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Learning to construct school knowledge in lower secondary school geography: what are the challenges for teacher training in the Swiss context?

Alain Pache, Nadia Lausselet, Thibaud Bauer, Marianne Milano, Philippe Hertig[a]
[a] UER Didactiques des Sciences Humaines et Sociales, HEP Vaud, Lausanne, Switzerland
Email: alain.pache@hepl.ch

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Abstract

This paper presents an action research project on a teacher training module aimed at building lower-secondary school knowledge in geography in the context of French-speaking Switzerland. The theoretical framework focuses on the hybridisation of geographical knowledge, a multi-stage transposition process and the development of critical and complex competences. The analysis results show that the eithty-four student teachers in our sample are processing the construction of geographical knowledge for teaching purposes. They are thus starting to put themselves in a teacher's shoes, thereby acquiring a didactic posture. This posture will enable them to further improve their knowledge in geography in the second year. They will address geographical knowledge centred on the academic discipline and its epistemology, but from the perspective of school geography. Ultimately, this knowledge will be cross-referenced to teaching competences taught during education science modules.

Keywords: Geography, Didactics, Knowledge, Competences, Hybtidisation

1. Introduction

Switzerland is a federal state made up of 23 cantons, each of which has sovereignty over the education and training of teachers. Thus, even if the diplomas are recognised at the national level, the training programmes offered in the teacher training colleges (hereafter HEP) have different characteristics, particularly with regard to training at secondary level 1 (Pelzelmayer, 2024).

HEP Vaud, which is the subject of this paper, stands out for having introduced a new curriculum in August 2023 to train teachers at Secondary level 1[1] to teach four subjects. This programme comprises a Bachelor's degree (3 years) followed by a Master's degree (2 years) and, for each subject, modules focusing on generic subject knowledge – referring to the

[1] In the canton of Vaud, Secondary level 1 corresponds to years 9, 10 and 11, i.e. pupils aged between 12 and 15.

academic sphere – or specific knowledge – referring to the syllabus for the level concerned – as well as didactic knowledge. Elements of practical training (placements, integration modules), educational science and practical digital education workshops complete the course.

Until 2023, Secondary 1 teachers were trained in geography at university (Bachelor's level), and then joined the HEP for a two-year Master's-level teacher training course enabling them to teach one, two or even three subjects.

On the one hand, the idea behind this change is to improve employability, given that a teacher trained in four subjects should find a job more easily. On the other hand, it brings us into line with a reality experienced by most teachers who have to take on teaching for which they have never been trained.

The opportunity therefore arises in terms of training to reflect on a didactic posture from the start of training, which would consist of constructing disciplinary knowledge from the outset with a view to teaching, in terms of content, methods and tools. We borrow from Bucheton and Soulé (2009, p. 38) this notion of posture, which these authors define as "a pre-constructed schema of "thinking-directing-doing" that a person summons up in response to a given school situation or task. The posture is relative to the task but constructed in the individual's social, personal and educational history".

Another opportunity lies in the fact that, from the outset, we will be able to integrate the key issues of today's schools into the construction of this school knowledge, issues such as health, the rational use of technology and consideration of the interdependence between the social, economic and ecological dimensions of an issue from a sustainable development perspective, as stipulated in the Plan d'Etudes Romand (PER).

More generally, in terms of the humanities and social sciences, this new curriculum aims to be emancipatory, transformative and critical, in order to provide tools for understanding the complexity of today's world and imagining a viable future, as well as ways of getting there (Pache and Rouiller, 2022; Lausselet, 2022). It is also part of a reflection aimed at rethinking schooling in the Anthropocene era, involving consideration of planetary limits (Rockström et al., 2009) and the principle of social justice. In terms of geography, this means exploring our relationship with the world through a relational, lived and sensory geography (Blondin et al., 2023).

This article then focuses on the three-year Bachelor's programme, which includes disciplinary training. By way of illustration, Figure 1 shows the distribution of training credits over the three years of the Bachelor's programme.

Figure 2 illustrates the distinction between generic subject knowledge and specific subject knowledge (linked to the Secondary 1 syllabus) in the specific case of geography, during the three years of Bachelor's level study.

In the rest of the text, we present our theoretical framework, our methodology, and then the results obtained following the implementation of the first training module, delivered in autumn 2023. We conclude with a comparison of the results obtained and some perspectives for future research.

