

PBL and Mixed-Background Groups on Master's Programmes

*Mie Engen, Mia Arp Fallov, Rune Hagel Skaarup Jensen, Julie Borup Jensen and Ole Ravn **

ABSTRACT

This article presents the main findings of an applied research project, which studied student experiences of the challenges and opportunities of Problem-Based Learning (PBL) in two master programmes (MPs) at Aalborg University (AAU) characterised by diverse student groups, who bring different educational backgrounds, skills and experiences to the table. Research shows that PBL holds a potential for integrating and promoting learning outcomes for diverse student population, but also that heterogeneity can have negative influence on group dynamics and collaboration central in PBL, but how students experience this is under-researched. The investigation shows that diversity in terms of age differences and varieties in educational backgrounds are experienced both as challenges in teaching situations, but also as an opportunity to increase student learning over time. The study concludes with recommendations for practical alterations of the introduction to and conditions for the PBL model.

CHALLENGES TO HIGHER EDUCATION PROGRAMMES

In the 2000s, and especially in the wake of the financial and economic crisis that began in 2008, intake of students to higher education underwent a virtual explosion, educational attainment being seen as an important pre-requisite for economic growth (Caspersen and Hovdhaugen, 2014; Arvanitakis, 2014, p. 737). The resultant high and, often, growing

* Mie Engen, Department of Sociology and Social Work, Aalborg University
Email: engen@socsci.aau.dk
Mia Arp Fallov, Department of Sociology and Social Work, Aalborg University
Email: fallov@socsci.aau.dk
Rune Hagel Skaarup Jensen, Department of Learning and Philosophy, Aalborg University
Email: rune@learning.aau.dk
Julie Borup Jensen, Department of Learning and Philosophy, Aalborg University
Email: jbjen@learning.aau.dk
Ole Ravn, Department of Learning and Philosophy, Aalborg University
Email: orc@learning.aau.dk

student numbers make for groups with widely varying pre-requisites for academic work and for decoding the academic environment (Stafseng, 2009; Dale, 2009, p. 474). Student populations are now more diverse in terms of both ethnic, cultural, language, age, social class, gender and prior educational training backgrounds, which makes it important to understand challenges and opportunities connected to student heterogeneity and diverse learning environments (Singaram et al., 2010). Diversity, however, is an elastic concept, since it refers to a range of human differences in characteristics, qualities and conditions, for example observable differences such as physical function, age, ethnicity, gender and race, but also not directly observable differences in values, socioeconomic status, education, skills and knowledge (Singaram et al., 2010, p. 298; Dan and Mino, 2016, p. 39). Furthermore, these differences are not mutually exclusive, but are often combined and associated with each other, e.g. race may be associated with socioeconomic status.

In the context of higher education, collaborative approaches such as problem-based learning (PBL) have presented themselves as an opportunity to enhance learning among diverse students (Ellis and Gabriel, 2010). Looking closer at PBL, there is not one single definition or understanding of the concept. However, there is some agreement that common principles are that student learning and curricula should be organised around problems rather than disciplines, and that collaboration in small groups facilitates social as well as academic learning and thus prepares the students for handling complex problems in real life (Li, 2013, p. 178). Research has emphasised the model's problem-oriented approach, the focus on integrating and combining different academic disciplines and on collaborative learning in groups as holding a potential, when it comes to integrating and creating learning outcomes in diverse student populations (Singaram et al., 2010; Busse and Krause 2015).

However, in the research literature on PBL there has been much debate about the effects of student heterogeneity on small group work in project- and problem-based learning (Cheng et al., 2008, p. 205). Significant work has been done on understanding how different factors such as gender, age, ethnicity, intellectual abilities, educational experience, study strategies, study hours and socioeconomic background influence the interplay between group members, their learning processes and the overall learning outcome (Khan and Sobani, 2012, p. 123). Studies have shown that student heterogeneity and diversity have positive effects on small group learning outcomes. It is highlighted that group inhomogeneity brings diverse perspectives to the discussion, which enhances learning, and that students working in heterogeneous groupings learn from their differences and thus becomes better prepared for their future professions in diverse and complex societies (LaPrairie, 2009; Khan and Sobani, 2012; McLean et al., 2006; Mills et al., 2007; Singaram et al., 2008; Sinagram et al., 2010). However, there are also studies, which point in other directions. For example, Cheng et al. (2008) found that group

heterogeneity was not a determinant factor in students' learning efficacy. Instead the quality of group processes had a fundamental role to play in student learning. Also, a study by Robinson (2016) has showed how inter-generational issues create positions of power in the group that is detrimental to deep exploratory learning – an important principle of PBL. Other studies point to the fact that “collaborative heterogeneous learning has two sides that need to be balanced. On the positive end we have the ‘ideology’ behind mixing diverse students and on the negative the ‘practice’ behind mixing students” (Sinagram et al., 2010, p. 297). The conclusion here is that simply placing students in heterogeneous groups without any support in how to handle differences in e.g. language, academic preparedness and perceived status factors is unconstructive and ineffective (Sinagram et al., 2010).

