

PBL ØVELSER MOTIVATION

UDFORDRINGER OG POTENTIALER VED
ØVELSESBASERET UNDERVISNING

PROJEKTET

- **Formål:** Undersøge mulighederne i læringsrummet mellem forelæsning og projektarbejde med udgangspunkt i øvelsesbaseret undervisning.
- **Fokus:** Hvordan forskelle i de studerendes studieengagement, læringsforståelse og motivation får betydning for deres oplevelse af øvelsesbaseret undervisning og problembaseret læring.
- **Finansieret af AAU's strategiske pulje og Sociologiuddannelsen.**

RESULTATER



POTENTIALER

- **Øvelser kan tage mange forskellige former - er derfor en mere fleksibel platform for PBL sammenlignet med projektarbejde.**
- **Alle typer af studerende ser fordele ved anvendelse af viden i øvelser—selvom det er forskelligt, hvordan anvendelsen har betydning for dem.**
- **Koordinering af øvelser er vigtigt for studerendes oplevelse og motivation**
- **Studerende motiveres forskelligt og nogle gange modstridende, men hver type kan relatere til elementer i PBL modellen, der virker motiverende.**
- **Uoverensstemmelse mellem studerendes læringsforståelse og PBL kræver særlig opmærksomhed ift. kommunikation af formålet med øvelserne og læringsformatet**

TYPER AF STUDERENDE

LÆRINGSMOTIVERET FAGENTUSIAST

Fagidentifikation Interesse
Ny Viden Faglige udfordringer
Anerkendelse Læringsrefleksion
Undervisersparring Abstraktion



SOCIALT ORIENTERET SELVUDFORSKER

Kollektiv Læring Diskussioner
Sociale Færdigheder Selvudvikling
Underviser som procesfacilitator
Perspektiver Samarbejde



JOBFOKUSERET PRAKTIKER

Jobrelevans Fremtid Overførbar viden
Praktiske Færdigheder
Underviser som ekspert Facit
Autencitet Regelbaseret læring



RETNINGSLØS PLURALIST

Tilfældigt Studievalg Mødepligt
Eksamensfokus Ydre Forventninger
Rutiner Underviserstyring Struktur
Generalist kompetencer Tvivl



Studiestartscamp

HA 1.semester

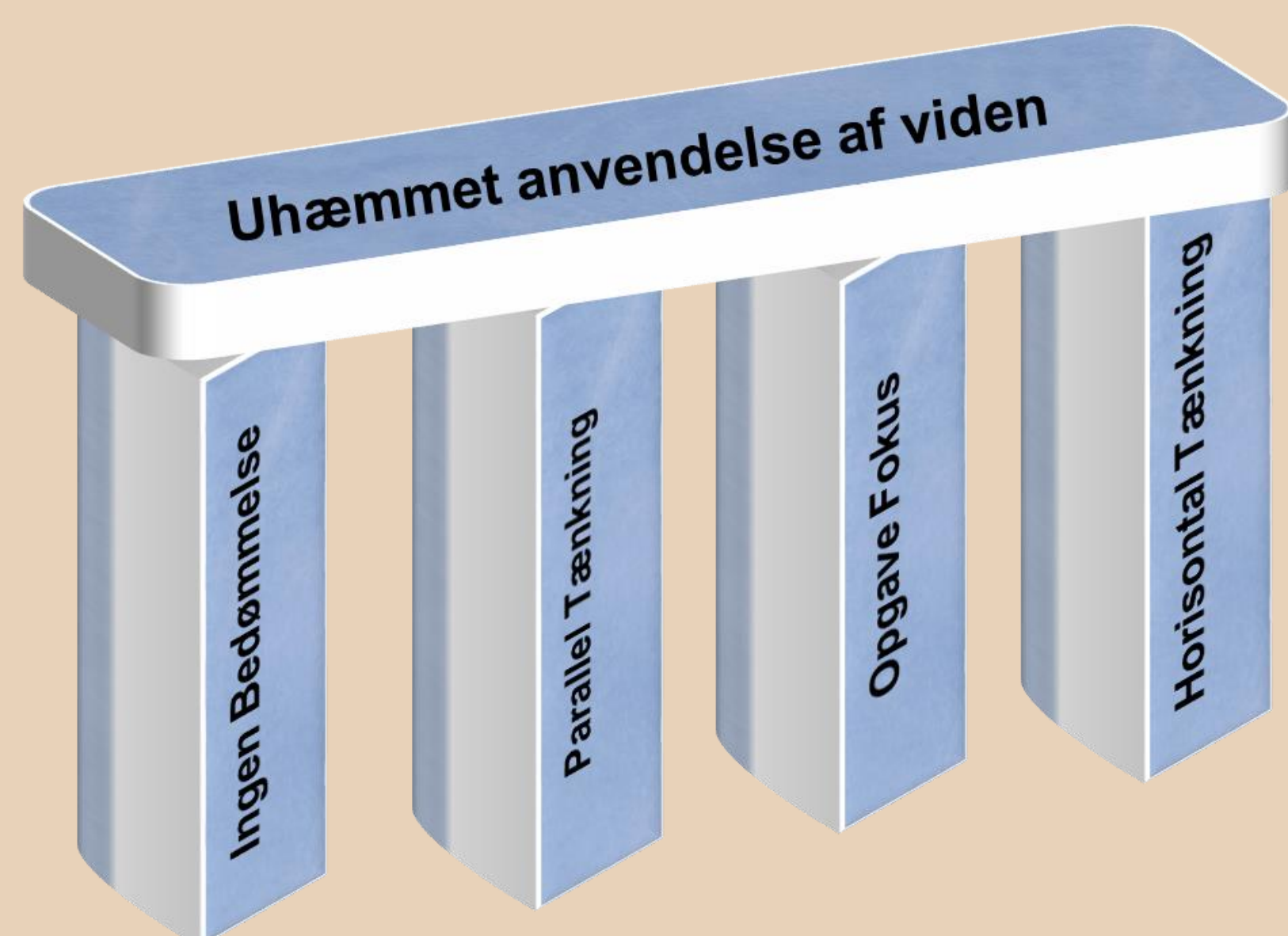
Søren Hansen og Jonna Langeland Christensen, Forskningsgruppen for Uhæmmet Vidensanvendelse
Henrik Find Fladkjær, Formand for det Erhvervsøkonomiske Studienævn.

1. Mål

- **Engagerende** studiestart
- De studerende **lærer hinanden at kende** i en faglig kontekst
- Erhvervsøkonomisk case - **Indføring i faget**
- Udvikling af **samarbejdskompetencer** (Campen er en del af kursus i proceskompetencer)
- Udvikling af **kreative kompetencer**



Den Kreative Platform



2. Metode

2 dages camp for 325 studerende primo september. Campen bygger på procesmodellen **Den Kreative Platform**:

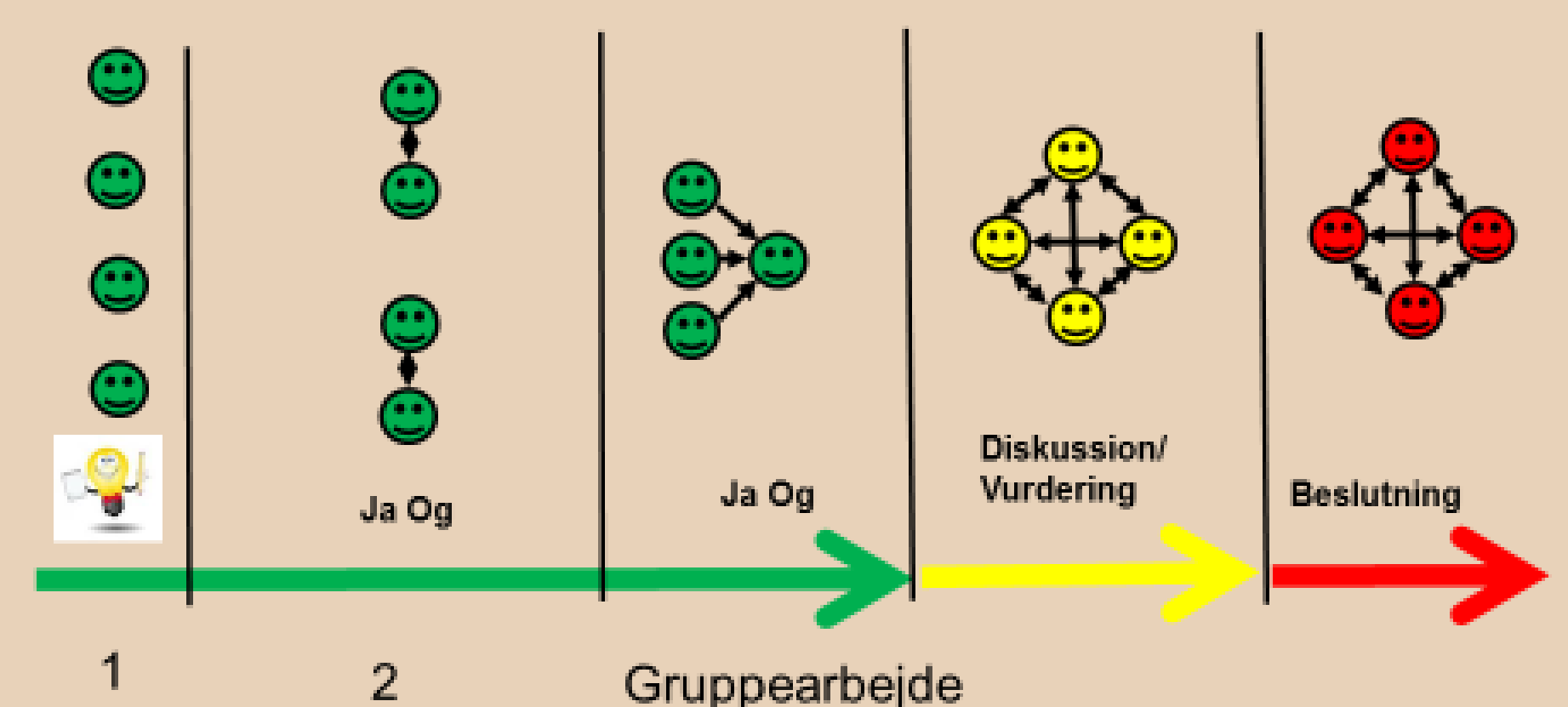
- Opgavefokus fremfor personfokus
- Parallel tænkning – Alle følges ad i processen = stor energi og engagement.
- Ingen bedømmelse af idéer og personer
- Anvendelse af horisontal viden.

3. Træning af samarbejds-kompetencer

De studerende træner deres **samarbejdskompetencer** vha metoden: **"1-2-gruppe"**:

- ⇒ Alles idéer bliver hørt
- ⇒ Alle gruppemedlemmer vælger en idé, der bliver videre udviklet
- ⇒ Udskydelse af diskussioner og valg. Idéer bliver udviklet inden der vælges, hvilken idé gruppen vil arbejde videre med.

Det Kreative Gruppearbejde



4. Træning af kreative kompetencer

De studerende træner deres **kreative kompetencer** vha 3D-cases(kreativitetsøvelser)

- At få mange idéer ved hjælp af stimuli og person-analogier.
- At sige "ja, og ..." til andres idéer.
- At udvikle idéerne.



Dannelsesworkshop og Dannelsesfortællinger

Psykologi: Casper Feilberg, Inst. for Kommunikation og Psykologi, kontaktperson: feilberg@hum.aau.dk.
Sociologi: Inger Glavind Bo samt Annette Quinto Romani, Inst. for Sociologi og Socialt Arbejde.

Formål At øge refleksionen omkring forventninger, fremtidsdrømme, dannelsesprocesser og idealer som studerende og professionsudøver (psykolog, sociolog).

Delmål:

- 1) Forberede nye studerende på de **omvæltende dannelsesprocesser** de snart vil befinde sig i, hvis de engagerer sig personligt i studie og professionsfelter, samt på de **eksemplariske dilemmaer** studerende ofte konfronteres med (fx karakterstrategier, CV-rytteri, ørkenvandring).
- 2) Præsentere begreber for den **studerendes personlige/faglige udvikling** og de opnåelige/ opnåede akademiske og professionsfaglige beredskaber (faglig habitus) samt PBL kompetencer.
- 3) Skabe diskussioner med medstuderende om egne drømme omkring, og **ideal**er for, rollen som **universitetsstuderende** og **professionsudøver**.

Deltager-udtalelser

Uddannelsesrettet workshop (psykologi):

*"Der bliver skabt et rum for at man kan tale om de **store krav** der bliver stillet samt hvordan man egentlig kan leve op til dem"*

*"Jeg blev bevidst om, at de overvejelser og usikkerheder om studievalg og uddannelse var naturlige, og jeg var ikke alene om at have de her tanker. Jeg følte mig set af studiet, da jeg følte, at de var opmærksomme på, at nogle nye studerende kan have usikkerheder. På mange måder, synes jeg, at **dannelses-workshoppen gjorde det "legitimt" at tale om, at man var forvirret og usikker** - særligt hvis man i Gymnasiet var en 12-tals pige."*

*"Jeg kan især huske, at der blev talt om det her med at man på universitetet **skal turde tage hoppe og svæve i usikkerheden i løbet af et projekt. Det er virkelige noget, jeg tit er vendt tilbage til**, når jeg har været usikker. Derudover har jeg også flere gange genbesøgt de forskellige egenskaber en psykolog har, samt **hvordan vi opnår disse gennem studietiden her.**"*

*"Dannelsesworkshoppen har spillet en stor rolle - og især i forhold til karakterstrategien. I starten betød karakteren rigtig meget, men efter jeg læste dannelsesfortællingen omkring Anna var jeg ikke længere i tvivl. Jeg ville ændre mit perspektiv på karakter og forsøge at opnå en større psykologisk habitus i fremtiden. Jeg søgte mit første frivillige job hvor jeg støtter med min tilstedeværelse. Dette føler jeg har været **medvirkende til at skabe en stor forståelse for feltet, og derigennem støtte min psykologiske habitus** men også den videnskabelige habitus. Jeg takker for en fantastisk Workshop!"*

Aktiviteter

Et dannelsesworkshop-koncept er udviklet til to forskellige målgrupper: 1. års studerende, og 4.-5. års studerende, hhv. en uddannelses-rettet og en fremtids-rettet dannelsesworkshop.

