

Didactical Positions and Teacher Collaboration: Teamwork between Possibilities and Frustrations

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The context of this study is the Danish upper secondary school, which has undergone remarkable changes during the past ten years. Cross-disciplinary activities have been introduced as a teaching principle in order to create new skills for future generations in the knowledge society, while team organization among teachers has become obligatory in order to ensure collaboration regarding a new era of student learning. The reform has been widely discussed among teachers and in the public media as well. Our research shows that the majority of teachers support the idea of teamwork, but also that there are differences in teachers' attitudes due to the diversity of interpretations of what constitutes good teaching and learning or what we call didactical values. We consider this an important discovery because it reveals that there is much resistance towards teamwork in the heterogeneous ways teachers understand their role as teacher. In this paper, we use data from a longitudinal study carried out in 2006-2009 to show that, in times of radical reforms such as the present, conflicts may be intensified exactly because of different didactical positions among teachers and between teachers and leaders in terms of how to create a viable connection between new structures and new teacher culture with the didactical values and practices that go along with them.

Cette étude porte sur l'éducation secondaire au Danemark, qui a connu des changements remarquables dans les dix dernières années. On a intégré au système éducatif des activités interdisciplinaires comme principe d'enseignement afin de développer de nouvelles habiletés chez les générations de l'avenir de la société de la connaissance. De plus, l'organisation par équipes est devenue obligatoire pour les enseignants de sorte à assurer la collaboration face à la nouvelle ère d'apprentissage par les élèves. Cette réforme a été largement discutée par les enseignants et les médias. Notre recherche indique que la majorité des enseignants appuient l'idée du travail en équipe, mais qu'il existe des différences dans leurs attitudes en raison de la diversité d'interprétations de ce qui constitue l'enseignement et l'apprentissage de qualité (ce qu'on nomme les valeurs didactiques). Nous estimons que ces conclusions sont importantes car elles révèlent beaucoup de résistance face au travail en équipe compte tenu des interprétations hétérogènes selon lesquelles les enseignants conçoivent leur rôle en salle de classe. Cet article présente des données d'une étude longitudinale réalisée en 2006-2009 pour démontrer que pendant des périodes marquées par des réformes radicales telles que celle au Danemark, il se peut que les conflits soient intensifiés en raison des positions didactiques différentes d'un enseignant à l'autre et entre les enseignants et les chefs relativement à la création d'un lien viable entre les nouvelles structures d'une part, et la nouvelle culture des enseignants et les valeurs et pratiques didactiques afférentes d'autre part.

Introduction and Research Question

In 2005, a considerable and radical reform of the Danish Upper Secondary School was implemented. The political setting was influenced by the challenges of a globalized knowledge society (Beck 2009) where the creation of a more flexible workforce and strategies of lifelong learning were central goals. In the reform process, the Danish Ministry of Education adopted a very proactive stance towards the school system by creating a new “language” or discursive paradigm and thereby allotting new subject-positions to leaders and teachers (Korsgaard 1999). A discourse can be defined as a language-based manifestation of meaning that creates a “truth” where new subject positions are pushed forward and others are marginalized (Foucault 1995; 1980). Within the reform discourse, words such as *collaboration* (instead of teacher individualism), *professionalism* (instead of the old amateurism), *competence* (instead of qualifications), *knowledge society* (instead of industrial society), and *study skills* (instead of “*Bildung*”)¹ are central. The fundamental intention is that teaching and learning should no longer be dependent upon a standard curriculum and that focus should be shifted away from reproductive to productive learning. In this context, the idea of cross-disciplinarity as a central feature of the secondary school has been fostered. We are aware that within the sociology of science there is a continuing attempt to clarify the variation in interactions in the knowledge production between traditional scientific disciplines and the new knowledge landscape that contains types of interaction described as multi-disciplinarity, cross-disciplinarity, inter-disciplinarity, and trans-disciplinarity (e.g. Russell et al. 2008); however, this variation in terminology does not have any impact on our analyses and in this paper we will use the term cross-disciplinary activities to cover the spectrum. Cross-disciplinary activities feature in the new multi-subject course, General Study Preparation, and in specialized study programs with inter-related subjects. The idea is that, by connecting single academic subjects, students’ abilities to use academic subjects to solve problems and reflect on the usability of methods in a more advanced context are enhanced.

Another reason for establishing new goals for schools is that school organization has been criticized for socializing teachers into a culture dominated by individualism, fragmentation, and traditional single-subject related didactic thinking rather than into a holistic and dynamic approach to school subjects². Teacher teamwork has become mandatory and it is stressed that teachers are primarily employees of and are not “kings in their own classroom” as one significant metaphor with clear negative connotations puts it.

In 2004, the Minister of Education stated that the 2005 reform was the most radical since the creation of the modern Danish secondary school in 1903. Undoubtedly, teachers agreed with this statement, but in discussions about the quality of the changes many critical voices were heard (Frederiksen & Beck 2010). In some teacher environments, the changes were interpreted as symptoms of a declining respect for academic quality and as a victory for “reform pedagogics” that pay too much attention to student learning and inductive work methods instead of structured and deductive teaching of academic knowledge. Other teachers were more positive towards the reform, even though teachers who were positive towards the reform intentions, often regarded the reform implementation as a *top-down* process that built too much on the abstract ideas of *desk-generals* in the Ministry of Education and too little on the practical experience of teaching and progression in real life.

Implementation may be seen as a concept referring to both structural changes and cultural changes. First, implementation refers to new organizational and economical structures. For

instance, changes to timetables, new organizational patterns for meetings, and decision-making, such as teams, and new roles and functions within the organization, such as team leaders. Second, implementation refers to the way leaders, teachers, and students subjectively interpret the objective changes and interact within the new structures (Archer 2007, Honig 2006, Raae 2011); this is the cultural level. The distinction between *structural* and *cultural implementation* explains the complexity, and sometimes ambiguity, of teacher identity and “roles”. One aspect of the role relates to actions within new structures defined by rules and expectations coming from the exterior world: teachers *must* attend meetings, work in teams, and record teaching in documents that are visible on the intranet to leaders and other teachers. Another aspect of the role is defined by the ways in which the externally dictated actions are made meaningful (or not) by individuals or groups of individuals. Teachers must do certain things as part of their job, but they may *want to* do them more or less passionately. In this way, roles can be seen as both *given* and *taken*, creating the risk of tension arising between the two.