Thus, to sum up, research results on PBL and student diversity are inconsistent, and furthermore it is less clear in the literature, how students experience PBL in student populations that are diverse when it comes to educational background and professional experience – not only in connection with project work in small groups but also more broadly in an PBL-oriented educational practice.

This article presents the findings of an applied research project that studied how students experience the challenges and opportunities of working with PBL in mixed-background MP in order to identify ways of resolving issues related to this type of diversity, that is – students who are diverse when it comes to professional and educational backgrounds and experience. Using an inductive, qualitative approach and by making use of focus group interviews we have explored the following research questions in depth:

- How do students experience the challenges and opportunities of PBL in mixed-background MPs?
- What suggestions do the students have for solving the challenges, they experience (if any), and how to make improvements to the introduction and conditions of the PBL model as it relates to student diversity?

METHODOLOGY AND EMPIRICAL MATERIAL

As outlined above, the aim of the study was to shed light on students' experiences of the challenges and opportunities of PBL in mixed-background MPs. We chose to conduct focus group interviews with graduate students on their 1st semester of two MPs based at Aalborg University: The MA in Social Work (social sciences) and the MA in Learning and Change Processes (humanities). The choice is based on the fact that the graduate students enrolled in the two MPs vary widely in backgrounds, skills, bachelor degrees, age and professional experience, which will be elaborated below. Furthermore, both MPs

have attempted to promote and develop different approaches to PBL on the introductory semester. This is in line with the overall strategy of AAU, which has had a strong focus on PBL since its beginning in 1974. The pedagogical linchpin of PBL at AAU is self-governed group work organized around a problem-based project and supported by a supervisor. A key principle of the model is that students learn best when applying theory and research-based knowledge in their work by studying and possibly solving an authentic problem – a problem that has societal and practical relevance (AAU, 2016). The problem-based focus requires of students to combine a variety of perspectives and knowledge (theories, methods, scientific disciplines, practices) in an interdisciplinary problem-solving learning process (AAU, 2016). Overall, this has traditionally been regarded as the basis for producing highly reflective, independent and competent students and bachelor's or master's graduates.

The two MPs prepare students for roles such as lecturing in higher education, training of social workers, nurses or educators, or in other training roles in the social professions or the voluntary sector, leadership, coordination, development and innovation work, consultancy and other cross-functional roles in development in the public or private sector (MA in Learning and Change Processes, 2018; MA in Social Work, 2018).

The students gain grounding in scientific theory and methodology enabling them to take on research, analysis, evaluation and development responsibilities in fields related to learning, education and social work (MA in Social Work, 2018a). Both programmes have a markedly interdisciplinary structure and strive both to integrate different disciplines and to build bridges between traditional academic theory and methods and skills directly relevant to a practice field (Ejrnæs, 1998, p. 38). The MPs are also similar in that the students are not being trained for a well-defined job market (as opposed to e.g. engineering, law or psychology students). They therefore – to a higher degree – need to define, build and formulate their own professional profiles and career options.

These complexities amount to a pedagogical challenge of developing an integrated discipline in which students can relate *both* to practice *and* apply scientific theory and method. The following section will identify and document in greater depth the types of diversity found among students on the MPs.¹

¹ The student data are acquired from AAU Economy and Statistics Department and analyzed by the authors of this article.

DIVERSITY IN MIXED-BACKGROUND MP GROUPS

The students enrolled in the MPs have widely varying educational backgrounds. To get a picture of the diversity in the students' educational and professional backgrounds and age, we are going to present the 2016 cohort as an example using quantitative data from both MPs. Figure 1 shows the composition of the students' bachelor degree types.

