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Qvist, Palle

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Democratic Elements in Group and Project Organized PBL

Democratic skills and bildung via project organized problem based learning in groups in the Aalborg Model. Results from a pilot investigation

Palle Qvist

Aalborg University

<http://www.plan.aau.dk/~palle>

Abstract:

Students in a democratic learning system as the Aalborg Model knows of and uses democratic skills as e.g. the ability to discuss and accept other points of view, negotiate, compromise, reach consensus or accept the result of a vote in striving to reach specific common or personal learning goals, run processes and decide behaviour. It is what a pilot investigation referred in this article indicate.

The meaning of this seems to be far behind the study itself and qualifications of the students to the labour marked. If it is true that "the building of community begins in the classroom but extends beyond it to the school and the community" (Marris, 2003:274) then implementing democratic learning systems as The Aalborg Model are important for supporting and promote democratic bildung of students in higher education.

This article defines at a – start - what should be understood by a democratic learning system. It contrasts it to an authoritarian or elitist systems. Then it brings the results from an investigation of 9 process analyses' written at the end of the second semester 2005 by project groups from The Technical Natural Scientific Basic Year at Aalborg University and

concludes that students make decisions related to learning and learning goals, learning processes and behaviour after discussions and so called rounds which indicates that they develop democratic skill useful in social relations.

Democratic learning

Democratic learning can tentatively and in general be defined as learning in a system which supports democratic principles together with reaching the learning outcomes. The meaning of democratic principles must be further defined.

Democracy is a positive word in the western culture. The word means rule by the people.

Christensen and Jensen differ between democracy as goal and as means.

“Looked at as goal it is normal an element in a strategy of liberation – as a normative demand for everybody to have maximum influence on affairs which matters for them. But it can also be seen as a method to reach common decision on important issues in a reasonable way. What is meant by ‘common’ is that all people involved have the same influence at the starting point which also means that decisions are supported broadly afterwards. Democracy can be a method to avoid heavy conflicts concerning political issues” [Note 1] (Wrang og Jensen, 2001:135)

The academic literature about democracy has many definitions of democracy. Or more precisely definitions of different forms of democracy (see the reference list). In the conventional understanding called the liberal or economic model democracy is a political process containing individual preferences to be settled in a fair and just way.

Miller has written:

"In the liberal view, the aim of democracy is to aggregate individual preferences into a collective choice in as fair and efficient a way as possible. In a democracy there will be many different interests and beliefs present in society. Each person's preferences should be accorded equal weight" (Miller, 2000: 9)

Raphael writes about the choice of each individual:

"The underlying idea is that self-direction, choosing for yourself is far preferable to having decisions made for you, and imposed upon you, by another... " (Raphael, 1970: 144)

In the communicative understanding of democracy creation of opinions is an important part of the process and expression of democracy.

An example is the Danish theologian Hal Koch (Koch, 1945) and the German philosopher and sociologist Jürgen Habermas (Habermas, 1981, 1996). Koch has described the essence of democracy as conversation, dialogue and discussion with the aim to reach consensus about the common goods. (Koch, 1945).

Habermas talks about deliberative democracy and the ideal behind is the ethics of discourse. In a communication community, free and without supremacy, is it according to Habermas possible to reach a common understanding, assuming, that basic rules are respected. The rules are: Everybody has the right to participate in the discourse, everybody has the right to introduce any subject and everybody has the right to question any allegation. Nobody should be limited in using these rights.

Habermas formulates two principles for decision making. The principle of discourse and the idea of communicative freedom. According to the principle of discourse only decisions and acts which everyone affected has agreed on, are valid. A decision is legitimate when everybody has agreed. Communicative acting means that the participants in a discussion has as goal a common understanding – contrary to a situation in which they

act strategic and try to reach e.g. individual goals or goals which favours the few.

Habermas is just one of many scholars trying to define the concept deliberative democracy (Miller, 2000). Elster has tried to sum up the different approaches to a common definition of participatory democracy. (Elster, 1998)

He admits that the "characterizations are somewhat rough", and continues:

"There is a robust core of phenomena that count as deliberative democracy ...the notion includes collective decision making with the participation of all who will be affected by the decision or their representatives: this is the democratic part. Also ... it includes decision making by means of arguments offered *by* and *to* participants who are committed to the values of rationality and impartiality: this is the deliberative part" (Elster, 1998: 8).

Drawing on the literature and the scholars above important democratic principles seem to be:

Decisions including settling of disagreements are reached by arguments (discussion) or negotiation (dialog), voting or consensus (see also Elster, 1998:7) (or a combination) between those affected by the decision. The participants are in principle equal with equal rights and feel themselves committed to the values of rationality and impartiality.

