

COOPERATIVE FREEDOM AND TRANSPARENCY IN ONLINE EDUCATION

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Abstract

The paper focuses on the opportunities to provide online education that combines individual freedom with meaningful cooperation. Online students often seek individual flexibility and freedom. At the same time, many need or prefer cooperation and social unity. These aims are difficult to combine, so the presentation discusses online education tools and services that support both individual freedom and cooperation. The presentation also elucidates the opportunities and challenges with transparency in online learning environments and provides examples and experiences from NKI Nettstudier in Norway.

Introduction

This article is an updated and shorter version of Cooperative Online Education (Paulsen, 2008), which builds on the *Theory of Cooperative Freedom*. The first version of the theory was published in the monograph *From Bulletin Boards to Electronic Universities* (Paulsen, 1992). It was updated in the book *Online Education and Learning Management Systems* (Paulsen, 2003) and in the article *Transparency in Cooperative Online Education* by Dalsgaard and Paulsen (2009).

The article illustrates the theory with system developments, participatory observations, examples and surveys from NKI Nettstudier. Having about 12.000 students, 150 online teachers and 400 online courses, NKI is Scandinavia's largest provider of distance education and among the European mega-providers of online education (Paulsen, 2007). To handle this, NKI operates a self-developed LMS system named SESAM (Paulsen & Rekkedal, 2003). It is developed to support cooperative freedom and transparency in a large-scale online education environment.

This article also presents results from four evaluations that included questions about NKI's cooperative tools and services. They are documented in three internal reports (Paulsen, 2005, 2006, 2008). The first survey received about 910 responses, the second 360, the third 540 and the last 890 responses.

Cooperative Learning

Learning theories can be individual, collaborative or cooperative, and online education technology can support the theories in various ways.

Individual learning provides superior individual flexibility, but very limited affinity to a learning community. It has a strong position in online education delivered by institutions with a tradition in distance education.

Collaborative learning requires participation in a learning community, but limits individual flexibility. One may say that collaborative learning requires that students sink or swim together. Collaborative learning is common in online education offered by traditional face-to-face institutions.

Cooperative learning focuses on opportunities to encourage both individual flexibility and affinity to a learning community. Cooperative learning seeks to foster some benefits from individual freedom and other benefits from cooperation in online learning communities. It thrives in virtual learning environments that emphasize individual freedom within online learning communities.

Another way to distinguish between the three terms is to claim that individual learning is conducted *alone*, collaborative learning depends on *groups* and cooperative learning takes place in *networks*.

The differences between the three learning theories are illustrated in Figure 1.

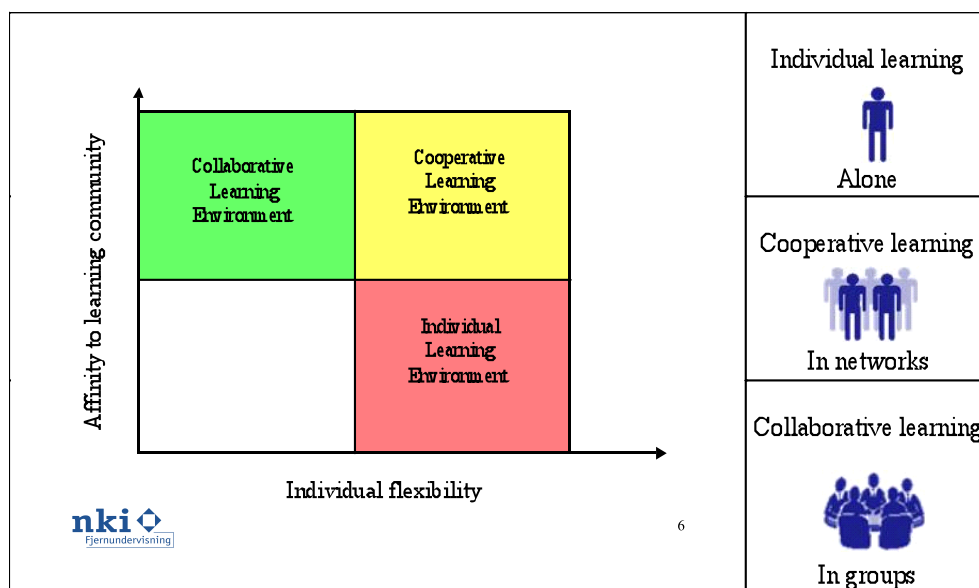


Figure 1. Individual, cooperative and collaborative learning environments.

