

Education and its borderlines.

An essay about the nature of education

Herner Saeverot

Department of Education, University of Bergen, Norway

Herner.saverot@psych.uib.no

Glenn-Egil Torgersen

Norwegian Defence University College, Norway

Ikt-pedagogikk@halden.net

Abstract

This essay initiates a fundamental discussion about education's nature and character, and raises the questions: *Is education reliant on other disciplines as, for example, psychology, sociology and philosophy? Or may education be thought of independently, without being reliant on other disciplines?* These questions are discussed in the light of Theodor Litt's educational reading of Hegel's understanding of dialectics, as it appears in the book *Phenomenology of Spirit*, in order to support that education has a relational and dialectic nature. In the second part, we connect the concept of 'Hegelian dialectic structure' with scientific theory. More specifically, we introduce a theoretically oriented concept, based on semantic theory construction; namely, '*relational parameter bundles*'. This concept clarifies the difference between education and other 'scientific,' often more empirically based disciplines, such as psychology, on which education, or rather, educational researchers, traditionally rely. Through our theoretical approach we aim to uncover fundamental differences within different disciplines' scientific thinking, and their use of theories and models, which then manifest themselves in the discipline's scientific assessments and practical actions. An uncritical integration of other disciplines in education may destroy the 'true' nature of education, and thus pose a danger to education's character, problem areas and ways of conducting research. That does not mean that education shall be isolated from other disciplines, it is rather a question of *when* perspectives from other disciplines should be included in educational matters. Not before the educational questions are raised and worked through will it be appropriate to obtain knowledge from other disciplines, if, that is, it is deemed necessary based on educational judgment.

Introduction

We wish to start with an example that touches on a significant problem in relation to education. Our inquiry began with a symposium that investigated the question: What is education? A philosopher and a psychologist each had a lecture, followed by an educator giving a short commentary on their lectures. We consider this to be an absurd situation. The theme of education was being examined, but two lecturers outside this field were given the main roles, while the educator was placed at the borderline. The problem we wish to examine in this essay occurs because other disciplines decide, and gladly dictate, on what counts in the

field of education. The danger is that education in this manner loses its own distinctiveness; the educational language becomes either totally absent or very unclear. Moreover, education becomes fragmented and ends up as a hyphen-discipline, it becomes educational philosophy, educational psychology, educational sociology and so on, which means, other subject terminologies govern educational discourse. In the worst scenario, you might gradually become totally removed from education. You may believe that you act educationally in accordance with a situation or a case, but in reality find yourself within other disciplines. The question is how to resolve such a complex problem. Many will perhaps maintain that there is no problem, but it depends on how you view the situation. For example, it can be asserted, that for the sake of education, one should be both open and generous, and that includes inviting experts outside of education to a discussion about education. In this we agree. There must be such openness, but the problem is that education might end up being totally invaded by other discipline areas.

It is worthwhile asking how many, or who, really are or have been educators, meaning people who have education degree at the master level or above. It would also be good to know, as well, how many have educational experience from primary to secondary schools, nursery schools or higher education; or, alternatively other training activities from other sectors. It is appropriate to ask how many people holding positions in educational disciplines have such relevant education and practice. How can lecturers who are not educators themselves, appear as representatives for education, with no professional background within the field? Based on a small survey of the Norwegian system, we find psychologists, philosophers, sociologists and linguists as representatives of educational subjects (noticeably, we do not mean subject didactics). Only seldom do we find educators in positions within the mentioned discipline areas of psychology, philosophy, sociology, linguistics or history.

Why does this fragmentation occur in relationship to education? Is it because education is reliant on other disciplines such as psychology, sociology, and philosophy? Or may education be thought of as an independent discipline in its own right? We will address these questions in two stages: (1) To begin with we shall discuss the question in the light of Theodor Litt's educational reading of Hegel's (1995) understanding of dialectics, as it appears in the book *Phenomenology of Spirit*. The reason being is twofold. Firstly, in many ways Hegel's philosophy formed the basis for the German tradition of *Geisteswissenschaftliche Pädagogik*, which we find interesting as this tradition legitimized education [*Pädagogik*] as an independent academic discipline (cf. Litt, 1961). Secondly, and this is the main reason, *Phenomenology of Spirit* supports our thesis that education has a relational and dialectic nature, where education occurs in an interaction and exchange with other people and surroundings; (2) In the second part, we shall connect the Hegelian dialectic structure with scientific theory, more specifically semantic theory construction. Since this is a wide theme, we will limit the discussion to fundamental differences between education and psychology. Through this discussion we will gradually develop a concept about the character of education. The aim of our discussion is to come to an understanding of what is needed in order to regard education as an independent discipline with its own uniqueness.