It is implied that decisions and settlements are respected and identical actions are taken. Decisions, settlements and actions can always be questioned but must be respected until new decisions between the participants are reached.

More precisely *democratic learning* can now be defined as *learning in a system where decisions, processes and behaviour related to learning are established through argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between those affected by the decision simultaneously reaching the learning outcomes, the technical*

and professional knowledge and insight. The participants must in principle be equal with equal rights and feel themselves committed to the values of rationality and impartiality.

Conventional teaching and bildung

Conventional teaching in higher education – e.g. lecturing by a university professor – can be seen as a contrast to democratic learning. It is characterized by the fact that the professor is in control of the lecture. The professor controls the teaching due to the one way communication and the students look after the right answers from the professor. Learning is for the students a question of finding out what is right and what is wrong. And the professor has the answers.

The professor has a specific subject area in which he lectures. The professor controls the teaching not even by the way of communication but also by being the one representing the knowledge and insight on the subject area. The teacher can choose to argue for his understandings, ideas, viewpoints or conceptions. But he can also without any arguments against and because of his authority and documented knowledge on the subject area refer to his technical or professional expertise.

In professor centred teaching it is the professor which - as an authority representing the professional knowledge - has chosen what to teach in (within the given frames). And there are only few situations with possibility for the students to search alternative knowledge compared to the knowledge which the professor presents.

In conventional, traditional professor centred lecturing the student is an object. Not an arguing, searching, selecting and acting subject with influence or responsibility on own learning. In the learning situation the student is passive. The knowledge comes to the student from the professor. [Note 2]

Bildung which is created in conventional systems with characteristics mentioned above can not be called democratic but rather authoritarian or elitist. The relation between authoritarian/elitist and democratic learning and bildung can be

shown on a dichotomy.



Figure 1: Authoritarian or elitist bildung as contrast to democratic bildung. Authoritarian/elitist bildung can be authoritarian/elitist in different degrees. The more to the left, the more authoritarian/elitist. It is the same for democratic bildung. The more to the right, the more democratic bildung elements are in the system.

Many institutions in higher education – also engineering and natural science – are dominated by professor centred or elitist teaching. According to Romme structures determines behaviour (Romme, 1999) referring to the Dutch engineer and entrepreneur Endenburg (Endenburg, 1992).

"The way a system is structured determines the behavior within that system ... Moreover, some structures are more useful and effective than others in leading to certain desired behaviors or outcomes". (Hommes et al. 1999: 115).

Learning in a conventional professor centred system has many supporters but it is hardly - and opposed democratic learning systems – creating democratic personalities (Endenburg 1992).

The PBL study group, discussions and rounds

Some learning systems have few democratic elements, others have many.

Within participant directed, group- and project organized problem based learning it is – in its ideal form - the members of the study group – the students – making decisions about the problem to settle and how it should be done. (Illeris, 1974). In the ideal form a study group is an independent and autonomic

unit. The group has a common vision, goals, strategies and plans. They use and share theories, methods and empirical data and have agreed on common arrangements about rules of behaviour for the group. Some of the important rules of behaviour are related to meeting hours in the group room. It is also agreed that everything can be discussed, how serious the learning should be, how reflecting, constructive and result orientated. Each group member is equal and a resource and everybody participates in the effort to reach common goals formulated by the group e.g. the professional project report (Qvist & Spliid, 2004).

A study group is in principle a communication community, free and without supremacy. It is autonomic and unlimited in relation to planning of its learning within the frames decided by the study board and determined in the curriculum. But limited by the fact that the group at the exam are confronted with and made responsible for selections and decisions during the learning process.

Learning is democratic in the ideal form of participant directed, group and project organized problem based learning [Note 3]. The students decide and plan their own learning in a communication community in the group room, free and without supremacy. They make decisions about learning, learning outcomes, learning process and behaviour after argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between the group members. In principle they are equal with equal rights. It is presumed that the students when they agree, negotiate and make deals feel themselves committed to the values of rationality and impartiality.

Discussions and "rounds" are methods which support democratic learning. Dillon (Marri, 2003) defines discussions as:

"a particular form of group interaction where members join together in addressing a question of common concern, exchanging their knowledge or understanding, their appreciation or judgement, their decision, resolution or action over the matter of issue (Dillon, 1994: 8)".

