

A didactic for Vocational Education and Training?

—Critical exploration of the relation between general and subject didactics—

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Abstract

Depending on perspectives and even languages the concept didactics is defined in different ways. The article acknowledges that the debate about conceptualization, particularly concerning the equivalence in English of what in Germanic and Latin languages is termed ‘didactics’, is well documented in the research literature (e.g. Wetsbury, Hoppmann & Riquarts, 2000). There is a claim in this article concerning the need to transcend the language discussion; it argues that there is indeed a need, particularly relevant for VET, to develop a close linkage between what some authors (e.g. Wenerstam & Hansen, 2006) consider “an empirically based” side of didactics associated to empirical findings and the “non-empirical” associated theoretical constructs for understanding the teaching-learning process.

The article intends to critically revisit a number of influential didactical works both from German, Nordic and Anglo-Saxon contexts in search to contribute to the development of didactics for specific intricate subject of vocational education and training. The article does not intend to propose alternative solutions but suggest lines of development, encourage discussions and the further research that is required.

Introduction

Earlier studies like the one by Klaus Hoffmann (c.f. 1996, p.95) indicates that the literature on didactic models offers “a confused profusion of planning strategies, and especially the beginning teachers are faced with a considerable classroom dilemma”. Moreover Hoffmann argues that “there is hardly any sufficiently well-founded theory of teaching on the basis of which specific and individual instructional models of practice and action could be substantiated, transferred and integrated”. This claim, with additional arguments, is to be found in subsequent research on didactic particularly in what can be called the German and Nordic tradition (e.g. Kansanen 2009, Meyer, 2010, Uljens 1997a,b). Particularly interesting in this context is the proposal of the so called “design for learning” by Staffan Selander (e.g. 2008) which might bridge the more traditional notion of didactics in the Germanic and Nordic context and the curriculum theory Anglo-Saxon tradition. In the subject/area of vocational education and training (VET) participants involved in the learning process are systematically challenged by a complex and multidimensional variation in context with demands for innovative approach to didactics.

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research on didactics in the complex area of vocational education and training.

Didactics – A needed conceptualization

Much controversies are visible in the different ways that didactics has been conceptualized (c.f. Hudson & Meyer, 2011; Klinberg, 1972; Uljens 1997b.). Interesting for the subject matter of this article is the analysis by Stefan Hopmann (2006) on the traditional path of development of didactics and how it influences the design of specific didactic strategies in different subjects. Hopmann traces the origin of ‘Didaktik’ back to the ideas of students’ activity (Socrates), in a disciplinary setting (Hugh of Saint Victor), with a certain order of knowledge (Thomas Aquinas) and necessary choice of subject matter (Comenius). He adds that in the German context, ‘Didaktik’, in its different forms, can be described as systematic reflection about how to organise teaching in a way that brings about the individual growth of the student. This means accordingly that subject matters can open up different educative meanings for learners; and thus that teaching and learning follow different paths. ‘Didaktik’ as presented is very different from a curriculum perspective where subject matter and meaning have to be close and also from the French tradition of ‘transposition didactique’ which is interested in differences between meanings and subject matter in order to enable the learning of the appropriate meanings of such matter.

Hopmann (2006) argues that the search for a common core of Didaktik has been a continuous endeavour; from this argues that “innumerable variations available, for every purpose and taste” as presented below.

Table I. Modes of ‘didaktik’ (Hopmann, 2006, p. 114)

	Modes of Didaktik				
	<i>Foundations</i>				
Reference	Methodological	Normative	Institutions	Clients	Actions
Philosophical	Hermeneutical	Catholic	Nursery	Children	Education
Anthropological	Phenomenological	Jewish	School	Adults	Instruction
Psychological	Experimental	Marxist	University	Handicapped	Training
Sociological	Empirical	Ecological	Company	Parents	Teaching
Educational	Constructivist	Humanistic	Prison	Minority	Playing
Etc.	Etc.	Etc.	Etc.	Etc.	Etc.

Combining any two of these examples leads us, according to Hopmann (2006, p. 114), to “the core of at least one existing school of Didaktik”. He would however make the distinction the in spite of this seemingly unlimited variety of scopes most of these modes of ‘Didaktik’ share the same common places to describe what Didaktik is about, namely, (a) the concept of ‘Bildung’, (b) the embedded differentiation of matter and meaning, and (c) a concept of the necessary autonomy of teaching, thus continuing the above mentioned problems of order, sequence and choice within their respective frames of reference.

Anthropological Theory of Didactic (ATD) & Didactic transposition

Relevant for a shaping a didactic for Vocational Education and Training is what has come to be known as the Anthropological Theory of the Didactic (ATD) (Chevallard, 2006). ITD, it is argued, dismisses – based on both fact and theory – some widespread views of teaching and learning, and the establishing of new attitudes towards ‘the didactic’, seen as an anthropological dimension of social life. It emphasises the logic behind the evolution of a ‘science of the didactic’ that, in adapting to the changing nature of its object of study, currently brings to the fore new ideas.

