

EDUCATION AND ITS INTEREST IN INTERDISCIPLINARITY

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To what extent is interdisciplinarity a part of European education programmes? What does interdisciplinarity contribute to in the realm of education? Is there a need for interdisciplinarity felt on the part of the student? Can it be taught? These questions are put forward in advance and form a frame of reference in this article. The goal here is to point at problems and to raise questions, in the hope that this may instigate others to continue the debate. Basically, the relation between interdisciplinarity and education is being explored.

1. *Definitions*

In order to draft an answer to the questions above, it will be necessary in what follows to determine first what interdisciplinarity stands for. We proceed with a distinction between interdisciplinarity and multi-disciplinarity made by Koen DePryck. Under the heading of multi-disciplinarity, the relation between disciplines is a technical one. The basic question is whether one discipline is linked up with another for instrumental reasons, whether it functions as a tool.

Interdisciplinarity presupposes a relationship between disciplines that moves beyond mere instrumentality, that is, according to DePryck, "an internal relationship described in onto-epistemic terms". It is where DePryck explains why a certain contact between disciplines is not inter-disciplinary, that he is most revealing about what interdisciplinarity entails. Commenting on a certain practice of historical research he observes that "these intellectual pursuits — which I would call multi-disciplinary — leave the fundamental questions concerning the relations

between disciplines — both in terms of their subjects as in terms of their methods — unaddressed. I would call interdisciplinary, then, those studies which have these relations and their reference to the world as their subject.”

This distinction is pertinent, because it isolates in the notion of multi-disciplinarity our most common conception of interdisciplinarity. Under multi-disciplinarity, the ‘wildest’ connections between disciplines are perfectly acceptable. Some knowledge of botany may for instance come in handy to discover certain metaphors in literary works to be metaphors of plants. However, to think of a more fundamental connection between botany and the study of literary works seems extraordinary difficult, and yet, should not be considered to be impossible beforehand. Why plants are being used as metaphors by an author in the first place is an example of a more fundamental question.

In what follows, we focus on some pragmatic aspects of interdisciplinarity. Theoretical approaches of the phenomenon are legion, but pragmatic questions are somewhat kept at bay, as if it were to exclude them from the discussion about the definition of this subject, until it be more or less well enough defined for a pragmatic approach to be legitimate.

2. Interdisciplinarity at the university ... a quest

Interdisciplinarity aims at making us see reality in its entirety, and the coherence of reality, as it exists. It is an idea which I take to be emerging from DePryck’s discussion on multi-disciplinarity and interdisciplinarity. With this in mind, we have to deal with knowledge of reality in a particular way: we have to make existing connections visible. Human knowledge has developed and has in course of time become institutionalized in disciplines. Our perception of knowledge has been influenced by that. It is extremely difficult to see reality in its entirety and to keep seeing the existing coherence. This becomes clear when we perceive how knowledge is passed on in institutions of education, like universities. Interdisciplinarity that poses the question of coherence of knowledge and reality, does not appear to be self-evident in that context.

Drawing from my experience as a former student at the university of Leuven, I never felt an interdisciplinary approach to be lacking — for

instance unfairly so — and this simply because of ignorance. The notion of interdisciplinarity is new to me. I was never quite aware of its existence in classes, neither as a topic of discussion nor as a received methodological principle, and therefore I do not consider it to be a conspicuous concept in academic circles. This observation asks for a close examination of the prevailing organization of the university. The organization of a university like Leuven is in this context an example that lends itself outstandingly to close scrutiny, because it yields rather negative results in an inquiry about interdisciplinarity and its presence on the academic scene.

A university traditionally is the place where the autonomy of disciplines is enforced by institutional autonomy, as disciplines are assigned in independent departments with own departmental boards, offices of administration, discussion groups, libraries and journals.

The overall impression we get in Leuven is that contact between departments is not really intensive or common. The fact that the university of Leuven has no centralized campus structure, but that the different departments are scattered all over the city, is almost emblematic. When the computer in the department of art history indicates that a certain entry is to be found in the library of the department of engineering, that is the sign for a venturous journey into the unknown.