		Year 1		Year 2		Year 3		Total ECTS
Required courses		Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	
Generic disiplinary courses		40 ECTS		40 ECTS				112
Specific disiplinary courses for middle school		8 ECTS	8 ECTS	8 ECTS	8 ECTS			
Disciplines didactics						12 ECTS	12 ECTS	24
Practical training	Internship	2 ECTS		2 ECTS		15 ECTS		22
	Integration					3 ECTS		
Educational science courses		3 ECTS		4 ECTS		15 ECTS		22
Digital education workshops		Workshop 1	Workshop 2	Workshop 3	Workshop 4	Workshop 5	Workshop 6	0
Total ECTS		61		62		57		180

Figure 1. Distribution of training credits over the three years of the Bachelor's degree (source: HEP Vaud) Source: author's elaboration.

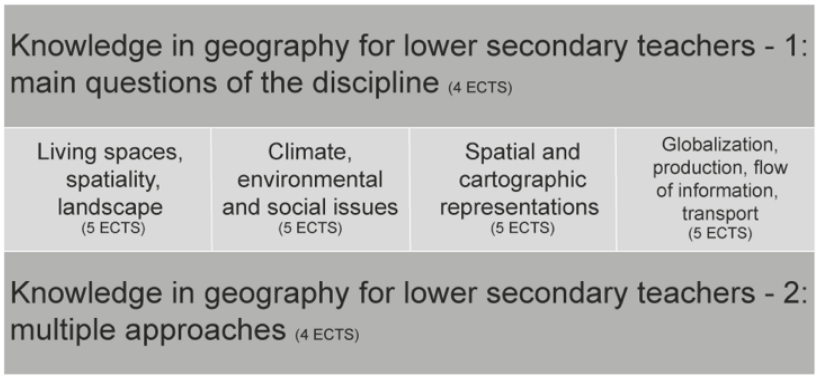

Figure 2. Presentation of the six training modules relating to generic and specific geographical reference knowledge, spread over the 3 years of the Bachelor's degree. There are also didactic modules, not shown here. Source: author's elaboration.

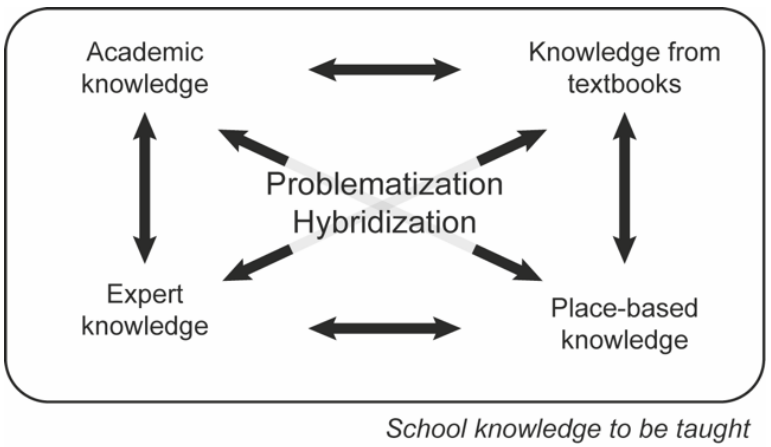

Figure 3. Knowledge to be taught and articulated. Source: author's elaboration.

