

THE TRANSITION FROM DISCIPLINARY EXPERTISE TO CURRICULAR KNOWLEDGE: AN ESSENTIAL STEP IN THE ACQUISITION OF DIDACTIC COMPETENCY



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Within the framework of a coaching activity and in my role as a resource person, I became interested in how Lyne, a teacher in Nursing, would integrate a didactic frame of reference into her teaching practice. What paths would she choose to get there? How would this process unfold for her?

The purpose of this article is to show the path taken by Lyne and also demonstrate the support a resource person can bring at various moments of the integration process.

SIX KEY MOMENTS FOR INTEGRATING THE FRAME OF REFERENCE

Discovering a new didactic frame of reference corresponds to the implementation of this perspective in one's teaching practice. It is while doing research that I recognized the impact of this discovery on the construction of didactic competencies for the teacher in question.

Thanks to Lyne's close cooperation and the data documented in my journal subsequent to our coaching sessions, which I was later able to analyze and interpret, I identified six specific moments for integrating the frame of reference.

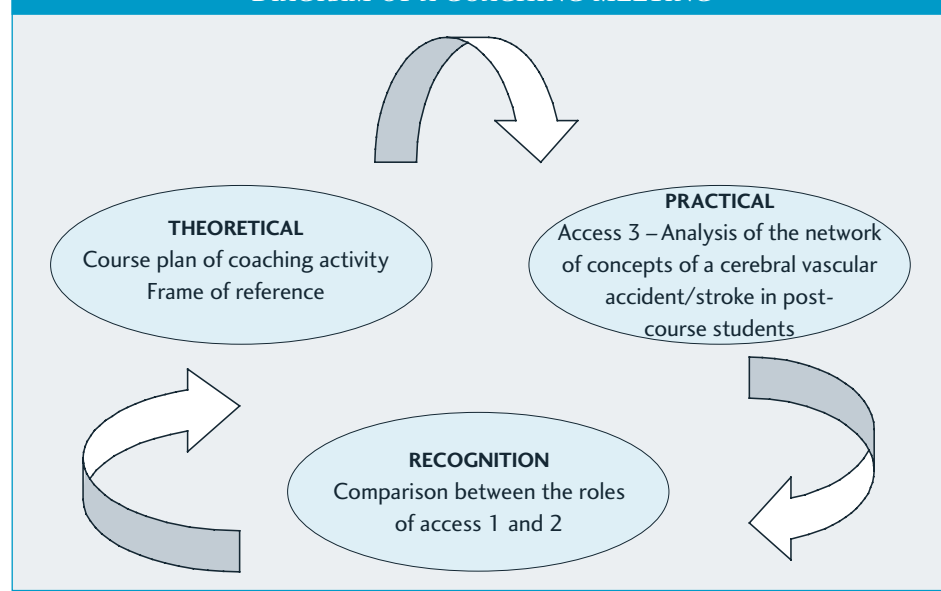
While still in the planning stages, I had deliberated at length on the best way to guide Lyne so that the procedure would be meaningful. The idea of building links between the way she currently chose relevant content and developed her learning strategies and what I was proposing came from Perrenoud (2001).

Lyne constructed her didactic knowledge and competencies by moving between her teaching practice in Nursing and the theoretical notions supported by authors such as Shulman, specifically his framework (1987) synthesized by Raymond (2001-2002) in *L'encadrement en didactique*, and concepts put forth by Raisky in the didactics of professional knowledge (1993, 1999).

We should keep in mind that Shulman's framework (1987), as synthesized by Raymond (2001-2002), comprises five types of access: access 1 refers to the teacher's relationship to specialized or disciplinary knowledge; access 2, the teacher's relationship to curricular knowledge; access 3, the learner's relationship to the subject to be learned; access 4, the teacher's relationship to the didactic material and lastly, access 5, the teacher's relationship to learning strategies (refer to the article by Bizier in this issue).

Broadly speaking, these coaching sessions have a mirror effect on the teacher. As she continues to examine the object of her initial didactic process using the above-mentioned theoretical concepts, she becomes aware of a number of things. Her growing awareness seems to enable her to distance herself, which is favourable to the development of a new outlook in her approach to the nursing content.

Figure 1
DIAGRAM OF A COACHING MEETING



When we accessed the frame of reference via the course plan versus an analysis of conceptual networks, I noted that Lyne's learning path was circular and that it could be illustrated by a spiral leading towards the objectives (figure 2).