General sources of information, like certain journals, 'general', because they are aimed at the university (as a community of people) as a whole, including all departments, do also exist. It is interesting to verify the contents of these organs in order to see how information pertaining to a single department is presented to a general audience. It seems that only general matters are being discussed there, in spite of the fact that such an all-embracing information channel could be an excellent forum for interdisciplinary debate, if only for the diffusion of the notion itself. These matters are administrative, social or political in nature, but only with respect to the university as a whole. When issues raised in there concern students, they frequently concern 'the' student, in a generic sense. In journals like that, it seems that the only thing a student of medicine and a student of literature have in common is that they both belong to this generic class of students. Either they are involved in causes that concern them both, or one of them is involved in issues that concern him or her within the own department (of medicine, of literature). There seems to be nothing substantial in between. One will for instance find

specific information coming from the departments, about scientific discoveries or research in progress, but rendered in a superficial manner. One will rarely come across more thorough subjects like the acquisition of knowledge, scientific methodology or concrete didactic problems. All this is almost always *intra*-departmental discussion material.

The overall impression we get of the separate disciplines is one of high specialization. An outsider is taken aback by the technical jargon used in these fields of knowledge. To speak of 'fields of knowledge' or 'areas of learning' mirrors the increased differentiation of human knowledge in general. To name one discipline that can be studied at the university is rarely the finest distinction that can be made. One discipline is the heading for a nomenclature of subdivisions.

The perception of differentiation and difference almost involuntarily — but at the same time inevitably — leads us to 'that great divide' between the humanities and the sciences. This opposition governs the form of contact between disciplines to a large extent. Discussion groups and think tanks in which scholars of different departments participate do exist for instance at the university of Leuven, but as far as I know, we are always dealing with exchanges between adjacent departments. I know of discussion groups in which scholars from the field of linguistics, literature and philosophy participate, but I never heard of similar discussion between departments within the humanities and the sciences. It is very likely that an intellectual exchange between both 'camps' actually takes place, but on a small scale, for instance between two people. The scale of it can in fact not be accurately measured by the student. It would be interesting to know to what degree genuine interdisciplinary concerns govern these contacts.

But what on earth could human beings in the field of humanities and in the field of science possibly have to say to one another? The manner in which this question is formulated, but again confirms the opposition between both fields. The awareness of this distinction is deeply rooted in our Western minds. It seems absolutely vital that this legacy should in the light of the discussion on interdisciplinarity be coming under close scrutiny again. A history of the divide between the humanities and the sciences is blatantly lacking in this paper. It is only with the knowledge of such a history in mind that a rethinking of the opposition could start. Indeed, learning from the present, and, for that matter, also from the past, may well be the guiding maxim for a possible rethinking of the

organization of our universities, should any such thing be at stake.

Interdisciplinarity as a notion finds almost no resonance in the context of courses and lectures attended by students. References to other subjects or disciplines are unusual, and therefore, in a way, striking or daring. This conjecture is not just hot air, but is rooted in some experience. I remember a professor of literature, who at one stage seemed to be wanting to free his students from some inferiority complex vis-à-vis students of the 'hard' sciences, as if they struggled with inhibitions of that kind. He suggested that literary critics could gain a lot of self-esteem owing to their well-practice of reading texts, owing to their dealing in a particular way with language, thereby yielding to the suggestion that scientists rather unconsciously use language to name things and that maybe to start questioning the use of language there would be appropriate. I leave it open whether this professor showed evidence of some inappropriate sense of superiority and whether this superiority itself is derived from a feeling of inferiority vis-à-vis his colleagues in the lab. Nevertheless, this professor isolated a proficiency pertaining to the study of literary texts and then seemed to hint at its benefits for other fields of study. At the time I heard those remarks, such considerations did not come to my mind. They struck me, because they suddenly, albeit via the — received! — picture of a vast abyss between the humanities and the sciences, threw a relative light on the study of literature. A relation between this field of study and the other disciplines became visible, simply because I became aware of these 'other' disciplines. I would call this a state of mind ready for reflection, say, on this particular relation, but this pre-reflective moment died out for lack of further inciting ideas.

The organization of education I was confronted with at my university did not make interdisciplinarity self-evident. To read for a certain degree at a university such as Leuven implies that a certain fixed curriculum is covered and that the period in which the education is completed is fixed as well. Students cannot take a degree in history, Latin and English literature at the same time. When asked what they are studying, they can only name — and are only expected to do so ! — one discipline, a general subject matter, like biology, history, linguistics, medicine, engineering, mathematics, etc. In the context of one discipline, they have to enrol for a great variety of courses. Each year, students have to finish one part of the general curriculum, which corresponds to an average of ten to fifteen subjects or courses, and have to pass examinations in order

to proceed with the next part of it. The prospect of exams intensifies the impression one gets of the subject matter as a clear-cut unity, because each time, one unit of knowledge has to be digested. In circumstances like these, knowledge in general, that found concrete shape in subject matter, is not seen to full advantage. A minimum of intellectual insight will always be necessary to digest the subject matter required for the exam. However, to question the knowledge and to see it in a context that goes beyond the subject matter covered in a specific course, remains peripheral. And that while the concept of interdisciplinarity indicates that knowledge cannot be limited to one course, one subject, except when one is made aware of any pragmatically induced limitation, that is, when it is made part of the subject matter.