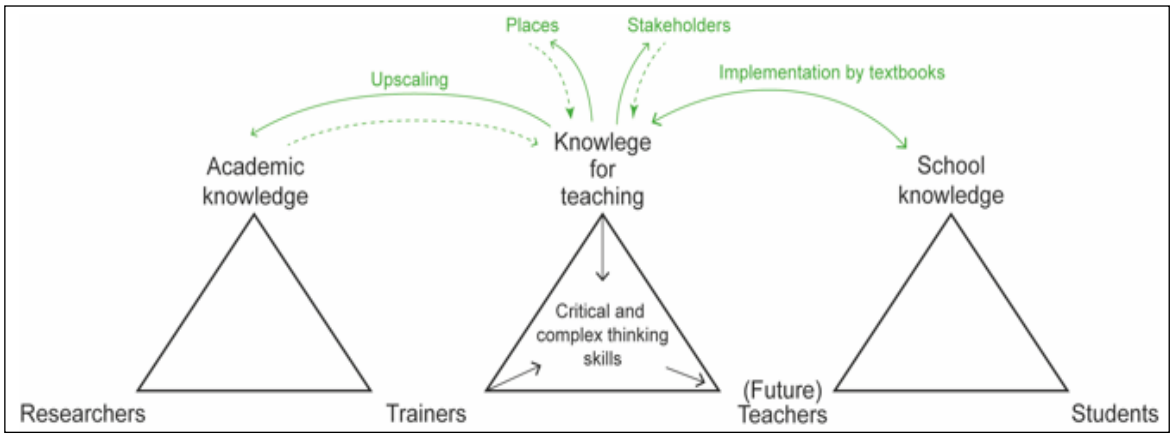

Figure 4. The triple system of research, training and didactics at the basis of a double didactic transposition. Source: author's elaboration.

Analysis of certification reports BS11DIS_GEO

R*eports analysed : 5*

The reports analysed cover the topics of information flows, migration, the production of manufactured goods, climate change and risks (avalanches)

In all five reports, the students are able to identify a current issue and formulate it clearly. However, these issues are not theoretically grounded and therefore not linked to the scientific literature.

Academic knowledge	**Expert knowledge**	**Place-based knowledge**	**Knowledge from texbooks**
Students use **academic knowledge** to define the main concepts and to present research results. The elements are often juxtaposed and are not intended to construct questions or debate.	As for the **experts,** they are often (4/5) confused with the local stakeholders. Moreover, when their comments are called upon, they are not compared with other types of knowledge.	The **places** chosen are consistent with the issues studied. The knowledge presented is often presented in a very succinct manner. It is generally descriptive and presented in a juxtaposed manner. In one case, the places studied made it possible to put forward hypotheses (reflection on the location of EVAM sites). However, these hypotheses were not taken up in the light of scientific knowledge, for example. In another case, the students were able to analyse the places in the light of a concept from the scientific literature (*overtourism).*	With regard to the **knowledge from textbooks**, students point out that some of the data (on information flows, for example) is obsolete, but rarely the underlying values or assumptions. Some also highlight the lack of solutions (in relation to planned obsolescence, for example). Some missing subjects are also highlighted (the problem of heat islands in cities, for example).

Figure 5. An exemple of summary document. Source: author's elaboration.

2. Theoretical framework

In this section, we present the concepts at the heart of our training system: hybridisation, transposition and critical and complex competences.

2.1 The hybridisation of geographical knowledge

In the first introductory module in disciplinary knowledge in geography, the teaching team agreed to place the student teachers from the outset in a teaching perspective. This means that in this module, the student teachers work on disciplinary knowledge specific to teaching, and therefore in line with the curricula and available teaching resources. To draw a parallel with Shulman's PCK model (1986), this amounts to working on Pedagogical Content Knowledge. However, this module is not linked to a practical course, since student teachers in the first year of training only carry out observation.

The construction of a school-based geographical knowledge is at the heart of this module and that the links between different types of knowledge to be mobilised to construct it are highlighted. In line with recent epistemological developments in the academic discipline of geography, we have identified four types of knowledge: academic reference knowledge, expert knowledge, knowledge derived from a place, and knowledge already transposed for use in school textbooks (Figure 3).

As this knowledge is diverse in nature and origin, and encourages "encounters" or "networking" (Bédouret et al., 2018), the notion of hybridisation of knowledge has been introduced. Comparing this knowledge allows points of convergence to emerge, as well as areas of tension or controversy, which encourages problematisation and the identification of elements to be explored in greater depth, for example during an investigation related to a sustainability issue (Stoltman, 2012). The overall aim is to build up a body of knowledge that is up-to-date, alive and linked to the pupils' spatial experience, and so avoid teaching a geography that is paradoxically out of touch with the world.

2.2 Transposition in several stages

This construction of a geographical knowledge to be taught is based on a system of transposition in several stages, which may take place in a variable order: a) the selection of academic knowledge produced by geography research as part of a bottom-up didactic transposition (Bronckart, 1989; Hertig, 2012) rather than an external didactic transposition (Verret, 1975; Chevallard, 1985); b) school knowledge from textbooks mobilised in a bottom-up logic and supplemented in a top-down logic by a broader knowledge for teaching. Finally, c) these two types of knowledge are supplemented by knowledge from places and experts. Consequently, student teachers – future teachers – find themselves at the interface of a triple system: research, training and didactics (Leutenegger, 2009; Pache, 2014) and grappling with a double didactic transposition, as shown in Figure 4.