Our basic thesis is that, in times of radical reforms, conflicts concerning means and ends may be intensified and that this is certainly the case with regards to the implementation of the 2005-Reform. As long as teachers were able to make individual decisions without having to legitimize them to their colleagues, conflicts between different agents did not exist to a large extent because the hegemonic discourse protected the individual teacher’s right to practice his or her own teaching in accordance with his or her own ideas and morals. In Denmark the main manifestation of this discourse was the teacher’s right to use his own method. But in a time of mandatory teamwork and cross-disciplinarity this changed. Teachers are now obliged to collaborate on teaching and learning. But accommodating to a new reality seems to be difficult, resulting in tensions and quite superficial implementation. State-supported political discourses may be very strong, but they are confronted with older discourses of good school and good teaching. In this way, people do not automatically identify with the subject positions offered by the reform discourse: rather, the discourse is negotiated, criticized and moderated.

In this paper, we explain some of the problems arising from the implementation of teamwork by analyzing differences in didactical positions among teachers.

Our research question is:

How do teachers’ different didactical values affect their attitude towards teamwork, and what is the consequence of these differences for the ability of teamwork to function as an organizational and didactical tool?

The paper is structured as follows. The first section presents a literature review of current knowledge about teachers’ perceptions of teamwork. It also suggests how the present paper may contribute to new knowledge. In the subsequent section, we present a number of theoretical positions towards teamwork with the intention of creating an interpretative framework for the analyses that follow. Our point of departure will be a frame for organizational cultural analysis. Then, after introducing our data and the methods employed in the project, we turn to the empirical findings that form the core of this paper. In the empirical analysis, we begin by presenting a case study of teachers’ and leaders’ interpretations of teamwork at two specific schools, one of which we consider the *reform-conservative* and the other, the *reform-progressive* school. With this case study as a point of departure, we then discuss some important connections between didactical positions and attitudes towards teamwork. In the final section, we point out certain interesting relations between cultural levels of analysis and

various didactical positions. Conclusions and discussions of further perspectives follow after that.

Teacher Teams in Literature

This section outlines contributions to the literature on teacher teams. The focus is on purposes, challenges, and problems in actual team development. The review describes preconditions and various outcomes, personal as well as organizational, but we still know rather little about the reasons for these outcomes. This paper is a step in the direction of redressing that situation and the review will provide a point of departure for subsequent analyses.

Collaboration in teams is one of the catchphrases in contemporary school development and is similar to the dominant trend in organizational development. The origins of the academic interest in group-work within organizations can be traced back to the 1960s and the general idea of teamwork has taken different forms since then (Hamde, 2002). Teamwork developed from the experimental to achieving an established status when it gained the support of management gurus like Tom Peters in the 1980s (van Hooft et al. 2005). Since then, it has become fashionable and is usually considered the optimal solution in terms of organizational efficiency. Team-based structure was characterized by normative descriptions and optimistic expectations for the ways in which teacher collaboration could and would affect school improvement as well as teacher development. However, later empirical studies—in schools and in other public and private organizations—show a different and more varied picture of teacher attitudes, which blur the optimistic picture of teams as *the* way to develop efficient organizations (e.g. Gronn 2003; e.g. Johnson 2003, Leonard & Leonard 2001).

Current knowledge of teams in schools is characterized by ambiguous understandings of the concept and ambiguous perceptions and experiences of actual teamwork. Theories about the capacity of teams to change organizations are influential, but it must be emphasized that team and collaboration are both ambiguous concepts. Various individuals may subscribe to different meanings and therefore have different experiences (Little 1990; Leonard & Leonard 2001; Kelchtermans 2006). Little (1990) especially distinguishes between various forms of collaboration by scrutinizing the level of mutual influence on teachers' practice or commitment. These connections concern frequency as well as intensity and they present a spectrum from weak to strong ties between teachers. The first level is, according to Little (1990, p. 519), "storytelling and scanning" where teachers trade and negotiate stories about their experiences. Such contacts are often informal and allow room for information gathering in staff rooms and corridors. The next level on the collaboration ladder is called "aid and assistance" (ibid) and this includes both formal and informal arrangements. Here, a barrier may arise from the fact that asking for help is more acceptable for young teachers than for those who are more experienced. Relationships like these are sometimes formalized in mentor relationships. The third form of collaboration is "sharing" (ibid) of materials and methods, which can take place in formal arrangements as seminars and on electronic platforms. The fourth and final type of collaboration is "joint work" (ibid) where teachers share responsibilities for specific tasks and are mutually dependent on each other's contribution to the task solving. The various forms of collaboration represent a continuum of degree in the commitment to and influence on each other's practice.

The concrete patterns of collaboration in schools may exist within these four types of collaboration. Furthermore, the actual team structures may vary from school to school as well as

over time and there may be variations in how groups and teams are labelled. Also, there may be variations in the tangible tasks which are assigned to teams. Beyond these variations, one question remains: What do we actually know about teachers' attitudes toward collaborative structures within school organization? In his survey, Kelchtermans (2006) emphasizes the fact that both collaboration and collegiality are far from unambiguous concepts and that practices, and teacher perceptions, also vary. According to Johnson (2003), a majority of teachers support a higher degree of collaboration, which they find is possible as well as beneficial. Johnson, however also concludes that parts of the teacher population involved in his investigation experienced a drawback in working conditions as a consequence of the higher degree of collaboration in form of micro-political controversies and threats to their professional integrity. Leonard and Leonard (2001) also conclude that the majority of teachers in general support collaborative activities in schools. However, these studies did not include background variables that could explain differences in teachers' opinions or attitudes toward collaboration.

Some possible suggestions exist. According to Hargreaves (2000), the main reason for teacher support of collaboration is that collaboration may provide moral support, promote confidence, reduce uncertainty by establishing boundaries and promote teacher reflection and learning, all of which lead to continuous improvement. In a qualitative study from Australian schools, Johnson (2003) found teachers generally experience that they gain moral support from their collaboration with other teachers. In addition, they experience greater self-confidence and they find that absenteeism rates decrease. The vast majority of studies point out a learning effect on the part of the teachers as they open up to other teachers. The drawbacks of collaboration were found to be work intensification and potential conflicts. These conflicts may arise within or between teams, resulting in dysfunctional competition and factionalism. Increasing collaboration on one level can thus lead to decreasing collaboration on other levels. Achinstein's (2002) case studies from American schools also emphasize the latent conflicts inherent in teacher collaboration.