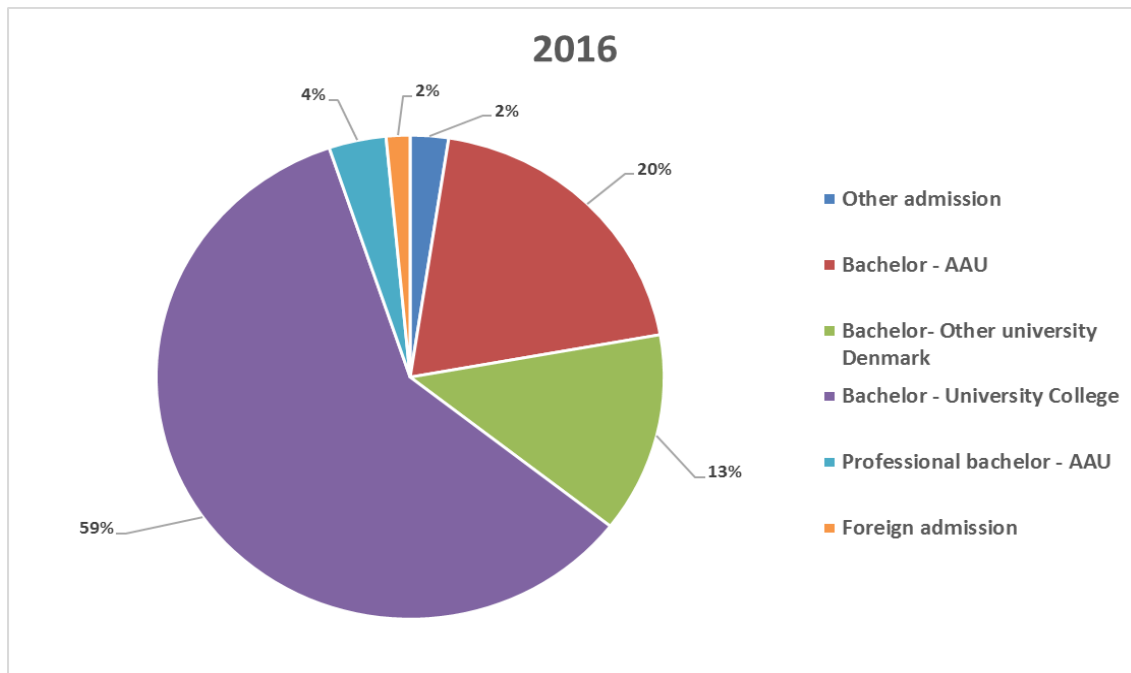


Figure 1: All students (N: 329) admitted to the MPs, broken down by bachelor degree type, 2016

As the chart shows, students with a professional bachelor degree from a University College by far make the largest group – 59 % of the students in 2016 had this type of degree. The second largest group of students (20 %) had an academic bachelor degree from AAU, and 13 % of the students in 2016 had an academic bachelor degree from another university. A minority of the students – 4 % – had a professional bachelor degree from AAU. Thus, a total of 24 % of the student had experience with PBL from AAU and the large majority of came from educational programmes that have not implemented a PBL approach. This means that the students bring with them different experiences of group work and PBL.

The differences in bachelor degree are reflected in diversity in professional experience, which is illustrated in table 1.

Table 1: Student backgrounds, SW and LCP 2016

Student background	Students, SW, in percent (n=160)	Students, LCP, in percent (n=169)
Social worker	37	2
Nurse	15	1
Nutrition and Health	-	14
Occupational therapist	5	-
Pedagogue	2	20
Public Administration	1	8
Prof. BA	2	6
Teacher	-	13
BA Social Science	16	11
BA Humanities	16	21
BA Other ²	3	2
Unknown	3	2
Total	100	100

Table 2: Student backgrounds, SW and LCP 2016

Table 1 shows that most of the students from MA in SW are trained social workers: 37 % in 2016. The next largest group – 35 % – has a bachelor’s degree in social science, the humanities or another academic bachelor. There is also a relatively large group – 15 % – with nursing training, while 10 % are trained as occupational therapists, pedagogues, in public administration or other types of professional bachelors. In the LCP MP the largest group of students also has a bachelor in the humanities, social sciences or another academic bachelor (34 %). The second largest group has a professional background as pedagogues (20 %). A relatively large group of students has a professional background in nutrition and health (14 %), as teachers (13 %) or in public administration (8 %). Put together 64 % of the students in the LCP MP have a professional background, rather than a strictly academic. This is the case for 62 % of the students in the MP in SW. This obviously means that a large number of students have work experience from different professions, and may have been away from academia for several years. This also results in significant age variation among the students, which is illustrated in the figure 2 below.

² This category contains other bachelor’s degrees such as cross faculty degrees, for example, within health promotion or communication.