As a starting point, our focus lies on basic concepts of education in general, and is the main reason for implying a broad approach toward education and target groups. The main core is development of the person as a whole, without restricting the concept by setting defined limits at the research level or within an academic discipline. General education as a subject offers a broad approach. In contrast, "educational research" is based on studies of relationships and differences between a limited set of variables, while trying to identify characteristic features and effective work methods depending on the profession (see Shulman, 2004). Specific learning objectives must necessarily be developed within the single school, grade and subject (pedagogical practice), but should be based on a fundamental pedagogical

view allowing for wholeness and individual needs. On the other hand, this article studies the basic concepts of these general approaches, and thus discusses how a fundamental pedagogical view may be developed.

Part I. Hegel's dialectical structure as educational quality and feature

Hegel's (1807) book *Phenomenology of Spirit*, establishes boundaries for what is considered the essence within education as a discipline, as well as connecting to our idea that education has a relational and dialectic nature where the educative event occurs via an interaction with other people and surroundings. In what follows we expand these perspectives so that we can come to an understanding about what is needed to explain the discipline of education and the incumbent distinctiveness from the other social disciplines. As we shall argue, the Hegelian dialectic structure constitutes an essential feature of educational research, which is not found as prominently in other seemingly education-related disciplines.

In fact, this is supported by the German *Geisteswissenschaftliche* understanding of education (*Pädagogik*). Wilhelm Dilthey's (1900) dialectical understanding of reality, based on both Schleiermacher and Hegel, came to characterize the education of Theodor Litt, Eduard Spranger, Herman Nohl, Erich Weniger, Wilhelm Flitner, and Wolfgang Klafki. The one who stands out most in this respect is Litt (1926), who inspired his student, Klafki, to promote a dialectical understanding of education (cf. Klafki, 1966). For Litt (1926) it was essential that education should not be a psychologically oriented science; rather, he believed that education had to be a cultural discipline, in which the dialectical and relational would prevent persons from becoming objects by way of a technical and instrumental form of education (Litt, 1962). Litt will therefore be with us in the following discussion, as a co-reader of Hegel.

Education as sociology

Similar to the traditional *Bildungsroman*, as formed by Goethe (1795–96), *Phenomenology of Spirit* has a two-way educational function. On one side it is about *Bildung*, understood as the spirit's independence or the European people's maturing process. No doubt, different readings are connected to this, but generally the text speaks about the common individual or the collective people, and "how they gain their concrete form and their own formation"[authors' translation] (Hegel, 1995, pp. 31–32). On the other side, the aim of *Phenomenology of Spirit* is to guide the reader towards historic understanding: "With an eye for this, upbringing consists, seen from the individuals position, of acquiring that which is at hand, namely that the individual consumes his inorganic nature and possess it"[authors' translation] (ibid., p. 32). This means that the individual or the reader shall be aware of his or her inorganic nature, in other words the unknown historic

However, it is not so that the individual can force his or her will. Quite the opposite, the individual must control his or her desire in order to reach the goal. That is to say, the individual must renounce his or her natural drive and allow the people or the general public to come first. In other words, it is about individuals allowing themselves to be cultivated or socialised, something Hegel emphasises when he says the following:

When it involves the relationship between the public individual and the private individual, each moment is shown in the public individual, how he gains his concrete form and his own formation. The single individual is, on the contrary, the incomplete spirit, a concrete figure where a single certainty rules the whole

being, and where other certainties are only present in a washed out manner.
[authors' translation] (ibid., pp. 31–32)

Thus Hegel emphasises the people's process for *Bildung* before the individual, but despite this the private individual is present in the formation of the spirit. The spirit is far from being finalised beforehand. Its self-determination is rather a result of the relations between society's individuals, and what they agree to be authoritative and convincing. The individual has a role with respect to the spirit's self-realisation, even though it may renounce the will, desire, and its natural urges.

Even if there is a connection in the relationship between society's citizens, it is a form of socialising that is highly problematic seen in the light of education, because socialising includes firm priorities. That is to say that the reader is led to an unambiguous interpretation; hence the reader is led out of the relational and the dialectic and therefore also led out of education. This realization, supported by Litt (1961), was divided in his conception of Hegel. On the one hand, he applauded Hegel's dialectics, but on the other hand he claimed that Hegel put too much emphasis on society, at the expense of the individual. We can therefore say, by way of Litt's interpretation, that the reader of *Phenomenology of Spirit* shall be educated through Hegel's premises. In other words, Hegel has presupposed an educational reading that is of a general and universal character. The intension is to teach the reader to acquire the system of *Phenomenology of Spirit*, or that which Hegel considers to be the true science (cf. Litt, 1961).

