

Evaluation report

SVF-8054 Philosophy of Science, Faculty of Humanities Social Sciences and Education, University of Tromsø.

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1. Introduction and mandate

The present report was commissioned by the University of Tromsø, Faculty of Humanities, Social Sciences and Education, in March 2017. In the letter to the evaluators, the Faculty stated the background for the external evaluation:

"the faculty wishes to offer students in the PhD program a high-quality course in philosophy of science (*vitenskapsteori*). The feedback from the annual student and teacher evaluations shows that expectations are not met at the level we want. The criticisms regard the course's structure, as well as content and organization."

The mandate for the evaluation was to:

1. Assess whether the description of objectives is adequate, and if a completed course provides the appropriate competence in the field of philosophy of science (*vitenskapsteori*) at the relevant level, as well as assess whether the curriculum and teaching are suitable to ensure the students' competence in relation to the subject's learning outcomes description.
2. Assess the extent to which students achieve the learning outcomes/course objectives after completing the course, both in terms of knowledge in general philosophy of science, and theory related to the individual disciplines. For example, through a mapping of strengths and weaknesses of the present model, based on selected interviews.
3. Critically assess whether the course's organization in three parts is fit for purpose, and whether this should be continued, revised, or replaced by another model. In the case of revision or replacement, the committee is requested to outline proposals for the suggested changes.
4. Comment on whether the overarching part of the course, with anchoring in philosophy, should be continued, as well as outline alternatives to the philosophical anchoring.

2. The situation at present

The mandate for the report is naturally problem-oriented, based on the experiences of the course and evaluations, primarily from students but also from teachers. A course like this, involving a great heterogeneity of disciplines and students' backgrounds is in itself a challenge, involving a variety of problems. In order to capture this multifaceted reality, it is important to base the identification of problems on a corresponding variety of sources. It is also important to determine whether the problem descriptions from these sources are complimentary or not.

From the **Student perspective**, the principal sources of information are course evaluations and exam papers. The evaluations are partly a compilation of course evaluation forms, and partly open-ended responses to course evaluations. The course evaluation form employs a Likert scale and asks to what degree the course and different aspects of it, has met the participant's expectations. The overall picture is generally rather negative, but the number of respondents is too small to allow for statistical analysis. We do not know anything about the "base value" or reference point, i.e. the expectations of the students. Responses in the open-ended part of the evaluations are generally negative and problem-oriented. The workshops constitute an exception to this negative picture, and are more positively evaluated. Recurrent themes, representative or not, are: lack of coordination of content between parts of the course, lack of organizational coordination and logistics between parts of the course, and lack of teacher commitment. Another theme mentioned is the lack of relevance of the course for the PhD-thesis, or the teachers' lacking demonstration of this relevance.

Teachers: The sources from the teachers' perspective are self-evaluations and interview with participating teachers. Problems articulated by the teachers are e.g. the lack of continuous administrative support, the heterogeneity and varied background of the student group. Teachers responsible for the linguistic part and that of social science, seem rather satisfied with the actual content and learning milieu of their teaching. This is also to some extent corroborated by student evaluations even though these, as mentioned, are quite problem-focused. The introductory course in philosophy represents a good academic standard from a philosophical point of view and is constructed from its philosophical relevance rather than as an introduction to the more general field of philosophy of science.

Leadership: We have been in contact with administrators, the dean responsible for PhD-education and teachers responsible for the course. The administrators' problem descriptions are partly based on the course evaluations and partly on the challenge of continuity, i.e. allocating motivated and competent teachers to the course over time.

Documents

The course plan SVF-8054 is a key source for the report. The document outlines the structure of the course and also describes some of the course content. We note that the course description does not clearly identify what unit at the university "owns" the course. Consequently, it does not specify

who has the overall responsibility for the coordination of the course, in administrative terms as well as in terms of content. We also note that the course topic is sometimes referred to as "philosophy of science" and sometimes as "vitenskapsteori". This may create some confusion as to the content of the course, since "philosophy of science" is generally considered to be a subdiscipline of philosophy with relatively well-defined institutional and disciplinary boundaries, while "vitenskapsteori", in a Norwegian context is generally a more inclusive term, referring to social studies of science and technology, normative aspects of scientific research, studies of the science-society interface, as well as philosophy of science. Our interpretation of the course plan is that it is the wider sense of "vitenskapsteori" which is relevant in this context.

