

Subnetwork E
Day 3 Sunday 30 May
Parallel Session 3.2: 11.00-12.30
Room 4
Session E1: *"Didaktik"- the science of the teaching profession?*

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Didactic relation in the teaching-studying-learning process

Abstract

The relation between general didactics and subject didactics is first analysed and the special characteristics of subject didactics are described. With help of didactic triangle the pedagogical relation between the teacher and the student is discussed. The core of subject didactics is outlined as the teacher's relation to another relation, that between the student and the content. The manifest part of this later relation is expressed as studying and the latent part as learning. Finally the fact that every teacher has a didactics of his/her own is discussed.

1. General didactics and subject didactics

The substance of didactics and of research on didactics is the instructional process with all to it connected factors. The ideal approach to such an examination would be to look at that process as a totality, taking all possible factors into consideration. It is certainly not possible to include all viewpoints into the same design in the same study. But the framework is totally different when the process is looked at as a whole as against the alternative approach where the focus rests on some particular component and the totality is not even discussed. Research on didactics in its broadest definition refer to all kinds of research on teaching or, more precisely, on the teaching-studying-learning process (Kansanen, 1999). It must be added that didactics also means pedagogy in this area. The descriptive side of didactics is characteristic of a research approach and the normative side represents the practical viewpoint with its arguments and justifications behind the educational decisions. In addition, didactics always is connected with some context in the society, with some institution, and it is here that a curriculum comes into the picture. A curriculum restricts the degree of freedom to act in this context. It is pedagogy as a totality that guides the instructional process according to the aims and goals stated in the curriculum.

Generality in examining didactics differentiates into many special viewpoints on the action level. The teacher and the practitioner researcher need some viewpoint to approach the instructional process in practice. Beside general didactics (*didactica generalis*) special didactics (*didactica specialis*) concentrates on some aspect that is distinguished from the instructional process for examination. It may usually be some period of life (*Stufendidaktik*), some content (*Fachdidaktik*), some broader content area of education (*Bereichsdidaktik*), or leisure didactics (*Freizeitdidaktik*). Another viewpoint to look at the same problem is to speak of theoretical didactics contra applied didactics. When speaking of applied didactics the theoretical aspect of didactics is emphasised and there is a certain difference as to the

dimension of generality if we compare it with special didactics. Covertly, at least, applied didactics steers our thoughts to the idea that the content could be deduced from some theoretical model or rationale and the practical procedures could be subordinate to the theoretical didactics. In the generality dimension the hierarchical aspect is not supposed to be present and the various areas of didactics get some specific additional meaning with the special characteristic in question.

Education and didactics is a many-disciplined field of study. It has traditionally been central content of educational sciences, other disciplines have brought their characteristic contributions to this area when dealing with the questions of education or didactics. Beside didactics some subdisciplines of education are generally mentioned in the literature. The most common are educational psychology and educational sociology or psychology of education and sociology of education (e. g. Röhrs, 1969; Tibble, 1966; Hirst, 1983).

Educational psychology is most commonly defined as the intersection of education and psychology. In that intersection we can find an area where the aspects common to education and psychology are found. If the viewpoint of social psychology is added, the area is often called the social psychology of education. The unity of two separate disciplines brings certain problems mainly with the people who are doing research in this area. It is characteristic of those who come to educational psychology from the direction of education to say that educational psychology is a subdiscipline of education, and of those who come from the direction of psychology to say that it is a subdiscipline of psychology. This state of affairs only emphasises the common area of both disciplines, that is, the place where they intersect. The same can be said of the unity of education and sociology, educational sociology.

Analogous to the unity of education and some neighbour discipline is the unity of didactics and some content that is to be taught, studied and learned. Usually we speak of subject didactics (Fachdidaktik) but the term is not clear at all. Why not content didactics (Inhaltsdidaktik)? We must first answer to a very awkward question: what is content? When we speak of subject didactics we are already tightly on the action level and doing with very concrete things inside the curriculum. But where do the subjects come from and what is the relation between content and a subject?