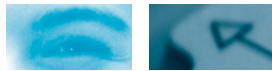
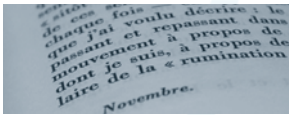
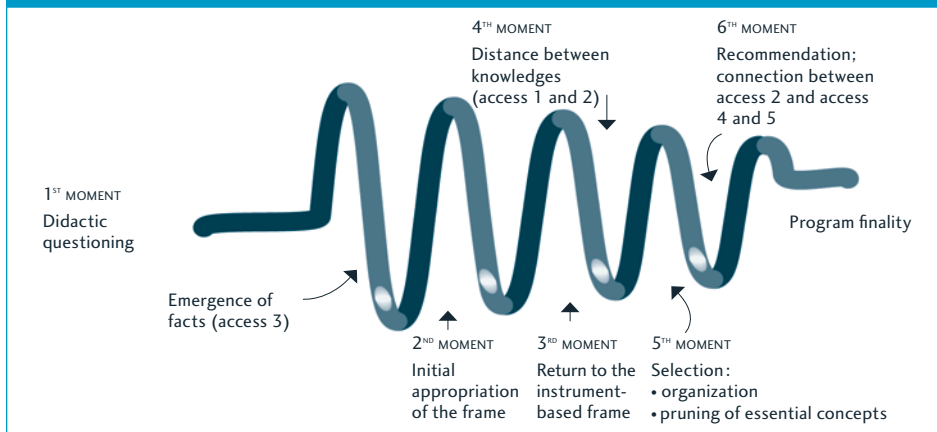


Figure 2
THE LEARNING SPIRAL



The movement between the different access points accomplished by this teacher, reflects the fact that she is developing a new perspective in her journey. Her learning motion, the beginning of the spiral, starts with questions dealing mainly with the knowledge to be taught to students. (access 3).

1ST MOMENT

"All subject matter is important!"

Emergence of observations resulting from didactic questioning

Lyne accesses didactic questioning through the relationships the students have with the subject (access 3). An exam on the conceptual networks of her students relative to the nursing care required for a stroke brings to light the fact that there are many concepts that are poorly interconnected when it comes to understanding the stroke per se, from whence the students' confusion. "I am astonished that what appears so important to me, as a teacher, is confused and poorly organized in the minds of students".

This observation is startling and such a major destabilization factor that the teacher fails to access the framework. The destabilization that she mentions quite specifically during a coaching session is, to my mind, *the gap* between her own representation and her students' conceptual networks.

2ND MOMENT

Initial appropriation of the didactic frame of reference

I then suggested to Lyne that she schematize the frame of reference. Her schematization shows that she has not yet established a link between curricular knowledge and other access points for the frame of reference, given that ministerial specifications are determined outside the college.

Following feedback based on *L'encadrement didactique* (Raymond 2001-2002) concerning curricular knowledge within the program (access 2) and based on Lyne's participation in elaborating the framework plans and course plans for the 5th and 6th sessions of the program, I realize that she has given preference to her experience and expert knowledge in choosing the content to be taught. Her beliefs and the way she perceives nursing directly influence her choice of program content. She then introduces in the process the questioning relative to the knowledge to be taught in the program.

3RD MOMENT

Return to the instrument-based frame of reference

At this point in time, I recommended that she analyze the conceptual networks and answers to the basic exam questions dealing with strokes, in order to establish a precise diagnosis of the learning problems.

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After the analyzing the conceptual networks, examining and compiling the most frequent errors committed by the 36 students on four exam questions dealing with strokes, she notices there is a high degree of difficulty, complexity and abstraction associated with the knowledge connected to this pathology, which is compounded by the fact that the biology course on the neurological system comes after the first group has completed her course.



Four elements emerge from her analysis, showing that:

- several students have difficulty distinguishing between some of the theoretical concepts;
- their answers to exam questions lack precision;
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- their answers to exam questions lack precision.

At this stage, Lyne has demonstrated her ability to accurately diagnose the learning problems of students. She realizes that it is not the quantity so much as the quality of useful and essential knowledge that is important for the student.

4TH MOMENT

The construction of conceptual networks means establishing distance between expert knowledge and curricular knowledge (access 1 and 2)

Lyne then constructs two conceptual networks dealing with nursing care required during a stroke: the first is the network of expert concepts that she developed as an experienced practicing nurse; and, the second is the network of curricular knowledge that she was using in the program prior to undertaking the coaching activity.

For Lyne, the goal of this exercise is to *distance* her expert knowledge from the curricular knowledge within the program. When we examined the 2nd network of concepts, I noticed that she referred to the complementary role of a nurse in relation to other health professionals, in addition to covering actual nursing care per se.

I also noticed that nursing care does not occupy the central role. Therefore,

her frame of reference goes beyond what a nurse must know when she enters the labour market.