To forskellige studie-kontekster: Psykologi (1.sm). Sociologi (8.sm).

Bærende elementer i dannelsesworkshoppen:

To fortællinger: En Dannelsesfortælling beskriver en studerendes dannelsesrejse og konfrontation med eksemplariske dilemmaer i lyset af studiet og professionen; beskrivelsen skal vække identifikation. Arbejdsspørgsmål udgør oplæg til diskussion og *selvstændig stillingtagen*.

Oplæg og opsamling: Indledende fagligt oplæg om dannelse, udviklingsprocesser samt akademiske og professionsfaglige idealer.

Aktiv diskussion: 75 % af tiden diskuterer studerende i mindre grupper. Afslutningsvis er der fælles opsamling. Samlet workshop-tid: 4 x 45 min.

Konklusioner

- 1) Konceptet lykkes med at bringe dannelses-perspektiver samt diskussioner om idealer og drømme ind i en engagerende og faglig kontekst. Det kræver god tid og en *meningsfuld* modul-integration.
- 2) Dannelsesfortællingerne skal udspringe af erfaringer hos studerende fra det enkelte studie for at sikre autenticitet, identifikation og tematisering af aktuelle eksemplariske dilemmaer og udfordringer. *Dette er vanskeligt og kræver refleksion om fag, studie og idealer hos underviserne selv.*
- 3) Konceptet er implementeret på Psykologi (E2018: 1. ba), og Sociologi (E2018: bachelor eller kandidat). *Hvad med dit studie?*

Formidling

Flyer beskriver konceptet. Video giver indblik i studenteraktiviteter.

Undervisningsmateriale (dannelsesfortællinger, slides, program), erfaringer samt guide til udvikling af dannelses-fortællinger formidles via hjemmeside (*i proces*).

Fremtidsrettet workshop (sociologi): *Hvad tager du med dig fra dannelsesworkshoppen?*

"Refleksion over hvad jeg værdsætter ved studiet, min dannelse og uddannelses forløb samt hvilke udfordringer og fordele jeg har i min kommende praktik."

*"Jeg vil 1) huske at have det mere personlige præg og forståelse med og **ikke blot at fokusere på karakterer og et flot CV**. 2) være mere reflekterende over de valg og fravalg der tages ift. fag, projekter og praktik."*

*"Det har givet mulighed for at tænke på ens egen dannelsesrejse gennem studiet. Hvor har jeg været udfordret? Hvilke idealer havde jeg, da jeg begyndte på studiet og hvordan har disse måske udviklet sig? Workshoppen har overordnet gjort mig bevidst og sat nogle tanker igang om dannelse - idealer og værdier - **balancen mellem ens personlige og akademiske formåen**. Noget jeg helt sikkert vil kunne bruge i fremtiden."*

Flipped and blended classroom approaches at AAU: theory, cases and toolbox



AALBORG UNIVERSITY
DENMARK



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ABOUT THE PROJECT

This project documents and illustrates 6 examples of blended classroom (BC) and flipped classroom pedagogy. BC offers both face-to-face and virtual elements while in FC the learning design changes the typical division of student work. For example, lectures or instructional podcasts could be moved online to be viewed before class, while classroom time is dedicated to learning activities that require students to engage with the concepts at a higher level.

The teacher's role 'flips' to become more interactive and provide answers to contextual and applied questions, give feedback, and prompt reflections of key ideas. Research evidence shows that such approaches increase levels of problem solving structure and practice but also indicates that students may at first be sceptical of such approaches. This project will build on these findings to present 6 selected examples to inspire university teachers across the faculties to apply BL and FC approaches to their teaching. The examples present typical teaching scenarios that have been transformed representing different levels and novel teaching solutions. Each example is contextualised in the PBL environment at AAU.

THE OUTPUT OF THE PROJECT

Each case has led to three kinds of outputs.

1. Background/theory: text document that explains the pedagogical and didactical reasoning for the FC or BL approach used in the example.
2. Video on practice: a podcasts that shows and shares the details on what was done and how it was implemented.
3. How-to guide on tools: visual material (image plus text) to provide step-by-step, hands-on instructions on how to utilise and apply specific IT tools that support FC and BL

REFERENCES

- [1] Bitner, N. and Bitner, J. (2002). Integrating Technology into the Classroom: Eight Keys to Success. *Journal of Technology and Teacher Education*, 10(1), 95-100. Norfolk, VA: Society for Information Technology & Teacher Education.
- [2] D. Gnaur and Hüttel (2017). *Podcasting for Teaching and Learning in Higher Education*, Higher Education Practices, vol. 2. Aalborg University Press, 2017.
- [3] Rivard, L. P., and Straw, S. B. (2000). The effect of talk and writing on learning science: An exploratory study. *Science education*, 84(5), 566-593.

THE SIX CASES

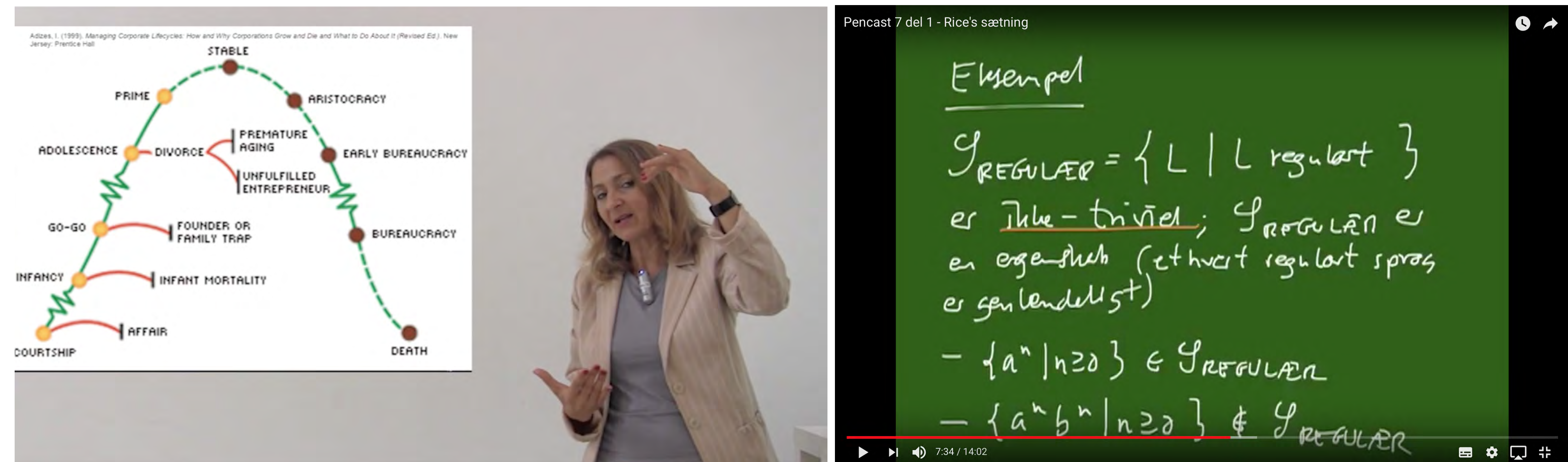


Figure 1: Two examples of podcasts. Left: A live recording (Dorina Gnaur). Right: A pencast (Hans Hüttel)

BL - Integration of video for reflection (Eva Petersen – Nano-technology) In this blended learning approach students were given individual assignments to solve chemical equations. Students video recorded themselves solving those assignments, giving the teacher an opportunity to (re)view videos and detect the level of competencies of understanding and applying scientific concepts through the students verbal explanations. This video supported approach involving the construction of scientific explanations is also supporting evidence that suggests how talk combined with writing appears to enhance the retention of science learning over time [3] has contributed to raising the pass rate in this course and was used to build on with group work in class.

FC - Office Mix for podcasting in mass customisation (Kjeld Nielsen) This case illustrates the adoption of a FC approach by utilising ready and available technology (Office Mix) that required little new learning by the teacher and how this led to a revision of teaching approaches and materials towards an increase of active in class learning. This approach clearly highlights how to overcome the challenges attributed to the uptake with new technology for teaching [1] and the example here has led to the teacher providing assistance to other colleagues on how to easily adopt new technology with the aim to revitalise teaching approaches.

FC - A computer science course on computability and complexity theory using pencasts and peer reviews (Hans Hüttel) This case describes how the teacher re-structured a course on the theory of computation in the fifth semester of the degree programmes in computer science and software. The presentations moved from a traditional lecture-based format using a blackboard to using pencasts recorded using an iPad and a stylus, and the active learning

moved to plenary sessions and peer-assessed exercises about key concepts covered in the course text.

BL - Using Google+ (Nicolai Steinø) This case illustrates how the social network Google+ can be used in a course in the fourth semester of the degree programme on architecture and urban planning for sharing video lectures, readings, assignments and materials, for sharing work in progress submitted by the students, and for commenting, asking and answering questions between classes.

BL - Teaching objected-oriented programming to 2nd semester students (Thomas Bøgholm) This case illustrates the use of supplementary podcasts in a course on object-oriented programming in the second semester of the computer science and software degree programmes. The teacher recorded videos explaining solutions for the weekly assignments of the course as well as for the more challenging exercises posed in the problem sets. Moreover, the teacher made video presentations of some of the harder topics covered in the course. These latter presentations were meant as supplements to the lectures covering the same material.

FC - Podcasting in a course in Change Management (Dorina Gnaur) In this flipped class approach, students were given the opportunity to gain exposure to the lecture content prior to class in the form of pre-recorded video presentations of the lecture content. They were also advised to prepare questions that needed further discussion in class and received reflection questions to facilitate understanding. Class time was then used on active learning and activities requiring higher-order thinking such as case-based work and problem solving together with peers.

CONTACT INFORMATION

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Improving flipped classrooms for better PBL implementation in everyday study

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1. What this project is about?

Flipped classrooms is a modern teaching form where explanation of theory is delivered outside a classroom, most often online, through video-lectures. The video lectures are usually supplemented with quizzes for self-control. Flipped classes strategy fits the PBL approach perfectly well as it gives more time for interaction with students when they work on real problems via seminars, workshops, mini-projects etc. It also makes cross-campus teaching more efficient.

In this project we tried to improve this concept by using experience from another modern educational trend — **Massive Online Open Courses (MOOC)** which are getting more and more popular during the last several years. MOOCs initially developed for on-line education and are based on dedicated IT-platforms for effective delivering of educational activities.

So, the goal of this project was to use experience and IT-solutions from MOOC to **make flipped classrooms teaching more efficient and attractive to students.**

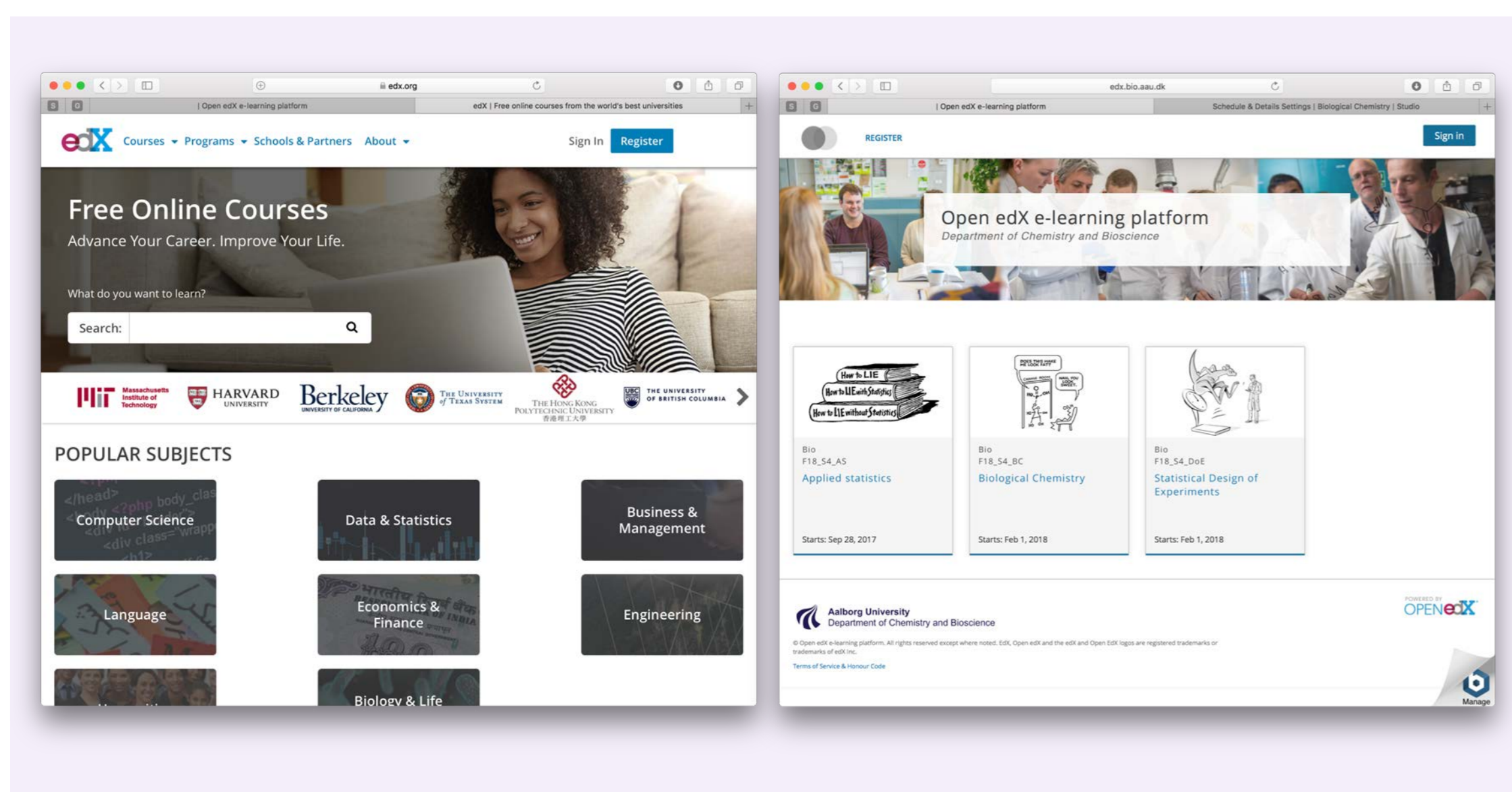


Fig. 1. The edX platform and its small "brother" Open edX at Bio

3. What are the key features?

One of the most important features is representation of traditional lecture as a learning sequence. **Learning sequence** is a set of short (5-15 minutes) video fragments, quizzes, interactive applications and illustrated web-pages with course materials. All items are organized using an intuitive user interface which makes access to any learning sequence as well as any part of it very easy (Fig 2).