Overview of the current model:

This description is based on (1) documentation provided by the Faculty administration (2) the course description (3) interviews with course coordinators and administrators.

There is some discrepancy between the course description and the actual content of the course. Also, as mentioned above, the course description lacks information about what unit "owns" the course, and whom to contact for inquiries. The evaluators were informed by the Faculty that the course is anchored at the Department of Philosophy and First Semester Studies (IFF) and that IFF has overall responsibility for coordination. IFF is also responsible for teaching the overarching (common) part of the course. In addition, there are three academic staff responsible for each of the 3 specialisations (humanities, linguistics, and social sciences). Two of the three specialisations are specified in the course description, while there is no mention of a specialisation in linguistics. According to the course plan, the course has only three foci, general philosophy of science, philosophy of the humanities, and philosophy of the social sciences.

The course consists of the following five elements:

- (1) a written draft (2-3 pages) from students, suggesting topics or questions to be discussed in the exam paper, submitted three weeks *before* the course starts.
- (2) an overarching (common) part directed to the entire student group. The overarching part consists of lectures on topics in philosophy of science. These have focused mainly on speech act theory, and the works of John Searle in particular. Duration: 1 ½ days.
- (3) 3 parallel, specialised parts, with three directions: a) social science, b) humanities, c) linguistics. There is a mix between lectures and seminars. Duration: 1 ½ days
- (4) a workshop, where the draft (1) is presented and discussed with peers and course instructors. Students are required to comment on one draft. Duration 1 day.
- (5) an exam paper of 3000-3750 words, based on (1).

The teaching elements, lectures/seminars and workshop (2)-(4) last 4 consecutive days. The exam paper is submitted approx. 6 weeks after end of teaching.

The course is organized every Fall, usually in October/November.

The syllabus for the course is approx. 800 pages, chosen by the participants from a list of recommended literature.

3. Assessment related to the mandate

1) Is the description of the course adequate; does the course provide the appropriate competence and are the curriculum and teaching suitable to guarantee students' competence according to the goals

This point of assessment opens up for several dimensions. *First*, we have the main question whether there is a correspondence between objectives and the actual outcome of the course. Taking into the account the students' evaluations, it is highly questionable whether the goals are fulfilled. The same conclusion seems to follow from the teachers' self-evaluations. We have also looked at a selection of student's assignment; the initial drafts, as well as the final assignments. There is an important methodical reservation that our sample is not representative over time, but somewhat impressionistic. It is however striking that many of initial drafts are quite ambitious, substantial, and often articulate topics of principal interest. The themes addressed in the initial drafts seem however to be theory- and method oriented in a restricted sense and not focused on more principal problems of vitenskapsteori/philosophy of science. This is understandable as the students generally are not familiar with the philosophical tradition, but often well versed in specialized theory and more technical aspects of methods.

As for the final assignment, they seem on the one hand to have a reasonable quality and level for a course on this level. However, the *integration* between topics in philosophy of science/vitenskapsteori with problems related to the students' theses, which, admittedly, is difficult to achieve in a relatively short course such as this, is generally lacking. The exam papers represent rather a continuation of the initial drafts where aspects of vitenskapsteori/philosophy of science, as articulated in the course goals, not are well integrated.

Secondly, another point of assessment is whether the objectives expressed in the curriculum are reasonable for a philosophy of science course at this level. This is obviously a matter of how to evaluate different possible approaches to philosophy of science, where the extremes are, on the one hand a "pure" philosophical orientation, and on the other hand a more pragmatic methodological orientation. Our assessment is that the goals expressed in the course objectives are ambitious and operationalize the idea of an integrated course, where basic philosophical perspectives are made relevant and applicable for the research activities of the students. It seems clear that these ambitious goals with an integration of vitenskapsteori with specialized research are not fulfilled.