It becomes immediately clear that subjects are only a part of the content on the whole. The content in the curriculum is usually divided into various subjects but there are also other kind of content that may be common to all subjects or is, for example, psychological by nature (cf. Achtenhagen, 1992). The development of curriculum making has come a long way to the so called school subjects we are almost universally referring to in our curricula. There is also some special usage with the terms depending on how we define subject didactics. In the other end of the dimension subject didactics refers to some specific school subject, e. g. mathematics, English, or history. In the other end of the dimension it sometimes means a combination of some related subjects. If the content is more general or refers to some area of personality development we usually move to the side of general didactics.

It is an interesting question to ask how independent the different sections of subject didactics may be. In German we may speak of *Bereichsdidaktik* and that is also the practice in the Finnish teacher education. We combine some related subjects to an area (Bereich) and in this way we may get fewer didactic areas to deal with. Typical examples are didactics of mathematical subjects, didactics of natural sciences, didactics of foreign languages, and didactics of physical education. Apparently we can combine those subjects that have something common with each other. It may be same kind of phenomena or same kind of

methodology in getting new knowledge. Problematic, however, is how far we can go with this kind of unification.

The possibility of general subject didactics of a certain kind has also been suggested (Achtenhagen, 1981; Scherler, 1989, p. 21; Klingberg, 1994, p. 82). It might be placed between general didactics and different subject didactics areas. Perhaps a dimension from concrete to more abstract content might be behind it. This suggestion is, however, like repeating the question what subjects or, more generally, what content may be combined. Bringing together different subjects with quite different theoretical assumptions behind them may lead only to superficial compilation. Perhaps the general subject didactics could be interpreted consisting of a few, partly overlapping, areas reducing the various subject didactics areas from quite many subjects to only some combinations.

The position of subject didactics in the field of education is not solely independent by nature. It depends how the curriculum is written and what kind of decisions are made in that context. As in curriculum making in general the position of subject didactics is political by nature and dependent of the educational policy in the society. That means that some subject didactics may come to an end or change its character with the societal development if that content is not taught any more in the schools. Subject didactics may also be latent in that sense that we do not know the content that may be produced in the future and furthermore taught in the schools.

Subject didactics must also be seen as a last concrete (or first) link in a circle where academic subjects are one possible starting-point and where the school subjects have their own position. If we start from the academic subjects we may see that quite many of the oldest ones are represented somehow or other in the school curriculum as school subjects. They are not identical, naturally, but it may be claimed that there are certain authority in their relations. That comes visible when we think of teacher education and the specialising of teachers. Those departments in the university that have competence in particular subjects are also responsible for the studies of the university students of teacher education. Usually the didactic aspects are linked to the subject after some studies in the subject and in education. The situation varies in different countries as to the placement of subject didactics studies in the university. May it be in the subject department or in the department of teacher education it means practically that the development of a school subject is controlled by the academic representatives of the subject. There are exceptions because all school subjects are not academic by nature but the general trend is that the university professors as authorities of their subjects control also the development of school subjects. That means that it is very difficult to brake the circle and introduce some alternative or new models to the content in the curriculum. The need to develop a new subject from the practical point of this circle is extremely difficult and to achieve a strong position among traditional school subjects brings along big problems. The subject of civic education (kansalaistaito) or guidance (oppilaan ohjaus) are good examples in Finland, also Goodson (1983) presents some similar experiences in his studies of the development of school subjects.

In the course of time there has been attempts to get rid of the separate-subject system of the curriculum. Without going deeply in this topic the viewpoint may be raised that with smaller children the curriculum has often been designed as a totality concentrating in some organising themes (Gesamtunterricht) instead of the subjects. The vicious circle comes, however, quite soon into operation: how to build units, how to get competent teachers in the special themes, where is teacher education taking place, etc. Emphasis on the child or on the student puts the content to a secondary position and highlights the formal side of education.

The content can not be avoided, its role is in any case central and important, only its systematic representation may be different. The larger administrative and traditional boundaries must, however, be broken before it may become realistic.

We can conclude that also the system of subject didactics follows the disciplines of knowledge. Trying to integrate knowledge in a curriculum is one possibility to break the traditional conception of separate-subject approach (cf. Beane, 1995). Most of the school subjects are already multidisciplinary in some way and the unity with education makes subject didactics interdisciplinary in any case. The integrated curriculum meets the requirements of everyday life in a natural way. On the other hand, knowledge has gradually developed and differentiated to a certain accepted system that may also be reasonably justified. The development in the future will probably find some compromises. One such a compromise has already been experimented quite a lot: the main factor steering the application of integrated curriculum is the age of students. With older students our experiences are still quite limited.