Information is easier to digest when it is split into small portions.

Teacher can control a performance of all students almost in real time and see how active students are, which parts of the course are more difficult etc. Everything is done via **interactive gradebook** which functionality has been improved as a part of this project activities (Fig 3).

Creating a course is done using interactive interface and does not need any special skills from teacher (but knowledge of basic HTML will extend possibilities). Quizzes are made using very simple text markup (Fig 4).

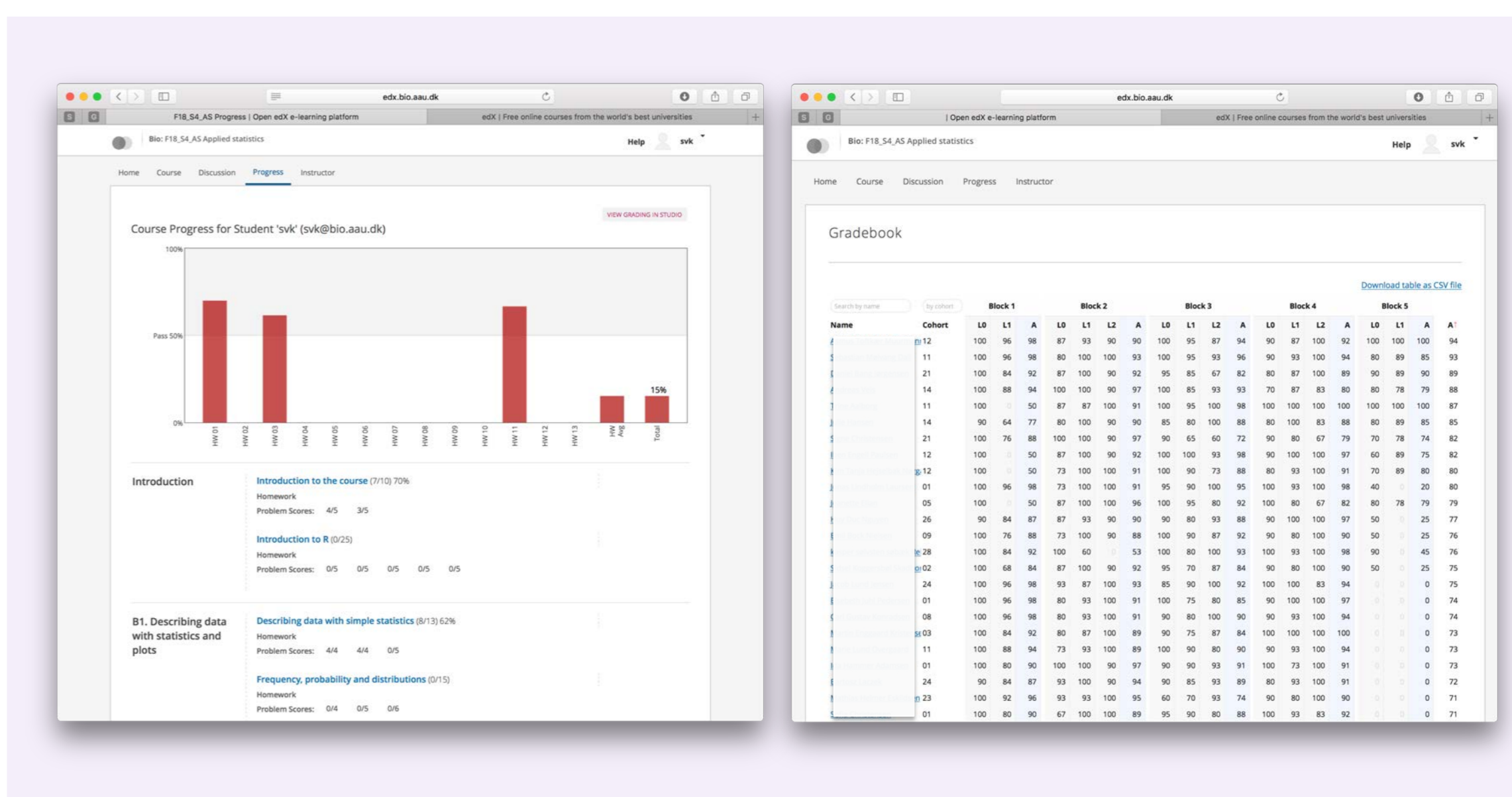


Fig. 3. Gradebook for a student (left) and teacher (right). Student names are hidden

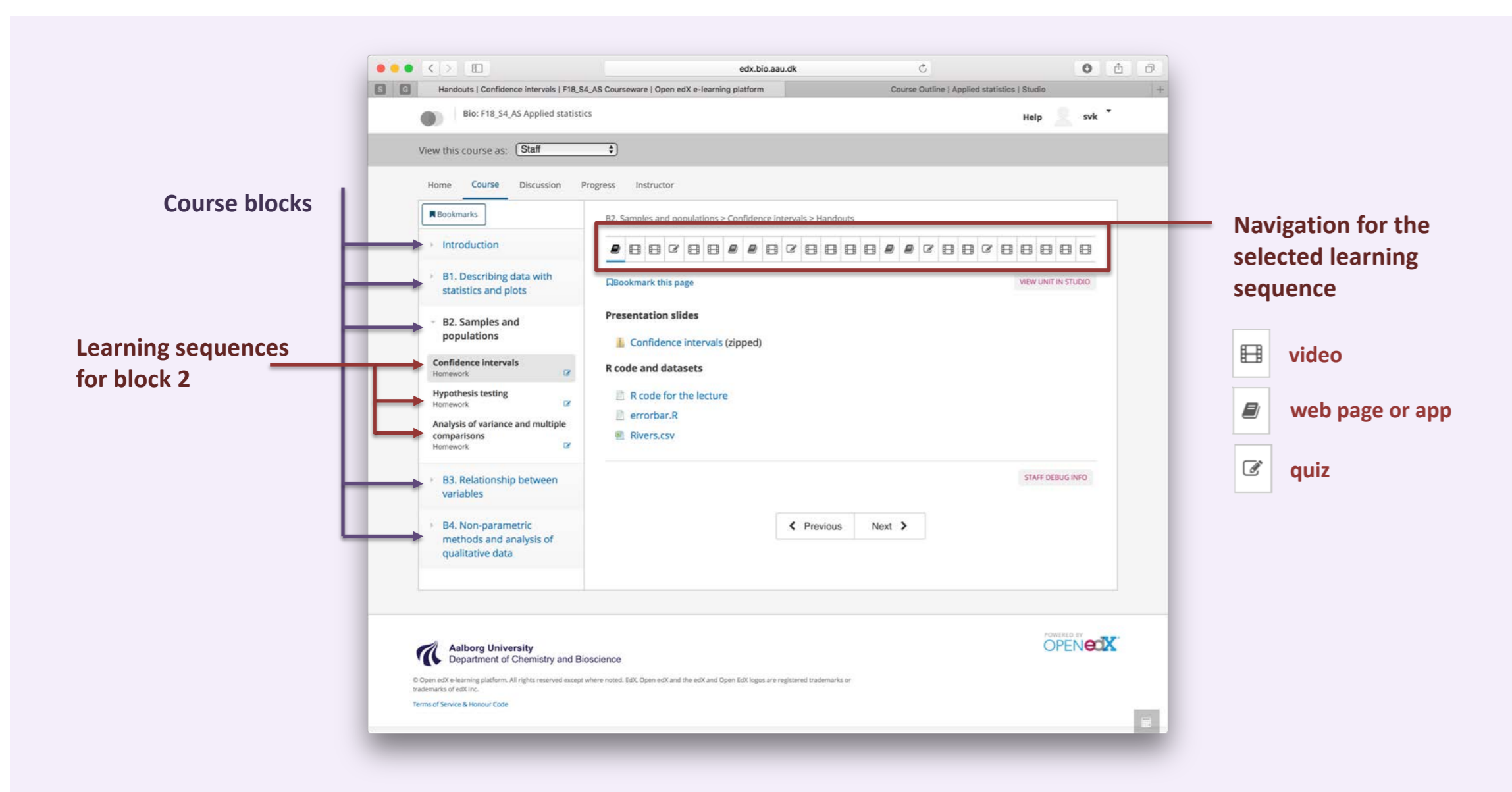


Fig. 2. Course structure in Open edX

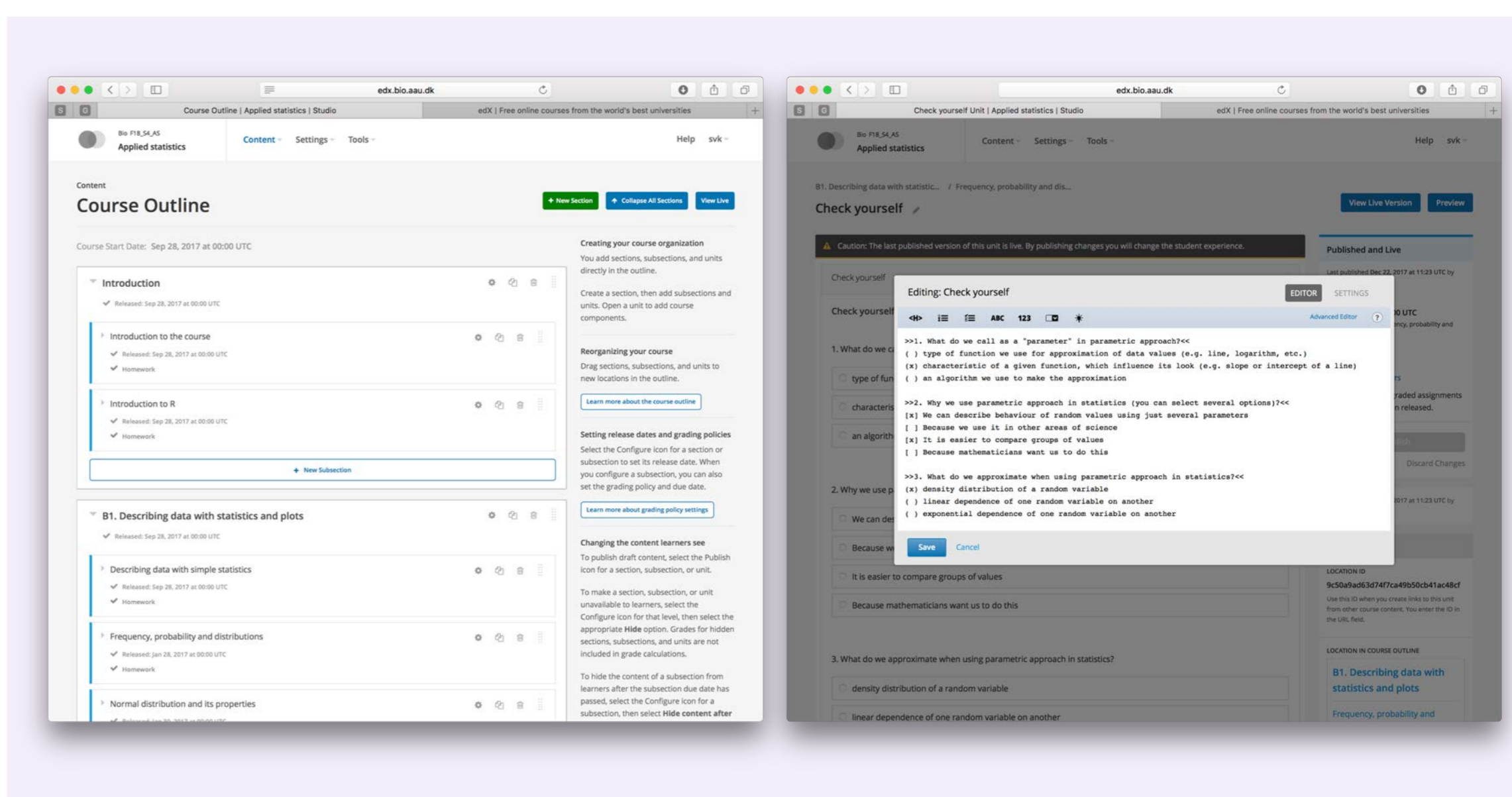


Fig. 4. Course creator interface

2. What is done?

The first step was a study of all approaches and IT-platforms used in MOOC world. It resulted in selection of **Open edX** — open source solution from the second biggest MOOC provider, edX, developed by MIT, Harvard and several others (Fig 1).