As *Phenomenology of Spirit* is mapping the way, or trying to lead the reader towards the correct way with respect to the future, the text rejects active involvement of opposing parts. This creates momentous consequences. That means that the text is removed from education, or one can say that education is reduced to a hyphenated field where its ideas and practice are based in other disciplines. In other words, *Phenomenology of Spirit* is reduced to a sociological text and a strongly normative science in that the individual shall socialise within Hegel's universal and given system, rather than an educational text that still is capable of creating new thoughts.

The dialectics of education

On the other hand, if we are to enter education, and here, too, we are inspired by Litt's educational reading of Hegel, we must have contradictions (Litt, 1961). Seen in the light of *Phenomenology of Spirit*, this book must make an active resistance in relation to its reader. Through this interaction, the reader, as well as the text itself, may change. The question is whether it is possible to read *Phenomenology of Spirit* in such an educational manner. So far we have sown doubt about this, but it can be argued that this book offers resistance if we take a look at the German concept of *Gegenstand* that we find in *Phenomenology of Spirit*. The *Gegenstand* resists the technical and sociologic aspects because it can assert itself with authority. *The Phenomenology of Spirit* is a *Gegenstand* and it can make resistance because it stores an unknown past; at the same time an unexpected form of non-calculable reason is embedded in this text. This means that the text brings about surprising and sudden shifts of opinion. The sociologic text's demand to be unchangeable and untouchable is foreign to an educational text that unfolds itself in a spontaneous and unpredictable movement. The educational text invites the reader's own interpretation and takes the reader's response seriously.

This assertion is not only substantiated by Litt (1961) but is also further substantiated by *Phenomenology of Spirit*'s mention of the spirit as "an *I* that is a *We*, and a *We* that is an *I*" [author's translation] (p. 145). The spirit is the relationship between the private individual (*I*)

and the common individual (We). The spirit is not an independent participant. It is neither the individual nor the common alone. Rather, the spirit is both similar and dissimilar with itself. Yet, the one part cannot arrive at consciousness without the other. This is a relationship of dependency; or, more specifically, a dialectic relationship between the identical and the different. The reader, for his or her part, must identify him—or herself with, and re-interpret, the text and can in this way, revise and widen his or her ideas and concepts. Thus, *Phenomenology of Spirit* has become an educational text rather than a sociological text in that education involves a relational and dialectic activity, which leads to an active performance from the reader's side.

Notably, such an educational reading demands that the reader enters a relationship with Hegel, as he appears in the text. If not, the text will remain incomprehensible. This is shown in a quotation from the foreword: "Knowledge's movement occurs therefore on the surface, it does not touch the case itself, that is, the being or the concept, and is therefore not an understanding" [authors' translation] (Hegel, 1995, p. 44). These two sides of experience become "like oil and water, they cannot mix and are only externally connected" [authors' translation] (ibid., p. 41). In other words, the receiver and the text do not come in contact with each other. Now, what is required to be internally related with the text? First and foremost the educational reader must "hold one's own insight outside the concept's immanent rhythm" [authors' translation] (ibid., p. 56). Without this aloofness the reader will be on the outside and relate himself to something other than what Hegel writes about. Rather, it is about being present so that the one gives oneself over to the other. This means that the text "touches" and "calls" the reader. Said differently: the text addresses an interpreter, who must answer and receive the call, whereupon we end up with "an *I* that is a *We*, a *We* that is an *I*." With this, the perspective is relational and dialectic, that leads us away from sociology and further into education.

Where Hegel stayed within the frame of philosophy, Litt (1961) takes this Hegelian idea even further in the direction of education. Litt stressed that education is not a technical matter, where, for example, philosophy is supposed to form the theoretical basis for educational actions. Thus, education is not the same as applied philosophy. On the contrary, educational contexts are characterized by internal relations between subject and object, after which the object appears as a subject. The object is thus a subject that has its own inner self, that *thinks* on its own. The sociological and technical distinction between the external and the internal thus collapses. By including this dialectical perspective, Litt (1961) avoids reducing humans to a mechanical object. Instead, humans becomes active, an interpreter, and this can be explained through the relationship between the reader and Hegel, as he appears in the *Phenomenology of Spirit*.