In spite of the conception we adopt for the role of subject didactics in the totality of the instructional process its relation to general didactics is essential. To interpret this relation there are various possibilities (Kron, 1993, pp. 36-37). Usually we put them opposite to each other with their respective background disciplines. Every school subject has its own base, some of them have it in an academic discipline. In the area of education general education forms the background. When we form the intersection of the base discipline and education we get a subject didactics (e. g. Glöckel, 1990, pp. 316-324). Plöger (1991; 1994) has described the development of the relation between general didactics and subject didactics in Germany. He states that the dialogue between general didactics and subject didactics that began in the early 1950s gradually diminished and got special subject didactics emphases. Plöger claims that certain special questions in subject didactics became important and left the theme of the relation between general didactics and subject didactics in the background. Questions like selection of the themes, the position of a subject among other subjects, and the hierarchy between subjects came important in the discussion. The concepts were looked for in the general didactics and applications were elaborated in various subjects according to the models in general didactics. According to Plöger this was done with too little criticism. In spite of that the identity of subject didactics were looked for in the discipline behind the subject. This trend was in close connection to the reform of teacher education in Germany and the representatives of subject didactics considered themselves belonging more to the realm of their subject than in pedagogy.

Klafki (1994) has made a summary of the relation between general didactics and subject didactics with five theses:

- The relation of general didactics and subject didactics is not hierarchical by nature. Their relation is rather reciprocal. It means that it is not possible to deduce subject didactics from general didactics. They deal both with same problems, naturally a certain subject brings its typical characteristics to the discussion but their difference is predominantly in the possibility to generalise their solutions and decisions. Reduction of the subject didactics to general didactics is not possible and general didactics has no immediate consequences in subject didactics.

- The relation of general didactics and subject didactics is based on equality and constructive co-operation. The way of thinking may in spite of that be divergent.

-General didactics and subject didactics are necessary to each other.

-The role of subject didactics between the discipline and education is not only a mediatory one, it must be seen as more independent with its own contributions to the common area of education and the subject.

-General didactics aim at as comprehensive model as possible but it does not mean that those models could include the instructional process in its entire totality. The models in subject didactics may, however, be done in more detail.

On the action level of the teaching-studying-learning process integrating curriculum has aroused much discussion and also opposition. The arguments presented for and against integration reflect also the attitudes when discussing the relation of general didactics and subject didactics. Beane (1995) claims that the separate-subject approach derives from Western-style humanism and it is deeply rooted in our thinking and in the academic knowledge system. Beane also presents some protecting factors that contribute to the stable position of the separate-subject approach in school curriculum and teacher education. First of all there is a network of academic elites with symbiotic relationships. Beane refers among others to many academicians and teacher educators, test and text publishers, subject-area associations whose identity and advantages are behind some subject. Secondly, parents and other adults are uncertain to choose radical alternatives. Further, teachers have their identity in the very subject they have studied and are teaching. There is also a certain ranking among subjects that is of a nature to strengthen teacher's own beliefs. Finally, Beane claims that we are living in a very conservative era.

Separate-subject approach in the curriculum and subject didactics have many characteristics in common, actually they both are based on the same knowledge system. It is reasonable to claim that the same problems are encountered when trying to combine certain subject didactics to area didactics (Bereichsdidaktik). Klafki, however, considers subject didactics and area didactics as parallel in his five theses (1994). It may be interpreted in such a way that he has nothing against combining some relative subjects into a common area. The conceptions about this matter are, nevertheless, extremely varied. In the Finnish system of teacher education area didactics has been realised already over twenty years. Although it must be added that there are also economic reasons for this decision, it has functioned reasonably well. Didactic research literature on the respective areas has increased and the number of doctoral students has continually increased.