The second step was installation of the platform at AAU and adjusting its functionality for our needs. As a result in spring 2017 a first Open edX based course — *Applied Statistics* (95 students in total) has been launched.

The third step was to improve both the platform functionality as well as the procedure and some peculiarities for creating Open edX courses based on feedback from students and teacher's experience. The *Applied Statistics* course has been updated and currently being running again for 105 students. Another course — *Statistical Design of Experiments* (30 students) was launched this spring.

4. How well does this work?

Most of the students are very satisfied with the new form of teaching and the Open edX platform. Many found the learning sequences very efficient as there is no need to arrange several hours for learning and easy to re-watch most difficult parts.

From teacher's side — very efficient for teaching courses with large number of students (100 or more) and for cross-campus teaching. Quizzes made for small parts instead of a whole lecture give a possibility to see what is going on with course activities and understanding almost in real time.

At the same time, creating a course for Open edX takes almost the same time as conventional flipped classes with long videos and large quizzes.





Our problem setting

One of the emerging challenges in academia is that of developing and maintaining teaching qualifications in a setting where teaching staff is often temporary and with diverse backgrounds. At Aalborg University, project-organized problem-based learning is at the heart of all degree programmes and supervision within this format has particular challenges.

There are many resources available at Aalborg University for developing competences for project supervisors, but they tend to be general in nature. Where can one go if one has a concrete problem in one's supervision practice?

These may be problems relating to e.g. group formation, problem analysis, problem statement development or conflicts among students in the group.

Crowdsourcing

Crowdsourcing is a form of collaborative user-generated creation on the WWW. A particularly well-known example is Wikipedia.

There are several examples of uses of crowdsourcing in educational settings. Crowdsourcing is often problem-based and demand-driven and takes the form of question/answer-based fora.

StackExchange [2] has become recognized as an important means of establishing crowd-sourced knowledge in a question/answer-based format, with a large user community and fora that cover a wide variety of subject areas. At its heart is a *gamification* principle: Any user can pose a question and other users can now answer the question. The community can upvote or downvote questions as well as answers or comment on questions and answers.

References

- [1] Moodle. <https://moodle.org>.
- [2] Jared Keller. Stack Overflow's Crowdsourcing Model Guarantees Success. *The Atlantic*, 18 November 2010.

Our goals

The first goal of this PBL development project has been to create PBL Exchange, a web-based platform for all project supervisors at Aalborg University that will make it easy for them to ask and answer any and all questions that they have about PBL supervision practice. PBL Exchange is inspired by StackExchange.

The second goal of the project is to ensure that PBL Exchange becomes widely used across Aalborg University.

User satisfaction

We wanted to know whether the users found PBL Exchange useful, so far. The responses from users of the prototype version reveal that this is indeed the case.

How useful do you find the present version of PBL Exchange?

14 responses

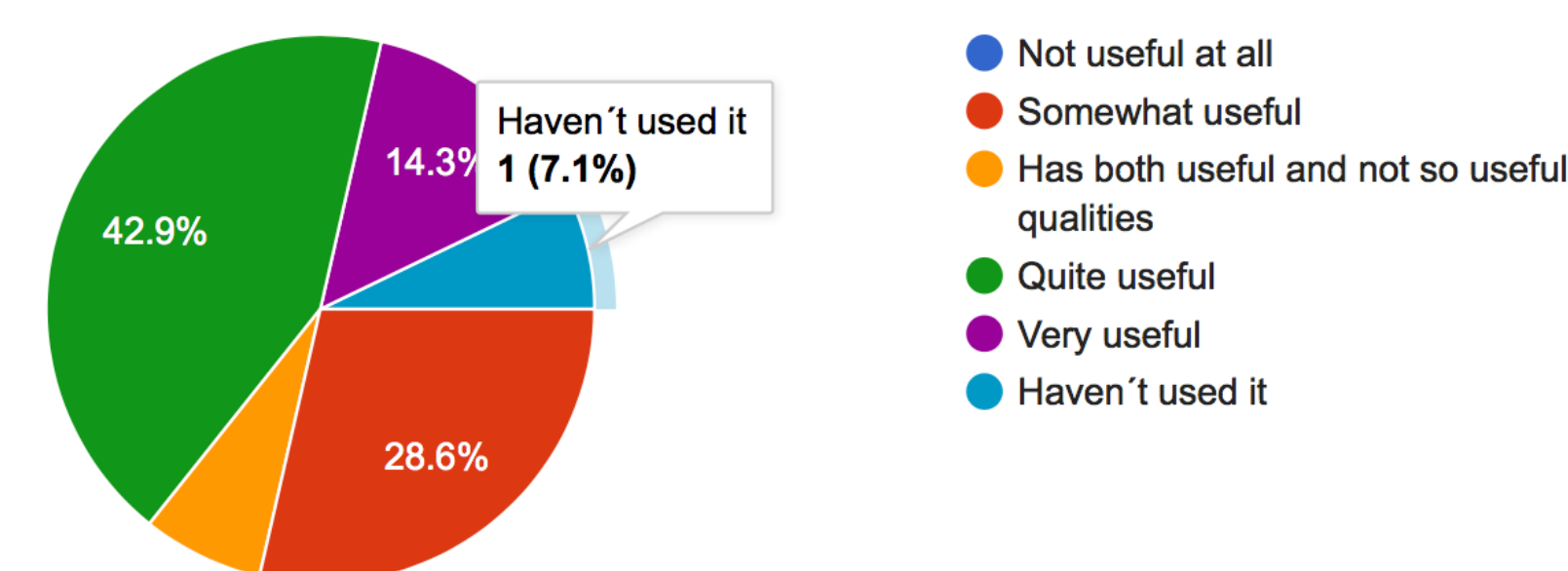


Figure 2: User satisfaction

Future Work

We are currently developing a variant of PBL Exchange called PBL Exchange/stud which is aimed at developing PBL competences among students

The PBL Exchange platform

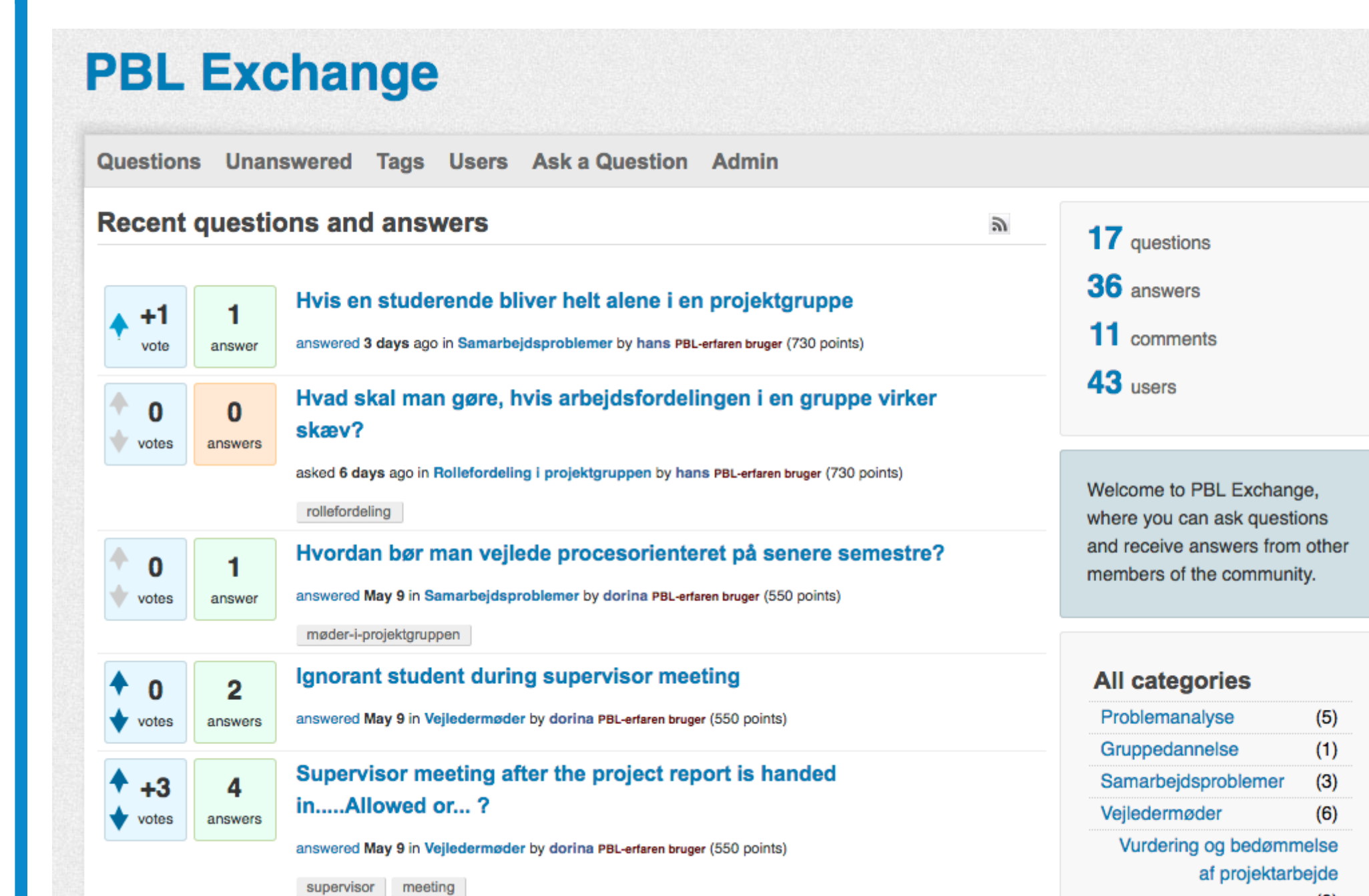


Figure 1: A screenshot of PBL Exchange

For the PBL Exchange platform we initially took outset in the Question2Answer platform; this is an open-source piece of software written in PHP and using a MySQL database. Question2Answer already supports quite a few of the features that we consider important. In particular, it is easy to support a categorization of questions. Users can tag their questions to provide a classification is or-

Conclusion

The work on developing PBL Exchange is continuing. Many of the software development issues have led us to create a new, restructured codebase which replaces the original Question2Answer codebase with a system written in Python under the Django framework.

At the level of applications to competence development, an important task is that of ensuring that PBL Exchange will be taken up by the teaching staff at Aalborg University and continue to be used. The ongoing challenge is now one of building a growing

thogonal to that of the pre-defined categories. Question2Answer also already supports gamification in the form of a reputation-based voting system similar to that of StackExchange. Questions and answers can be upvoted and downvoted, and users are then ranked wrt. their privileges according to how many points they receive.

However, Question2Answer turned out to have a codebase of poor modularity. Moreover, PBL Exchange must be able to interface with other systems related to teaching activities at Aalborg University. Here, the main platform is that of Moodle [1], and the common gateway to Moodle and to other web-based services is that of a single sign-on feature that enables a user to log on to several services through a common entry point.

We have therefore re-implemented a version of PBL Exchange using the Django framework. This allows us to incorporate a collection of new features, including multilingual support and mail notifications.

and stable community of users among the teaching staff at AAU.

A further development will be one of using PBL Exchange as a basis for similar fora at other higher education institutions that use forms of problem-based learning. In particular, there are now universities in several countries that take up forms of PBL similar to that used at Aalborg University; we believe that the PBL Exchange platform can be of particular value in settings where a new teaching practice is to be built from the ground up.

Contact Information

To learn more, contact Dorina Gnaur at dg@learning.aau.dk. And visit PBL Exchange at <http://pblexchange.aau.dk>.

at AAU. The codebase of the new system is based on that of PBL Exchange.

Problem solving and intercultural dynamics in a PBL context: Challenges and solutions



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Abstract

- Recent years has witnessed an increased internationalization of universities including AAU Copenhagen's study programs where 25% of the students are Non-Danish.
- This survey investigates if Danish and non-Danish students differ in their participation in the problem identification phase of group work.
- The study finds that non-Danish students face significant challenges in the forming phase primarily because they are less trained in 'out of the box-thinking', have less self-efficacy, are more concerned about speaking out, are more concerned about reputation effects.
- The student survey also indicates that group supervisors might be too task focused and that they need to pay more attention to group and intercultural dynamics.
- We propose several recommendations for students, supervisors and study boards, including among other things the need for identifying (or developing) appropriate pedagogical supervision. The supervision needs to focus explicitly on overcoming creativity constrains, limiting fear of speaking out, building up psychological safety etc.