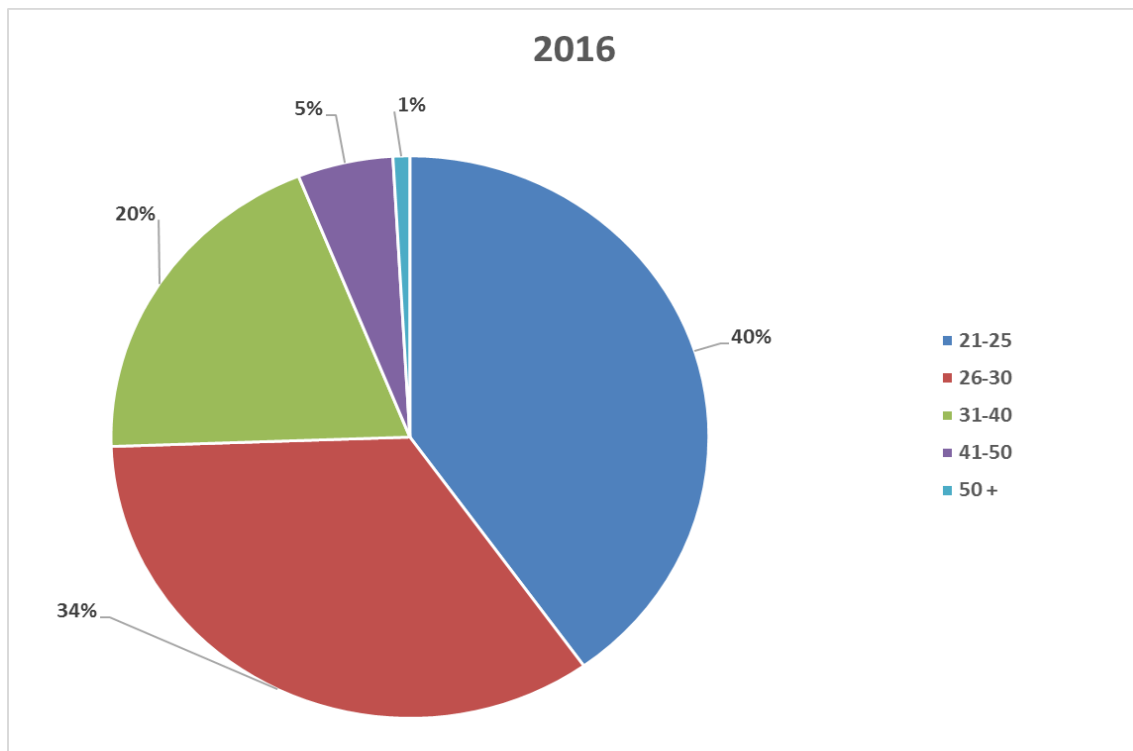


Figure 2: Age distribution among SW and LCP students in 2016

In 2016 40% of students in the MPs were aged 21-25, 34% were aged 26-30, 20% were aged 31-40, 5% were 41-50 years old and 1% were 50 years old or more. Although the youngest age group was the largest in 2016, about half (54%) of students were aged 26-40, while a not insignificant proportion - 6% - were aged 41 or older. The students thus exhibit a wide range of ages, with the student body divided into a large group of young students aged 21-25, an even larger group of 26-40-year old, and a smaller group aged 41 or more.

Looking at the gender distribution of the two MPs, a clear picture emerges of female students making up a large majority. Women thus accounted for 86% of the students in 2016 on the MP in SW, and 87% on the MA in LCP the same year. The MPs are thus relatively homogeneous as regards gender. This study did not include data on the students' ethnic backgrounds or socio-economic status, but we know from earlier research that these are important dimensions of diverse learning environments.

We can conclude that the typical student on the MPs is a woman in her thirties with a professional bachelor's degree, but overall the MPs are marked by a high degree of diversity, when it comes to age and professional and/or academic experience and knowledge. This also means that the students are in different stages of their life; they may or may not have families, children and/or a continued connection to the labour market,

while they are studying. Differences in life experience and life stages can strongly impact learning, as evidenced by e.g. Illeris (2005), and thus it becomes important to investigate, how the students experience the challenges and opportunities of PBL in mixed-background MPs, and how to make improvements to the PBL model as it relates to student diversity. In the following we will elaborate on how we selected informants for the focus group interviews, and how the interviews were conducted.

SELECTION OF INFORMANTS AND METHOD

As mentioned, we chose to conduct focus group interviews with students just after they had completed the 1st semester of the MPs. During this period, many of the students are introduced to PBL and work in project groups for the first time in their educational life, while others have much or some experience with PBL and group work.. Research has shown that student diversity may be perceived as a greater challenge in the short term when working with PBL in a new learning environment, but in the long term heterogeneous groups lead to comparable or better performance (Khan and Sobani, 2012, p. 124-125). Therefore, the introduction of PBL in the first semester is central, when it comes to creating a shared sense of academic affinity and for integrating the students into the MPs. Related to this, data from the MPs show that drop-out rates are highest in the first year, emphasizing the importance of the introduction phase for programme outcomes.

We conducted two focus group interviews: one with three LCP students and one with six SW students. The focus group interview form was chosen because it gives students the opportunity to support or debate each other's answers and reasoning (Launsø and Rieper, 2006). There is agreement in the methodological literature that the purpose of focus group interviews – contrary to individual interviews – is not to go into depth with individual answers, but to elicit dialogue and the participants' response to each other's statements and opinions (Justesen and Mik-Meyer, 2010, p. 79). It is a special trait of focus groups that the participants are encouraged make 'taken for granted'- norms and preconceptions explicit, because the participants will debate with each other and ask each other questions in the course of the interview (Justesen and Mik-Meyer, 2010, p.79).

This form of interview also highlights the role of the moderator. According to Lezaun (2007, p. 138), "the role of the moderator is thus to *provoke* preconceptions that would suit her research purposes". Lezaun (2007, p. 138) argues that informants will always try to act in accordance with what they think is expected of them in the interview-situation. This makes it important for the moderator to manage the informants' expectations "so as to generate nondirective outcomes that are conducive to the research" (Lezaun, 2007, p.

138). This reflection was particularly important in relation to our research process for two reasons, since the focus group interviews were conducted by two members of the research team, who are also supervisors – but not teachers – on the MPs. This may lead the students to be overly oriented towards what is expected of them, because they may perceive the moderators not as neutral, but as representatives of the MPs. The role expectations connected to being a student and a supervisor respectively, may contribute further to this. Thus, the moderators continually had this in mind by asking non-directive questions, but also questions that would invite the students talk about the more negative experiences of PBL and diversity in the MPs.