2.3 Critical and complex competences

By carrying out this work of categorising and selecting knowledge, student teachers develop critical competences,[2] for example by becoming aware that the textbook is already transposed knowledge based on choices, sometimes ignores certain fundamental aspects of a subject, and represents a "social product" resulting from the interaction of four "metasystems": academic, scientific, economic and media (Niclot, 2001). As a result, it can be supplemented by other sources of information, particularly to take account of societal issues or various current events.

Student teachers are also introduced to thinking about complexity at two levels: firstly, in terms of the system of knowledge to be mobilised to construct the knowledge to be taught, by identifying the elements of this system and their relationships; secondly, at the level of the object of knowledge being dealt with, where understanding it from various angles also helps to bring out the complexity of a subject made up of several elements, to determine or understand the limits of these elements, and then to

[2] Competence can be defined as the ability to mobilise relevant resources to solve a problem or perform a complex task (De Ketele, 2006).

graphically represent these elements and these links. Proceeding in this way helps student teachers to go beyond, and even deconstruct, spontaneous forms of reasoning such as linear causal reasoning and binary reasoning (Hertig, 2018). The second stage involves using the system thus defined to formulate possible courses of action in response to a given issue, basing them on appropriate arguments. This presupposes the ability to make forecasts and evaluate courses of action (Jenni et al., 2013).

On the basis of these different concepts, we developed the following research question:

- How can we enable first-year Bachelor's student teachers to build up knowledge for teaching at secondary level 1?

This research question can be divided into two sub-questions:

- How can epistemological and critical thinking be developed among student teachers?
- How can they be enabled to construct an issue by articulating four types of knowledge (Figure 3)?

3. Method and sample

The method used here is that of action research (Bassey, 1998; Dolbec and Clément, 2000), in that it involves putting the training we provide at a distance, with the aim of analysing its impact, strengths and limitations and, ultimately, bringing about change. Such research involves alternating phases of action and reflection. This text therefore corresponds to the first phase of reflection, before delivering this module for the second time.

Among the various data collected, it is worth mentioning the traces produced by the eighty-four student teachers enrolled in this course (drawings and diagrams), the certification reports produced by each group, i.e. an analysis of 23 reports, the notes of the weekly debriefing sessions taken throughout the semester and the interview conducted with two student teachers four months after the course, namely in April 2024. The following points were discussed during this interview: strengths and weaknesses of the module, development of critical and complex competences, categorisation and articulation of knowledge into four types, points to keep in mind for the rest of the course. Student teachers also had the opportunity to add other comments.

To complete our data, we have also carried out interviews in April and May 2024 with two academics, a geographer and a sustainability specialist, both working with teachers.

The analysis of our data took place in two stages. Firstly, each university lecturer assessed the certification reports submitted by their student teachers based on the four types of knowledge defined above (Figure 3). On this basis, a summary document was drawn up by each researcher (Figure 5). These summary documents were then discussed and compared within the research team. The interviews were transcribed using *Trint* and then analysed using conceptualising categories (Paillé nad Mucchielli, 2003).

Secondly, the analyses of each piece of the corpus were compared within the team of researchers, in order to identify the salient features. This is what we present in the next section.

4. Results

In this section, we present in turn the analysis of the traces produced by the student teachers, the analysis of the interviews conducted with two student teachers and two academics, and then the assessment of the university lecturers.

4.1 Traces produced by students

The 23 student teachers projects dealt with geographical themes covered in Secondary 1 according to the PER (migration, natural hazards, production of agricultural or manufactured goods, climate change, etc.). The issues were generally clearly identified by the student teachers and were of interest for the following reason: they were rooted more in the social and cultural realities of the student teachers, and emerged less from scientific literature. The corpus as a whole thus shows that student teachers have appropriated geographical knowledge, and that various types of knowledge have been mobilised to varying degrees, with expert knowledge predominating.

Academic knowledge is used in a descriptive rather than analytical way and is generally used to define concepts (e.g. *overtourism*) in an introductory section, but little or nothing is done to link it to the issues or to other types of knowledge. When scientific articles are used, they are not compared with one another to cross-reference sources, construct a line of questioning or identify areas of tension. It should be noted, however, that some groups of student teachers had difficulty finding scientific articles, thus confusing academic knowledge with popularised knowledge.