Structural conditions, like size of schools or amount of administrative support (e.g. time and space for meetings), influence the concrete outcome and also teachers' opinions of these organizational arrangements. Kwakman (2003) reports that, although structural factors are important, personal characteristics and values are even more decisive for teachers' approaches to shared professional learning activities.

Teacher perceptions seem to be affected by their subjective positions and the meaning or non-meaning with which they approach teamwork. In the next section, we will introduce our framework for analysis in order to establish a theoretical perspective for understanding the ways in which teachers ascribe meanings to such a phenomenon as *teamwork*. From a framework based on theory about organizational culture, we adopt a perspective that allows us to observe how structural changes caused by legislation may lead to various perceptions of what it symbolizes.

Organization from a Cultural Perspective

In this section, we present the theoretical framework for our empirical analysis. Our focus is on variations within the single organization, mainly between (groups of) teachers at a school, as seen from an institutional organizational theory. Many such studies focus on similarities between organizations and they tend to converge due to regulations, norms, roles and expectations of reducing risks. On the other hand, some cultural studies focus on those unique

features of a single organization that mark its differences in relation to other organizations (Strandgaard Pedersen & Dobbin 2006). Our aim is to find an approach that provides an organizational perspective and simultaneously enables us to find possible explanations that go beyond the observed variations in teacher perceptions. In order to achieve this, we use both an organizational perspective and a cultural model allowing us to understand differences and changes within a single school.

Our point of departure is a dynamic model of organizational culture developed by Hatch (1993). Hatch elaborates on Schein's (1985/2004) model of organizational culture containing visible artifacts, espoused values, and basic unarticulated assumptions. Artifacts are the visible *signs* of the organization and can be found in architecture, material culture, and ways of organizing daily routines, such as time schedules. Espoused values are explicitly expressed values, often made clear when an organization presents itself to the outside world or when leaders define values in their communication with their employees. According to Schein, the basic assumptions form the core of the culture where the fundamental stipulations of the agents can be found. This is the level of *the way we do things* and it guides everyday activities. Such fundamental ideas have a certain kind of solidity because the members of the organization have experienced them to be successful. The pattern of basic assumptions create the deep cultural values "that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to these problems" (Schein 1985, p. 9).

The main difference between Schein's cultural model and the model developed by Hatch (1993) is that the latter includes a cultural element of symbols that occur in between Schein's artifacts and basic assumptions. According to Schein, symbols are parts of the artifacts, but according to Hatch it is the separation between these two elements that makes cultural dynamics possible. The same artifact may symbolize something different to different members, thus creating tensions, discursive battles and, as a consequence, changes. Furthermore, Hatch's model emphasizes the processes between the elements rather than focusing on them as different categories. This means that changes in an organization, for instance due to external pressure, constitute an opportunity to study different reactions to these processes from members of the same organization. Focus is on the dynamic changes as well as on the single elements in the model.

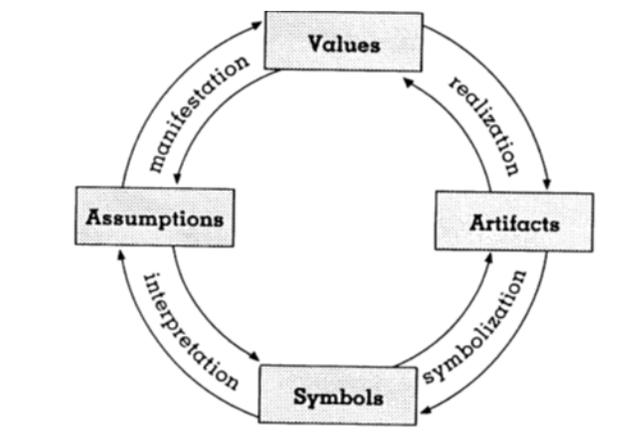


Figure 1. The Cultural Dynamics Model (Hatch 1993, p. 660)

In principle, there are eight processes in the dynamic model because the processes occur in both directions. The model emphasizes the dynamic perspective; that is, the impact of various changes.

Manifestation emerges between assumptions and values. According to Schein, values represent what ought to be and not necessarily what is. Values are guided by the basic assumptions. Hatch's example is if one *assumes* humans are lazy, they develop their *values* accordingly. Conversely, the model also claims that values may either change or maintain the assumptions. The leader's challenge is to change the organization by changing the values, often in order to adjust to exterior demands. If the new approach turns out to be successful, values may be incorporated into the assumptions. *Realization* emerges between values and artifacts. If the leader is guided by values that define employees as lazy then, one artifact of behavior may be control arrangements, such as time clocks and registration systems. *Symbols* are placed between artifacts and basic assumptions and emerge through symbolization and interpretation. Here, we have a field where values are challenged and different kinds of *interpretation* are possible. The various artifacts may have different symbolic value depending on the basic assumptions invested in the interpretation of them. Employees may see control arrangements as positive if these are regarded as part of an incentive that makes it possible to earn more, or they may see them as negative because they are indicative of leaders' mistrust towards their employees.

We assume that the Danish upper secondary school reform process initiated by the central political and administrative authorities plays the part of decisive change. The reform introduces new purposes, goals, and requirements for the schools. We may assume that a reform is motivated by a wish, often ambiguous in the sense that it represents a political compromise, to change the system. With the reform, several new values concerning education are introduced while other values either increase or decrease. As previously mentioned, an important new value concerns teacher collaboration as a tool to enhance cross-curricular teaching.

Mandatory teams are not only a change in the culture *per se*, but also a change of important differences at various organizational levels. Organizing employees in teams may become more than a visible structural change and it may expose a hitherto dormant culture as well as lead to new, and unexpected, cultural tensions. It is necessary, albeit not in itself sufficient, to take the structural dimensions into account because, beyond these issues, one may encounter cultural issues that are rooted in a deeper level. For that reason, an understanding of teachers' attitudes towards teamwork must be sensitive to differences between schools as well as differences within any given school.

Data and Method

Data for our analysis of cultural changes in schools has been generated via a four-year project on the changed teacher role in the wake of the reform of the Danish upper secondary school. Data has been gathered through both quantitative and qualitative methods. In 2005 and 2008 we conducted surveys from a sample of Danish teachers. In the 2005 survey, 1506 teachers responded and in 2008, 2546 teachers responded, corresponding to approximately 60 percent of the possible respondents. A little over 1000 respondents answered both questionnaires. This overlap between the two surveys may strengthen our analyses regarding changes and stability in distribution patterns. In 2006 and 2008, we visited 16 schools. School visits included interviews with teachers and leaders as well as observations of meetings and classroom teaching. In this paper, we draw on qualitative as well as quantitative data from the project.