Thirdly, the question whether the teaching is suitable in relation to the goals. Our assessment of this question is that the general philosophical part has become somewhat isolated from the specialized parts and is not given the ideal integrative role – following up the learning process continuously from the start of the course to the final workshop. A major problem is the time limitations for the different elements, and furthermore the extreme concentration in time, i.e. that the course in teaching elements is finalized within four days. This gives no time for the students to process the material and “mature” during the course.

A *final aspect*, implicated in this part of the mandate, is whether the objectives constitute a coherent whole. See also our comments on the course objectives above. Most important in this context is if there are any contradictory elements, or if the elements of the course could be regarded as additive and complimentary. We do see some tension between the idea of integration between philosophical positions and active research, in that the course plan mainly focus on static positions in the field of philosophy and not on implications for active methodological strategies in empirical research.

2) To what degree do the students attain the course objective what concerns general philosophy of science and theories related to their specific fields of study.

This is related to the topic of appropriate competence above. As formulated in the mandate the question is twofold; i.e. a matter of philosophy of science as well as related to more specific theories applicable to the students’ specific research field. It is relatively clear, based on available material, that there are problems for students to attain the course objectives what concerns general philosophy of science in the broader sense, as well as to relate it to their specialization. We also note that there is an ambiguity on how to use the course literature and even if it necessarily should be used at all. We suggest that a selection is made of literature that obligatorily should be used as references in the assignments; literature dealing with basic perspectives and concepts in vitenskapsteori.

3) Is the structure in three modules functional in relation to the goals, or should it be replaced by another model. If the model should be replaced, how could it then be organized?

We will get back to the question of an alternative way of organizing the course more in detail in our recommendation below. Basically, there are good reasons to keep this three-part structure with a common introductory part, followed by specialized parts and workshop. It is however problematic that the initial philosophical part not is followed up later in the course.

4) Should the general foundation of the course in philosophy continue or are there alternatives to philosophical basis?

There are good reasons to keep philosophy as a basis for the course. There is a remaining relevance of the cliché that philosophy is the mother of all sciences, in the sense that some broad questions of high relevance for scientific research are not habitually raised internally in the disciplines. One might call them meta-scientific, or philosophical. The broader and more principal philosophical perspectives on the craft of science are important as complementary perspectives to the instrumental aspects of theory

and method. Today's PhD-studies are often quite limited in time, technically demanding and highly specialized, leaving little room for reflections on general principles of theories and methods. The philosophical basis of the course could widen the perspective and, by discussing fundamental aspects of e.g. concept construction, explanations, theories and constitute a meeting place for students from different fields.

It should also be stressed that the course is unique in the sense that it is the only forum where PhD students from across the Faculty meet and discuss each other's projects in a sustained and academic context. This has a value for their research education and for the research environment that transcends the disciplinary framework of "vitenskapsteori".

The requisite for this idea of philosophy as a "meeting-place" for students socially and substantially to function, is however that the philosophical part is oriented towards the empirical sciences. To fulfil the course objectives, it is also necessary that the specialized parts are oriented towards more principal and philosophical aspects of theory and method.

4. Our recommendation

We have outlined three alternative ways to organize the course and we will give assessments of these as well as our preferences. Course model 3 represents our best judgement as to how the course could be re-organised. Course model 2 represents an amended version of the present course model that implies simple changes, which can be implemented within a short time-frame, as an intermediary step towards course model 3.

The base alternative

In line with the description and assessment above, and in light of the mandate given by the Faculty of Humanities, Social Sciences and Education, the evaluators regard the base alternative (no significant changes) untenable.

Course model 2: Minor modifications

Given that course model 3, which is the evaluators' recommendation, requires a restructuring of the course plan and a significant strengthening of teaching resources, which will take time, we have sketched an intermediary model, which can strengthen the integration of the course while a more robust restructuring is worked out.