3. Contours for an interdisciplinary project

When I started writing this article, I was not sure how to refer to interdisciplinarity. Should it be called a 'practice'? Or a 'mode of thinking'? I would opt for interdisciplinarity as a mode of thinking. And I do not think 'practice' is that inappropriate either, for I could conceive of interdisciplinarity as a thinking practice, a way of thinking that became 'common practice'.

How could an interdisciplinary project take shape within education programmes? To what extent would it change the present curricula, the present way of teaching, or the present way of reading courses? Can interdisciplinarity be taught? The answer to the last question can never be already negative, as the experience of interdisciplinarity in education as briefly touched upon is so far non-existent and cannot be evaluated to date. In this article, the possibility conditions for a practice of interdisciplinarity in education are probed. On the whole however, this article is less about interdisciplinarity *in* education than about interdisciplinarity *and* education.

As already noted, an existing institutional framework has such a profound influence on our perception of knowledge that the division of disciplines hamper a kind of reflection that ought not to be governed by such an established distinction. There is however no good reason in regarding an interdisciplinary project as something that immediately obliterates the opposition between sciences and humanities or between the

existing disciplines in the first place. Interdisciplinarity cannot be a green light for visions of *tabula rasa*, visions with a nightmarish tinge for the separate disciplines, because it is exactly such visions that make specialists fearful of losing the 'autonomy' of their fields.

What does it mean that interdisciplinarity is, in DePryck's words, "not yet defined as an autonomous field of research with its own subject"? How are we to understand 'autonomous'? On the one hand, the term 'interdisciplinarity' does not seem to 'tell' very much. Although it contains the notion 'disciplinarity', we should not think of it as a discipline, I suppose, at least not as an existing one. On the other hand, the term seems to presuppose the established disciplines. Although interdisciplinarity makes the unity of knowledge the point at issue, it cannot be just a matter of returning to some pristine unity, 'still unaffected by disciplines'. The boundaries of disciplines are historical and people probably were never aware of such a unity. Interdisciplinarity aims at revealing unity in multiplicity and such an investigation necessarily starts at the level of the separate disciplines.

Communication between disciplines and university departments should be encouraged. This should not be limited to talks between scholars, to the level of scientific research, but should certainly touch the education programmes or curricula. I have only few doubts that interdisciplinarity should at best find a solid foundation on the level of general education and not be left to the scientists. It is during their education that students should become acquainted with an interdisciplinary approach to knowledge. They should be stimulated to think in interdisciplinary 'categories'. The earlier, the better.

In what follows, a short list of suggestions, examples of how contact between disciplines could be intensified in the benefit of the student, is put forward. What seems to be most important is to give students the sense of relativity of the subject matter, to make them aware of the fact that the boundaries of disciplines are liable to change.

1. During the course of study at the University of Leuven, any student is confronted with so-called 'general' subjects, general, because they are part of the curricula of students of different disciplines. I am referring to subjects like logic, philosophy, sociology, psychology or history. Students tend to have one and the same attitude towards these subjects. They are just ready for revision, without regard on the part of the student for

their possible meaning in a particular curriculum. Students do not give it a thought that they have these subjects in common with students from other disciplines, at least not a serious one. The reason why a subject like psychology appears in the programme of economics is not questioned in itself, and neither is the presence of an introduction to metaphysics in both the curricula of students of literature and students of medicine. These subjects should appear in their own right. The question of their general aspect could itself be turned into subject matter when they are being read.

2. Special attention could be paid to contact between the humanities and the sciences. One could think of passing on a minimal amount of basic knowledge proper to one side, say the sciences, to students of 'that other side', say, the humanities, and vice versa. The transfer from the sciences to the humanities is thereby less obvious than its direct opposite. The minimal aspect of a mutual integration is a necessity to avoid that the confrontation with highly specialized language from the opposite field result in failure. This 'minimal amount of basic knowledge' does not necessarily have to take the form of already existing courses. Just to pick out, say, a course from the field of the sciences and insert it in the curricula of the humanities could ask for trouble. An entirely new concept could be thought of, for instance with initially simple questions in mind like, 'how do we introduce the sciences to an audience without expert knowledge' and 'what typical scientific knowledge do we communicate?' The last question calls forth another, namely what can be regarded as typical scientific knowledge? It seems that the scientist should have a fairly good knowledge of his own field before he can distribute its choicest fruits. In other words, he has to go back to the basics, in itself a formidable challenge for any discipline that appears to be specialized to a very high degree.