In our qualitative research, we visited a total of 16 schools and from these we have selected two for the following case studies. In each school, we interviewed five teachers, five students, and two or three leaders; we observed team meetings as well as other informal interactions in order to understand how didactical considerations, learning motivation, and the new organization of collaboration took place. In this article, we have concentrated on leaders and teachers at two schools that show significant differences in their respective positions towards teamwork. The presented data serves as an exemplar, but it builds on much more complex studies.

In the two surveys, we asked the teachers to respond to statements concerning attitudes to reform-related issues, such as student outcomes in the wake of the reform, teams and teamwork, feelings about stress and work-related pressure, and what it fundamentally means to be a teacher. Furthermore, we asked teachers to report on practical issues; for instance, the amount of time spent on meetings and the percentage of their teaching spent on different work methods. We also asked the teachers about their general attitudes towards teaching and learning. The surveys made it possible to establish correlations between teachers' positions towards teaching and learning and their positions towards the actual reform implementation. We have been able to compare the two surveys because they contain identical questions (and the large group of respondents that answered both surveys). For the analysis in this article, we have selected data which shows the relation between didactical positions and attitudes towards reform elements. It is our thesis that such a study can provide valuable information about underlying cultural assumptions, which generate attitudes towards the reform and, at the individual school, towards organizational questions.

Both qualitative and quantitative data provide valuable information about individual positions and cultural development, but they point to different aspects of this relation. First, from a qualitative approach we investigate how positions, as far as they can be investigated by means of interviews, are tuned by the specific school culture and how ambivalences and conflicts are handled according to specific organizational cultures. Next, we use our quantitative data to show how, underneath the specific school cultures, there exists a level which we refer to as didactical positions and which generates different attitudes towards the reform and teamwork.

Two Case Studies: Teambuilding and Collaboration after the Reform

In this section, we present two cases which illustrate the reform process and the reception of the reform by the schools. The cases appear within the paper following the presentation of our current knowledge of teams in schools and the conceptual framework. We found it beneficial to analyze positions towards teamwork in an actual school context to give expressions to and underpin the subsequent quantitative patterns and cultural analyses. We are not able to claim unequivocal evidence from the cases or statements presented below. For example, other participants in the same or another school may have perceived the same aspects in different ways and articulated other opinions. But our interpretations of the statements provide possible outcomes in other cases.

School 1 may be labeled *the reform-progressive school* if we take our point of departure in the espoused values of the leaders. The leadership team, apparently quite ambitious, framed the implementation process by creating a new team-based structure. Collaboration between teachers should be reinforced in order to facilitate the cross-disciplinary activities and make the

teachers' handling of classroom culture more effective. At the same time, the leader team was aware that teachers appreciate autonomy and, therefore, each team should be able to make its own decisions. However, in the implementation process it appeared difficult to carry out these intentions because the self-management principles were unsuccessful with regard to teambuilding. It was not as simple as expected to make the transfer from individual autonomy to team autonomy because of the latent conflicts within the teams and the uncertainty about roles and responsibilities in circumstances where the ascribed team leaders had neither formal training nor actual leader competence. According to the school's principal, the result was that some teachers wanted the management to have greater influence while others felt that the management interfered too much. According to the principal, the underlying problem was "that too many of the teachers have a rather strong need for external structures in order to feel secure. This is especially the problem for teachers who are mentally unstructured and un-structuring". This explanation may be said to stress individual psychology as the main reason for dysfunctional teams.

We also interviewed a young and fairly inexperienced teacher as well as an older experienced teacher about teamwork. The young teacher explained how he and his colleagues made an effort to share responsibility in the team and he concluded that:

There will always be someone who is in charge. I do not experience these conflicts, but there is obviously a basis for conflicts to arise here. When you work in a team, you discover that it does not consist of three or four similar teachers. They often have each their own way of working and thinking. And they also have their own particular ideas about what quality really is in terms of teaching and relations to students. We try to find a solution and try to smooth things out and make compromises.

Although it may not be very clear exactly what constitutes the differences within the team, the explanation here is different from the school leaders' explanation. This is probably due to various approaches to teaching or what we call different didactical positions. It also seems that the existence of differences is taken by the young teacher as given and unchangeable and as something personal and, therefore, not a legitimate point of discussion among professionals. In the same vein, the mature teacher added that teamwork turns out to be about formal matters such as coordination and social issues concerning individual students and less about curriculum, methods, and cross-disciplinarity. Her explanation was that, "we simply don't have time to treat other relevant issues".

The interviews with these two teachers made differences in attitudes towards didactical issues and the reform implementation explicit. The more experienced teacher stated that she appreciated the concept of learning with its stress on work methods and the importance of student activity, "I like to be a consultant letting the student take power". She appreciated the competence-discourse, making room for new ways of practicing teaching and learning. At the same time, she belongs to the group, also mentioned by the principal, who adopts a critical stance towards greater management control. Briefly, this teacher represents a *classical reform pedagogical* position. She appreciated the idea of a school that embraces experiments and student participation, but she is critical towards the control-mechanisms and bureaucratic structures of the reform.

The experienced teacher is positively disposed towards cross-disciplinarity and projects while the younger teacher seems to take a more subject-oriented position. He accepts the new skills approach, but also feels that the ideal of cross-disciplinarity is somewhat superficial and

trivial. "You are placed in this team with practical tasks such as programs for next week", he said. He could hardly conceive of students employing cross-faculty skills. Also, he agrees that teachers are obliged to vary their teaching, but it is not always easy to use student-initiated methods, such as group-work with projects, as many students need a fundamental understanding of the subject before they are able to discuss anything. From his point of view, a mix of old and new teaching methods is required. In other words, his position is a little more conservative than that of his older colleague.

In School 2, which we call the *culture-conservative school*, there are similarities to School 1 regarding the structure. Teams refer to individuals in the leadership team. It is obvious to the interviewer that the principal is rather critical towards the reform. He does not consider himself a change-facilitating agent in the same manner as the principal of School 1 does and concerning teams, he highlights the need to maintain and protect *sound* elements of the existing culture.