The relationship itself becomes complicated when the reader must relate him or herself to the text's dialectic between the known and the unknown. On one side, the *Phenomenology of Spirit* gives a known picture of history. On the other side, the surface of the text gives a blurred image of the unknown history. Consequently, we get a surface that is fixed as a dialectic game of chance between the known and the unknown. In addition, we get an opposition and division between the two parts: the reader and the text. There is thus a full contradictory opposition between like and unlike, identity and difference. Because of this the reader must endeavour to achieve conciliation, which is to understand the different and the unknown that are understandably close, but at the same time incredibly distant. As uneasiness and uncertainty evolve into certainty, previous cognitive discord becomes cognitive consonance. However, and this is important, the condition of cognitive consonance is not lasting. This is because Hegel's *Phenomenology of Spirit* continues to call upon the reader. The book can be read again and again so that the reader is constantly uncertain in relation to his views and beliefs. Thus Litt (1952) could criticize the neo-humanistic idea of *Bildung*,

which stated that education's most important task was to develop people, particularly through literature and art, into a harmonious being. In contrast to such an idea of harmony, Litt (1952) promoted the educational idea of living in tense conflicts, which may occur in society and culture. Consequently we achieve a mutual touching and an audio-haptic border zone between the receiver and the other party. This place is education's energy source and opening, because room is created for "a new world and a new form of the Spirit" [authors' translation] (Hegel 1995, p. 590). With this new world both sides of experience become changed. In no way can education be regarded as sociology, where the individual surrenders totally to something that is already thought out. As discussed earlier, hyphenating education with another discipline, such as sociology, dilutes the potential for educating the individual. Right enough, the reader and the writer of *Phenomenology of Spirit* must surrender to one another, but only in order to put the richness of sensations in coherence. The educational process ends in a form of concept making, where the reader makes concepts meaningful. Thus education is a kind of poetic and creative activity in that the reader renews him or herself through recreating the text. The text is given a new form through the reader's activity—while the reader on his or her side becomes self aware through the recreating of the text. Another way to say this is that the reader realises him or herself by interacting with the text.

Therefore, to read *Phenomenology of Spirit* educationally, indicates that the reader must reflect upon the experiences that are contained in this book. The educational task is to give meaning to that which is recollected; the reader must attempt to grasp the historic figures or the "gallery of pictures" [authors' translation] (ibid., p. 591), that are archived in *Phenomenology of Spirit*. Furthermore, if Hegel's book shall be realised in an educational form, the reader must conceptualise the recollected spirits. The reader must also give the history, as is described in *Phenomenology of Spirit*, a new future so that the conscious reflection exceeds the historic narrative. Education, not only happens in a relationship of dialectic exchange between different actors, but there has also been a transformation, in that something educational has happened.

This dialectical perspective has implications for educational situations, in which teachers and pupils are involved. According to Litt (1927/1964) the teacher or educator is given a double task, consisting in, on the one hand, conveying and representing the cultural heritage and spiritual values –and, on the other hand, safeguarding the child's individual characteristics. Education's dialectical nature is absolutely essential here, in the sense that the whole process shall not lead to indoctrination, manipulation, or sheer seduction. Through the dialectical perspective the teacher is led to respecting the child and his or her right to grow, while redeeming the values of culture –in such a way that the encounter between the child and culture becomes fruitful. For example, basing education practice in sociology may lead to the imposing of a particular image of the culture. Hence, it will all end in a form of socialisation. That is why Litt (1927/1964) considers the dialectic between guidance [*Führen*] and let grow [*Wachsenlassen*] as the basic educational problem. This means that the teacher does let the child grow while guiding the child in terms of cultural and spiritual values. Through this dialectical tension, which can never be repealed by a higher synthesis, lies the educational challenge and responsibility (ibid.). However, the history of education has shown that a hyphenated form of education often puts too much emphasis on either guidance or growth. An example of this is the educational philosophy of Herbart (1806) and Rousseau (1762), where the former emphasizes excessive guidance while the latter emphasizes growth. While other disciplines, such as philosophy, appear as a standard for education, the individual is easily governed toward unambiguous directions. Thus, Litt (1927/1964) relates to *pure* education, where the dialectical tension between guidance and growth is sustained.

Part II. The Hegelian dialectic structure and scientific theory

Through an educational reading of Hegel's *Phenomenology of Spirit*, with Theodor Litt as a co-reader, we now have a theoretical framework that we will bring into the following argument in which modern scientific theory is at the centre. We believe this will strengthen our thesis that education has a dialectical nature, which differs from other disciplines, such as, for example psychology.

Are other disciplines the basis for education?