The *knowledge of experts* is frequently mobilised and generally put to good use, providing an additional or complementary perspective to academic knowledge. In some cases, however, it is confused with the knowledge of actors who are not necessarily experts in the field under study, but rather have local knowledge (e.g. a passer-by).

Local knowledge is often presented in a descriptive manner and, in most cases, plays an illustrative role. It should be noted that it is rarely questioned from the angle of feelings or values, and that it is not used to bring out areas of tension that could feed into the problem. In a few cases, these places are analyzed in the light of a concept from the scientific literature.

As for *textbook knowledge*, it is often presented as a culmination, i.e. more as a reduction of academic knowledge than as a deliberate choice that highlights certain elements and omits others. Student teachers are generally able to identify the limitations of these textbook extracts, particularly when they are out of date or omit an important aspect of a topic (for example, in the case of migration, a lack of perspective on the challenges of integration in Switzerland, which is a central issue for student teachers who have migrated).

In short, student teachers are able to construct a living geographical knowledge that takes into account the spatial reality of the student teachers, themselves and other actors in the territory. They are also able to identify different types of geographical knowledge and categorize them. However, they still have difficulty linking them together, i.e. understanding how they complement one another in order to identify areas of tension, or even new elements of problematization. This kind of work requires a distinction to be made between the initial question and the investigative issue that emerges after consulting different sources of knowledge. In addition, in only a few cases did the student teachers take a step back and consider the limits of the knowledge they had identified, and the difficulty of mastering the various components of a subject while making choices from a teaching perspective, as the problematic only partially helped them to make these choices. On the other hand, these student teachers identified the need for further research in order to master the subject.

4.2 Analysis of interviews with student teachers

The student teachers interviewed highlighted the strengths of the fieldwork, which enabled them to acquire the geographer's tools, and the small group work during the seminars, which enabled them to grasp the contributions of the module. On the other hand, they noted the difficulty of exploring a place independently in order to build up academic knowledge, which led to difficulties in completing the certification report, and mentioned the lack of explicit links between the different types of knowledge. They emphasised the fact that, in the end, the module was fairly short and that the link between lectures and seminars was not always obvious. They illustrated this by explaining their difficulty in establishing the link between the lecture on the challenges of education for sustainability and the specific work they had to do (in this case on the theme of migration).

In terms of critical competences, the participants noted the contribution of the seminar on reading scientific articles and the acquisition of a certain "legitimacy" in teaching the subjects in the Plan d'études romand. They also stressed the importance of taking a critical look at the fixed nature of the knowledge proposed in the textbook:

Interviewee 3: *But we feel justified in criticising the school system a little and saying, yeah, actually there are lots of things that aren't necessarily right, there are lots of different ways of presenting things, like the fact that in my day, in my generation, geography was only presented in one way, and now we can see that there are different approaches, like with wind turbines. When the students went there, things like that can give you some perspective…*

They did not feel that the competence of thinking about complexity had been explicitly developed, partly because they perceived the topics covered in the course as separate.

As for the types of knowledge, they noted that the proposed categorisation was an aid to learning. However, they did not fully understand the meaning of the arrows in the diagram (see Figure 3). In any case, they did not feel that they had been prepared, during the courses and seminars, to establish the necessary relationships. This is how one student teacher put it:

Interviewee 2: *I think it's a good way of approaching geographical knowledge and presents it clearly. But then, once again, at least in my mind, how I see it.... I really see it as four distinct categories where we don't necessarily have.... For example, we looked at the knowledge derived from a place when we went to the cathedral and then we read scientific articles about mobility, but I don't necessarily see any links....*

In terms of things to keep in mind for the rest of their education, the student teachers mainly mention a number of websites that provide resources for geography (interactive maps, for example), practising reading scientific articles and the importance of sustainability issues.

4.3 Interviews with academic experts

Two semi-structured interviews were held with experts in environmental science from the University of Lausanne, one with a member of the Centre de compétence en durabilité (Expert 1), which took place on 15 April 2024, and the other with a member of the Centre interdisciplinaire de recherche sur la montagne (Expert 2), which took place on 22 April 2024.