Well-designed virtual cooperative learning environments build on a number of means that support individual flexibility and other means that facilitate affinity to a learning community. The Theory of Cooperative Freedom is based on the following three pillars:

1. Voluntary, but attractive participation
2. Means promoting individual flexibility
3. Means promoting affinity to learning community

Cooperative Learning is Voluntary and Attractive

A cornerstone in cooperative online education is that cooperation should be voluntary, but attractive and appealing. It should be offered as an appealing opportunity to those who seek cooperation. The challenge is therefore primarily to help those who are interested in cooperation to engage in a network of learners and learning resources. Students should be stimulated to be visible as potential partners and resources for others. Transparent information could be a huge cooperative resource. So, one may argue that a successful cooperative learning community may depend on members who are committed to serve as resources for the learning community.

NKI's Cooperative Philosophy for Online Learning

NKI has developed the following philosophy on cooperative online learning: *NKI Distance Education facilitates individual freedom within a learning community in which online students serve as mutual resources without being dependent on each other.*

Version 6 of SESAM, NKI's learning management system, was developed in 2007 when there was much focus on web 2.0 services. Therefore, it was based on a systems development philosophy stating that the services should be *personal, interactive, dynamic and transparent*. They should further stimulate students and teachers to *produce, share and refine* content they all will benefit from.

Transparency Supports Cooperation

Transparency is important for cooperative online education. People can cooperate more easily if they know something about each other and have access to some common information and services. Cooperation will benefit when general and personal information related to the learning and the learners is available directly or indirectly to the learning community. This transparent information may include personal information about the users and statistics related to the users' application of the online tools. It may further include work students and teachers provide in online notebooks, blogs and discussion forums as well as results derived from quizzes, surveys, and assignments.

Transparency implies that users to a certain extent gain insight and are visible, but it is important to find a suitable transparency level. The theory hypothesize that transparency is an important driver for improved quality, and that it has the following three positive effects on quality:

- Preventive quality improvement; because we are prone to provide better quality when we know that others have access to the information and contributions we provide.
- Constructive quality improvement; because we may learn from others when we have access to their data and contributions.
- Reactive quality improvement; because we may receive feedback from others when they have access to our data and contributions.

Transparency may reduce the amount of low quality contributions and make high quality work more accessible as paragons for others. In transparent learning environments, poor contributions from teachers and course designers cannot easily be hidden behind closed doors.

It is important to realize that transparency must be handled carefully with regard to privacy issues. The users must be confident that privacy is well taken care of. They should be able to choose their preferred privacy level and understand how this choice controls how much of their personal data and contributions that will be available to others.

Information that is too personal to be transparent could still be very useful if it is presented as statistics or averages. Individual grades are usually only presented for the student and the teacher. However, it might be useful to make average course grades available for everyone.

Social Software and Web 2.0 Support Cooperative Learning

The Internet trends that are most interesting for online education today are related to social software and Web 2.0. Some well-known examples are blog, wiki, RSS and social bookmarking. The most interesting characteristics of Web 2.0 is the development of social networks and communities that are hugely successful since the users produce, share and refine information of mutual interest and benefit for all the community members. Some relevant examples of Web 2.0 services used in an online course on cooperative education at Universidade Aberta are described by Paulsen (2010) in the blog entry *E-Viva em Portugal*.

Means Promoting Individual Flexibility

In cooperative learning, individual flexibility and freedom is paramount, as is illustrated in Figure 2. *The Theory of Cooperative Freedom* (Paulsen, 2003) suggests that important flexibility facets are: time, space, pace, medium, access, and content.