The course description must specify the responsible unit, the person responsible for teaching the course, and who to contact for inquiries. The course description must be re-written so as to reflect the actual content of the course and clarify the assessment criteria. It is crucial that the instructors have a clear and detailed understanding of what is being taught in the other modules. The

best way to achieve this is by attending each others courses. The basic thematic structure of the course is kept intact, with a few minor changes:

To sign up for the course, students submit a 1 page summary of their research project 4 weeks before course starts. The summary serves as a basis for selecting relevant course content and preparing lectures. The course period has been extended from 7 to 10 weeks in order to allow more time to reflect on paper topics and for working on the exam paper.

WEEK 1

The general introduction to key topics in philosophy of science is expanded thematically, with a broader focus on basic traditions in philosophy of science, their key concepts, perspectives and their application to current research practices, and to the students' research projects.

(1 ½ days)

The specialised modules directed towards humanities, social science and linguistics follow immediately after the general introduction, in order to facilitate attendance from students at external campuses. These modules should also take into account the project summaries submitted by the students. (1 ½ days)

WEEK 2-3:

The students prepare and submit a written draft proposing a problematic/research question to be discussed in the final exam paper. The draft is distributed to fellow students and to the instructor in advance of the workshop.

WEEK 4:

Workshop/group supervision. The prepared drafts are discussed in groups of 3-4 students and instructor. All students in the group are expected to comment and discuss each others drafts together with the supervisor. Students from external campuses may attend the workshops via video conference equipment. (1 day)

WEEK 10:

Exam paper is handed in and evaluated in accordance with the practices of the UiT.

Alternative 3 and our recommendation

Based on our assessment we recommend the following organization and content of the course.

Organization and structure:

A major problem with the present organization of SVF-8054 is the rather extreme concentration in time. An ambitious course plan shall in principle be realized within a week, with some additional individual work of the course participants. From a pedagogical point of view, as well as a substantial point of view, this is not manageable. The present time limits do not give the students a reasonable possibility to process the material and reflect on the applicability and possible integration of wider

perspectives from vitenskapsteori/philosophy of science with their own research project. We suggest with this background the following three-part structure.

Part 1) Philosophy teacher has the main responsibility for this part.

- a. Before the course starts the students deliver a short presentation of their research projects (max. 1 page) with a highly concentrated listing of research questions, material to be processed, principal methods by which to process the material, important concepts and theory/ies. This should be written in telegram style and should not be explicitly oriented towards philosophy of science. This is a way for teachers to charter themes and find points of reference.
- b. Social gathering with “interdisciplinary speed dating” (see explanation below). Presentation of the course from everyone responsible involved.
- c. The students receive a specified instruction for the assignment to be delivered before part 3. See specification below.
- d. Main part. Philosophy teacher giving introductory lectures on basic concepts and perspectives of vitenskapsteori and their implications for current research from a philosophical perspective.
- e. Introductory lectures in the three subgroups (specializations) covering basic epistemological and ontological standpoints in the specific discipline. Furthermore, a discussion of the possible relevance of paradigmatic traditions and possible controversies related to the specific field and their consequences for methodological strategies.

Students individual work with the assignments. Preliminary sketches to be delivered before part 2.

Part 2) Specialities responsible for this part.

- a. Lectures covering theoretical and methodological topics in the specialities with a view on topics in vitenskapsteori.
- b. Tutorial and workshop in relation to assignment distributed in part 1) Preferably as group sessions where students also are active in commenting.

Students individual work with the assignments. Assignments to be delivered before part 3.

Part 3) Specialities and philosophy teacher responsible for this part.

- a. Written and oral feedback on assignments from teachers. Teachers responsible for respective speciality as well as philosopher attending. Conclusion and discussion.
- b. Course evaluation and discussion of experiences.