Discussions as pedagogical method are recommended by many (according to Marri, 2003 e.g. by Engle, 1988; Hahn, 1998; Oliver & Shaver, 1966; Parker 1996a; Singer, 1997). The reasons are:

- ”(1) It can help young people develop the group discourse skills and dispositions necessary for participatory citizenship in a multicultural democracy.
- (2) It enhances critical thinking
- (3) It deepens understanding of important democratic issues and concepts.
- (4) It develops a more democratic classroom community.
- (5) It influences future political participation.”(Marri, 2003: 273f.)

A leaning system with lots of possibilities for discussions before technical or professional decisions or decisions related to the process or behaviour where the students have possibility to express themselves freely indicates a democratic learning system.

Rounds are a specific form for discussion or dialogue practised by groups. Typically each group member gives his opinion to the subject on the agenda. A moderator or chairman ensures that everybody participates. A referee takes notes – important viewpoints or decisions. The goal is to reach a common understanding between the group members. The moderator sums up after the first round. The purpose of the summing up is to clarify where the group agrees and where the members disagree. In case of disagreement the subject must be discussed or negotiated again in a new round.

The goal of the second round can be searching for a common understanding or compromise, in order to find out what is acceptable for everyone or to find out which decision satisfies most members. The second round can also be more discourse in order to make an effort to agree upon the subjects in which they disagreed upon in the first round. In the third and the following rounds the goal is to reach a common understanding. This can be established after negotiation, be consensus or a result of a vote.

Technical or professional decisions are typically discussed afterwards with the supervisor. The same are decisions related to the process. If the supervisor objects to the selections or decisions made by the group they must discuss the matters again. Arrange new rounds with the purpose to find solutions or reach acceptance which can resist technical or professional critique from the supervisor.

Solutions and decisions related to process and behaviour can be group related. They are implemented without being discussed or confronted with the supervisor. They are related to the internal life or wellbeing of the group. The group are responsible for evaluating and reviewing the solutions or decisions.

While discussions in principle are open and unstructured, rounds are relatively structured.

A pilot investigation

An examination of 9 process analyses [Note 4] written at the end of the second semester 2005 by project groups from the cohort group called Industry on The Technical Natural Scientific Basis Year shows (implicit and explicit) that the groups have discussed and reached agreement on the following technical, process and behaviour matters:

- (1) Technical and professional goals for the project report
- (2) Principles and goals related to sharing of knowledge
- (3) Planning of the learning process
- (4) Organizing the internal cooperation in the group, including a written agreement on cooperation containing principles of social behaviour
- (5) The use of human resources external to the group as e.g. supervisors and contacts within industry.

In their process analyses the groups use words as "conversation", "consensus", "broad agreement", "decision", "agreed on", "vote" and "dialogue". However it is not possible to

say that the words reflects and respects the democratic principles described above. More research e.g. interviewing of group members are needed.

8 out of 9 project groups or 89% (85% of the students in the cohort) write in their process analyses' that they use rounds. It is not possible to confirm that the method described above has been followed 100%. Other rough structured models or more discourse like method might have been used. It is therefore not possible to say anything about the quality of the rounds.

Rounds has according to the process analyses been used in relation to general decision making and setting up of technical goals as well as goals related to project management, to facilitate reflection from other projects groups including communicating experiences, personal visions, personal expectations and personal goals. In relation to project management the groups states that they use rounds when planning, making decisions and solving conflicts.

Conclusion

Conventional teaching systems determine authoritarian or elitist bildung and behaviour while democratic teaching systems determine democratic bildung and behaviour.

A democratic teaching system is a systems with democratic elements. It is a system where decisions, processes and behaviour related to learning are established through argumentation (discussion) or negotiation (dialog), voting or consensus (alone or in combination) between those affected by the decision simultaneously reaching the learning outcomes, the technical and professional knowledge and insight. The participants must in principle be equal with equal rights and feel committed to the values of rationality and impartiality.

The Aalborg Model is an example of a democratic teaching system although not 100% democratic. The influence of the students own learning is not extended to e.g. the teaching in courses and the supervision of the groups might be elitist. But

the learning in the groups during the project work is in principle learning in a communication community, free and without supremacy. The students are responsible for their own learning and behaviour within the frames decided by the study board and elicited in the study regulations. A small pilot investigation of 9 process analyses written by students at the second semester of The Technical Natural Scientific Basis Year shows that the students make decisions related to learning and learning goals, learning processes and behaviour after discussions and rounds.

The empirical evidence from the 9 process analyses is not comprehensive enough to generalise about how the Aalborg Model are practised at the entire university. More research e.g. observations of the student's behaviour in the group rooms, interviews with students along with questionnaires and focus group interviews must be carried out.