Contrary to the positive attitude towards area didactics is the recent point of view taken by the chairpersons of associations of subject didactics in Germany (Konferenz, 1998). They are strongly against combining neighbour subject didactics to fewer units of area didactics. Among many arguments it is repeatedly stressed that every separate subject didactics is strongly connected to its discipline and to its knowledge base. The different subject didactics must rather be seen in close co-operation with each other and in this way they are together able to fulfil their interdisciplinary assignments. The problems overlapping separate subjects are a challenge for co-operation of specialists in subject didactics, area didactics is called something like "imaginary super science" (imaginäre Superwissenschaft) and is claimed to be impossible. As said earlier, integrated curriculum and area didactics must not be considered identical or corresponding each other directly. A possible solution to overlapping subjects or integration of subjects is interdisciplinary co-operation, combining separate subject didactics to some kind of combination is not the right way. The chairpersons are by the way taking stand also to the curriculum integration when mentioning such subjects as civic education

(Sachunterricht) and field of work studies (Arbeitslehre). To constitute a school subject from some practical point of view brings about a different kind of subject, not based on any discipline, and the chairpersons (Konferenz, 1998) are not referring to such compilations. We tend to approve of this last viewpoint but it leaves the development of didactics for such compilations open. Also the remark that many subject didactics are quite large and heterogeneous is true, e.g. biology as a subject contains knowledge from many different areas.

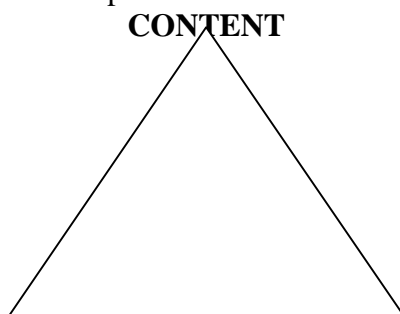
The position of subject didactics as a special area in didactics is not a simple one. Although the viewpoint here is content it must be kept in mind that subject didactics is only one special angle to look at the problems in the field of didactics. Beside subject didactics we need some other perspectives. The point is, however, that subject didactics has traditionally a very strong position. As we have indicated there may be alternative ways of looking at things, examining and experimenting with them will prove their future usefulness.

Subject didactics has been thoroughly dealt with in the German didactic literature. It has, of course, its corresponding field in the Anglo-Saxon research on teaching. The tradition and the cultural context is there, however, totally different. Lee Shulman (1987) has introduced his term pedagogical content knowledge and it has been noted to resemble the German *Fachdidaktik* quite closely (cf. Gudmundsdottir & Shulman, 1987; Gudmundsdottir & Grankvist, 1992; Nordenbo, 1997, pp. 123-130). In spite of that, as systematic analytic literature as in German is still waiting its coming.

2. Didactic triangle as a means to understand subject didactics

In addition to the participants in the teaching-studying-learning process this process has some purpose, it aims at something. The purpose, aims and goals are defined in the curriculum. The relation of the participants, the teacher and the students, is fairly often described with the didactic triangle according to Johann Friedrich Herbart (Peterssen, 1983, p. 46). What is content in the teaching-studying-learning process is a very complicated thing. Said shortly, the content does not restrict to various subjects, it may, in fact be extremely versatile as e.g. Shulman (1987, p. 8-9; Wilson, Shulman & Richert, 1987, p. 114) has described. The same has been taken into consideration when drawing the didactic triangle. The didactic triangle is usually drawn with teacher, student and content as its points. There are, however, numerous variations depending on how the points are understood in a larger context where the societal factors are explicitly drawn out (Paschen, 1979; Künzli, 1998).

Although the didactic triangle should be treated as a whole, it is nearly impossible in practice. That is why it is usually analysed in pairs. The most usual approach is to take the relation between the teacher and the students as a starting point (Figure 1). When this relation is seen as a pedagogical relation it brings with it certain special meanings. The grown-ups as students are of age but the pedagogical relation between the teacher and the student is, however, asymmetrical. In the pedagogical relation the teacher has something that the student not yet has. In other respects this relation may be democratic. When the students are children the asymmetric quality of the relation is emphasised.