On the one hand, Expert 1 works with colleagues seeking to integrate content relating to sustainability issues into their curricula, and on the other hand with teachers at their request or at the request of the Department of Education and Vocational Training (DEF). It was this part of his work, focusing on the transition from academic knowledge to teaching knowledge, that was the focus of the discussion. He prepares his transposition in three stages: a) Entry through knowledge, i.e. identification of the central concepts of a theme, as well as their links and their coherence. This is done on the basis of his expertise, based on the scientific literature, which provides him with a "meta" epistemological perspective that helps him to distinguish marginal or obsolete concepts from central concepts, and also the evolution of the latter. This requires a good level of knowledge, and is therefore only possible in certain fields. For other areas, he will work with a person who is an expert in the field. b) Consideration of the context of the intervention (target audience, time available, whether or not the intervention is part of a wider curriculum, desired focus, etc.). c) Combination of these two stages to identify appropriate learning objectives, and choice of content accordingly.

At a more detailed level, the criteria involved in choosing content are to establish a link between the teacher group's prior knowledge and the planned input, and to identify what might be useful to them in the subsequent process of constructing the knowledge to be taught. The first point proves difficult given the heterogeneity of most of the groups. To do this, he relies on the information provided by the person who commissioned him, or tries to draw on his past as a teacher to put himself in the shoes of his audience, by encouraging a multi-faceted approach to the subject so as to nurture both beginners and experts. On the second point, his main aim is to make people want to get involved in the subject, while providing a basis on which teachers can continue to work. To inspire interest, he combines clarity of discourse (explanation, coherence around a common thread, progression from the simple to the complex, easy-to-read graphics) and ways of using the elements presented.

According to Expert 1, this transposition process is difficult for beginner teachers, as they need time to gradually build up real expertise in a subject over the years. To avoid discouraging them while guaranteeing a qualitatively defensible start to the process, he recommends a simplified methodology that can be used from the outset, with opportunities for gradual deepening, leading them by stages to the construction of academically sound school knowledge that is linked to the pupils' preconceptions. In his view, expert knowledge, like the knowledge of the actors, has its place in the process and in school textbooks, provided that there is a link with academic knowledge (even popularized knowledge) and epistemo-

logical work carried out with the pupils on ways of verifying the validity of this expert knowledge.

The interview with Expert 2 focused on the issues involved in setting up teacher training on community involvement and education for sustainability for the period 2020-2022. The transition from academic knowledge to teaching knowledge was less structured than for Expert 1. The focus was on the diversity of practical training methods, in particular the use of theoretical videos on sustainability and how ecosystems work, as well as creative workshops on personal values. Emphasis was also placed on the graphic dimension of digital media. From a theoretical point of view, academic knowledge on systems thinking, personal values and sustainability was emphasised. The expert would have liked to adapt the content more to the geographical contexts of the places where the training was provided and to compare the content of school textbooks more between the different countries, but the pan-European dimension of the training and the need for homogeneity in educational intervention for research purposes prevented him from doing so.

4.4 The university lecturers' assessment

The university lecturers' assessment highlighted several positive points about the implementation of the module. According to the university lecturers, the student teachers identified geographical objects and acquired various tools of the discipline, in particular sketches, forward-looking diagrams, map reading, etc. They developed some of their problem-solving competences around a collective subject – the city – and around a specific theme – the environment. They developed some of their problem-solving competences around a subject tackled collectively – the city – and around a subject chosen freely with a view to the module's certification. They were able to embark on the construction of a living geographical knowledge and began to reflect critically on the selection of knowledge to be taught and on the limits of the textbook, which convinced them to work on complementary resources. In addition, the categorization into four types of knowledge helped them to "bring some order" to the vast amount of geographical knowledge. Finally, they realised that it is necessary to think about the hybridisation of knowledge if we are to teach in a contemporary and motivating way.

The university lecturers had realised, however, that it is important to clarify the boundaries between these four types of knowledge, and also to show how they respond to one another or, on the contrary, come into tension with one another. The aim is therefore to work on these relationships explicitly during the semester, so that student teachers can then carry out their work independently to construct academic knowledge, particularly for certification purposes. Lectures and seminars should also be better articulated, so as to give meaning to the planned activities and show how the content is interrelated. Finally, an explanatory and systemic approach should be favoured over a descriptive approach where elements are presented in a juxtaposed manner (Figure 6).