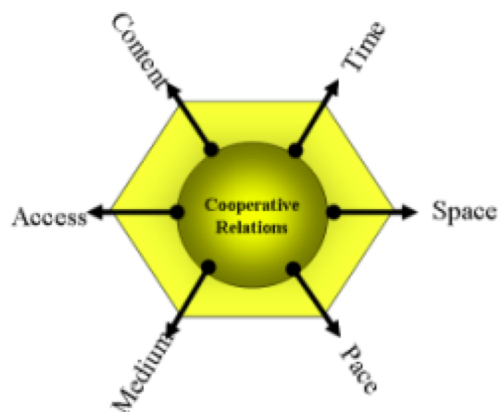


Figure 2. Facets of flexibility discussed in the Theory of Cooperative Freedom.

It should also be emphasized that flexibility is not easy to provide. Individual flexibility tends to add costs, administrative difficulties and pedagogical challenges. In the book *Flexible Learning in a Digital World*, Collis and Moonen (2001, 16) present several factors that constrain learning flexibility. They state that flexibility could be unmanageable, not acceptable, not affordable, and not realistic.

Individual Progress Plans

One of the most strategic decisions online education providers need to make is whether the students' progress plans should be individual or collective. This is a decisive dilemma and challenge for cooperative learning, because its focus on individual flexibility favors individual progress plans, while collective progress plans make cooperation easier.

It is possible to use various schemes for progress planning as illustrated in the following three models with varying degrees of enrollment flexibility:

- Traditional universities enroll students once a year.
- Some institutions enroll distance education students once per month.
- NKI enrolls students every day.

This article focuses on how cooperative learning is stimulated within NKI's model, the only one of the three models that supports individual progress planning.

In learning environments with individual pacing, tools for individual progress planning could support planning and tracking of student progress. Such tools could provide various progress reports and opportunities to initiate automatic and manual reminders to procrastinating students. The tools could:

- Help students develop individual progress plans in courses and study programs
- Provide various progress reports allowing students, teachers and staff to detect procrastination and initiate a set of services to help student proceed
- Reduce dropout rates by improving support to and communication with procrastinating students
- Suggest potential learning partners based on the database of progress plans.

As shown in Figure 3, NKI has integrated tools for individual progress planning in its LMS system SESAM. All students are encouraged to register their individual progress plans, and they may change their plans whenever they like.

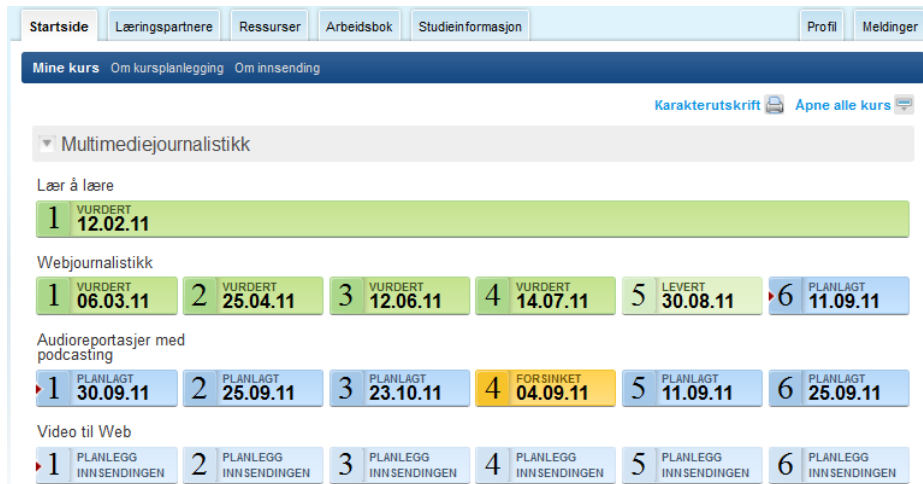


Figure 3. NKI’s planning tools allow students to register submission dates for all courses.

One challenge regarding individual progress planning is to decide how voluntary or obligatory it should be. The more students using the planning system, the more useful it is for the community.

NKI introduced the planning system as a voluntary option in May 2004. In February 2005, about 2200 students had registered their plans. From October 2006 the number has been quite stable around 3900. This is a large number, but it still constitutes less than 50% of the student population.