The informants were recruited by an email explaining the research focus and encouraging them to participate in the focus group. This resulted in a LCP focus group with three students: two with a professional background as a pedagogue and a physiotherapist respectively and one with a bachelor's degree in sport science, and a SW focus group with six students: two with a bachelor in sociology, two with a professional bachelor in social work and two with a professional background as a pedagogue and a nurse, respectively. Three of the nine students were men. We do not know how they are placed in the age spectra of the MPs. Thus, this group of students can be seen to represent the diversity in the MPs, even though they have not been selected, but have volunteered to participate on their own initiative. It is important to be aware, though, that this way of recruiting informants present a possible bias, although not one we have any certain knowledge of here, since it is likely to sample a certain type of students, e.g. students who are more engaged in their studies, and/or may be motivated by the opportunity to express experiences that are overly positive or negative compared to others students' experiences. In order to counteract this potential problem, we have chosen to include qualitative comments from the standardized student semester evaluation that is relevant for describing, how the students experience the challenges and opportunities of PBL in the mixed-background MPs.

The focus groups were semi-structured and an interview scheme was designed to explore, how the students experience both the introduction to and courses in PBL, the long-term process of project and group work in the first semester and the opportunities and challenges they had faced. The moderator introduced the purpose of the research project and of the focus group and informed the students that they would be fully anonymised in the final report, and that they were able to withdraw their consent at any time. The interviews lasted approx. 60 minutes each, and they were audio recorded and transcribed in their full length.

The analysis was made with an inductive, thematic approach. This means that the transcripts have been read and reread many times in order to identify patterns in the

students' experiences. By an inductive coding of the material 'staying close' to student narratives, four common themes of relevance to the research questions were identified

We will now look in greater depth at the students' perceptions and experiences of PBL and diversity and the challenges and opportunities of PBL in the first semester of the MPs.

STUDENT PERCEPTION OF STRENGTH AND CHALLENGES CONNECTED TO DIVERSITY AND PBL

In table 2 we have displayed the main themes found through analysis. In the following, each theme will be described and illustrated by student quotes.

Opportunities	Challenges
Development of collaborative skills	Differences in academic background and skills create unequal status and poor group dynamics
Difference as an offset for academic development	Diverse backgrounds and disciplines as a challenge to teaching
<p>Recommendations:</p> <p><i>Teachers should actively try to make students aware of difference and support the groups in handling diversity</i></p> <p><i>Teachers should facilitate group-formation</i></p>	

Table 2: Summary of main themes and recommendations³

Development of collaborative skills

The students emphasize that through project work in small groups they gain experience of collaboration and acquire skills of problem-solving with others that are important for their future professional life:

I think it's really great to have learnt to work together both in stressful situations and when you're hoping something goes well. And with something that you want to go well, something you want to be your own, but where you still have to reach agreement with others. There are really a lot of problems that you confront, when you are cooperating, and when you have done it for several semesters, you really

³ This table is inspired by Sinagram et al., 2010, p. 302

develop, I think! Then you are ready for managing yourself in 'real life'. (Student, LCP)

It is a common experience that the pressure of working together with others within a limited timeframe with the aim to produce an academic product – the project report – provides the individual student with possibilities of developing their personal and collaborative skills, and that these skills are developed through the course of the MP:

Looking at my first semester and until now, I'm much easier to collaborate with, because you've learned to 'take things in' and to work together. I'm happy that I've learned this now, when I have been confronted with the problems, instead of waiting until I enter a workplace. This is worth just as much as all the theories, I've learned. It's great! (Student, LCP)

In relation to this the students perceive diversity in the groups – that is differences in age and backgrounds – as a reflection of the diversity they will meet in the workplace, and as an opportunity to develop their collaborative skills further:

There's just a really wide variation in age and education – in everything, really! It's just very mixed. But even so, I think you manage to accept that there is that difference. So maybe I'm towards the rather younger end of the big group, but if I'm sitting and working with someone who's maybe 50, I actually think that's just great, because you do learn things that way. And you have to do that when you go out into the workplace. (Student, LCP)

The ability to 'accept difference' and work closely with people who are at a completely different stage in their lives, and who have different social experiences, is seen by the students as an important career skill for employment success later on. The advantage of the PBL approach here is that because it builds on the joint effort of group members to achieve a common outcome it has the potential to facilitate the interaction of different lifeworlds and learning strategies. Thus, these experiences point to the opportunity of PBL in mixed background MPs.

Difference as an offset for academic development

Students also emphasize the opportunities for academic development when working in groups with a diverse composition. They point out that in addition to learning how to collaborate, different approaches and ways of looking at issues also contributes to academic learning:

I'm thinking of the whole social and collaborative thing, but I think you get more academic development, too. I get the feeling that being allowed to debate and look at things from different angles, that's the advantage of a large group. The fact that there are many different angles you can take...there is also an academic development aspect to it, which I wouldn't have been able to get on my own.
(Student, LCP)

The fact that the students in the project groups do not only have different academic backgrounds, but also different professional experiences adds further to developing an authentic problem and creating interdisciplinary knowledge that has relevance for practice – the official purpose of the PBL-model:

Seen in relation to groups in sociology [bachelor education], where we...well, it was more academic. It was young people, maybe with less experience from the labour market, but nevertheless you had to relate to other people's ways of understanding the curriculum and different dynamics. But here [MA in SW] there is the advantage that you also get to know other professions' view on problems. I think, I have learnt very, very much from that. (Student, SW)

The students therefore highlight the possibility to get an inter-disciplinary perspective and join cross professional experiences in the solution to their self-identified practical problem. There is thus a potential to push reflection further than in a more homogenous setting, as presumptions and taken for granted knowledge that the students bring with them to the group interaction are challenged in a diverse MP. However, even though the students highlight the possibilities for learning, when working in groups with mixed backgrounds, they also experience challenges that can hinder group collaboration and learning processes. This will be the focus of the next section.