3. Seminars could be organized, in which small amounts of students from different departments participate. The discussion matter would be a very general aspect of human life, that would be approached from the perspective of the separate disciplines. Possible topics for discussion are: money, illness, law, beauty, evolution, nature, trade, language, to give but a few suggestions. The topic has no absolute importance. It is first and foremost an exchange of ideas and the confrontation with other approaches that is

of primary concern. The student's attention should be drawn to what happens in other fields of knowledge and should be able to compare things.

I would only like to add some stray remarks to these suggestions.

1. A lot of what has tentatively been proposed here implies some change of education programmes. How sweeping changes would be, is something I cannot really judge. It should be stressed that they would be motivated by the necessity of establishing intensive contact between disciplines.
2. An interdisciplinary project asks for renewed attention to the organization of knowledge within the boundaries of a discipline, for a kind of survey of what has so far been achieved. The emphasis does not lie on giving an overview of knowledge, but on a critical evaluation of how it is obtained. Only on the basis of a fair understanding of the proper discipline, a comparison of the methodology of several disciplines seems possible. This cross-examination of what happens within one discipline seems very important: it is a step towards communication between disciplines and perhaps the first step at all of any interdisciplinary project. The student's ability to evaluate certain realizations and the progress of knowledge within one discipline, as well as his or her skill at handling scientific models and methods should be trained.
3. Interdisciplinarity in its earliest stages requires a lot of thinking and reflection on knowledge, and faces the student with new challenges, for which he or she may be not quite prepared. A crucial point has to be made. So far, we have only presented a lengthy discussion of the situation of the student, thereby almost ignoring the didactic implications and the situation of the lecturer, although much can be derived from the organization of certain academic institutions as outlined above. Interdisciplinarity seems to entail new and important pedagogical challenges.

Teaching becomes more important than ever. Students cannot be expected to start exploring the possibilities of interdisciplinarity from scratch, even if the subject at stake touches their proper education. What they need is some introduction to the matter. An interdisciplinary framework should be presented to students in contours that are at least minimal. The poten-

tial academic career of the concept interdisciplinarity lies, first and foremost, in the hands of the members of the teaching staff. It is their task to give an impetus to interdisciplinary thinking and to make interdisciplinarity familiar to students. It is only in response to what they are taught that students can start to think about it. However, not only on the part of the students, but also on the part of the lecturers the present-day picture looks bleak. It seems that scholars with a lecturing task are not familiar with interdisciplinarity. Consequently, for interdisciplinarity to become functional in education, an enormous amount of preparatory work still has to be done. It is in the interest of the project itself that as many people as possible from different contexts and different levels do participate. When interdisciplinarity offers the slightest prospect of adding something invaluable to the process of education, we should not hesitate to devote ourselves fully to this matter.

Does interdisciplinarity really add something to education? Why should interdisciplinarity in the light of education be interesting? What interest can education have in interdisciplinarity? Again, the following suggestion is tentative, because we cannot draw from existing experiments.

It may be very likely however, that interdisciplinary reference to disciplines has incredibly beneficial effects on students, beneficial for great moments of insight and reflection in the course of study. This means that students or pupils should reflect on knowledge and how it is obtained in the various fields of knowledge recognized so far. This means that students become aware that subject matter is 'knowledge organized in some way'. This is quite obvious, but students tend to become so absorbed in the concrete subject matter, that in some way or another they lose an attitude of reflection necessary to perceive something like 'structure'. The benefit of interdisciplinary thinking here seems to me that it breeds that reflective attitude. The student's personal development could gain from such an increased awareness, especially in the context of education. It may help him or her to see things in a certain perspective, to put problems and questions against the background of a larger context, to see unity and similarity that previously was not perceived. It could be a reflective attitude which on a long term basis makes subject matter more transparent and the effort of study only seemingly demanding. In fact, education cannot possibly lose its interest in interdisciplinarity: we have not even laid bare the tip of the iceberg.

Reference

DePryck, K., *The World of Language*. SUNY PRESS, forthcoming.