Contributions from French educational research in particular the 'transposition didactique' (didactic transposition in the following) (Chevallard, 1982,) are particularly valuable for our analysis.

The concept of didactic transposition has become widely used in educational sciences and especially in various educational disciplines. Reviewing earlier research Perrenoud (1998) argues that reduced to its simplest form, the concept is explained by the subtitle of the book by Chevallard "From academic knowledge to knowledge taught." Entirely devoted to mathematical knowledge and particularly the transformations undergone by the theories of mathematicians when they become school knowledge, first in programs and in textbooks and classrooms, this book became a reference for other disciplines. He has contributed greatly to associate the concept of transposition to knowledge called "scholars", those whose claim to academic disciplines such as mathematics, natural sciences (biology, chemistry, geology and physics) and social sciences (history, geography, including philosophy).

According the study by Perrenoud (1998) 'to do justice' to the disciplines in which academic knowledge is not as central, Joshua proposed to extend the theory of movement to the expert knowledge. Long before, in the same perspective, Martinand introduced the concept of complementary best practices. He had proposed about technology and computers, but is also suitable for language arts or artistic works, handicrafts, physical education and vocational training. We are working now, argues Perrenoud, with two sources of didactic transposition: first knowledge, scientists and experts, other social practices outlined as illustrated in the following the chain of transposition.

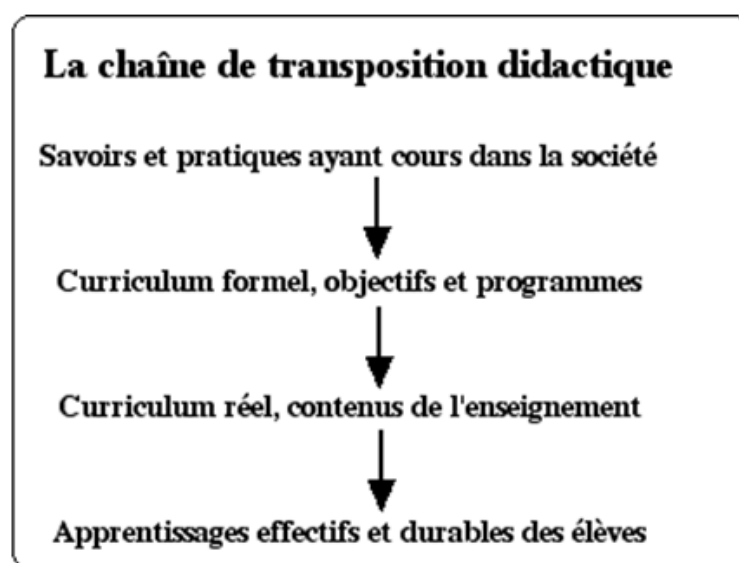


Figure 1. Chain of didactic transposition (Perrenoud, 1998, p.487)

Perrenoud (1998) explains the graphic as follows: the first arrow is the transformation of knowledge and practices in curriculum, also called the formal curriculum or prescribed. This is what Chevallard calls external didactic transposition. The second arrow indicates the transformation or content of the programs designed at school by the teacher, an internal implementation, which is largely a margin of interpretation or creative teachers. Perrenoud cites Chevallard, the chain is limited to the path of knowledge, from the state of 'scholarly knowledge' to state of 'knowledge to be taught' (external transposition), then from the state of 'knowledge to be taught' to 'knowledge taught' (internal implementation). The third arrow is considered to indicate the process of learning, ownership, construction of knowledge and skills in the minds of students.

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According to Perrenoud (1998) this is undoubtedly a new and decisive step in the path of knowledge and culture. However, he opens to questions whether to include or not this last step in the process of didactic transposition itself. From a period in which the notion of transposition has been used primarily in disciplines where academic knowledge have central role, masking practices reduce or reference to the implementation of procedural knowledge Perrenoud refers to the several researchers who worked to a broadening of the theory of the transposition. Vocational Educational and Training is an area in which empirical research on the didactic transposition is much needed.

A broader conceptualization of the implementation will provide didactics for vocational education and training with considerable new lines of development. Perrenoud (1998) is particularly critical to the false symmetry when it is suggested that knowledge and practice are two equivalent sources of didactic transposition, in a fashion that is most valuable for our subject area.