The principal emphasizes that some teachers do not sympathize with the reform while others are more positive. He claims that there are teachers who find binding collaboration difficult while others are pleased with the opportunity to establish binding relations. The principal emphasizes the importance of maintaining the good elements within the organizational culture, "from my point of view we have not and should not develop a completely new culture. In our school, we have always been able to communicate with each other in a civilized manner. Our culture is strong enough to adapt to new structural frames." What is interesting here is that the principal seems to identify with the existing culture and talks about "we" in another way than the leader at School 1. His strategy is not to enhance reform adjustments among his teachers, but rather to assimilate the new structures into cultural patterns already present.

In this respect, the leader at School 2 is in accordance with his teachers. Our interviews with the teachers at this school left the impression that they agree with their leader; they wish to maintain what they perceive as the good atmosphere at the school. When asked to clarify this, the teachers explained that a good atmosphere did not include new hierarchies, but rather, the maintenance of the egalitarian structure, which used to be a strong aspect of the secondary school. One teacher, who was formally assigned as team leader, reacted with some wonder to the question concerning the task of a team leader. "A team leader is, well, it's just a way of arranging things; who makes the calls for meetings and so on. The team leader is the person to whom the administration can make their requests." At the same time, the teachers made it clear that the overall ideal of *Bildung* and development of democratic skills were threatened by the reform with its focus on skills and on what the teachers considered rather instrumental ideals. Also, the teachers expressed that they were recognized as experts within their academic disciplines, but after the reform they were forced to behave as amateurs due to the cross-disciplinary emphasis.

Some immediate differences between the two schools can be established. In School 1, the teachers are apparently challenged by an ambitious leader team; in School 2, there seems to be an agreement that it is important to maintain most of the old culture. In School 1, then, we find an *accommodation strategy* and in School 2 an *assimilation strategy*. However, in spite of different managerial strategies, it is clear in both schools that team collaboration has a tendency to establish rather superficial patterns for interaction. In School 2, it is almost impossible to observe how teaching and learning are affected by the new structures. In School 1, an ongoing effort to make the new ideals meaningful is unfolding, although accommodating the new requirements is hard and seems to leave the teachers with an experience of encountering exceedingly heavy demands and of not really knowing how to go about tackling them. In both

schools, issues such as student culture and classroom culture, curriculum and cross-disciplinarity are, in fact, hardly discussed within the teams.

The cases make it apparent that, in both schools, a variety of individual perceptions exist among teachers. They also illustrate that the reform is implemented in two different ways and that latent conflicts are made more explicit at the reform-progressive school. In both schools, there seem to be hidden barriers that obstruct teamwork of the ambitious kind prescribed by the reform documents. Our hypothesis is that teamwork is difficult for teachers primarily because they find it difficult to discuss their didactical and moral perceptions with one another. The reason for this might not only be an absence of a common pedagogical and didactical language, but also real differences concerning ideas of how to achieve goals and by what means in everyday classroom teaching. In the previous structure of teachers being either *kings in their own classroom* or participating in self-created *love-teams* such differences were not considered a problem simply because teachers were not put into situations where this type of conflict had to be handled. In the current structure of required collaboration it becomes harder to maintain harmony and mutual confidence because differences are squeezed to the surface. More or less consciously, teachers know this and they often try to avoid the consequences of the conflicts by communicating superficially, as was seen in both School 1 and 2.

In the next two sections, we will try to define more precisely the hidden barriers, which the teachers have difficulties expressing. Firstly, we will deduce the major patterns of teacher perceptions of the reform. How do our observations in the two case studies correlate with the national distribution? Subsequently, we analyze the variations via the organizational cultural perspective.

Didactical Positions, Teamwork, and Cross-disciplinarity

In this section we draw on data from the two surveys of 2005 and 2007 to derive the key patterns in opinions by using the teachers' didactical positions as explanatory variables of teamwork. Before analyzing different didactical positions towards teamwork and cross-disciplinarity, we define the didactical positions involved.

The didactical positions were derived during this research project by analyzing two dimensions (Beck & Paulsen 2010). The first dimension concerns the span between *reproductive learning* (students must first and foremost acquire existing knowledge) and *productive learning* (students must above all create new knowledge). The other dimension concerns the teachers' emphasis on students' *individual learning* (learning as an individual process) and *social learning* (learning as a social process including cooperation with other students). We consider these aspects central in relation to teacher values in the upper secondary school. These four learning strategies are not mutually exclusive. It is logically possible for a teacher to be sympathetic towards reproductive, productive, individual as well as social learning, in processes where different approaches including inductive and deductive teaching are combined. But it is also logically possible to adopt clearer positions where social and productive learning strategies are preferred and reproductive and individual learning strategies are avoided and vice versa. We will illustrate the possible didactical positions in figure 2.

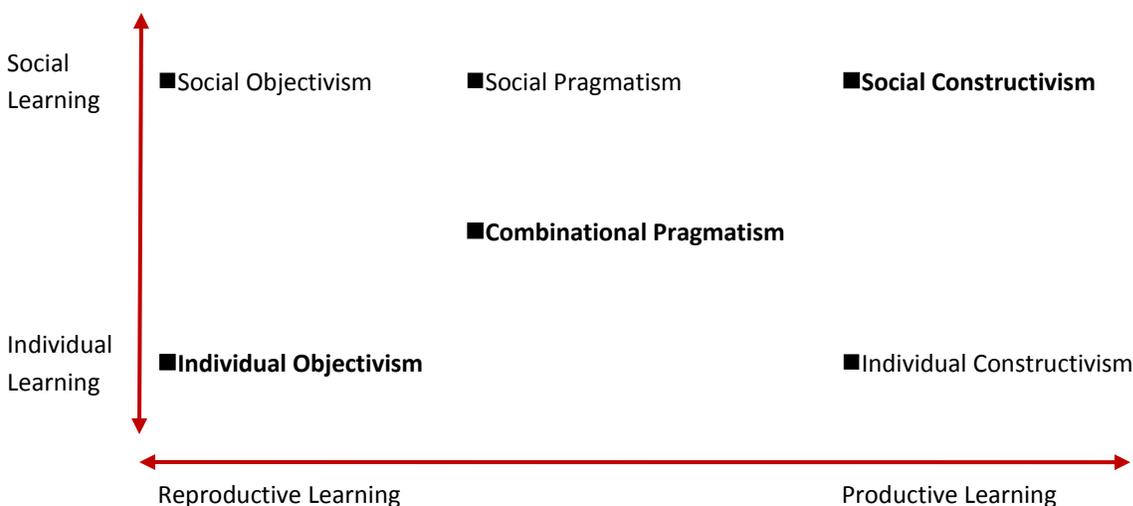


Figure 2. Six Didactical Positions (the three analyzed positions are presented in bold)

In the following, we illustrate patterns in teachers' perceptions using three exemplar positions located in a continuum. *Individual objectivism* is objectivistic as far as teachers with this attitude are sympathetic toward learning strategies whereby students should acquire existing knowledge, but unsympathetic toward students learning how to create new knowledge. The term, objectivism, refers to a specific ideal about reception and mimesis. The students are required to obtain knowledge that supposedly exists independently from the learning individual. Klafki (1976) defines this point of view as material objectivism. We define this position as *individual* since the teachers taking this position hold that students should learn individually and at the same time they are against approaches, whereby, the students should learn together. From this point of view, then, optimal learning is understood as an individual process of reception.

