: we can work with the development of the process of self-regulated learning, because we are in a position to introduce a context that favours this development. Knowing that several major studies point to self-regulated learning as a factor strongly correlated with school success and persistence (Buysse *et al.*, 2014; Dignath and Buttner, 2008; OECD, 2003), considering ways to promote the development of self-regulated learning among students appears to be even more relevant.

HOW DO WE PROMOTE THE DEVELOPMENT OF SELF-REGULATED LEARNING?

I then began exploring the factors liable to promote this development. During an Acfas conference I took part in at in May 2015, Sannier-Bérusseau and Buysse (2015), two researchers from Université Laval submitted the results of a major review of the literature conducted through an international review of scientific and professional works. They identified five factors that stand out for having a positive effect on the development of self-regulated learning:

1. Leading students to have a need to use learning strategies to act on their **perception of usefulness,** notably by providing them with significant goals.

2. Giving the place of honour to **metacognition,** where it will be a topic of discussion and structuring reflection.

3. Introducing means to protect academic and affective **motivation** as much as possible.

4. Providing students an opportunity to **actively interact...**
   ... in order to trigger **cognitive conflict** that results in feedback;
   ... in order to increase their **feelings of self-efficacy.**

5. Creating a space where students can **be autonomous** and provide them with the means to do so.

After the conference, I began to think about how to implement these strategies in my classes. I specifically looked at the motivational aspect, because it was the one that was most familiar to me. After close analysis, I soon realized that almost all the factors favouring the development of self-regulated learning were closely related to the sources of the motivational dynamic model of Viau (2009).