Theoretical background

- From Organizational behavior we cover
 - Psychological safety
 - Implicit Voice theory
 - Self-efficacy
 - Cultural intelligence/strategies
 - Creativity
 - Personality
 - Power distance
 - Using the psychometric scales from this field, modified to PBL

Some results

	Danish vs non-Danish	Mean
Thinking out of the box.	Dan	1,39
	Non-Dan	3,01***
Easy accomplishing my goals	Dan	3,01**
	Non-Dan	2,76
Self-confidence in unexpected events.	Dan	3,37***
	Non-Dan	3,10
Fear of offending experienced PBL students	Dan	1,81
	Non-Dan	2,20**
Silence fearing bad reputation	Dan	1,86
	Non-Dan	2,49***

Methods

- Questionnaire (psychometric Likert scales 1-5)
- Open ended interviews with supervisors
- Open ended interviews with students
- Focus group interviews

	Number	Percentage
Participants total	169	233
Danish	78	46.4
Non-Danish	90	56.6
Response rate	NA	22-25
Female	83	49.6
Male	85	50.6

- Only the most important background information is presented.

Some results (continue)

	Danish vs non-Danish	Mean
Students from MORE hierarchical countries tend not to be active	Dan	3,00***
	Non-Dan	2,43
Supervisors should decide	Da	1,44
	Non-Dan	1,95***
Psychological safety	Dan	1,60
	Non-Dan	1,92**
Cultural intelligence Enjoy cultural diversity	Dan	3,18
	Non-Dan	3,82***
Awareness of cult. difference in problem-solving	Dan	2,88
	Non-Dan	3,38**
To diverse groups.	Dan	1,81
	Non-Dan	2,28**

Study programs

Program	Number	Percentage
GRS	30	17.9
GDS	12	7.1
IS	2	1.2
MEDIA	3	1.8
OIM/GM	25	14.9
OIM/MM	26	15.5
OME	21	12.5
TOURISM	43	25.6
NONE	6	3.6

Satisfaction w Study	Number	Means
Danes	71	3.76
Non-danes	87	4.13

Conclusions

- Significant differences between Danish and Non-Danish students across almost all meta-dimensions
- Need to take action for supervisors
- E.g.need to design exercises related to intercultural awareness, psychological safety, easing speaking out
- Study board should make intercultural challenges mandatory in coordination meetings and evaluations
- Program coordinator should ensure cultural training of supervisors
- Pedagogical courses should be better integrated in our teaching/supervision courses

FLIPPED PBL CURRICULUM

Projektets mål: Designe og afprøve PBL-praksisser, der radikalt omtænker relationerne mellem kurser og projektarbejde og integrerer nye IKT-kompetencer

Metode: 4 cases hvor PBL læringsdesignet blev omtænkt pædagogisk og ressourcemæssigt. Design, implementering og evaluering.

Case 1: Kommunikation og digitale medier, BA, 5. semester (Thomas Ryberg, Ulla Konnerup)

Modul 1, 5. Semester på uddannelsen Kommunikation og Digitale medier er rammesat til 6 uger, 10 ECTS med det overordnede tema "Kommunikationsdesign: læring, netværk og organisation". Semestret har 70-80 studerende. Modulet afsluttes med mundtlig eksamen på baggrund af projektrapport.

Case 2: Elektroniske Systemer, BSc, 1. semester (Jens Myrup)

På elektroniske systemer tages der udgangspunkt i 1. semester af kandidatuddannelsen "Networks and Distributed Systems". Semestret er i dag traditionelt opbygget med 15 ECTS projekt og 3x5 ECTS kursusblokke, men i forbindelse med forsøget integreres projektet og den kursusblok, der er fagligt tættest på projektenheden. Casen omfatter således 20 ECTS.

Generelt:

- **God studentertilfredshed med initiativerne, samt godt fagligt udbytte.**

Centrale indsigter:

- **Flipped Engagement:**
 - Model bygger på høj grad af studenteraktivitet og medbestemmelse. Kræver studerende tager ansvar. Det var en *udfordring*, der krævede ekstra pædagogisk indsats.
- **Flipped Visibility:**
 - Forbedelsestungt og meget krævende it-kompetencemæssigt. *Udfordring* at de studerende har svært ved at se undervisners indsats.
- **Flipped Responsibilities:**
 - Kræver stor koordination på tværs. Fra 'lone wolf' til underviserteams. Krævende at implementere i eksisterende 'snævre rammer'.
- **Struktureret frihed som pædagogik:**
 - For at sikre højt studenterengagement var der brug for mere tydelig kommunikation af rammer, forventninger og opgaver. *Udfordring* eller *modsætning* at skabe medbestemmelse og aktivitet gennem mere struktur.

Evalueringsteam: Lykke Brogaard Bertel, Anette Kolmos (institut for planlægning), Mia Thyrrer Sørensen (institut for kommunikation & psykologi)

I forbindelse med evalueringen er der blevet foretaget fokusgruppeinterview med studerende, der har deltaget i de forskellige re-designede kurser og kurssets undervisere er også blevet interviewet.

Case 3: Arkitektur & Design, BSc, 4. semester, arkitektur/urban design (Nicolai Steinø)

Semesterforløbet i arkitektur/urban har ca. 80 studerende og udfoldes gennem (a) et projektmodul (15 ECTS), (b) et kursusmodul i parametriske design (5 ECTS), (c) et kursusmodul i teori, samfund og arkitektur (5 ECTS), samt (d) et kursusmodul i urbane teknologier (5 ECTS). Et kursusmodul (b) indeholder en matematikdel (50%) der er fælles med et kursusmodul for et parallelt BSc4-forløb i industrielt design.

Case 4: Multifunktionel it viden, BSc HA 2. semester, 5 ECTS (Henrik Find Fladkær, Kathrin Otrell-Cass)

Semesterforløbet omfatter ca. 330 ordinære HA og meritstuderende, samt ca. 110 internationale HA og meritstuderende. I første omgang vil fokus være på de danske studerende. It omfatter pt. 5 ECTS, som integreres med to yderligere 5 ECTS fag - Videnskabelig metode og grundlæggende erhvervsøkonomi - der sammen udprøves i et 5 ECTS projekt.

Project team: Thomas Ryberg, Ulla Konnerup, Mia Thyrrer Sørensen, Jens Myrup Pedersen, Nicolai Steinø, Henrik Find Fladkær, Kathrin Otrell-Cass, Anette Kolmos og Lykke Brogaard Bertel



UDVIKLING & VEJLEDNING AF GRUPPEARBEJDE PÅ AAU



” Man kunne måske foreslå, at folk kunne komme ned til studievejledning og få hjælp til at udarbejde de her ting sammen i gruppen, inden at selve arbejdet for alvor går i gang og der eventuelt opstår konflikter. Det behøver ikke at være obligatorisk, men mere et tilbud til grupperne.

AAU studerende om forbedringsmuligheder

”

Jeg tror faktisk ikke vi har haft sådan noget som konflikt-håndtering, og det kan man sige, det burde måske være en del af undervisning helt fra starten af. Vi arbejder jo kun i grupper på Aalborg Universitet, så er det også ret vigtigt at alle i gruppen ved, hvordan man skal løse problemer, for selvfølgelig vil der opstå problemer i et gruppearbejde, det er nærmest uundgåeligt, men det handler jo om, at kunne løse dem på en god måde, også komme videre og lave et godt fælles projekt.

AAU studerende om forbedringsmuligheder

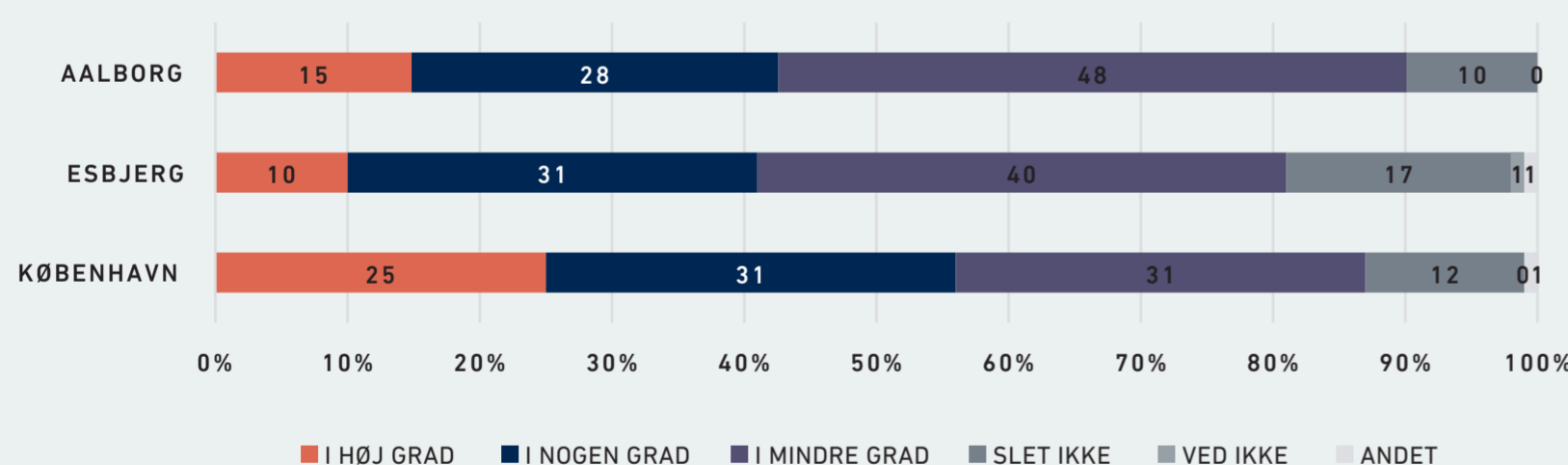
Introduktion

Projektets formål har været at undersøge, hvorvidt udfordringer med AAU's PBL-model, herunder arbejdet i grupper, kan have betydning for frafald på bachelor og- kandidatuddannelserne på Aalborg Universitet.

Metode

Denne problemstilling undersøges gennem en spørgeskemaundersøgelse samt interviews og fokus-gruppeinterviews med studerende fra henholdsvis campus Aalborg, Esbjerg og København. AAU's PBL-model, herunder arbejdet i grupper, kan have betydning for frafald på bachelor og- kandidatuddannelserne på Aalborg Universitet.

I hvilken grad har du oplevet gruppearbejde som konfliktfyldt?



”

Der bør være mulighed for individuel sparring hvis man som den eneste har det svært i en gruppe (...) Der bør konsekvent sættes tid af i vejledningerne til at tale gruppeproces (...) Særligt senere i forløbet. Dertil kunne man, udover at opfordre til at formulere gruppe- og samarbejdsregler i starten, også opfordre til at gruppen bruger tid på at tale gruppedynamik en gang ugentligt. Det burde på en eller anden måde være et krav.

AAU studerende om forbedringsmuligheder



”

(...) det kunne være godt med helt konkrete redskaber for eksempel, hvordan den her samarbejdsaftale den skal laves eller se ud. Sådan helt fysisk få vist hvordan den skal sættes op. Jeg har tænkt at der ligesom mangler de her konkrete redskaber.

AAU studerende om forbedringsmuligheder



Vigtige karakteristika for gruppearbejde I

Overordnet set på de tre campusser fra Aalborg Universitet, er det centralt, at de studerende finder nedstående karakteristika særlige vigtige for deres gruppearbejde:

- Faglige sparringsmuligheder
- Plads til konstruktiv kritik
- At der overholdes aftaler
- At der er samme ambitionsniveau i gruppen

Vigtige karakteristika for gruppearbejde II

De studerende efterspørger i høj grad mere undervisning og praksis erfaring med blandt andet:

- Forventningsafstemningsaftaler/ kontrakter
- Tidsplanlægningskemaer
- Konflikt håndteringsredskaber
- Mulighed for individuel sparring

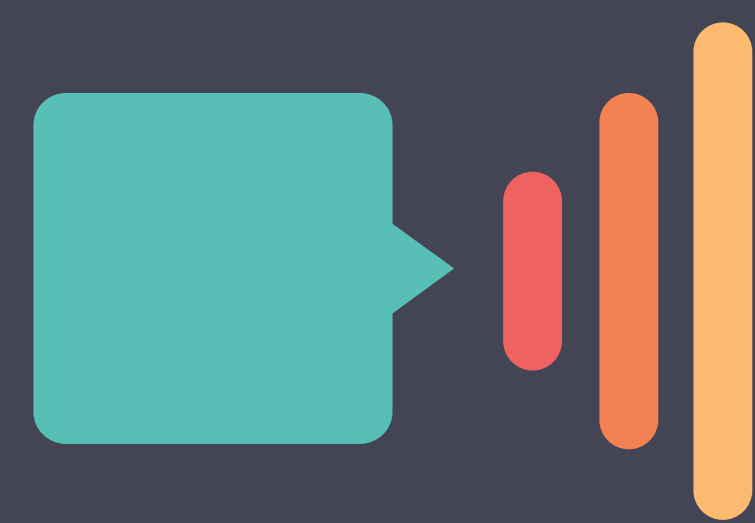
Udfordringer i gruppearbejdet

Indgår disse faktorer ikke i gruppearbejdet oplever de studerende i højere grad konflikter og udfordringer i gruppearbejdet. De studerende beretter, at de oftest støder på udfordringer med:

- Dårlig kommunikation
- Forskellige forventninger til gruppearbejdet
- Forskel i det faglige niveau
- Manglende overholdelse af aftaler

Kontakt:

FÆLLES ANNOTERING SOM LÆRINGSRESSOURCE I PBL

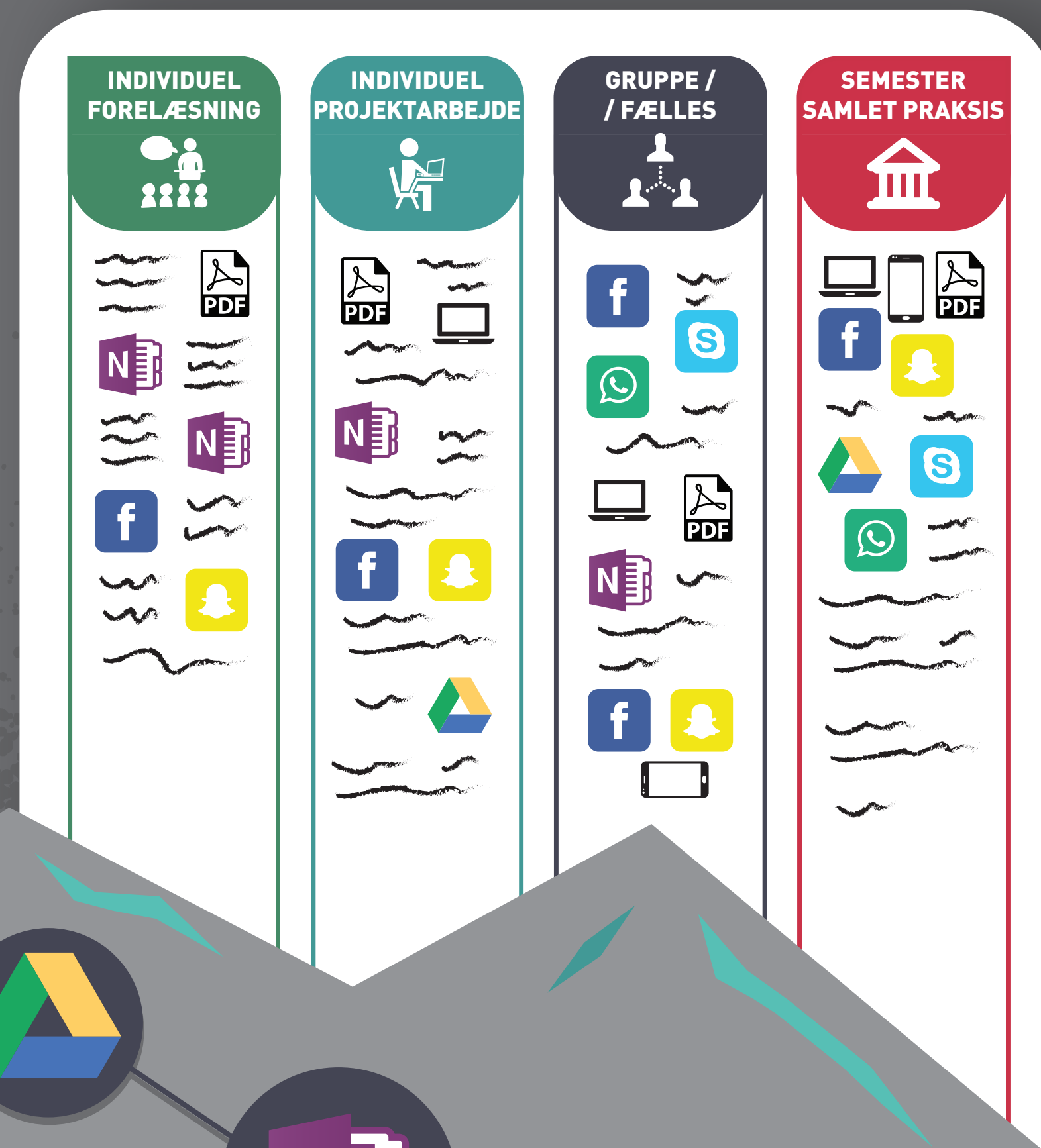


UNDERSØGELSE

I dette PBL udviklingsprojekt stilles der skarpt på 1., 3. og 5. semester studerende på Kommunikation og Digitale Medier og deres brug og implementering af fælles annoterings-værktøjer herunder *Hypothes.is*, *Mendeley* og *Zotero*. Projektet er opdelt i to undersøgelsesdesigns.

(1) deltagelse i 1. semester studerendes annotationer i forbindelse med opgaver knyttet til undervisningen. Dataen blev indsamlet gennem studerendes kommentarer og eventuelle diskussioner i teksterne online, samt en kvalitativ afrapportering fra 16 projektgruppers oplevelse med brugen af *Hypothes.is* og refleksion over egen læseproces.

(2) to workshops med studerende fra 3. og 5. semester med henblik på at skabe indblik i de studerendes vedligeholdelse og produktion af læringsmiljøer baseret på praksis med fælles annoterings-værktøjer. Dataen blev indsamlet gennem journey map opdelt i fire praksisser (illustreret til venstre).



samt bibeholde et fællestfagligt rum.

Vi skal også bruge hinanden socialt (ikke kun fagligt) da det (typisk) ville gøre et gruppearbejde nemmere, hvis de studerende rent faktisk kender hinanden lidt - dette er nemmest på de sociale medier vi kender i forvejen, så vi ikke skal lære et nyt (og kompliceret) medie (som dette 😊!!) at kende.



RESULTATER

1. semester

På baggrund af projektet konstateres det, at de studerende på 1. semester ikke i særlig grad benytter *Hypothes.is* i deres læsepraksis.

Det skyldes ifølge de studerende:

- (1) at *Hypothes.is* ikke afspejler de teknologier, de studerende er bekendte med i deres hverdag.
- (2) at *Hypothes.is* kan være besværligt for førstegangsbbrugere.
- (3) at de studerende mangler klarhed i forhold til programmets formål.

3. & 5 semester

Workshoppene med henholdsvis 3. og 5. semester viser en interessant progression i brugen af fælles annoterings-værktøjer, alt efter hvilken grad af samskabelse, som gør sig gældende i den aktuelle praksis.

I de individuelle praksisser opbygger de studerende en vidensbank i eget notesystem, oftest Word eller OneNote. Endvidere gives der udtryk for mangel på retning og formål i forhold til den opgivne litteratur

I de gruppeorienterede praksisser stiger anvendelsen af fælles annotering i form af deling af noter gennem *Google Drive*, *Facebook* og *Skype*.



hypothes.is

KONKLUSIONER

Resultaterne fra dette PBL udviklingsprojekt taler ind i et lignende fra Roskilde Universitet, 'Akademisk It-skoling', som viser, at de digitale værktøjer som anvendes af de studerende er hverken af avanceret karakter og benyttes ikke bevidst i et akademiske henseende.

Endvidere viser workshoppene med 3. og 5. semester, at de studerende gør brug af fælles annoterings-værktøjer alt efter hvilken grad af samskabelse, som gør sig gældende i den aktuelle praksis

Ansvar for medstuderendes læring er et essentielt punkt på de studerendes dagsorden, hvor gruppe- og projektarbejdet skaber retning i forhold til læsning og annotering.

Et muligt didaktisk design kan med rette, kan mønte sig på den Individuelle forelæsning med tanker og inspiration fra de forståelser, procedurer og engagementer, som gør sig gældende i gruppe- og projektorienterede praksisser - i denne praksis fremstår samhørighed, interaktion og målrettet læsning tilknyttet projektskrivning som det essentielle.

Muligt didaktisk design

Baseret på dette PBL udviklingsprojekts vidensudbytte kunne det muligvis være givende at justere den institutionelle ramme, således de studerende i begyndelsen af hvert semester bliver placeret i mindre læsegrupper. Dette med øje for at de studerende i gruppekonstellationer føler en vis forpligtelse og ansvar i forhold til deres medstuderendes læring.

En væsentlig pointe fra dette projekt er ydermere, at de studerende mangler retning i forhold til kursuslitteratur. I den forbindelse kunne det være interessant at invitere en garvet studerende ind fra de ældre semestre som assisterende mentor. Her kunne mentoren i samspil med forelæseren planlægge forskellige cases, der omfavner den pågældende litteratur, således der både skabes tydelig retning og formål for de studerendes læsning.

PBL Udviklingsprojekt

Visuelle Vidensdelingspraksisser som understøtter PBL

Show it
don't tell it

Udgangspunktet...

Igennem vores PBL udviklingsprojekt er undervisere fra forskellige fagområder blevet inviteret til at eksperimentere med, hvordan de kan inddrage visuel vidensdeling på nye måder. Vores intention har været at øge studieintensiteten og motivationen hos de studerende.

De visuelle metoder:

- 1) Skaber overblik ved at visualisere projektet fra start.
- 2) Aktiverer de studerende til indsigtskabende og analyserende dialog.
- 3) Giver fælles forståelse i teamet.



Udvikling og test af et visuelt læringskoncept

Skabe ejerskab – Skabe fokus – Sætte rammer – Giv overblik – Sikre ny indsigt

De visuelle metoder kræver af underviserne:

- 1) At de inddrager nye former for materialer, opstillinger, osv.
- 2) At de tænker visualisering aktivt ind som et værktøj ift fagets læringsmål.
- 3) At de er villige til at afprøve forskellige måder at skabe en faglig åbning af feltet.

Vi har oplevet, at PBL principperne er blevet styrket gennem tiltagene. De studerende arbejder mere teamorienteret ved at styrke deres vidensdeling. De arbejder mere problemorienteret, fordi de bliver støttet i at åbne deres problemforståelse. De styrker også deres projektoverblik ift ledelse m.m.

Resultatet...



Kontakt:

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Maj-Britt Quitzau, quitzau@plan.aau.dk



Center for Design, Innovation and Sustainable

LinkedIn

Følg os i vores gruppe:
Iscenesættende visuel vidensdeling:
<https://www.linkedin.com/groups/13581551>

Se video om projektet:



PBL, Internationalisation and Multicultural Group Work

Hanne Tange, Kirsten Jæger, Ane Bislev (Dept. of Culture and Global Studies)
Lone Krogh, Annie Aarup Jensen (Dept. of Learning and Philosophy)

Purpose

Strengthen students' and teachers' understanding of and ability to work in and with multicultural groups

Activities

- Survey on students' use of tools for planning, management and inclusion in project processes
- Development of prototypes of learning material / "leaflets"
- Evaluated by three multicultural student groups, interviewed during and after project writing
- Analysis of students' responses and evaluation of guides
- Conference on *Multicultural Groups and Problem Based Learning*, April 17th 2018 – presenting preliminary results, conclusions and recommendations

The project intends to

- Increase awareness of benefits and learning potential of working in multicultural groups
- Prevent frustration and unproductive tensions by making students and supervisors aware of potential challenges
- Provide concrete tools/instruments that can support multicultural group work

The project produced

- "Leaflets" encouraging reflection and discussion on
 - Group formation, Group Work, Group Roles, Global English, Diversity, Supervision.
- "Problem-based learning in multicultural group work – an introduction"

Conclusion and recommendations

Students value

- Autonomy, freedom, own decision-making
- Fluid roles, no clear role boundaries
- Flat structure
- Self-controlled identities
- Informality
- Sociality – programs should support social activities in order to help students build social relations

Recommendations

- Better 'scaffolding' of group formation;
- Introduce group management tools early in the program;
- Some management tools should probably be mandatory: code of conduct and clarification of expectations with supervisors;
- Group management tools that affect students' sense of autonomy, freedom, and identity should probably be voluntary and primarily used for group-internal purposes.

Further information on the project and access to the resources:

<http://www.en.cgs.aau.dk/research/academic-networks/c-inter/resources/>

PBL and IT - Improving Moodle for flipped classrooms to decrease drop-outs

Hendrik Knoche, Bianca Clavio Christensen, Jon Ram Bruun-Pedersen, Olga Timcenko, Lise B. Kofoed, Claus B. Madsen, Rikke Gade
Dept. of Architecture, Design and Media Technology

The goal of this project is to extend Moodle to help teachers better support their flipped classrooms and providing them with student learning data.

PROJECT OUTCOMES

HOW TO START FLIPPING A LESSON WITH MOODLE

- ☆ Integrated and evaluated new tools on AAU Moodle for flipped learning (e.g. Active Quiz).
- ☆ Communicated Moodle extensions in a project report¹ and on a course page on Moodle².

1. Find out what your students struggle with and plan how to flip that.
2. Plan study activities before, during and after class.
3. Use one Moodle activity to aid your flipped learning plan and test run it.
4. Collect student learning data and modify the activity content accordingly.

GROUP-ORIENTED / PROJECT-BASED ACTIVITIES

GAME SHOW NEW! ANALYSE - APPLY

What body part takes up the most graymatter in the brain?

Select one:

- a. yes ✓
- b. no

1. Face
2. Toes
3. Hand
4. Lips

Students answer questions alone or in groups

Summary of class responses can utilize class discussion

STUDENT GENERATED QUIZ NEW! CREATE - EVALUATE

The sky is blue?