Social constructivism exists among teachers who are of the opinion that students should learn to construct new knowledge in social learning processes. A constructivist approach means that the emancipating and changing aspects of the learning processes are given high priority. Learning is seen as an active and productive process, whereby, students develop their knowledge in a strong community of participation.

Teachers belonging to the *combinational pragmatic* group are placed between objectivism, constructivism, individual, and social learning. Teachers who take this pragmatic approach do not give priority to any of the four learning values at the expense of another. They support a balance between and combination of all four values. In combinational pragmatism, productive and reproductive approaches are combined, but social learning is given priority over individual learning. The proportion of these positions in relation to the total population is illustrated in table 1.

Table 1 shows that the pragmatic and the constructivist groups are the largest and that the majority of teachers are sympathetic towards social and combined learning processes. A

Table 1

Didactical Attitudes among Teachers Surveyed (in percentages)

	Individual Objectivism	Combinational Pragmatism	Social Constructivism	Others
2005-2006	4 %	17 %	31 %	48 %
2007-2008	4 %	14 %	29 %	53 %

Source: Beck (2008:141). N 2005-06: 1506, N 2007-08: 2546.

minority of teachers fall into the groups that prioritize reproduction and individual learning processes. Table 1 also shows that the distribution among these three groups do not change significantly during the first three years of the reform implementation. An important conclusion can therefore be drawn: In the first years of the reform implementation, teachers do not alter their positions. The distribution presents the same pattern in 2005 and 2007 and the respondents that completed both surveys show a stable pattern.

The next step is to demonstrate how teachers from the three groups assess teamwork. First we will show whether they regard teamwork as leading to more control and/or giving more possibilities to the teacher profession.

The opinions are only tentative and not, in fact, mutually exclusive, that is, a teacher may feel that collaboration in teams provides potential for a positive development of job, but at the same time find, or fear, that the actual implementation causes notable restrictions. In our 2005 survey, the patterns are moderately correlated in the sense that teachers who support the *possibility* items are also slightly opposed to the *control* items and vice versa.

In general, the figures show a greater support among teachers for the possibility scale in comparison to the control scale. However, the majority are placed at the intermediate level. The conclusion may be that, although the reform represents a substantial change, it is not considered a revolution in relation to the teacher's work with his or her students and subjects. Some general changes are detected between the first and the second survey. Both scales obtain less support, particularly the control scale. The smaller amount of support to both could be the result of teachers having grown accustomed to the new situation.

Table 2

Teachers' Perceptions of Teamwork as Restricting or Widening Teaching Work. 2005 and 2007. PDI

	2005 n≈1600	2007 n≈2800
Teamwork leads to more control	+10	-8
Teamwork gives more possibilities	+24	+17

Note: PDI = Percent Difference Index. A high PDI-score express a high level of agreement. The respondents are supporting the statements in the scale. PDI is calculated by a subtraction: High level of agreement minus low level of agreement. A PDI-score on +10 regarding that teamwork leads to more control means that there are 10 percentage point more teachers, who have a high level of agreement in the statements in the control scale, compared to teachers who have a low level of agreement. The actual score on + 10 appeared when 30 percent of the teachers' had a high level of agreement, and 20 percent had a low level of agreement. The resting 50 percent had a middle level of agreement (corresponding to 'do not know' in a poll).

Table 3

Teachers' Perceptions of Teamwork Divided by Their Didactical Positions (2007)

	Individually oriented objectivists n=98	Combinational pragmatists n=353	Social oriented constructivists n=727
Teamwork leads to more control	+33	+4	-27
Teamwork gives more possibilities	-43	+13	+41

Note: See notes to Table 2 for an explanation of PDI.

It seems that changes in teachers' attitudes between 2005 and 2007 have been minimal and almost non-existent. Nevertheless, regarding the overall transformations caused by the reform, we may expect changes considering the different independent variables.

Table 3, which contains the results of the 2007 survey, shows a huge variation as well as a clear coherence between teachers' didactical positions and their attitudes towards collaboration in teams. The fundamental and relatively stable attitudes to the teaching profession lead to clear differences in attitudes to teamwork. Individually oriented objectivists find that teamwork restricts their work and at the same time they can hardly see that it facilitates any possibilities at all. Socially oriented constructivists hold that through teamwork students may learn to create new knowledge during shared learning processes. Also in this respect, combinational pragmatists are located between the two extremes.

These patterns strengthen and even overtake other explanations, as our data shows that, to some extent, they cut across seniority, subject, and gender. This means that teachers' attitudes towards possibilities and restrictions in teamwork are closely connected to attitudes towards their teaching. It certainly seems that this issue challenges the professional identity core of many teachers and to a large extent influences their feelings about the reform and their role as teachers (van Veen and Slegers 2006).

A Cultural Interpretation of the Didactical Positions toward Teamwork

In this section, we use the theoretical lens from organizational culture to analyze the empirical figures and patterns we have detected in our qualitative and quantitative analyses. The aim is to fill a few of the gaps found in the literature review. Our findings show that didactical positions may be important both to explain positive and negative principal positions towards teamwork and to explain difficulties in creating consensus in actual teams where teachers with different approaches are told to collaborate.

Espoused values as well as artifacts may be observable and symbols can be analyzed. Basic assumptions are usually difficult to observe and at the same time the most troublesome element to determine. For that reason, we employed our empirical data as a valid proxy indicating teachers' basic assumptions.

Following the cultural dynamic model, it is possible to take any stage of the process as a starting point. We interpret the reception of the political reform, which was initiated from outside the school system, and we therefore take these changes as our point of departure for the analysis.