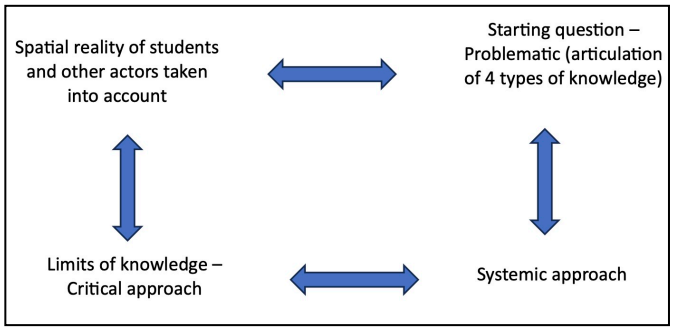

Figure 6. Summary of results obtained.
Source: author's elaboration.

5. Conclusions

Looking at the various results as a whole, it is possible to identify a coherence between the analysis of the student teachers' corpus, the interviews with the two students, and the university lecturers' assessment. The first version of this training course in the construction of school-based geographical knowledge seems to have supported the student teachers in the exercise of an epistemological competence based on the hybridisation of geographical knowledge and double didactic transposition. This was made possible by work on different types of geographical knowledge, the acquisition of which was supported in seminars or on field trips, in parallel with work on problematisation. The didactic transposition was carried out

between the academic knowledge of reference and the knowledge for training purposes, i.e. at a single level of the double didactic transposition, as the student teachers did not yet have access to classes, which would enable them to finalise the process by taking account, for example, of the pupils' preconceptions. Nevertheless, this first stage has enabled the construction of a body of academic knowledge exploring aspects of themes in the syllabus based on the students' interests and experiences.

Although the student teachers were able to identify different types of geographical knowledge, their articulation around a common thread represented by the problem remained a difficulty. A capacity for critical but constructive distancing from certain knowledge seems to have been developed, testifying to the emergence of a critical competence that would benefit from being better consolidated, for example by integrating more solid work with scientific literature. As for the complex dimension, apart from being able to identify knowledge as being a complex system in itself, this still needs to be worked on in greater depth. We therefore need to provide student teachers with better support in articulating the various types of geographical knowledge in order to bring out their complementarities and areas of fertile tension, which can feed into a richer problematisation. One way of doing this is to organise seminar work around a theme that would serve as a common thread for the gradual construction of hybrid academic knowledge throughout the semester, while at the same time exemplifying course contributions and working on the organisation of academic knowledge around this common thread.

The experts' viewpoint is partly in line with the work that has been done (importance of taking account of pupils' preconceptions, articulation of knowledge along a common thread, etc.) but also offers an interesting additional perspective: the importance of not underestimating the difficulty of the task asked of novice teachers, most of whom have only recently left their post-compulsory schooling; identification of a learning progression for the gradual acquisition of a critical and complex competence based on double transposition and the hybridisation of knowledge, tools for conducting epistemological reflection with pupils, the place of values in the construction of knowledge and the importance of integrating the notion of a "knowledge of hope" in the context of themes that can prove distressing, such as global warming.

At the end of this analysis, it is worth asking whether the knowledge covered in this introductory module can compete with the didactic knowledge that will be covered in the third year of training (Pache et al., 2024). From our point of view, the latter will be complementary, once the student teachers have fully understood how disciplinary knowledge can be selected from a teaching perspective and, above all, how it should be articulated (or hybridised).

Our results show that the construction of geographical knowledge for teaching as we have defined it is in the process of being appropriated by the student teachers. They are beginning to put themselves in the shoes of a teacher, thus acquiring a didactic stance and emphasising the relevance of geography for understanding current issues. This is not self-evident in a context where this discipline is often under pressure (van der Schee, 2014). In the second year, this posture will enable them to deepen their knowledge by approaching generic disciplinary knowledge, i.e. knowledge centred on the academic discipline and its epistemology, from the perspective of school geography. Ultimately, this knowledge will be combined with didactic knowledge and pedagogical skills taught in the education science modules. Finally, interdisciplinary approaches will be proposed in order to understand the complexity of societies, with geography being particularly suitable for dialogue with other disciplines (De Vecchis et al., 2011).

However, research needs to be carried out on an ongoing basis throughout these student teachers' training, and then as soon as they enter the profession, to see how this new training can coexist with the existing school culture. Indeed, a great deal of research has shown that logics outside the scope of training are often at work in the classroom (see, for example, Clerc, 2002, Tutiaux-Guillon, 2008, Altet, 2004 or Hertig, 2015). There are also frequent tensions between the theoretical knowledge "acquired" (or at least worked on) during training and the practical (and/or lay) knowledge mobilised during teaching (Altet, 2004), a tension that could also be explored in greater depth as part of this new training course.

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