Three surveys (Paulsen 2005, 2006, 2008) answered by 154, 336 and 763 students, revealed that the respondents were very positive to the planning system. In the three surveys, 88%, 80% and 87% of the responses were either very satisfied or satisfied with it and only 1%, 3% and 2% were either dissatisfied or dissatisfied. The remaining responses were either neutral or expressed no opinion. In the qualitative responses, the system was referred to as simple and motivating. Some stated that it made planning easier and resulted in improved progression. A typical comment was: “ It helps me keep up a steady study progression so that I finish the work before my exam.”

Following-up Individual Progress Plans


In a cooperative virtual learning environment, following-up individual progress plans could be supported by the individual student, automated e-mail and SMS messages, tutors, administrators and cooperative students. The most interesting strategy is to allow students to receive information about other students’ progress plans, but some oppose transparency that allows others to view their plans. One may however argue that these students may be the ones that will benefit most from having more focus on their progress plans.

Since the Fall of 2004, NKI has gradually, introduced, tested and evaluated its system for following-up individual progress plans. When students log on, they see the number of days to each of their planned submissions. If one or more submissions are overdue, the student is reminded. The teachers receive similar information for all their students when they log on. The example in Figure 4

illustrates the type of information the NKI follow-up system provides for teachers.

Please remind delayed students

The following students are more than 20 days behind their individual progress plans. Send them an e-mail reminder by clicking their names. Then they will disappear from your list.

| <u>User ID</u> | <u>Name</u> | <u>Course</u> |
|--|-------------------------|---------------------|
|  S12345 | Mary S. | Accounting 2, 4589E |

Planned submissions

According to the students' progress plans, you can expect 16 submissions the next 7 days.

Figure 4. Planning system services presented at a teacher's web page.

NKI is also testing, improving and contemplating good procedures to remind and encourage students who are delayed. The following means have been introduced:

- Standard e-mail reminders generated automatically and regularly by the LMS.
- Tools that make it easy for teachers to send personal e-mail reminders to procrastinating students.
- Tools that help administrative personnel send seasonal bulk reminders to procrastinating students.
- Student access to catalogues that provide information about other students' progress plans. This provides additional incentives for maintaining up-to-date progress plans. Some students may contact and encourage peers who have problems following their plans.

The reminders must be activated in a proper sequence and with adequate intervals so that students perceive them as personal and informative, not as irksome spam. It is also necessary to purge overly overdue plans so that the users perceive the plans as real. Plans that are more than 100 days delayed seem to be more annoying than useful. Further, it is a danger that the system unintentionally exposes dropouts to public contempt.

Two surveys (Paulsen 2006, Paulsen 2008) answered by 336 and 763 NKI students revealed that the respondents were positive to the follow-up system. In the surveys, 66% and 71% of the responses were very satisfied or satisfied, 4% and 4% were dissatisfied or very dissatisfied. The remaining responses were either neutral or expressed no opinion.

Submission System

NKI's submission system was initially developed to track and supervise the time from students' submissions to teachers' grading. It automatically records the time of submission and the time of grading.

By channeling both submissions and registration of grades through web-interfaces, the LMS system can provide features and reports related to:

- Following-up the individual progression plan
- Response time between submissions and registration of grades

Since the submission system also files all student submissions and teacher responses, it provides ample opportunities to develop cooperative services that allow the owners to give other students or teachers access to them. This can, for example, be developed further to include functionality for cooperative portfolio evaluation and for submission of cooperative papers.

Barometers for Teacher Response Time and Quality

Three NKI surveys (Paulsen 2005, 2006 and 2008) maintain that swift response time is essential for student satisfaction and perception of a tutor's work. In cooperative learning environments with individual progress plans and many courses, it could be wise but difficult to continually supervise response times for all teachers. This is a controversial issue, since some teachers may resist the idea of being supervised this way.

NKI has handled this by integrating a response barometer in the LMS system that records the time from a student submits a paper to the teacher registers the corresponding grade. The system allows NKI to provide the information at the teachers' web page shown in Figure 5.