Because structures determine behaviour the student in a teaching system as the Aalborg Model develop democratic skills useful in social relations. As Marri writes:

"students are able to continue their participation in small publics working toward a national civic culture, a large public"(Marri, 2003: 274)

[Note 1] Translated from Danish by Palle Qvist

[Note 2] On top of that the general view of researchers is that lectures are not the ideal pedagogical method for enhancing the development of effective thinking skills or academic motivation (Cameron ed., 1993). The disadvantages include according to Cameron:

"(a) placing students in a passive role, and thus hindering learning, (b) encouraging one-way communication from lecturer to student, but not vice versa, (c) requiring a considerable amount of unguided student work outside the classroom for understanding and long-term retention of content, and (d) requiring the lecturer to have or to learn effective writing, speaking, and modelling (of effective thinking) skills" (Cameron ed., 1993: 15).

The strong point are (according to McKeachie): " (a) providing up-to-date

information on current research and theories relevant to topics being studied, (b) summarizing widely scattered material, (c) adapting material to particular student backgrounds and interests, (d) building cognitive structures and expectations to help students read more effectively, and (e) modelling the motivation and intellectual curiosity of the lecturer" (Cameron ed., 1993: 15)

According to Cameron others list the following advantages of the traditional lecture: "(a) disseminating unpublished or hard to find material, (b) allowing the lecturer to precisely determine the aims, content, organization, pace and direction of a presentation, (c) introducing students to a topic or subject area, (d) complementing and clarifying text material, (e) communicating easily to large numbers of students, and (f) providing a highly teacher-centred teaching methods for students who prefer this method of presentation" (Cameron ed., 1993: 15-16)

[Note 3] Group and project work obtain only a part of the students learning hours. Even if it in its ideal form is democratic it can easily in practise be organised elitist. E.g. regarding the supervisor or dominating group members. An important precondition (although no guarantee) is that the group uses procedures for decision making which respects the integrity of each group member - respecting the right of each member of the group to take part in discussions, its right to introduce whatever subject and the right to question whatever allegation. Nobody must have these rights restricted or neglected.

Students in a group and project organised learning system receives normally technical and professional supervision. In the Aalborg Model its approx. 1-2 hours a week per semester. The supervision can be elitist or democratic or forms in between. It can be liberal or laissez faire and make room for discussions, choices and decisions between the students.

Besides receiving supervision the students follow courses and work in laboratories.

About 50% of the study time is group learning. The courses are typical conventional elitist university teaching which means lectures planed by the professor and mostly one way communication (see above) with or without tasks for the students to settle. The courses, their content in headlines and outcomes are decided by a study board, where the students have democratic influence through their elected representatives as in a liberal democracy. Indirectly the student has the possibility of influencing the courses, content, outcome and pedagogic via evaluations carried out. In praxis it means that the students have the possibility to evaluate the teaching e.g. via a questionnaire or as member of a focus group.

The teaching e.g. the substance of the courses can eventually be changed by the study board or by the professor – both in relation to technical content or in relation to the pedagogic. This will not always happen. A study board can make the decision

not to change a course by voting.

[Note 4] A process analysis at the Technical Natural Scientific Basis Year at Aalborg University can be seen as a document from the study group proving that it can plan and carry out a learning process of its own. It documents that the group has learned to learn. It uses concepts central to understanding of the learning process and goals. Decisions and non decisions are argued. It contains between others chapters about vision and goals for the learning, plans and time schedules, internal and external communication and cooperation and conflicts. The analysis is a paper of maximum 10 pages exclusive appendix

The following can characterize the analysis: It contains description, analysis and evaluation of goals, reflections, argument decisions and trials.

Description and analysis are separated and descriptions are documented.

Analysis is separated from evaluation and conclusion. It contains argument advices for the future.

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Qvist, Palle: Mag. art., Associate Professor. Department of Development and Planning, Aalborg University. Palle Qvist is a member of the CLP Group (Co-operation, Learning and Project management) and the VIOL (The Research Group Theory of Science, Engineering Education and Organisational Learning). His educational background is in modern history, communication and international relations. He has since 1977 given lectures in PBL at all faculties of the university. He is now teaching engineering students. His main interests in relation to PBL is related to understanding the nature of the problem in PBL, PBL and democratic learning, faculty development and ICT and excellent teaching practice in engineering education. He is co-authors of a much quoted book about PBL, has published articles and numerous web-pages on the topic and is editor of GRUPPExperten (The Group Expert), a on-line help site on world wide web - a "group doctor" - for project groups with co-operations problems or conflicts.