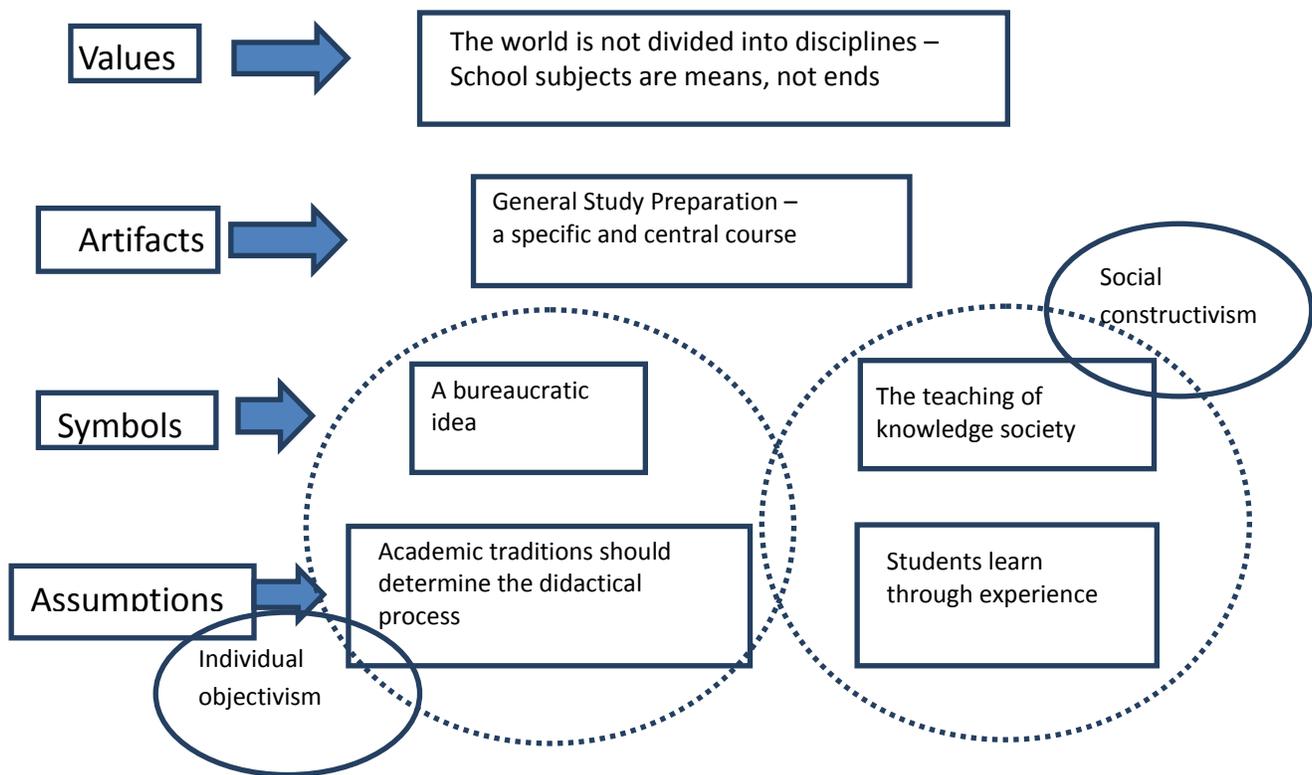


Figure 3. Organizational Culture and Different Symbols

Apart from the changes in regulations to promote cross-disciplinary teaching, the reform represents a change in espoused values often expressed by leaders in more or less concrete ways, as we saw in the quantitative analysis. Figure 2 shows the interpretation of this process using the cultural dynamic model. The guiding espoused values expressed in the reform supporting cross-disciplinary teaching boiled down to the notion that, because the world itself is not divided into scientific disciplines, students must learn to combine subject discourses in order to understand and solve problems in the real world. From this point of view, school subjects such as history, physics, and mathematics are only the means and not the ends. How will these values be expressed? How can one detect whether they are fulfilled? Politicians and civil servants, and to some extent, school leaders suggested an implementation whereby the idea of problem solving would influence the entire structure. First and foremost, the values were manifested in a specific course labeled 'General Study Preparation'. All schools had to provide this course, but the actual design was subject to local decisions. However, it was mandatory that some kind of cross-disciplinary teaching and teacher collaboration had to be incorporated into it.

As our two school cases illustrate, the symbolization attached to artifacts can be represented in different ways from one school to another. In the reform-progressive school, the existing values were changed in rather radical ways by the leaders and teachers who had to accommodate a new situation. We also noticed that their interpretation of teamwork was fairly superficial, mainly stressing coordination as the main purpose of teams. At the same time, we saw that differences between teachers are becoming explicit. In an interview, one of the teachers talked about reactionary and progressive teachers and the conflicts can no longer be avoided. At

the reform-conservative school, the existing values were not changed in similarly radical ways and therefore both leaders and teachers could assimilate new structures quite easily—the teacher culture was not seriously contested. One of the reasons for this difference probably is that School 1 is situated in a competitive environment in relation to other secondary schools, where *development* is a dominant buzzword, while School 2 has an educational monopoly in a large geographical area, making it less interested in using teamwork and cross-disciplinarity as ways of attracting potential students and thus gaining a competitive advantage.

The next step in the model allows us to discover and interpret a new and, in this case, more adequate explanation for the variations in perceptions of teamwork and cross-disciplinary teaching. The symbolization and interpretation processes make it probable that the same artifact may symbolize different things and be valorized in different ways. In accordance with their didactical positions, individual objectivists (left hand side of the figure) interpret General Study Preparation as an abstract idea designed by bureaucrats and lacking any valid academic impact. In many respects, they represent the classical teacher's professionalism as focusing on teaching in separate scientific disciplines and on individual teacher autonomy. In this way, the individualistic objectivists use their stable values as basic assumptions for interpreting the artifact. On the other hand, the social constructivists (right hand side of the figure) see another symbol. Due to their basic assumptions that students learn best through experience and experiments, they see the new cross-disciplinary construct as a symbol of teaching within the knowledge society. These different interpretations of the same artifact may explain the remarkable variations in the perceptions of teamwork and cross-disciplinary teaching. It is important to repeat that the didactical positions are distributed across gender, seniority, and subject. The mandatory and therefore increased teamwork leads to a changed view of organizational culture within schools. More than one set of basic assumptions may exist and, due to the reform, these may surface so as to confront and challenge each other. These latent conflicts may have slumbered until the reform awakened them. In a cultural perspective, a mismatch may emerge when the gap between values and basic assumptions becomes too wide, at least, for a large group of teachers. In general, basic assumptions are characterized by their apparently unchanging content. Indeed, basic assumptions are also subject to change, but probably not quickly or prompted by imposed directives because of their foundation in personal identity, habits, and often 'unconscious' attitudes.