Differences in academic background and skills create unequal status and poor group dynamics

Intra-group diversity also gives students cause for concern. Student evaluation questionnaires from both MPs show that group work can be experienced as challenging and even stressful. There may be several reasons for this, but student evaluations show that the educational and professional diversity within the groups can be a source of pressure. Poor group dynamics and a lack of mutual understanding seem to be sparked off by differences in academic background, skills and orientation:

We are so different and the 'older' ones, who haven't studied for a long time, are REALLY an obstacle in the collaboration, because they want to write about practical issues, and in this programme we have to be theoretical. It would be nice,

if they had a course in how to write a project before they started. (evaluation, student, SW)

And:

I think it is reprehensible that you [the MP] cannot help or make a course for those, who haven't done analysis for maybe 10-15 years. You cannot teach them this, write a project and read the curriculum at the same time! (evaluation, student, SW)

In these cases, the perceived negative differences in skills between students with a traditional academic background and orientation and students with several years of experience from the profession, hinder group collaboration, integration and learning processes central to PBL. The students' statements also express a status hierarchy, where theory and academic skills are regarded as superior to practical and professional experience. Thus, students with an academic background sometimes find it challenging to collaborate with other students whose learning approach is less theoretically grounded. This can hinder learning, understanding and development of a shared language:

We spent around one and a half to two months learning to talk with each other. Learning to understand each other, saying a sentence and really understanding that sentence. It was absolutely awful! I have never experienced anything like it.

Moderator: *That's a long time...*

Student: *It was crazy! Then somebody enters, and they say something, and you think: I have never heard that word before! Yes, yes! And then they begin to explain it, and no, I still haven't heard that word before! (...) It was because we had three social workers and two with an academic bachelor in the group. The two of us, who had an academic bachelor, we often understood each other. And then there was the other three, who talked a lot about legal paragraphs, and they talked about social reality, where we were more like: yes, but we have to integrate this theoretically! On the one side it was very philosophical and more practical on the other side, and we didn't understand each other. These two different contexts. (Student, SW)*

The social work MA student here makes a clear distinction between the 'practical social workers' in the group, who talk about legal paragraphs and 'social reality' and the 'philosophical academics', who are able to reflect on a theoretical level. For some reason this hierarchy in what is regarded as legitimate knowledge is expressed more clearly by the students from the MA in Social Work than students from the MA in LCP. As we have illustrated, the proportion of students with a professional and academic background respectively, is almost similar at the two MPs (slightly more than 60 % have a

professional background), but there are differences in the professional profiles of the students enrolled in the two MPs. Compared to the MA in Social Work, where almost 40 % of the students are trained social workers, there are no social work professionals in the MA in LCP, where almost half (47 %) of the students have a professional background as e.g. pedagogues, teachers or in nutrition and health. These differences in professional profiles across the two MPs can contribute to explaining the difference in assessment of the qualities of more professionally experienced fellow students. For example, teachers are professionally trained in the context of the educational system and in acquiring and communicating new knowledge, which may enable them to adapt more aptly to the standards of the academic setting and acquire ‘a sense for the game’; an academic habitus (Bourdieu 1984). However, on the grounds of our empirical material, we are not able to cast a light on these differences *among* the students with professional profiles related to pre-requisites for decoding the academic environment, which would be an interesting subject for further research.

However, diversity is also related to differences in experience with AAU’s problem-based learning model:

...[W]e have very different levels of experience with PBL, you see. Some people have taken their BA here at Aalborg University and have done six PBL projects; there are others who have never ever worked the way people do at this university, because there are also people with professional bachelor’s degrees. (Student, LCP)

Writing problem-oriented projects in groups with diverse backgrounds and experience with professional or academic work can lead to poor group dynamics, status divisions and polarization, which hinders the establishment of a common academic identity and language. In addition to this, mixed backgrounds give rise to challenges in relation to course teaching.

Diverse backgrounds and disciplines as a challenge to teaching

Students may also see diversity in academic backgrounds as a challenge in lectures and seminars, because it makes it difficult for the teachers to assess the knowledge base of the individual student and target their teaching. In the lecture room there may be students, who have almost no knowledge of subject areas related to e.g. social work, but extensive knowledge about and experience with methodological aspects of academic work and vice versa. Thus, elements of teaching will be pure repetition for some students, while challenging others. A student describes diversity as an obstacle to more advanced study:

I think our diversity is a bit of a challenge in teaching situations, because there are so many of us, and we have no knowledge in common at all. So, this semester, there was quite a feeling that there was some kind of basic level that had to be covered. And there are some people who knew it all to start with and there are some, who didn't know anything at all to start with. So, it was very difficult in terms of teaching, I think, because we were so different... (Student, LCP)

According to the students, the teachers at the first semester often encourage the students to mix across educational backgrounds, when doing exercises in the teaching seminars. However, there are barriers to interaction that are not easily overcome by this teacher's request:

They often say: 'now, make groups, where you are not from the same profession!' But if they don't do more than that, then we don't do it. That's not my experience. No-one says: 'well! If I'm sitting together with four from my sociology-education [bachelor], then I will not go together with somebody else, if I can see that everybody just goes together with the ones, they are sitting next to [people with similar backgrounds]' (Students, SW)

Again this points to challenges in the students' experiences with PBL in mixed background MPs – in this case in teaching situations. Students tend to interact with students that are similar to themselves in terms of educational backgrounds, and this contributes to maintenance of the divisions between academic and professional bachelors and hinders integration of different perspectives and knowledge.