In 1779, Ernst Christian Trapp, was appointed as the first ever professor in education (*Pädagogik*) at Halle University. In Norway we had to wait until 1918 before the first chair in education was a reality, but perhaps more important for the establishing and scientific appraisal of education was the Norwegian State's action in establishing the Department of Educational Research in 1938. Helga Eng, who was a child psychologist, was appointed the first professor of education at this institute and worked systematically to establish education as a scientific discipline. To achieve this goal, psychology had to be an assisting discipline, or an assisting science for education. In fact, Eng placed such great importance on psychology in educational studies that education was reduced to applied psychology, as this quotation from the curriculum of 1939 shows: "In the study of education, psychology has such an importance that today's education partially can be understood as applied psychology" [authors' translation] (Dale, 1999, p. 115). With the help of psychological knowledge one could, according to Eng, continually develop better assessment methods and exact treatment methods of empiric examinations, enabling one to achieve, as Eng herself said, an "exact practical education" [authors' translation] (*ibid.*, p. 126). Despite that, Eng's view of education also went towards humanism or what she described as "a universal realistic humanism" [author's translation] (*ibid.*, p. 45); it was, nevertheless, psychology that formed the basis for education. In view of the discussion we shall lead, our point is that the development of education as a scientific discipline had an unfortunate start in Norway, as it became subordinate to another discipline; namely, psychology.

The problem is that education and psychology are more different than alike as discipline domains. As we shall examine more closely, psychology lies closer to the natural sciences than education. Education and psychology cannot be said to have a discipline commonality, as we find within the sciences. In the natural sciences commonalities are found, such as mathematics and physics being the basis for many applied natural sciences, for example geophysics, astrophysics, and meteorology. Despite this, it is seldom, if not at all, that professionals within these subject domains will accept for example a biologist appointed to a position in chemistry (not biochemistry) and vice versa. Here Archimedes's famous statement is appropriate, "Don't disturb my circles." However, one can think of positions of discipline mixture, for example biochemist or physiochemist, but these are more applied discipline areas. Similarly one can think of a mixture between education and other disciplines, for example educational psychology, educational sociology, and educational philosophy. But can it be said that education and psychology have a corresponding relationship to each other, that psychology is the basis for education, or the opposite?

Based on what we have argued above, we do not believe this to be the case. They touch each other's fields of research, but with totally different research aims, methods, and theoretic starting points. They are quite simply different disciplines with different scientific and theoretic structures. While research aims in education are basically concerned about both heterogenic groups of people in a developmental education or teaching situation, psychology focuses on a clinical approach towards an individual or individuals in homogeneous groups

(who, after selection criteria, are groups of individuals with the same or similar characteristics). While psychology mainly examines similarities and differences within and between groups, or single individuals, education focuses on both individual and group oriented development and learning, beginning with the individual's uniqueness and the development of this uniqueness. Psychology is involved with identifying what factors a phenomenon, for example teaching, is comprised of, and what importance various defined factors have for changes in the phenomenon. Education focuses on an overall level on the phenomenon and wishes to a lesser degree to classify a phenomenon with a certain number of identification factors or parameters. Instead it is accepted that a phenomenon is composed of and affected by a multitude of factors that collectively deny being scheduled and directly identified. If one reduces these factors as a measure to attain an overview of the phenomenon, or as a link in a controlled research process, it also reduces the phenomenon's current interest for education.

Basic differences between education and psychology in the light of “relational parameter bundles”

The relationship between parameters and a discipline's theories and models can be further analysed in the light of *semantic theory construction* (Giere, 1988, 1992; van Fraassen, 1980, 1988; Suppe, 1977, 1989). This scientific theoretic perspective gives a nuanced view of the relationship between the expressions *model* and *theory*, and clarifies what basic demands ought to be addressed for the construction of models in a given subject, and to test methods that shall measure the phenomenon the model represents within the discipline area. Nevertheless, a *model* is only a representation or a simplified description of reality (Hacking, 1999), and has no clear generalisation and prediction function as *theory*. Giere (1992) and Suppe (1989) further describe that the building of a theory ought to have two steps or construction phases: first is connected to which parameter is selected to make the model (i.e. model formation), and the other describes the conditions for the transition from model to theory. A model is therefore only an abstract system that is constituted by the chosen parameter. A central requirement for selection of the parameters to a model that shall describe a phenomenon is that these ought to have an inviting connection, and in this way create a meaningful (semantic) totality. The choice of parameter, and the argumentation for its meaningful composition, will in turn be rooted and explained in other theories, models, observations and experiences. With this the researcher's aims will be there to steer the choices.

In light of semantic construction (Suppe, 1977; 1989), one can therefore say that education as a subject has a greater aggregate nature with reference to the parameters. The extent of the parameters becomes greater and more complete, though less specific and directly identifiable. We call such a collection of aggregate parameters a *relational parameter bundle*, which has a Hegelian dialectic structure (see figure 1). These bundles create the basis for educational models and theories.