An important phase in the change process may be the step from artifacts to values (part of the retroactive realization process). In this process, the teachers' existing values are measured against their actual outcome. The main question is whether the experiences that have been gained will support or contradict the values. During this phase, the change may be regarded as a learning process. The extent to which teachers' experiences and links to the pre-existing values are taken into consideration depends on how the actual teamwork is structured and organized.

One possible explanation for the remarkable and significant variation in the outcomes is that the objectivists, with their reproduction sympathies, have a clear focus on the individual academic subjects, which the students are to learn. They often support some kind of empiricist or behavioristic model of learning, stressing the transfer of knowledge from teacher to student. They consider cooperation with other teachers who have other subjects and use other methods a waste of time that basically removes focus from what is important, namely the transfer of exact and trustworthy knowledge. Contrary to this position, the constructivists, and to some degree the socially oriented pragmatists, are much more sympathetic towards teamwork because they are in favor of transfer and metacognition. Yet another explanation can also be found. If a

person has preferences for individual objectivism, the individual aspect may not only concern the teachers' thoughts about how the students become good learners, but also the teachers' own ideas of what the best teaching methods are. The same can be said for social constructivists and the connection between notions of social learning and social teaching.

These insights obtained through the cultural analysis make it probable that the divergence in teachers' perceptions of the new central elements within Danish upper secondary school after the reform are derived from different basic assumptions with regards to teaching and the teacher's role, measured by their various didactical positions. The teachers simply ascribe different symbols to the same artifacts.

Conclusions and Perspectives

In this study, we have ascertained the existence of remarkable variations in teachers' perceptions and attitudes toward collaboration in teams and cross-disciplinary teamwork. These findings in many ways confirm other findings reported in the literature. Our contribution of new knowledge to the field is that we emphasize how differences found in previous research literature may be explained. Among many independent variables (e.g. gender, seniority, teaching subject), it turned out to be the didactical positions that were the most influential and instructive variable. We have derived the didactical positions through our surveys and the positions were notably stable between the two surveys. Therefore, we have interpreted the positions as indicators for individual teachers' basic assumptions regarding teaching and learning and we conclude that the differences in teachers' attitudes are cultural differences. For a teacher who finds the situation problematic, it is not adequate to claim that, for example, the science teachers are not co-operative or to simply wait for the more mature teachers to retire. The subjective reasons for being critical towards teamwork seem to be much more fundamental. The cultural approach exposes previously hidden latent conflicts between individual teachers and these become manifest because a new artifact is interpreted in dissimilar ways.

The variations do not have the same distribution patterns at all schools, but different perceptions probably exist at all schools. Didactical positions adopted are connected to individual worldviews, ideas about the learners, socialization at school and at university, and they are probably relatively stable within a single adult person's life. For that reason, differences in didactical positions are not going to disappear, no matter how the individual school implements the reform. Every school will probably have teachers who support a curriculum-based approach and others who support a skills-based approach. We may therefore assume that these different perceptions constitute a condition for school development, but the transfer from *individual teacher* to *member of an organization* appears to be an important process for the majority of schools. It may take the form of a bottom-up versus a top-down process and the general approval of the changed organizational tasks depends on how the social relationships are perceived, either as a free choice or a compulsory community membership (Hargreaves 1990).

The conclusions deduced from our case studies come very close to these findings and general patterns. The case studies reveal several important non-articulated differences concerning teaching and subject issues within the teams. These differences are probably caused by the various approaches to teamwork and these quarrels will not necessarily disappear just because they are ignored. Rather, it is important to understand what happens in a teacher-group when reforms are implemented.

Our research may contribute to some important leader perspectives toward change processes.

1. Structural solutions are important, but by no means unambiguous. Many leaders seek systematic procedures for teamwork, while others leave more room for intuitive approaches.
2. Leadership delegation is important, but it is not unambiguous either. There may be at least two different areas where leadership delegation potentially conflicts with traditional teacher professional values. There may be a risk of interfering in each other's subject professionalism and there may be a risk of becoming each other's employers (Bennett 2007).
3. To teachers it is crucial that they find the new organizational obligations meaningful and not only the subject that they teach. While teamwork was mandatory from the beginning of the reform, a substantial emphasis was put on interpersonal and social relations and not on relations toward subjects and didactical issues. Teamwork skills are not only a question of psychological attitudes, such as the ability to structure one's own work, but also concern didactical positions toward and basic values attached to the teacher profession.

The perfect solution does not exist. Teachers have an ethical obligation to collaborate to the benefit of their students, but in order for teamwork to become successful it is necessary to combine duties with passion. Room must be made not only for common and shared tasks, but also for personal interests. It is in this process that school-based solutions and developments and teachers' values may collide.

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Notes

1 The German concept Bildung (which may be loosely translated to the English term “formation”, but not without losing some of its distinct meaning) refers to a very strong German-Scandinavian tradition within educational philosophy and psychology. The term refers to education as the cultivation of the single person as a ‘personality’. Topics such as development of moral judgment, aesthetic sensibility, creativity and democratic competence are highlighted. In the Bildung-tradition the aim of education is not to qualify the student for a specific job or study, but to form the “whole person”. The concept of Bildung was originally formed by the German philosopher Wilhelm von Humboldt in the end of the 18th century; in the 20th century the main figure has been Wolfgang Klafki (1976; 2007), who distinguishes between three historical Bildung-traditions: material Bildung (to learn something specific), formal Bildung (to learn how to learn) and categorical Bildung (which Klafki himself prefers), which is to combine the objective and the subjective dimensions of material and formal Bildung towards specific subjects of contemporary importance (peace, equality, environmental issues). Bildung is often seen as something different than can be tested and defined by politicians, and in contemporary discussions, it often serves as a critical corrective to more instrumental ideas of education.

2 The term didactics, which is central in the European continental tradition, refers to the art of teaching and to the substance and purpose of teaching. In this way didactics involves both considerations over what to be learned including such topics as specific knowledge, formal competences like metacognition, Bildung, and how to teach all of this. While teaching refers to the praxis of the teacher, didactics involves the meaning of teaching: Why do certain school subjects (and not others) exist? What kinds of knowledge and competences should be made possible for students? Didactical thinking tries to go beyond the surface of the teacher's performance in order to investigate the meaning of teaching, both in its theoretical and practical dimensions (Klafki 1976; 2007; Prange 1983)

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