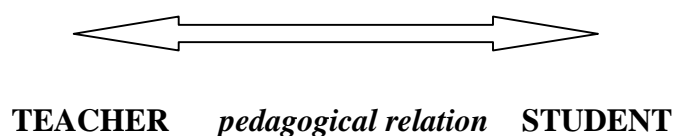


Figure 1. Pedagogical relation in the didactic triangle

In the *Geisteswissenschaft* pedagogy the relation between the teacher and the student is one of the basic concepts. In the thinking of Herman Nohl this relation has been of special importance. Wolfgang Klafki (1970, pp. 55-65) has summarised it by stating that this relation is necessary from the point of view of a young person and it aims at his/her best, the content of this relation has to be thought over in every historical situation, it is interaction by nature, it is not possible to compel the student to this relation, and it is not permanent but the young person gets gradually rid of it and develops to an independent person of age. The relation also takes gradually shape according to the future perspectives during the development of the young person. In everyday pedagogical discussion this characteristics has often been referred to as "the pedagogical suicide of the teacher" or "pedagogical paradox" according to Immanuel Kant.

It belongs to the character of the pedagogical relation that it may be organised in whatever way. In principle there is almost complete freedom to construct the interaction in the teaching-studying-learning process. It is also possible to describe the various emphases by drawing the didactic triangle accordingly. Jürgen Diederich (1988, pp. 256-257) presents some examples. Authoritarian atmosphere stresses the teacher's personality, student-centred methods emphasise the student's role, competence over the content means expert knowledge of some subject, and understanding of the student's personality refers to psychological interaction, etc. Klaus Prange (1986) considers the dimension between teacher and subject matter doctrinaire, pedagogical relation is seen from the teacher's point of view as ethical, and teacher's knowledge of the student is called maieutic.

In the relation between the teacher and the content the teacher's competence in content is in focus. From the point of view of subject didactics the question is of the balance between subject knowledge and pedagogy. It is common sense knowledge that the requirements in this respect are the greater the older the students are. The limits of the subject-matter expertise are easy to state. To be a teacher s/he must have something that the students do not have (cf. McClellan, 1976) and in the area of content knowledge this means sufficient academic or professional studies. In principle the competence of the teacher is never too high but when it is over the requirements it may become useless. Of importance is also that the teacher's relation to the content is sufficiently many-sided and there is pedagogical competence enough. Uniting content expertise and pedagogical competence is a good starting point but to fulfil the requirements needed in subject didactics it must be further specified.

It must be added that in the traditional understanding the content in the didactic triangle has meant discipline-based content knowledge that may be expanded to the questions of the curriculum, not so much to the questions of general pedagogy. We have, however, considered the content as somewhat more comprehensive as pure subject-matter and thus become nearer

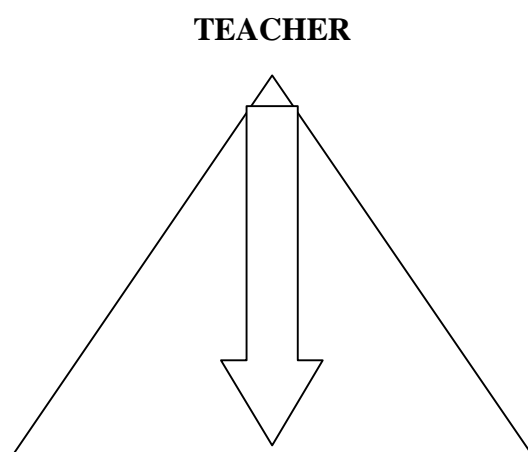
to the core of subject didactics as usual. This also indicates the limits of using such models as didactic triangle as a basis of understanding. In spite of their simplifying qualities the models may be of help in the conceptual analysis.

3. Didactic relation – the core of subject didactics

The student's relation to the subjects, or more generally to the content, is the key to didactic understanding. The content is defined in the curriculum as subjects and other content. The whole instructional process aims at achieving the aims and goals stated in the curriculum. Most of the outcomes from the teaching-studying-learning process are learning results but behavior changes through own free will on impulse of the activities in the instructional process are also consequences of the same process. Learning and other desirable changes, or more generally said the defined development of a student's personality, are the primary purpose of the teaching-studying-learning process. It may thus be said that the consequences, learning included, form the most essential viewpoint to the relation between the student and the content.