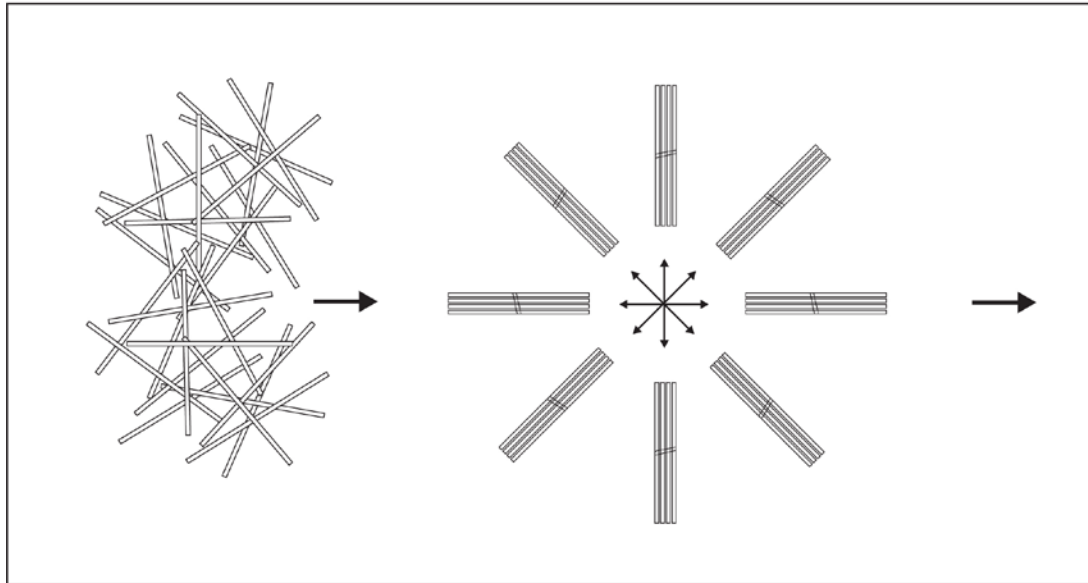


Figure 1. In education, data and parameter are selected and gathered in bundles after a qualified assessment. The bundles form the basis for a relational and holistic assessment, as a basis for describing a phenomenon. This approach has a Hegelian dialectic structure.

In psychology, the choice of parameters is more precise and nuanced, but with necessarily fewer parameters as the basis for model and theory development in the discipline. In the natural sciences this reduction of the parameters is called *scaling*. Scaling means the reduction of parameters or other relationships that are regarded as having little influence on the main results. An example of this can be the interpretation of formulae in physics where integration/derivation is undertaken. Links that are assessed to have less value are rejected or *scaled*, and the mathematic expression becomes simpler with less variables. Such a simplification is done for example in connection with partial derivations of pressure, currents and turbulence in air and in liquid (for example, so called “eddy parts”) and other composite physical processes. With the use of powerful data machines such links can be retained to enable a more correct calculation (such as calculation in meteorology, astrophysics and statistics). Consequently, these mathematic models are more in accordance with reality and can give a more accurate result.

In a similar manner to psychology, a research process reduces the parameters at an early stage in order to keep control of the remaining parameters and their meaning for a phenomenon. Education however, removes *as few* parameters as possible, but is instead regarded as an overall and collected measure (relational parameter bundle), and to a lesser degree as independent units with individual powers. The individual units in the parameter groups have a rather interactive and dynamic nature (therefore relational and dialectical), but without studying each individual unit isolated and in direct connection to each other, as in psychology (see figure 2).