While reflecting on this point and validating it with her, it seems to me that this so-called detour is due to a multidisciplinary approach instead of one that is focused primarily on the nurse. Lyne confirms that she has worked several years within a multidisciplinary team in her practice at the C.L.S.C. Her professional practice directly impacted the choices she made as well as the organization of the network of concepts to be taught. This example allowed me to grasp that we are not always conscious of the fact that our professional experience colours our relationship to the curricular knowledge (i.e. the knowledge that is to be taught), yet it has a direct impact on both the choices we make and the organization of the content.

A comparative analysis of Lyne's expert network and the network of curricular knowledge that she used prior to the current didactic questioning enabled me to show clearly that *the gap* between the two conceptual representations was *small*. This comparative analysis also gave me the opportunity to modify the framework of the essential knowledge required to meet program objectives. The distance that this teacher must now establish between her expert knowledge and curricular knowledge is experienced as a change in perception of her competency.

The distance between expert knowledge and curricular knowledge in programs is a crucial factor in the integration process of didactic knowledge and competencies.

At this stage, it is important to mention that with my support and the confidence I expressed in her learning abilities, Lyne persevered. She displayed the openness and willingness needed to acquire these competencies and become a better teacher.

Perrenoud (2001) emphasizes that "All training brings about changes in representations, even teaching practices. Therefore, it naturally gives rise to resistances that are that much stronger when they affect the solid core of our beliefs and acquired competencies." (Perrenoud, 2001, p. 169)

The distance between expert knowledge and curricular knowledge in programs is a crucial factor in the integration process of didactic knowledge and competencies. Actually, this distance is perceived as a transitory identity loss only since distancing these types of knowledge consolidates the teacher's role and returns curricular knowledge to its rightful place.

5TH MOMENT

Selection takes place through the organization and pruning of essential concepts to be taught (access 2)

After having recognized and removed the obstacle created by the distance between these types of knowledge, it is possible to overcome resistance and delve further into Lyne's practices. I recommended the following three stages.



Initially, she is to choose one of the most common professional situations in nursing, in this instance, the ischemic stroke. Then, she must analyze the situation according to Raisky's model (1993); finally, she is to select the most relevant curricular knowledge so that it can become a learning situation. She then identifies the nursing and biological knowledge in student reference volumes. To make sure that this situation is indeed the most current and includes proven and relevant knowledge, she consults several scientific magazines as well as the standards of the professional association. These choices and the organization of the content are carried out on a recognized and documented basis.

Upon closer inspection, it appears that Lyne articulates the nature and complex structure of concepts to be taught in order to establish a significant relationship between them. For example, she modifies the term "neurological attack" and adopts "neurological impairment" instead; then lists four categories of neurological impairment: minor, major, reversible, irreversible.

While pruning the network of concepts relating to curricular knowledge, we had a discussion to align ourselves with the teaching objectives. During this pruning, I proposed several possible combinations of concepts and paid close attention to her answers to see if her expert knowledge influenced the latter. After this discussion, Lyne retained two categories of deficiencies, reversible and irreversible, as well as two categories of nursing concepts, the therapeutic process and medical rehabilitation.

These choices are part of the research into "meaningfulness" and constancy in the use of these concepts; they are key structural elements because they organize curricular knowledge and can function as references. Using the learning situation relative to an ischemic stroke, Lyne wants to transfer this learning to other types of strokes such as cerebral embolisms and haemorrhagic strokes.

6TH MOMENT

Recommendation for a revision of learning strategies and didactic material (access 4 and 5)

Subsequent to discussions on the concepts put forth by Raisky for didactics of professional knowledge, Lyne decides to recreate a context in the laboratory that is as close as possible to the one found in hospitals. She rearranges her classroom accordingly. At the heart of the overall strategy is the implementation of a case study on a simulated situation of nursing care during an ischemic stroke. This simulated case study unfolds over time and follows the logic of the nurse's decision-making process (Raisky, 1993, 1999).

Lyne intends to juxtapose two approaches: the problem situation approach and an approach using discovery. Alternately, she will introduce research workshops and brief lectures so as to consolidate the relationships between concepts. Moreover, she will use a variety of didactic tools, videos, a three-dimensional model of the brain and volumes; all of which respect the parameters of a learning situation.

It is important to connect the new conceptual network of curricular knowledge to the learning strategies and the didactic material of this new proposal.

CONCLUSION

It is relevant to add that after testing this new proposal, Lyne found that students had a clearer representation of the knowledge to be learned and that the relationships they established between the different concepts were adequate and relevant.

Their examination results reflected the same improvements.

It is important to connect the new conceptual network of curricular knowledge to the learning strategies and the didactic material of this new proposal.

At the end, this experience has shown me that didactic questioning fostered a willingness by the teacher to completely integrate this new frame of reference into her practice. To map out the distance between her expert knowledge and curricular knowledge is one of the important stages of the implementation process. The benefits of developing her didactic competencies are numerous and include, among others, making difficult contents easier to learn and assigning the rightful place to the knowledge that is being taught. ●

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