It is a well-known fact that teaching in itself does not necessarily imply learning. Rather, teaching is a kind of action that is aimed at pupils' learning or other kinds of outcomes without any guarantee on the teacher's part (e.g., Smith 1961, 1987). If we describe the activities of the teacher as teaching, we would prefer to call the activities of the students as studying (cf. McClintock, 1971; Uljens, 1997, pp. 34-43). It is this studying we can see and observe in the instructional process. In other words, the relation between the student and the content is visible as studying, doing something in order to achieve the aims and goals in the curriculum. The invisible part of this relation may be learning and other consequences of the instructional process. Learning is taking place in a student's mind and in order to learn the student is expected to do something, to study. For the teacher to bring about learning is the central task but to control learning taking place is theoretically impossible. What the teacher is able to control or rather to guide is studying.

In any case, the most important determinant in the teaching-studying-learning process is the student and his/her achieving the aims and goals of the curriculum. The teacher's task is to try to guide this relation (Figure 2). First, there is a relation between the student and the content. This is manifest as studying and latent as learning and other changes. Secondly, the teacher has a relation to the relation between the student and the content. In other words, the teacher has a relation to studying and at the same time this relation is also to the learning and other changes. That very relation may be called didactic relation (cf. Klingberg, 1995, pp. 77-84). It is important to notice that the didactic relation means a relation to another relation.



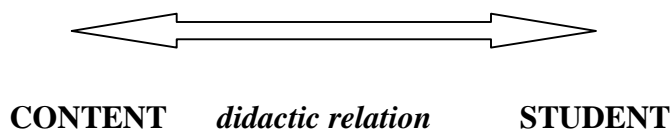


Figure 1. Didactic relation in the didactic triangle

To emphasise the importance of the didactic relation it may be brought out that concentrating on the content makes the teacher an expert and concentrating on a student makes the teacher a caretaker of the pedagogical relation. To concentrate on the relation between the student and the content or on studying is, however, the core of a teacher's profession.

4. Teacher's didactics

Didactic relation as a teacher's relation to studying has also some quick consequences. It is difficult to think that the didactic relation could be organised universally or following some technical rules. Every teacher is supposed to think and decide him/herself how to cope with it. That means also that every teacher has a didactics of his/her own. This comes quite near the concept of teacher's practical theories (Elbaz, 1983) or teacher's pedagogical thinking (Kansanen, 1999). Didactic models or textbooks may be of help but they do not remove the teacher's personal responsibility in making educational decisions.

A second point of view is the context of didactic triangle. It has been claimed that the larger societal conditions are not taken into consideration clearly enough. Adolf Diesterweg suggested a fourth factor that he named as outer conditions where the students are living (cf. Klingberg, 1995, pp. 84-85). Although it is true that the didactic triangle is an abstract construct it is always situated in some context. The question is how much of these outer conditions must be explicitly stated and how much of it belong to that context where the triangle is situated. In school didactics the instructional process is always guided by some curriculum and the relations to larger societal determinants are defined through it. If these societal conditions are emphasised it is natural that they are also paid more attention.

The development of research on general didactics has reacted to the claim of wider conditions with a concept of school pedagogy. It is also a German peculiarity like didactics. It may be described comparing it with didactics. Glöckel (1990, pp. 322-324) offers a historical explanation to their differentiation. Didactics has developed as an essential part of general pedagogy and teacher education. Almost all teaching was taking place in schools and school pedagogy was central in didactics. Teaching is nowadays, however, a broader concept taking place also outside schools and didactics is not limited to schools. The same may be said of school pedagogy, it refers to broader societal conditions. Didactics concentrates mainly on the individual and refers to educational psychology and further to the theory of teaching. School pedagogy has its main interest in organisational factors and refers to educational sociology and further to the theory of school. When didactics has its background in philosophy, school pedagogy is interested in political sciences. The most important names in didactics are Wolfgang Ratke and Johan Amos Comenius while the respective names in school pedagogy are Johann Friedrich Herbart and Friedrich Schleiermacher. The contemporary representatives among others may be named Hans Apel (1990; 1993) and Wolfgang Einsiedler (1991). It may be emphasised, however, that most of the problems and themes of didactics and school pedagogy are common.

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Questions for discussion

1. What does it mean to say that subject didactics may be manifest and latent?
2. How many didactic relations are possible to one teacher?
3. The results of the teaching-studying-learning process may be learning and other consequences. What may these other consequences be?

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