We can thus conclude that the students see great learning potential in PBL in mixed-background MPs, but they also experience challenges related to diversity in project work and teaching. In some cases, differences in academic and professional backgrounds produce divisions and poor group dynamics that hinder learning and creation of a common language and knowledgebase.

RECOMMENDATIONS

Teachers should actively try to make students aware of difference and support the groups in handling diversity

Teachers and supervisors in mixed-background MPs should be aware of these challenges connected to diversity and actively support the valuation of different forms of knowledge, perspectives and contributions to teaching and group project work - academic as well as

professional and practical. This is about presenting diversity as beneficial to students' learning and development of professional and collaborative skills and speaking explicitly about the strengths of diversity in a PBL context. It is also about supporting the groups in handling diversity by addressing power issues and conflicts among the students that create poor group dynamics and hinder learning (cf. Sinagram et al., 2010, p. 305). This can be a difficult task, and training supervisors in dealing with heterogeneous groups is essential. The study also indicates that MPs with diverse student backgrounds have to facilitate collective and individual reflection on learning strategies and learning styles. By making the students more aware of their own learning style, they can develop strategies for turning differences into synergies.

Teachers should facilitate group-formation

The students suggest that teachers spend time supporting and facilitating group formation and 'matchmaking'. The interviews show that working together with others within a limited timeframe with the aim to produce an academic product creates pressure, and the students welcome more time to get to know each other without this pressure:

I think it is a challenge that there is not more time in the course, before we write the project. You could put a bit more effort into throwing us into working more differently. You are placed in study groups from the start, and you work in them until the project groups are created. But there are so many people in the class that I haven't tried cooperating with, and I don't know their ways of thinking and what they are interested in. And in my eyes, much of project work is interest and passion for the subject, you are writing about. But a lot of it is also getting to know more about who you can cooperate really well with...where it's just working! (...)
(Student, SW)

A concrete suggestion is writing a small "test project", e.g. a project synopsis, in groups that are put together by the teachers, before forming groups and writing the PBL-project for the exam. This would support a higher degree of integration in the class and diversity in interaction experience.

CONCLUDING DISCUSSION

Student experiences relayed in this applied research project support the findings of Sinagram (2010) in that the students experience diverse backgrounds in the PBL setting as both an opportunity and a challenge. They experience that diverse backgrounds enable them to practice collaborative skills and that bringing together different lifeworlds and experiences can be a career improving competence. It is of course here important that the

MPs under study are both directed towards the interaction of academic knowledge and practical skills. Although collaboration across age and gender differences must be expected within most career paths, both of the MPs under scrutiny here point to career opportunities in more diverse environments, developing social work and further education and learning processes in often cross-sectoral settings. This is not simply a question of respect for the age or longer experience of fellow students, but how these experiences are put to work in the solution to the groups' self-articulated research questions. However, the students also indicate that overcoming status differences relating to differences in academic backgrounds or work experience require support from the professional learning environment.

In relation to this, a recent study shows that a large proportion of students from the MA in SW "feel uncertain about the academic expectations and whether they master the subject matter sufficiently", and that "perhaps their supervision is insufficient for responding to individual concerns when it is group based" (Monrad and Mølholt, 2017, p. 82). These experiences indicate that the students react to differences in academic experience and abilities to appropriate academic codes (Bernstein, 1996). In this study, these differences are most clearly expressed as a hierarchy between students, who think 'theoretically', and students, who are more 'practical' – a hierarchy that may also reflect perceived differences *between* students with different professional backgrounds, e.g. teachers and social workers, and their abilities to appropriate academic codes. This would, however, be a question for further study. Importantly, this study shows that these are challenges that are experienced in the lectures and seminars as well as in the group work settings. They relate how students are more likely to choose the easy way out and seek collaboration among fellow students that are more like themselves if the processes of group formation and collaboration are not probably facilitated. Differences in abilities to appropriate academic codes for learning is a common problem across further education settings whether or not they have adopted a PBL approach, but the findings above might indicate that the PBL setting have the potential to overcome such differences if managed in a way that explicitly takes on such challenges.

Working on a self-articulated research question is already a challenge for many students who struggle with the demands of supported self-managed learning in the PBL learning environment. Our study shows that course conveners and lecturers must highlight both potentials and challenges of differences in academic backgrounds and work experiences. By bringing the challenges out in the open as something that the students actively must position their own learning strategy in relation to will improve the chances of capitalizing on the diversity. This should be a constant facilitated reflective process and not something that starts and ends with the introduction to the PBL method at the beginning of the MPs.