Practices mobilize knowledge, but does not reduce it, even if, next to academic knowledge, knowledge experts, professionals or practitioners. The limits of the dissociation between knowledge and practice lead me to introduce the concept of skills and to offer a more complex mapping of the chain of transposition. (Perrenoud, 1998, p. 447, my translation)

Permanent didactic challenges

An interesting analysis of the role of didactics in bridging learning and sustainable development is presented in a study by Andreas Fischer (2006). This study is of particular interest when the claim for specific didactics for vocational education is the subject matter. Relevant is also in this context the very fact that didactic design of the so called teaching and learning process takes place in very varied and complex settings.

Fischer (2006, p. 4-5) uses the concepts “sustainable learning worlds” to argue that the discussion about sustainability includes a change in the content, and furthermore also concerns the way of structuring time, the participatory shaping of complex teaching-learning arrangements as well as a performance evaluation. According to his line of argumentation,

“...the characteristic feature of a new learning culture is to overcome the linear and mechanistic didactic reduction of the complex reality to clearly structured chains of cause and effect - with the aid of complex teaching-learning arrangements and with the aim of linking product- and process-oriented learning. The self-regulation of learning and the metacognition have to be strengthened; on the whole, the responsibility of learning has to be gradually transferred to the students; this also includes the self-assessment.” (p. 4)

Continuing further the analysis Fisher (2006) apparently coincides with other studies in didactics (e.g. Uljens, 1997a; Wenerstam & Hansen, 2006). This particularly concern the claim about the need to move from lineal strategies in didactical formulation giving instead room for openness, error probability, fault liability, interaction, systems dynamics and self-organisation. This is meant to be a direction different from...

...the so called teaching-learning short circuit that says that all available knowledge also has to be taught, and that everything that is taught also has to be learnt as well as those myths that nurture the believe in the feasibility of learning processes, and harbour the illusion that educational success guarantees a successful (professional) life have to be questioned. (Fischer, 2006, p.4)

Furthermore this is seen as a shift of attention away from mere instruction to arrangements that facilitate learning - as competences cannot be taught (Fischer, 2006). The teachers is then expected to assume the task of

creating learning events, offering information and shaping the learning in a way that the learners are able to and have to build their knowledge in action-learning situations. The aim here is a paradigm change, away from an instruction-oriented educational process to one that promotes learning.

In developing the notion of “sustainable learning worlds” the starting question goes as follows: “How can an educational process oriented to the idea of sustainability be created that besides specialised knowledge (discipline-oriented) highlights integrated (interdisciplinary) working, and at the same time promotes self-organised learning?” (Fischer, 2006, p. 5). Accordingly it is possible to confront the students with complex issues along sustainability-oriented complex teaching-learning arrangements. In such learning worlds, according to Fischer, sustainable working and/or business processes could be simulated. Which at the same time, seem to be the appropriate place to create and test participatory, action-oriented methods. In line with research on didactics and learning (c.f. Ghaye, 2010; Janik & Kansanen, 2009; Meyer, 2010) this is associated to an approach where learning is understood as an active, self-directed, constructive and co-operative process.

Such an interdisciplinary, problem-oriented teaching-learning corresponds to the intention of integrated learning, and therefore meets the requirements of an education in which the self-organisation, reflection and personal responsibility of the individual is in the centre of attention. (Fischer, 2006, p. 5)

Concluding remarks - Challenges in creating a didactic for Vocational Education & training

Consequently with the line of argumentation followed in this article I would like to argue that beyond transcending the language discussion there is indeed a need, particularly relevant for VET, to develop a close linkage between what some authors (e.g. Wenerstam & Hansen, 2006) consider “an empirically based” side of didactics associated to empirical findings and the “non-empirical” associated theoretical constructs for understanding the teaching-learning process.

There is a coincidence in claims in earlier studies (c.f. Larsson, 2006; Taylor, 1997, 2000) in referring to the problem of the relationship between theory and empiricism in the specific context of research on didactics. This particularly refers to the claim that didactic theory does not develop in interaction with empirical data. Larsson (2006, p. 145) explicitly refers to the tendency that seldom researchers develop a theoretical justification of education and then continue developing it, by examining when they are set out ‘in reality’. The academic debate is the point instead; missed is a more collaborative work to examine important questions empirically. Equally there are also examples of extensive relevant empirical research not used for further development of theories.

Returning to the key question of this article, that is, ‘a didactic for Vocational Education and Training?’, I would like to claim that there are indeed arguments for an affirmative response! As suggested by contributions from what we can call school of didactic transposition there is a great need to continue developing the basis of a didactic that will be encompassing and dynamic enough to deal with the complex and varied situation of guidance of the learning process in the VET field. In addition to the variety of context it is equally significant to consider the complexity derived from the various interacting components of the teaching and learning process.

More is to be done in creating or continuing developing a didactics that encompasses the complexities of VET considering its different levels and different settings. This article intends to be just a contribution to the discussion and the further researcher needed!

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