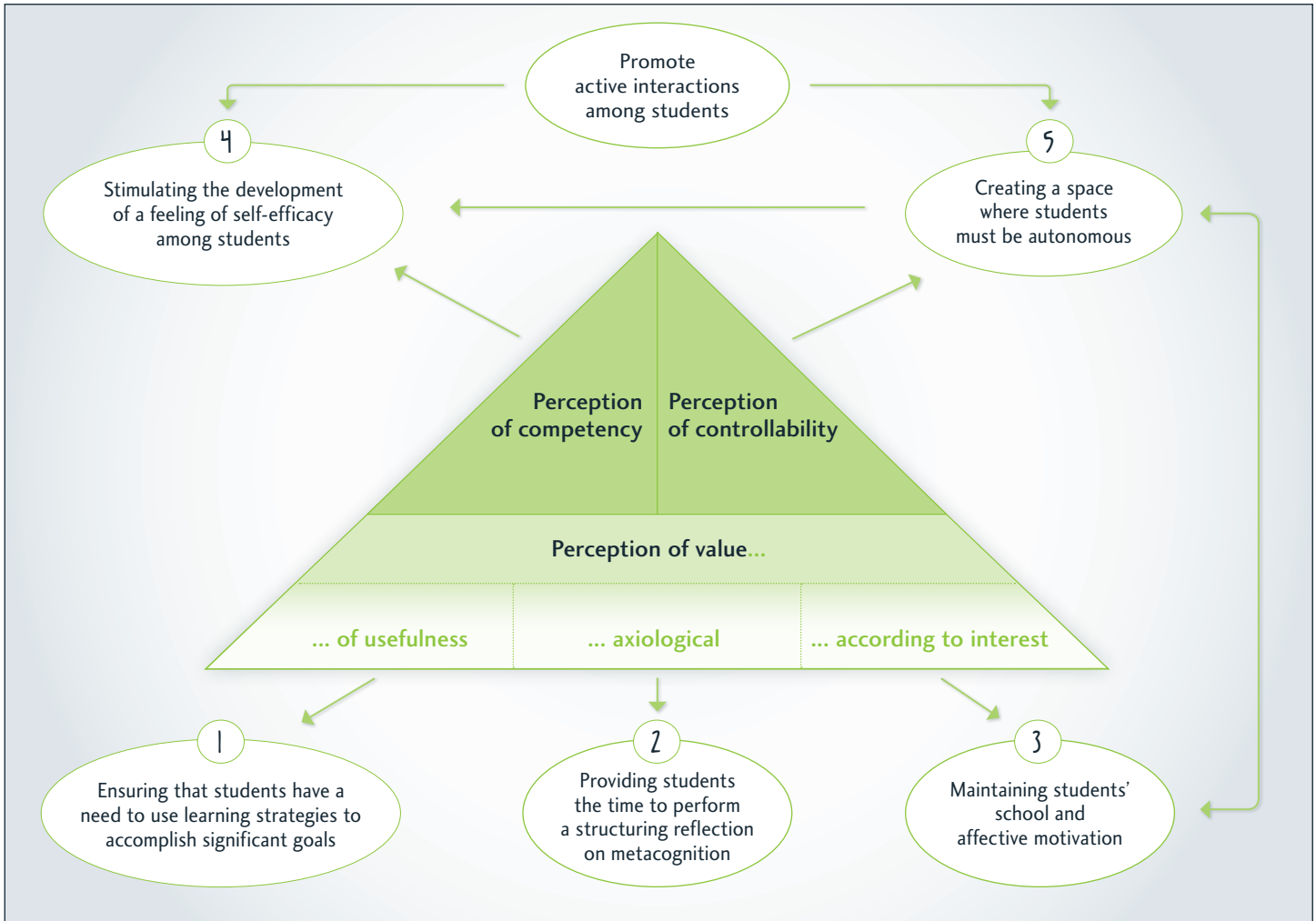## MOTIVATIONAL DYNAMIC: FOLLOW-UP AND ENRICHMENT

To clarify my ideas, here is a little recap of the motivational model according to Viau (2009), probably the best-known theory in Quebec to explain motivational dynamics in an educational context. According to his model, the motivation to learn comes from three main sources. The first is the *perception of value*, which is itself influenced by two factors: *interest* (the student likes it) and *usefulness* (it could be useful to the student, help them to attain their goals). Viau evokes some related concepts in explaining his model, including the perception of the importance of a subject's value (Wigfield and Eccles, 2000, in Viau, 2009) and the symbolic value (Delannoy, 2005, in Viau, 2009). However, Viau chooses to leave these concepts on the sideline for various reasons. For my part, my experience as a teacher, especially in general education courses, leads me to consider these axiological aspects as being crucial to the motivational dynamics of students. Indeed, I have often seen how this aspect can affect their perception of the value of an activity: students may not like to do something (lack of interest) and not really see how they will use it in their everyday life (perception of usefulness), but can still be motivated to do so, because they perceive learning as *significant*, a feeling that goes beyond their personal tastes or goals. In light of this, I compliment Viau's model by adding to it the notion of axiological value to Viau's model. By this, I mean the importance in terms of principles or values (philosophical, moral or aesthetic) attributed to an activity or an achievement (this is important, depending on the student's view of the action or even the subject matter, as well as according to their representation of the world and who they are). To summarize, student motivation first draws on the source of this construct, which is the value attributed to an educational activity, a value resulting from the interaction between *utility, axiological importance* and *interest*.

Two major sources of student motivation can be added to Viau's model (2009): the *perception of competency* and *perception of controllability* that are needed to accomplish a task. Based on this model, I was able to establish links with the five factors identified by Sannier-Bérusseau and Buysse (2015). The first three factors on the list appear likely to favour the development of self-regulated learning pertaining to each of the dimensions that contribute to its value, whereas the last two can be related to the *perception of competency* and *perception of controllability*. Figure 1 provides an overview of the relationship between the factors that promote the development of self-regulated learning and the sources of motivational dynamics. Thus, it is on the basis of these relationships that I reflected on my interventions in class in order to support my students in their learning.

FIGURE 1 — **SOURCES OF MOTIVATIONAL DYNAMICS***

Promote active interactions among students

4 — Stimulating the development of a feeling of self-efficacy among students

5 — Creating a space where students must be autonomous

Perception of competency

Perception of controllability

Perception of value...

... of usefulness

... axiological

... according to interest

1 — Ensuring that students have a need to use learning strategies to accomplish significant goals

2 — Providing students the time to perform a structuring reflection on metacognition

3 — Maintaining students' school and affective motivation

* Representation based on Viau (2009)

PROMOTING MOTIVATION AND SELF-REGULATED LEARNING

Here are the five strategies that I implemented to promote motivation and self-regulated learning.

1 — Perception of the usefulness of learning strategies: increasing the level of difficulty

For the teacher hoping to lead students to use learning strategies, it is first the perception of the usefulness (even the *necessity*) of the learning strategies which must be mobilized that impacts if students use these strategies, without which they will not implement them (Cartier, 2010). This is corroborated by what I experienced while teaching. I then asked myself: In what circumstances am I inclined to use, for example, reading strategies? As a rule of thumb, I do so when the text is complicated, difficult, or when learning objectives are significant and involve in-depth learning (as opposed to "superficial" learning).

I thus realized that if I wanted to encourage my students to use learning strategies, I would have to increase the level of difficulty for activities I proposed. This would be carried out so that the students would feel the need to use them, as stipulated in the first of the factors that promote the development

of self-regulated learning listed by Sannier-Bérusseau and Buysse (2015). It seemed paradoxical to me, since, in my literature classes, I had been simplifying my reading tests for years in order to adapt to the idea that I had of my students' reading skills, which seemed to deteriorate year after year. So I changed course completely: instead of giving reading tests with simple questions, I began asking students to perform complex analytical tasks. Some examples included answering, with supporting quotes, nuanced questions relevant to the entire novel, or to draw a physical and psychological portrait of a character, that were backed up by examples of figures of speech and symbols drawn from the whole novel. Regarding note-taking, I now inform them that after a lecture on a literary movement they will have to use their personal notes to draft a network of concepts presenting the links between the era (historical, social or artistic facts) and the characteristics of the current literary movement according to a logic of causation. By being well aware of the complex tasks that await them, students quickly grasp just how important it is for them to use different learning strategies to successfully accomplish the tasks I propose.