Select one:

- a. yes ✓
- b. no

Your answer is correct.
The correct answer is: yes

Rate: ★★★★★

Add comment:

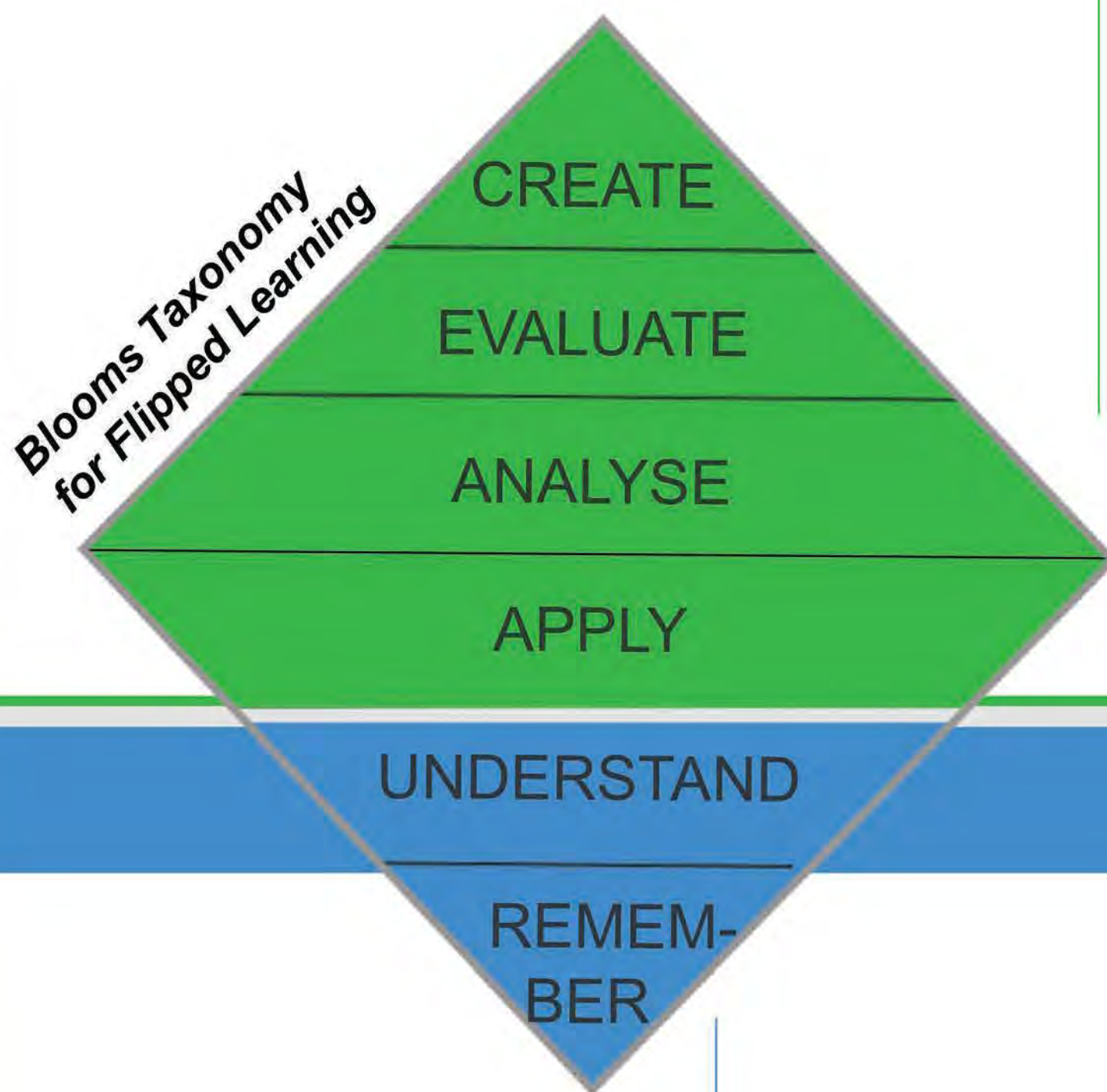
The question is irrelevant for the course

Student creation of quiz questions

Peer assessment

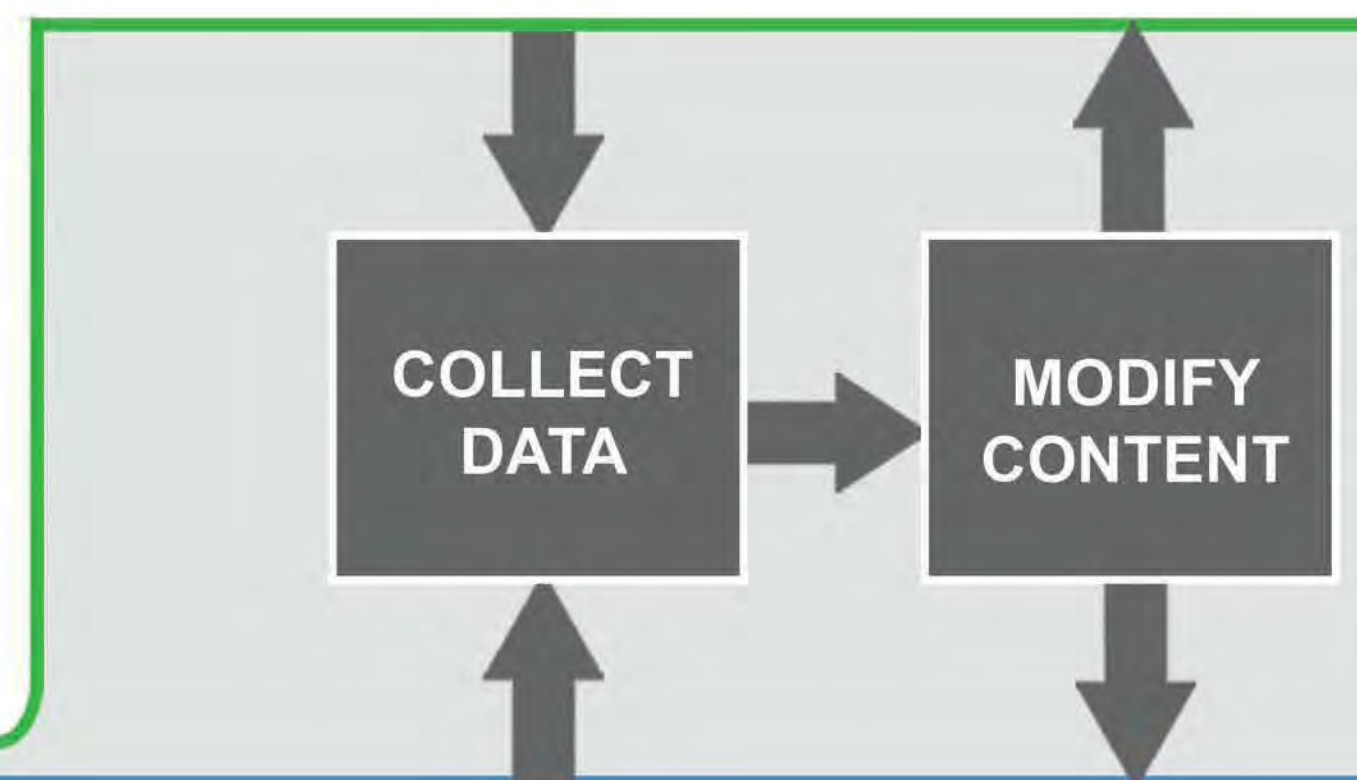
PEER REVIEW NEW! CREATE - EVALUATE

Facilitating student hand-ins and peer assessments



In class: The teacher facilitates class discussions about misunderstandings from the self-assessment quizzes and then helps with hands-on exercises or mini-projects.

After class: The students submit their mini-project and assess assignment with peers. The teacher use student scores on Moodle to identify struggling students³.



INDIVIDUAL ACTIVITIES

NON-INTERACTIVE RESOURCES

- Readings (e.g. books and articles)
- Slides
- Exercise sheet

INTERACTIVE VIDEO NEW! REMEMBER - UNDERSTAND

Fitts' law - explain

Thumbnail of teacher

Why do we have a logarithm in Fitts law equation? Due to:

- the exponential increase in size
- Fechners law indicates exponential sensitivity
- the exponential decrease in the error

Interactive content

or $1/I_M = 13 \text{ bits/sec}$

SELF-ASSESSMENT QUIZZES NEW! REMEMBER - UNDERSTAND

Given the declaration : char [] letters = {'V', 'T', 'O', 'R', 'P'}; What is the value of items[3]?

Select one:

- O
- P
- T
- V
- R ✓ Correct, the array starts at index zero, so we are actually looking for the fourth element.

Individual feedback on the submitted answer

Course statistics of quiz scores

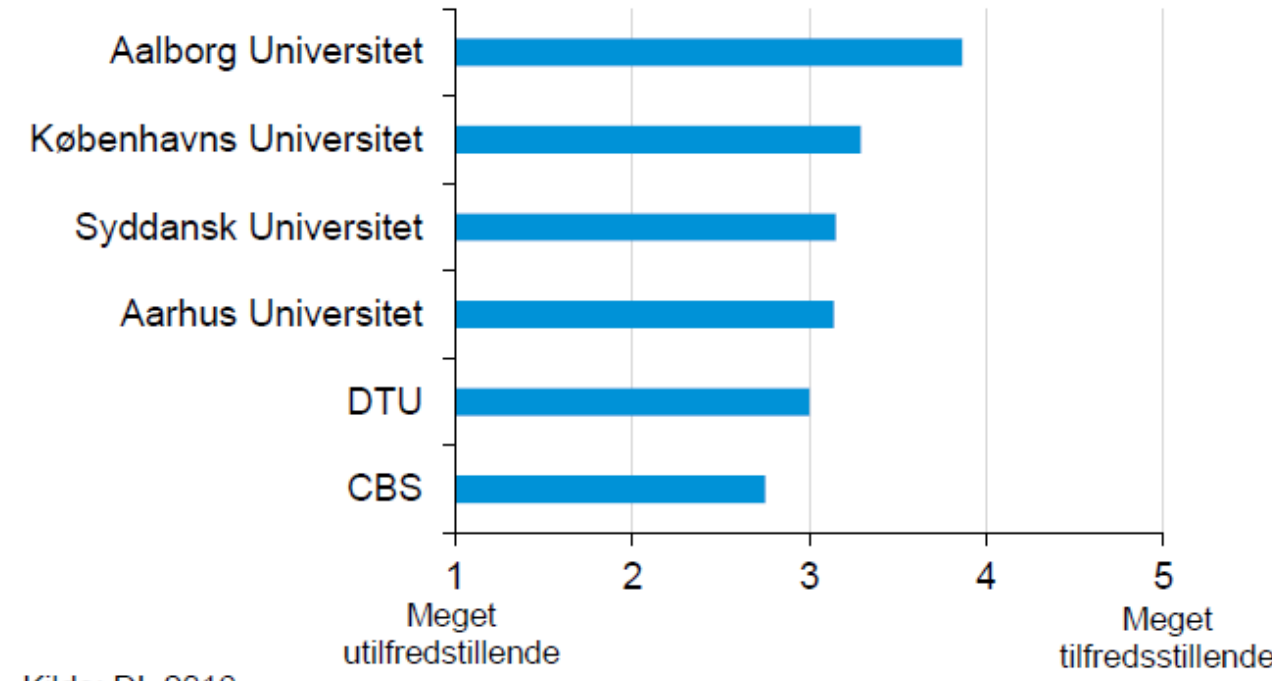
Before class: Students prepare for class watching videos and taking quizzes for self-assessment.

Projektarbejde som platform for vidensamskabelse – gensidig værdiskabelse og 'impact' i PBL (Project work as platform for co-creation – mutual value creation and 'impact' in PBL)

Thomas Duus Henriksen & Rikke Kristine Nielsen – Department of Communication and Psychology

Project Background

Virksomhedernes vurdering af samarbejde med de forskellige danske universiteter i forhold til indgåelse af samarbejdsaftaler

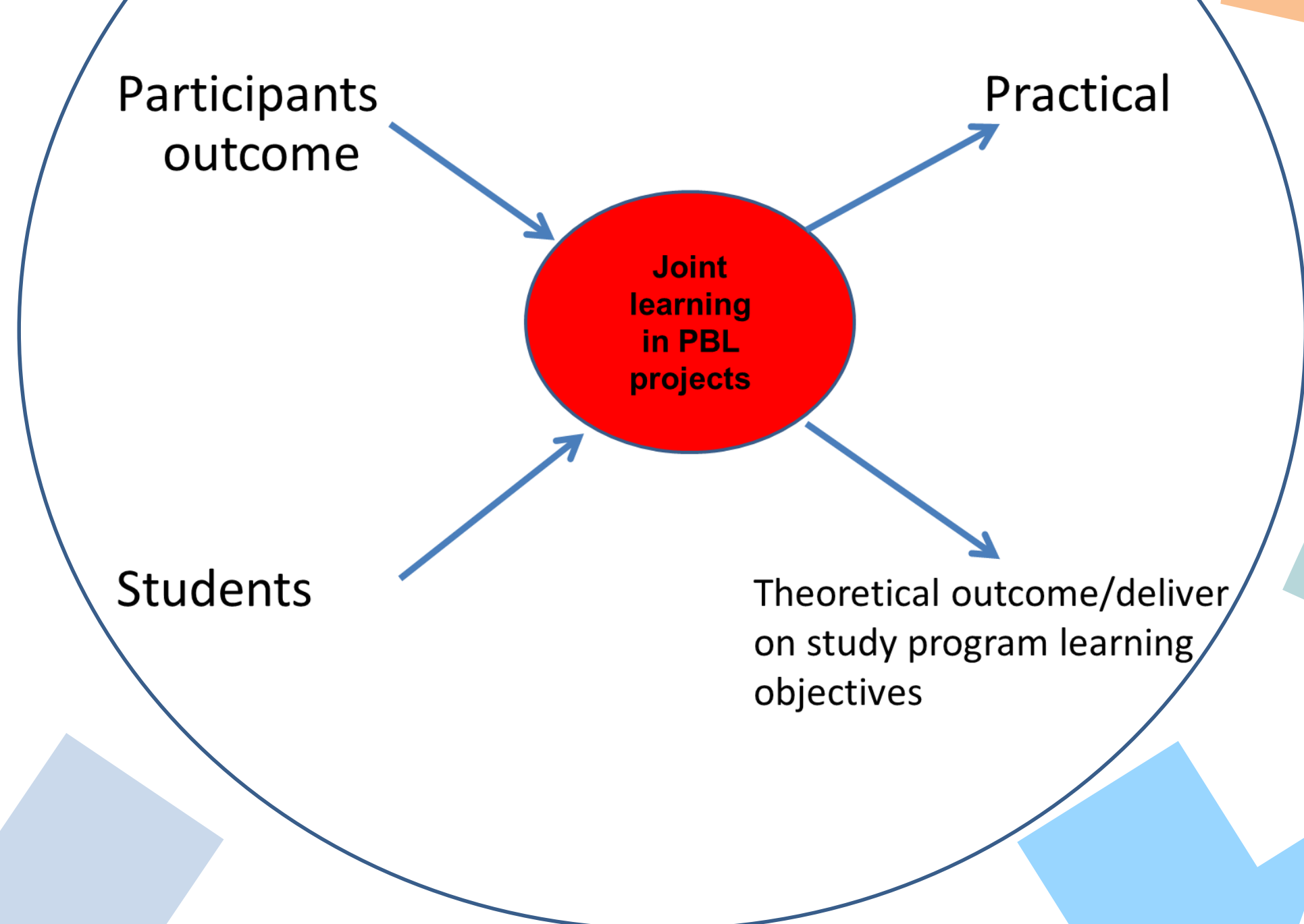


Kilde: DI, 2016.
Note: Vurderinger af RUC og IT-universitetet er ikke medtaget pga. for få besvarelser.