NKI's aim for response time: **2 days**. My response time last 90/180 days: **1/1 day**.
 Average response time for all tutors last 90/180 days: **2/2 days**.
 NKI's quality aim: **80% - 90%** positive responses. My evaluation last 90/180 days: **96/94%**.
 Average evaluation for all tutors last 90/180 days: **88/89%**.
There are 202 evaluations in my [detailed report](#)

Figure 5. Barometer that presents current response and quality statistics at the teachers' web page.

The response barometer was introduced in May 2004 and it resulted in much discussion in the teachers' online forum. A few teachers voiced strong criticism, doubts and reservations. Others suggested improvements. However, it was interesting to observe that among the 150 teachers, the overall average response time accumulated over the last six months dropped month by month during the Fall of 2004. In October it showed 3.97 days, in November 3.06 days and in December 2.76 days. Since then, the overall average response time has been between two or three days, except from the summer holidays.

A few teachers still had an unacceptable long response time, so in April 2008 NKI introduced an automated e-mail message to teachers who had not registered a grade after seven days. The average response time for all 150 teachers in 2010 was 1.77 days.

In 2011, NKI added a barometer for measuring teacher quality as illustrated in *Figure 5*. The first experiences are described in Rekkedal (2012).

Means Promoting Affinity to Learning Communities

There are a number of means that could be used to strengthen affinity to virtual learning communities. Transparency and web 2.0 related services are central to these means. It is paramount that the participants are visible and accessible. In addition, the community members must be urged and stimulated to contribute to the community and to benefit from it. In the following some of these means are discussed.

Cooperative Student Catalogues Comprising All Courses

Student catalogues are important tools for showing students that they have access to a learning community. A comprehensive catalogue providing much relevant information about many students is crucial for the learning community. Student catalogues usually provide information about all students enrolled in a course. However, if students also can access information about students enrolled in other courses, they may benefit from taking part in a larger learning community. A catalog that even includes alumni students could be of interest for students who seek advice on courses they consider enrolling in or on future employment.

To facilitate cooperation, the student catalogue should include information that makes it easy to initiate and maintain communication. This may be e-mail addresses, telephone numbers, chatting identities etc. that could facilitate electronic communication. It may also include postal codes that could make it easier to identify potential partners for face-to-face meetings. Similarly, it may include progress plan information so that students may identify peers who are working with the same study unit as they are. Finally, one may argue that student catalogues should include CV-type information to make it possible to search for peers with special competencies.

Student catalogues must handle privacy issues properly. Some information may be regarded as sensitive and require student consent to be included. Some students may also oppose inclusion in a student catalogue. The challenge is therefore to find the balance between providing as much relevant information as possible to stimulate cooperation without trespassing students' privacy thresholds. A viable solution is to ask students for permission to make the information available for the staff, the student enrolled in the actual course, or all students in all courses.

Cooperative Learner Profiles

The acronym CLIP – *Cooperative Learner Information Profile* has evolved as a result of the author's deliberations on effective cooperative student catalogues. Using CLIPs, LMS systems may help students find learning partners (study-buddies) that are motivated and fitting for cooperation. CLIPs could herald a new and innovative pedagogy for cooperative learning. CLIP could provide efficient tools for establishing smaller and larger networks with the right mix of students. It could be used to establish contact between junior students and more experienced students that are willing to function as mentors. It could also be used to establish small colloquial networks based on

geographic proximity or compatible progress plans. These networks could result in reduced dropout rates and better learning.

Based on CLIP and algorithms for teaming students, the system should suggest partners that have CLIPs that make cooperation interesting. Elements from NKI's implementation of CLIPs are illustrated in Figure 6 and Figure 7. The students should have access to enough information to establish contact and tools to maintain cooperation. However, to develop suitable algorithms for this is probably not a trivial task.

Learning partner and privacy level

I would like to have a learning partner

Global Everyone on the Internet may see my presentation

Open All NKI students may see my presentation

Limited The students in my course may see my presentation

Closed Only my teachers and the NKI staff may see my presentation

Figure 6. An element from the students' user interface.