Self-regulation belongs to the student, of course, but can be influenced – positively or not – by their environment. This is where it becomes interesting for us, the teachers.

2 **Structuring reflections: reflecting in a "meta" perspective**

Concerning the second factor promoting the development of self-regulated learning, namely to promote metacognition and make it a topic of discussion and *structuring reflection*, I had to read up on the meaning of the concept of structuring reflection. By structuring, Buysse (2009) means to reflect on "the conceptual explanation underlying the knowledge to internalize [...] and the demonstration of the meaning that this knowledge can take" (p. 594). The second factor seemed to me to be directly related to the axiological value that I propose to complete Viau's model (2009).

I was already presenting little theoretical capsules regarding learning strategies; I continued, but let the students speak more. I also created a learning journal in which, among other things, I ask students questions about success, their schoolwork habits, and their thoughts on the requirements set by college

education. At the beginning of the class, I take five minutes to review the questions in their journal and discuss them with them. I want them to think about how they work, to take a step back in order to have a better view of the whole picture. I also want them to see, given the time I devote to these questions, that I feel it is important to me (and to other students, who have a lot to say about the subject). As the session progressed, I began to ask questions about the subject and the activities I also introduce: What are their thoughts on the place literature holds in their studies? Are they uncomfortable with the subject being taught? What do they think about teamwork or activities where they have to participate? I quickly realized that the students' motivation is also influenced by these aspects, which stem from their axiological perception. Indeed, should we be surprised when a student shows little interest in literature because they do not understand its significance? Is it logical to expect a student in a passive and competitive learning paradigm to be comfortable (and motivated) with an activity that requires action and collaboration with other students? Of course, I do not pretend to have modified the students' perceptions and the values that matter to them within 15 weeks, but at least I have created a space where they have to carry out structuring reflections (using the learning journal) and I set aside time in class to review these aspects in a way that requires metacognition. I explain to them how these elements can influence their learning, which I hope makes it possible to get them thinking or, at least, become aware of the existence of these issues.

3 **Motivation: realize the importance of emotion in learning**

The third factor is to maintain both academic and affective motivation. The link to motivation is clearly direct, but how should we interpret this recommendation? Personally, this time I focussed on the concept of interest: ensuring that my students like what they are working on. I endeavoured to allow them seek out works that inspire them (which also refers to the importance of controllability, which will be discussed later), and to propose diverse activities (lectures, reading circles,[1] teamwork, research activities, flipped classroom activities, creative activities, etc.), so that everyone could, at least at some point, do something they enjoy. Above all, I organized

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[1] Ed. note: To learn more about how Catherine Bélec successfully introduces reading circles in her classes, a strategy that can be implemented whenever we ask students to read a text, consult the article entitled "Les cercles de lecture au collégial: une stratégie pédagogique qui pourrait s'avérer profitable dans toutes les disciplines," published in the journal in 2016 (Vol. 29, no. 4, p. 39-45) [aqpc.qc.ca/revue/article/cercles-de-lecture].
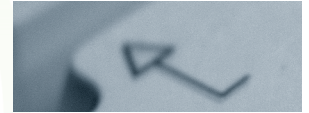
many team activities, as students generally enjoy interacting with their peers. In addition, since the concept of interest is essentially affective, I focussed on working on this dimension with my students in reading circles. I offered only formative feedback in the context of portfolios and reading journals, thus giving students the opportunity to obtain information on the quality of their work and to consequently adjust, without their success being penalized by their first attempts. Lastly, when I have to give them feedback in summative work, I provide considerate and forward-looking comments (targeting the strategies to focus on in the future to improve). Here, the link to self-regulation is the willingness of students to act upon it (fuel in the car, to recall the analogy made earlier).

4 Active learning: to improve self-efficacy

Many of the procedures mentioned so far are also related to the fourth factor: providing students with the opportunity to interact actively, with interactions having an effect on self-regulation. The cognitive conflict that can arise through the confrontation of the students' different interpretations helps them to progress in their learning. Moreover, through ongoing feedback received from peers during interactions, students are able to adjust their self-assessment strategies, something often lacking in weaker students (this, I noticed, is the catalyst that initiates the strategy adjustment process). Working with other students also promotes the development of new planning and adjustment strategies for the regulation process, with every-one's repertoire surrounding these strategies being enriched through the sharing that takes place while accomplishing a task.