Practicalities concerning structure and content

In the introductory part of the course we have suggested “interdisciplinary speed dating” as a convenient way for socializing the students and create a good “classroom-climate”. Interdisciplinary speed dating is organised by placing participants opposite each other on both sides of a table, allocating 5 minutes to each participant to present their research to the person in front, who is allowed to pose questions for clarification during the self-presentation. After the 5 minutes are up, the participant opposite takes the relay. When both have completed their presentation, the participants

rotate, and the procedure is repeated. The exercise works on several levels, social as well as professional, and can also be used as a resource in the teaching for discussing challenges and opportunities in interdisciplinary work.

In order for the structure suggested above to function properly, we suggest that each module consists at least of two days and we suggest an overall time-span covering most part of the term. If this not is possible due to logistic reasons and coordination, the time-span should anyhow be drastically widened. Although this is not recommendable other than from a resource perspective. A good investment would be to have three days allocated to the first module.

To fulfil the important integrative goal, it is highly recommendable that the teacher responsible for the philosophy part also attend Part 3. This would be a logistic challenge were the specialized sessions to be run in parallel, and we therefore suggest that they are scheduled without overlap.

In its present organization, the students have sent an initial draft before the start of the course describing their projects and identified possible topics related to their pre-understanding of what could be relevant for a vitenskapsteori/philosophy of science course. These initial drafts have often been rather ambitious, but not been followed up from an integrative vitenskapsteori/philosophy of science perspective. A possible consequence of this is reasonably frustrated expectations. We therefore suggest that the presentation of the students' research project to be delivered before course start should be organized differently. The idea being that the students deliver a very short summary of their research project as an information for teachers. These research abstracts can be compiled and distributed to the course and do not interfere with the "speed dating".

A consequence of our suggested organization of the course is that more resources get invested in it. Specifically, we think that the requisite would be a position based in philosophy/vitenskapsteori, responsible for the philosophical part and in addition being responsible for an overall integrative function. This would also guarantee the continuity of the course.

The course description is relatively ambitious concerning content, given the amount of time for lectures. Based on the evaluations, with all qualifications, it seems that the specialized courses function relatively well.

We find however some problems with the course description, given the goal that this should be a course helpful for the students in their own research work.

The topics listed in the course description are primarily, if not exclusively, related to different positions in the philosophical/scientific field. This is especially the case in the supposed integrative philosophical part. It is certainly important that the students become aware of distinctions and dichotomies as "realism versus constructivism" etc, and even the concept of paradigm (not specifically mentioned). It is however in this context important not only to focus on fixed positions but also on the methodological and knowledge-generating strategies and their anchoring in philosophical traditions. A rationale for an introductory philosophically oriented part of the course would be to introduce a

general vocabulary, as e.g. concepts as ontology, epistemology, realism etc. But it is also important to discuss different methodological positions and strategies related to these concepts. What are their possible implications for everyday research? The practical implication of this standpoint is that we suggest that the course literature on the philosophical part should have a clear orientation towards vitenskapsteori/philosophy of science in the broader sense. Basically, in order for this course to be truly integrative and constitute a meeting point, it is necessary that teaching in the specialized science is oriented towards philosophy and the philosophical part oriented towards the specialized (empirical) sciences.

The assignment

The assignment to be distributed at the beginning of the course is an important pedagogic component to a great degree structuring the course. There are different options on how to construct the assignment. One possibility is to have a rather free and unstructured task, but with an absolute minimum requirement that perspectives and concepts from the philosophy of science part of the course should be integrated with references. Another option is to ask specific questions in the assignment related to the students' dissertation-work, concerning e.g. concept construction; possible explanatory strategies, theory use etc. with integrated references to the course literature. This can also be combined with an additional task where the students are supposed to analyse a piece of research of relevance for them, from a philosophy of science perspective. The crucial point is that the assignment should be situated in the intersection between the students' actual research and topics discussed within the philosophy of science tradition. This means to use the concepts, theories and perspectives from the philosophical part of the course as tools for problematizing and analysing research relevant for the participants.