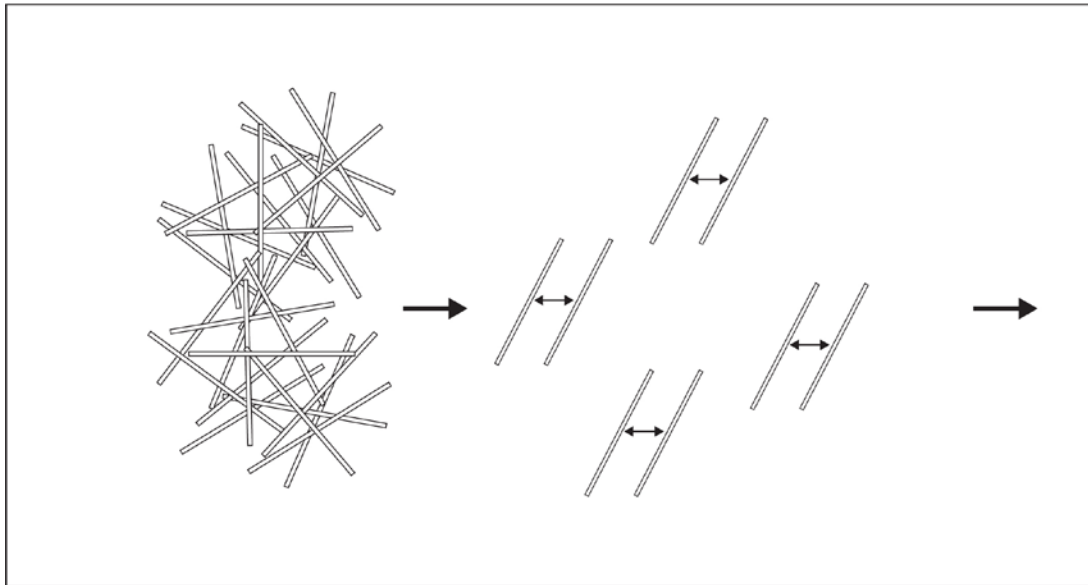


Figure 2. In psychology, a few specific parameters and data are selected, where the relationship or differences between single parameters or few groups are measured, as a basis for describing a phenomenon. This approach does not have a Hegelian dialectic structure.

However, from both a psychological and an educational perspective, the data or values of the parameters are often not available *before* they are examined, independent of being measured or not, as with simple physics phenomenon (i.e. thermodynamic relationships, magnetism, and radioactive radiation) (Hacking, 1999). On the other hand, parameter size, as focused upon in psychology and education, for example in learning ability, is more latent in the individuals unique cognitive processes, and its size or result evolves *as time passes by*, and it is examined and measured later. However, the purpose of measuring can be different; while psychologists gladly have as their research aim to identify each size or value in the phenomenon, set against definite (statistical) standards, the educator's research aim is to understand the phenomenon, not only isolated as a phenomenon but in a *simultaneous* and dialectic interaction with other people and surroundings, and how (didactic) organisation and facilitation for the best possible growth can happen. In other words, education introduces or retains an abundance of variables, which aggregate up to a superior size (parameter bundles), and are seen as connected. *Didactic relational thinking* (Zielinsky, 1972; Bjørndal & Lieberg, 1978), which is a strategic model, a principle for planning, completing and evaluating teaching, or training, is the basis of such a relational and dialectic process. With this, the group's factors are examined and their value and influence upon each other, as a basis for didactic choice. To a large extent, and here we rely on the argumentation from part one, relational and dialectical thinking is the basis for educational research, both with theoretic and empiric approximation. Nevertheless, this thinking is most visible in theoretic research through discussion and meta-reflection. As soon as research is based on empiric approximation, one gladly turns to the natural sciences (and the psychological/medical) research traditions and design (see Maxwell, 2005).

These two approaches (see figure 1 and 2) give different practical pedagogical implications. The relational approximation (Hegel's dialectical structure) is the foundation for the development of pedagogical goals and methods to guide the teacher, thus leaving no clear guidance or blueprint. Initially both factors are interdependent. If one factor or condition changes, it influences the others. The teacher must evaluate the situation through broader guidelines, and based on this assessment choose a concrete facilitation. On the other hand, the non-dialectic structure model will force the teacher to develop distinct and multiple goals directly related to individual and targeted research, and the teaching methods will be aimed

toward these results. This means that the *situation* will be subordinated, which will affect the pedagogical freedom of action, the teacher's skills and expertise, and the facilitation of teaching towards the pupil's needs, and possible spontaneous situations that might occur.

Education is not a “hyphen-discipline”

The basic difference between education and psychology, with a view to scientific theory, has further consequences for the formulation of research aims, method choice and interpretation approximation. Furthermore, psychology and education are more fundamentally different than the relationships between the natural sciences. In the natural sciences, as in psychology, the common denominator is the identification and choice of parameter, including *scaling*, as a basis for model and theory development. Seen in the light of scientific theory approximation, based on semantic theory construction, psychology is therefore more similar to astrophysics and inorganic chemistry than education. However, in practice, at an everyday level, the difference between education and psychology can be difficult to reveal as they seemingly examine many similar problem areas, for example learning and children's development. This superficial and deceptive similarity, based upon an overview assessment, can be one of the main reasons that different and apparently similar disciplines and discipline groups have invaded education as a discipline. Moreover, the educators themselves have not protected their own discipline area as other professions have.

On the other hand, it can be said that different disciplines associated with education have contributed to the totality that education has assumed. It can also be one of the reasons why educators have been open to other disciplines in order to bolster their own judgement, of course in the best sense. But we believe that professionals within education have not examined the fundamental differences between the disciplines thoroughly enough. As a paradox, the opposite of what one believes and wishes occurs, that is, the *total perspective* fails as soon as other discipline's scientific theories and research-like fundamental premises take the place of education, for example when psychology enters education's problems with scaling methodology and emphasis on the particular. In this manner, education becomes an independent and fragmentary discipline that in practice does not rest on its own scientific structure—even though its origin is there—whereupon the discipline of education does not receive the status that other disciplines can claim. This also creates consequences for how the research results in education are understood with regard to validity and effect.