Name: Morten Flate Paulsen
E-mail: mfp@nki.no
Telephone:
Mobile:
Homepage: <http://home.nettskolen.com/~morten>
Postal number and area: 1319 Bekkestua
Enrolled: 18. feb 2001
I would like to have a learning partner: Yes
Privacy level: Global

Personal presentation
 I'm President of the European Distance and E-Learning Network ([EDEN](#)) and I was on the European Association for Distance Learning (EADL) R&D committee until November 2010.

In the school year 2009-2010, I worked part time for Universidade Aberta in Portugal. From 1999 to 2005, I was appointed as Adjunct Professor, at the Athabasca University, Centre for Distance Education in Canada. I'm Doctor of Education from the Pennsylvania State University, Department of Adult Education and Instructional Systems.

I'm regional editor for [IRRODL](#) (The International Review of Research in Open and Distance Learning), [EURODL](#) (The European Journal of Open, Distance and E-Learning) and the [Asian Journal of Distance Education](#). I'm also on the Editorial Board of seminar.net.

I have worked with online education since I designed NKI's first Learning Management System in 1986 and published many books, reports and articles about the topic. Many of my publications and presentations are available at his personal homepage at <http://home.nki.no/morten>. My book Online Education and Learning Management Systems is available via www.studymentor.com.




Figure 7. Illustration of the authors' personal presentation in NKI's LMS system.

An online survey (Paulsen, 2005) answered by 154 NKI students showed that the majority wanted closer cooperation with one or more students. As many as 64 percent stated that they probably or definitively wanted closer cooperation. Only 16 percent responded that they probably not or definitively not wanted closer cooperation. The verbal comments also showed that many respondents wanted cooperation. Relatively many stated that they needed, wanted or missed cooperation and study-buddies. Some pointed out that it was difficult to contact other students; others wanted better tools to find partners. On the other hand, there were some respondents who stated that they didn't need cooperation. They thought cooperation should be voluntary and stated that they preferred to study without being dependant on others. The survey also showed that 71 percent of the respondents were positive or very positive to see each other's progress plans. Similarly 76 percent were positive or very positive to getting access to each other's zip codes.

Online teachers could also benefit from finding partners for cooperation. Therefore, NKI provides teachers with a discussion forum and dynamic information that lists contact information for all 150 teachers and the courses they teach.

In 2008, NKI introduced a new feature that allowed the students to make their presentation global, which means that everyone on the Internet can see the presentation. This is described by Slåtto (2010) in the article *Global student presentations - a unique source of knowledge about online students*.

Learning Partners

Based on the learning profile concept and a student survey (Paulsen, 2005), NKI introduced a service for Learning Partners (Slåtto & Paulsen 2006) in March 2006. The students that want Learning Partners are asked to:

1. Register their personal presentations
2. Decide who may access it
3. Search for potential learning partners
4. Invite somebody to become their learning partner

In November 2006, 3100 students had registered a personal presentation and an increasing number includes a personal picture. At the same time, 2500 had indicated their privacy level and preference regarding having learning partners. About 450 of the students had found one or more learning partners.

In December 2007, 3900 students had registered a personal presentation. At the same time, 3689 had indicated their privacy level and preference regarding having learning partners as indicated in Table 1. About 750 of the students had found one or more learning partners.

Table 1

Student Preferences Regarding Learning Partners and Privacy

| Privacy Level | Want Learning Partners | Don't Want Learning Partners | Sum | Percent |
|---------------|------------------------|------------------------------|------|---------|
| Closed | 79 | 657 | 736 | 20.0 % |
| Limited | 1192 | 706 | 1898 | 51.5 % |
| Open | 752 | 303 | 1055 | 28.6 % |
| Sum | 2023 | 1666 | 3689 | |
| Percent | 54.8 % | 45.2 % | | |

The first major survey (Paulsen, 2008) including a question about the learning partner services was answered by 763 NKI students. The results showed that 54 % of the responses were very satisfied or satisfied, 2 % were dissatisfied or very dissatisfied. The remaining responses were either neutral or expressed no opinion. The report concludes that the service has a potential to be developed further, and that the students need more time to get familiar with the services.

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