However, even if a student is aware of certain problems in controlling the task they perform, it is also important that they believe they are able to manage the situation. This is where the feeling of *self-efficacy* comes into play. Self-efficacy is defined as a person's perception of their ability to perform a task and then to achieve the expected results relating to that task in a given situation (Bandura, 2003). This self-efficacy will be influenced mainly by the person's experiences (successes and failures), although other factors come into play, such as observation, verbal persuasion and physiological state (Viau, 2009). I refer here to the link with the perception of competency proposed by Viau in his model.

Interactions with peers help to adjust the perception of reality some students have, while providing different elements that could improve their self-efficacy. By interacting with one another, students observe their peers, as well as encourage each other. These interactions could also have an effect on physiological states, in particular by reducing anxiety. I have personally seen how self-efficacy can develop when students are allowed to learn actively by interacting during activities. For example, at the start of the term, I asked students to conduct an analysis of several poems while in a reading circle – the poems were a genre that destabilizes many of them and that often results in them having a very low perception of self-efficacy. The discussions that took place while in the circles allowed the students to note, on the one hand, that they are not alone in having difficulties when it comes time to analyzing and understanding poems, which greatly reassures them. Also, the fragments of what they understand resonate in other students' understanding, which reinforces their own perception of self-efficacy. On the other hand, students who ultimately have made a very good analysis of most of the poems evidently realize that they are not so bad, since they have succeeded on their own. Of course, I provide them with a framework for the analysis pro-cess and, during their discussions, I reassure them or ask them a question aimed at redirecting them. It is important to note that this remains the result of their efforts, not mine. They are competent – or at least, much more than they originally thought.

Student motivation first draws on its primary source, which is the value attributed to an educational activity.

5 The student becoming autonomous: finding a balance between supervision and stepping back

The last factor favouring the development of self-regulated learning consists of creating a space where students must be autonomous. This closes the loop towards the last key concept of Viau's motivation model (2009), namely the perception of controllability. I then tried to decide what I could leave to the control of my students. Therefore, during the session I organize two reading circles where students have the opportunity to choose the book they prefer from among a selection of books. Additionally, I let them organize their reading schedule. I provide them with several opportunities to build upon their own knowledge themselves, either by doing their own research or by observing. For example, on the day I have to discuss the theory of literary genres, I arrive with a suitcase full of books belonging to different genres and I ask students, as a team, to identify what they believe to be genres, then to draw a diagram representing the main genres and sub-genres. I also give them some latitude in their way of expressing their learning. For

instance, by drafting a reading journal where students can choose the style (images, letters to the author, comments, annotated excerpts), as long as certain criteria related to the content are respected. Some students asked to create a common reading journal through a private group on Facebook (where they invited me). This medium allowing them not only to discuss the book among themselves, but also to share interviews with the author, documentaries about the events of the work, etc.

> If we want our students to become autonomous with regard to intellectual tasks, it becomes necessary to promote the development of their self-regulation.

As teachers and content specialists, we need to make so many decisions that we are hesitant about; we waver between 10 exciting works, between this or that way to conduct an assessment! Our choices are at times guided by our professional judgment. In these cases, there is obviously no question of letting the students have control over the matter, since we make these choices based on our expertise and experience in order to help them in their learning. However, some choices are guided only... by the need to make a choice! This is where it is possible to hand the control over to the students, to make them autonomous. At the same time, they increase their self-efficacy (they can adopt approaches they feel more comfortable with) and their commitment (which makes them more accountable to the learning situation where they are more active), while taking advantage of the chance to move towards their intrinsic interests. Motivation is thus mobilized and self-regulation favoured. The student is more in control and responsible for planning their learning; they cannot sit back passively and count on the teacher alone. And for us teachers, this opens the door to the potential for refreshing creativity and fruitful initiatives. It becomes a win-win situation.

CONCLUSION

All things considered, metacognition – and all the learning strategies that we will teach – only becomes possible when certain conditions are present. These conditions are deeply rooted in the sources of Viau's motivational dynamics model (2009), namely the perception that a student has of the value of learning, the perception of their ability to achieve it, as well as the perception they have of their margin of control over it. If we want our students to develop autonomy in intellectual work, it becomes necessary to promote the development of their self-regulation and, to succeed in this, we must consider metacognition in a much more global context than the simple explicit teaching of study methods.

Teachers in all disciplines would benefit from taking an interest in developing self-regulated learning, since this is how they will gradually help their students to advance autonomously in their learning. Moreover, the factors that help to promote the development of self-regulation provide an opportunity to work on motivation. This is an approach that teachers have every interest in favouring, because it is both more effective than simply teaching learning strategies, and more importantly, because it helps to improve the teaching dynamic by providing stimulating challenges to students and giving them the opportunity to be active, creative and responsible for their learning. So it is not only the students who will be motivated by this approach... but also the teachers! ◗

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