Project outline

- Developing the learning potential of the PBL-model by obtaining knowledge on how external partners in PBL projects experience the relationship with regards to knowledge co-creation and impact.
- 10 explorative interviews with project partners from PBL projects of Communication & Digital Media (6.-10. semester)
- Knowledge sharing with students following Spring 2017 project work.
- Knowledge sharing with supervisors: University Teaching Day 2018
- Survey of project hosts for PBL projects carried out Autumn 2017 and spring 2018 (7. and 8. semester).

Studying for mutual benefit



Potential outcomes of co-creative PBL

- **Addressing the demand for academic impact beyond the academy**
- **Delivering on the AAU strategy**
- **Addressing an underdeveloped part of PBL-practice**
- **Fostering 'return customers'**
 - organizations will come back for more based on positive experiences
 - doors will open for other PBL project groups...and researchers
 - students will become competent future PBL project host in their post-graduate careers
- **Building an impact talent pipeline:**
 - Students as impact drivers
 - Students as future researchers with an impact profile

Organizational motivations – getting to yes

Generic motivations:

- **"Back to school"-nostalgics:** "Great to be back in school"-segment reminiscing their own time as a student when working with students.
- **The faithful alumnus:** Alma mater-motivation
- **The peer professional corporate citizen:** Everyone of my profession is most welcome!
- **The pocket academic:** Interested and involved in research. Possible a guest lecturer, external assessor or supervisor on the side.

Symbolic motivations:

- **The talent manager:** Bonding with the employees of the future – employer branding
- **Corporate branding equity builder:** Symbolic value and CSR-thinking. Common responsibility for educating the workforce of tomorrow.

Relational motivations:

- **The friend of the family/networker:** "After all, it is Poul's daughter..." or "A good friend of mine asked if I could take this group on..."
- **The helpful colleague:** "Well, she is a student worker in our department, so..."

Content and engagement motivation:

- **The problem solver:** "This project hits a spot in the changes we are going through right now" – project content match.
- **The understaffed:** Extra hands, yes please.
- **The lone wolf:** The gate keeper is alone in a function and enjoys the opportunity to discuss with like-minded peers.

Follow us – coming up in 2018

- **Projektrapport/PBL Academy:** Summarizing results.
- **Workshopguide on mutual learning facilitation in PBL projects:** Plug and play-presentation of main results with script for conducting workshops on the issue with students, supervisors, project partner organization etc.
- **Open source questionnaire:** Explore co-creative learning in PBL projects in your study program by administering the survey.
- **PBL co-creation and impact seminar #2:** Open seminar on "Impact in PBL" project results with practitioner panelist, students and supervisors.

More from us:



Supervisor role

- Encouraging engagement – students AND companies?
- Match-making?
- Initiation of contact?
- Facilitation of collaborative process?
- Conflict resolution?
- Visiting?
- Dissemination?
- Provision of projects with host organization
- Role modelling?

Purpose

A range of masters programs at AAU admit students with many different backgrounds, further many of these programmes are interdisciplinary in some way. This poses a challenge of integration and gaining a shared profile and community between students of the study. Additionally this can lead to poor wellbeing and high dropout rate.

This study explores how a strengthened PBL-effort can improve the community of students and decrease dropout rates. This exploration is done by an analysis and a range of activities focused on addressing the problems. Techno-Anthropology is a interdisciplinary education and therefore the initiatives are focused on developing the students interdisciplinary competencies.

The interdisciplinary challenge at Techno-Anthropology is due to the many differences. Two campuses: Aalborg, Copenhagen. Many nationalities: Danish, Foreign. Teachers from different departments: Planning, Learning and Philosophy, Bioscience and chemistry, Healthcare, Energy. Students from different bachelors: Techno-Anthropology, tech and engineering, from studies drawing on ethnographic methods, Profession bachelor e.g. nurse, bioinformatics etc., Interdisciplinary BSc. e.g. Art and technology, communication and Digital Media etc.

Project overview

1. Literature Review
2. Analysis of project reports
3. Workshops with students and faculty members
4. Catalogue of ideas
5. Implementation of selected ideas
6. Next steps

1. Literature review

Three blocks of keywords were used:

- 1) "university teaching", made up of "university", "teaching", and "academic"
- 2) "PBL", made up of "problem-based", "learning", and "PBL", and
- 3) "interdisciplinary and transdisciplinary", made up of both words and "interdisciplin*" and "transdisciplin*"

Ten central papers were identified. From the papers on was found especially interesting as a theoretical framework for working with interdisciplinarity in PBL. This was the paper "Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning" by Savin-Baden. She defines "Transdisciplinary threshold concepts [...] as: concepts which transcends disciplines and subject boundaries but which are challenging and complex to understand, but once understood, the student experiences a transformed way of understanding" (Savin-Baden, 2016: 10).



Characteristics of Transdisciplinary Threshold Concepts: *Transformative*; change the way students view the discipline, *Troublesome*; pose a challenge, *Irreversible*; cannot be unlearn, *Integrative*; bring together different elements, *Bounded or Located*; delineate a particular conceptual space.

Savin-Baden identifies Four Transdisciplinary Threshold Concepts, which are required for an enhanced student engagement in a PBL context:

1. Liminality – Crossing into a new way of being,
2. Scaffolding – The way students are supported in learning,
3. Pedagogical content knowledge – Dissemination of key conceptions of the domain,
4. Pedagogical stance – Ways of viewing one self as learner.

Threshold concepts are used in this study to considering and frame future initiatives and activities to enhance interdisciplinary competencies.

2. Analysis of Students' Reports

Number of reports: 26 project report from 2014 and 2016 were analysed.

Project groups: The project groups were in general mixed and populated with students with different backgrounds.

Theories and problems: In all of the reports one or more of the six central Techno-Anthropological Theories were applied to problems often taken from areas related to the backgrounds of the students with a non-Techno-Anthropological background.

Methods: The applied methods were those taught at the bachelor program of Techno-Anthropology: Interviews, observations, workshops and literature reviews. The reports did not draw parallels to other cases studies.

At the Aalborg campus most of the problem statements were two-part, one being an explorative question of what or how something is, and the latter part being about in what way this knowledge can be mobilized to create a solution: "Why do people miss their appointments at the AUH and can we, with this knowledge, contribute to a solution to the problem?"

The problem statements of the Copenhagen campus reports contain "how" questions that aims at portraying existing and imagined relationships between group(s) and technology: "How do different institutions conceptualize drones, and how do they imagine the potential for drone technology?"

3. Workshops with students and faculty members

The workshops with students and faculty member were focused on defining current challenges and positive activities, then generating new ideas and lastly rating the most important. The activities of the workshops were:

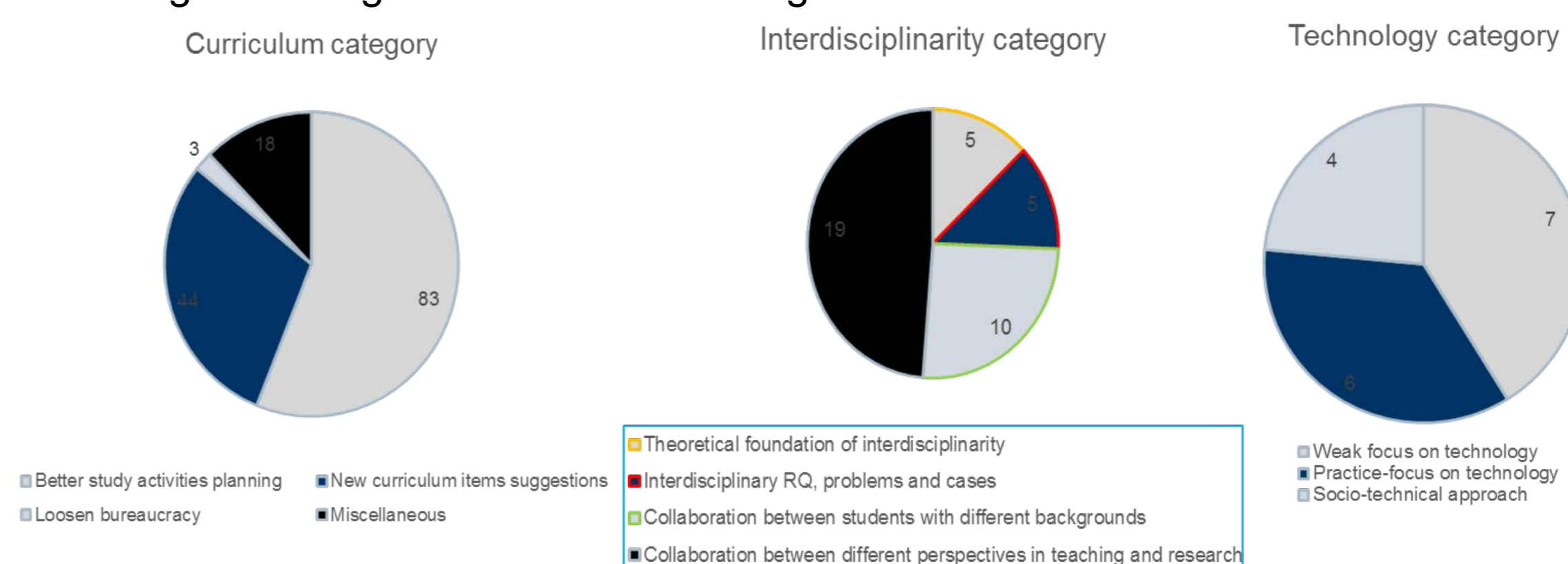
- Discussion of what interdisciplinarity is
- Evaluation of current activities: Positive (Green) and challenges(Orange)
- Generate new ideas (Purple)
- Rate ideas (mark for most important)



Doing workshops on evaluation can be an alternative to more traditional forms of evaluation meetings where students and faculty can discuss the challenges and opportunities for development of a study program.

4. Catalogue of ideas

A total of 226 ideas were generated in the workshops, and broadly divided into the following five categories and 11 sub-categories:



Additionally, a **Professional activities category (12 entries)** and a **Miscellaneous category (10 entries)** were identified without any subcategories.

During the workshops, some ideas were seen as having more practical weight than others and were labelled with a [challenges] and [positive ideas] tags. As these ideas go across categories, the tags assist in identifying what kind of planning attention is required from which category and sub-category.

5. Implementation of selected ideas

During the course of the 2017 autumn semester, the project owners implemented the following ideas:

poster presentation, film discussions, food events, academic reading seminar, case analysis, P0 literature search, updated language, company visit. Briefly elaborating on some of these, we present a short description for:

Poster presentation: 42 students divided into 10 groups, where 3 groups are presenting their individual Bachelor projects simultaneously. Meanwhile the other 7 groups are encouraged to walk around and listen to the presentation. Goal: encouraging social bonds around previous academic achievements. Highlighting the interdisciplinary character of the Master's program.

Academic reading seminar: students work simultaneously on a brief academic excerpt in a shared document, where they focus on "activating words" and illuminating role in academic and scientific texts. Additionally, students are asked to present, debate and evolve their understanding of what makes up an academic text.

Company visit: hands-on experience with product and software developers in a Danish software biometrics company as a way to both test and promote techno-anthropological competences. Additionally, the visit served as a showcase for potential internship host.



iMotions Lead Product Specialist giving a demo on eye tracking and galvanic skin response software to Techno-Anthropology Master students

6. Next steps

The students generally appreciated the implemented ideas. The project owners tried to involve the students in the planning of ideas. However some students called for more teacher controlled planning of the implementation of ideas. This points to a central concern: to which extend should students be involved to the planning of teaching activities?

The students asked for additional scaffolding item. The offered scaffolding items -- socio-technical concept of technology and the PBL pixi -- were not used very much in the project reports. Rather than developing new scaffolding items, the project owners suggest to develop and improve the existing scaffolding items.

Not all teachers took ownership over the ideas generated during this project, because it takes time to implement educational changes. Initiatives that can root the ideas in the core group of teachers must be organized. It is proposed that the ideas generated in this project are further addressed at a yearly meeting for all faculty members, teacher's meetings at each campus every semester, semester planning meetings.