Conclusion

We have argued for the notion that one can think educationally about education. This requires that we must know the basic structure of education. To help uncover such a structure, we have introduced the concept of Hegelian dialectic structure, which is connected to what we refer to as relational parameter bundles, based on scientific theory and semantic theory construction. Thus we have come to the conclusion that the whole idea that education must have supporting disciplines like psychology and sociology may be harmful for education, harmful because education becomes reduced to a strongly normative discipline. This will further lead to the limitation of the child's possibility for freedom. Even philosophy cannot—or must not—be a supporting discipline for education, and why? Because philosophy is engaged with questions other than education. Thus Hegel's philosophic arguments can be of relevance for education; however, they cannot be *directly* transposed into educational arguments. In that case, philosophy will be a supporting discipline for education, and, as we have argued, one could end in sociology instead of education, where the aim is to inaugurate the student in a fixed thought pattern. Therefore, one must proceed in an *indirect* manner. This means, as we have

tried to show through examples from Hegel, that one must alter or recreate the philosophic language to an educational language. Only then will the philosophic text, in this case *Phenomenology of Spirit*, be relevant for education. It becomes relevant because education, in contrast to psychology and sociology, happens in the dialectic contrast and division between the known and the unknown, the identical and the different. That does not mean that education shall be isolated from other disciplines; it is rather, a question of *when* perspectives from other disciplines should be included in educational matters. Not before the educational questions are raised and worked through, however, may it be appropriate to obtain knowledge from other disciplines, if, that is, it is deemed necessary based on educational judgment.

Acknowledgment. We wish to thank the many students who provided input and engagement in our research presented in this paper. We are also grateful to Per Arne Pedersen who helped us to design the figures in this paper.

References

- Bjørndal, B., & Lieberg, S. (1978). *Nye veier i didaktikken*. [New ways in didactics.]. Oslo: Aschehoug.
- Dale, E. L. (1999). *De strategiske pedagoger. Pedagogikkens vitenskapshistorie i Norge*. [The strategic educators. Education's history of science in Norway.]. Oslo: Ad Notam Gyldendal.
- Giere, R. (1988). *Explaining science: A cognitive approach*. Chicago: University of Chicago Press.
- Giere, R. (Ed.). (1992). *Cognitive models of science*. Minnesota: University of Minnesota Press.
- Hacking, I. (1999). *Representing and intervening: Introductory topics in the philosophy of natural science*. Cambridge: Cambridge University Press.
- Hegel, G.W. F. (1995). *Phänomenologie des Geistes*. [Phenomenology of spirit]. In E. Moldenhauer & K. M. Michel (Eds.), *Werke in zwanzig Bänden*, III. Frankfurt am Main: Suhrkamp.
- Klafki, W. (1966). Dialektischen Denkens in der Pädagogik. In S. Oppolzer (Ed.), *Denkformen und Forschungsmethoden in der Erziehungswissenschaft, band I*. München: Ehrenwirth.
- Litt, T. (1926). *Die gegenwärtige Lage der Erziehung und Ihre Forderungen. In Möglichkeiten und Grenzen der Pädagogik*. Berlin: Teubner.
- Litt, T. (1952). *Naturwissenschaft und Menschenbildung*. Heidelberg: Quelle und Meyer.
- Litt, T. (1961). *Hegel. Versuch einer kritischen Erneuerung*. Heidelberg: Quelle und Meyer.
- Litt, T. (1962). *Freiheit und Lebensordnung. Zur Philosophie und Pädagogik der Demokratie*. Heidelberg: Quelle und Meyer.

Litt, T. (1964). *Führen oder Wachsenlassen*. Stuttgart: Ernst Klett. (Original work published 1927).

Maxwell, J. A. (2005). *Qualitative research design*. London: Sage Publications Ltd.

Shulman, L. S. (2004). *Teaching as community property: Essays on higher education*. P. Hutchings (Ed.). San Francisco: Jossey-Bass, Inc.

Suppe, F. (1977). *The structure of scientific theories*. 2nd ed. Illinois: University of Illinois Press.

Suppe, F. (1989). *The semantic conception of theories and scientific realism*. Illinois: University of Illinois Press.

van Fraassen, B. (1980). *The scientific image*. Oxford: Clarendon Press.

van Fraassen, B. (1988). *Laws and symmetry*. Oxford: Clarendon Press.

Zielinsky, J. (1972). *Ausbildung der Ausbildenden*. Düsseldorf/Aachen: Berufsfortbildungswerk des DG