This demands that resources are directed in MPs with diverse student background to facilitate these processes.

References

- AAU (2016). *Problembased Learning*. Aalborg University. <http://www.aau.dk/om-aau/aalborg-modellen-problembaseret-laering>. 25.03.2018
- Arvanitakis, J. (2014). Massification and the large lecture theatre: from panic to excitement. *Higher Education*, 6, 735-745. doi: 10.1007/s10734-013-9676-y
- Bernstein, B. (1996). *Pedagogy, symbolic control and identity*. London: Taylor and Francis.
- Bourdieu, P. (1984) *Homo Academicus*. California: Stanford University Press.
- Busse, V. & Krause, U.M. 2015. Addressing cultural diversity: effects of a problem-based intercultural learning unit. *Learning Environments Research*, 18 (3), 425-452.
- Caspersen, J. & Hovdhaugen, E. (2014). Hva vet vi egentlig om ulikhet i høyere utdanning? [What do we really know about inequality in higher education?] *Sosiologisk tidsskrift*, 22, (3) 301-311.
- Cheng, R. W., Lam S. & Chung-yan Chan, J. (2008). When high achievers and low achievers work in the same group: The roles of group heterogeneity and processes in project-based learning. *British Journal of Educational Psychology*. 78, 205–221.
- Dale, L.E. (2009). Kritisk pedagogikk ved PFI [Critical pedagogy at PFI]. *Norsk pedagogisk tidsskrift*, 93 (06), 472-487.
- Ejrnæs, Morten (1998). *Brobygning mellem den Sociale Kandidatuddannelse og grunduddannelser inden for det sociale, sundhedsmæssige og pædagogiske felt* [Building bridges between the master's in Social Work and elementary education in care, health and pedagogy]. Skriftserie, nr.2, Copenhagen: Den sociale højskole.
- Ellis, R. & Gabrial, T. (2010) Context-based learning for beginners: CBL and non-traditional students. *Research in Post-Compulsory Education*. 15 (2), 129-140. doi: 10.1080/13596741003790658

- Illeris, K. (2015). *Læring [Learning]*. København: Samfundslitteratur.
- Jensen, J.B. (2016). *Transgressive, but fun. Music in university learning settings*. Aalborg: Aalborg Universitetsforlag.
- Justesen, L. & Mik-Meyer, N. (2010). *Kvalitative metoder i organisations- og ledelsesstudier [Qualitative methods in organizational- and management studies]*. Copenhagen: Hans Reitzels Forlag.
- Khan, M. A. A. & Sobani, Z. A. (2012). Influence of Gender and Ethnicity on Problem-Based Learning. *J PAK MED STUD.* 2 (3),122-125. doi: 10.1002/j.2168-9830.2011.tb00013.x
- LaPrairie, K. & Slate J.R. (2009). Grouping of Students: A Conceptual Analysis. Part I and Part II. *International Journal of Educational Leadership Preparation.* 4 (1).
- Launsø, L. & Rieper, O. (2005). *Forskning om og med mennesker : forskningstyper og forskningsmetoder i samfundsforskning [Research about and with people: reasearch approaches and methods in the social sciences]*. Copenhagen: Nyt Nordisk Forlag.
- Lezaun, J. (2007). A market of opinions: the political epistemology of focus groups. *The Sociological Review.* 55 (2), 130-151. doi: 10.1111/j.1467-954X.2007.00733.x
- Li, Huichun (2013). The Interpretation of Problem Based Learning: A Case Study. *Journal of Problem Based Learning in Higher Education.* 1 (1) 176-193.
- MA in Learning and Change Processes (2018). <http://www.aau.dk/uddannelser/kandidat/laering-forandringsprocesser/job-karriere> / 26.03.2018
- MA in Social Work (2018). <http://www.aau.dk/uddannelser/kandidat/socialt-arbejde/job-karriere> / 26.03.2018
- MA in Social Work (2018a). <http://www.aau.dk/uddannelser/kandidat/socialt-arbejde> 26.03.2018
- McLean, M., Van Wyk, J. M., Peters-Futre, E. M. & Higgins-Opitz, S. B. (2006). The small group in problem-based learning: more than a cognitive ‘learning’ experience for first-year medical students in a diverse population. *Medical Teacher,* 28 (4), 94–103. doi: 10.1080/01421590410001696425
- Mills, P. C., P. F. Woodall, M. Bellingham, M. Noad, and S. Lloyd (2007) Using Group Learning to Promote Integration and Cooperative Learning between Asian and Australian Second-year Veterinary Science Students. *Journal of Veterinary Medical Education.* 34 (3), 350–355.
- Monrad, M. & Mølholt, A. K. (2017) Problem-Based Learning in Social Work Education: Students’ Experiences in Denmark, *Journal of Teaching in Social Work.* 37 (1), 71-86. doi: 10.1080/08841233.2016.1271382

- Robinson, L. (2016). Age difference and face-saving in an intergenerational problem-based learning group. *Journal of Further and Higher Education*. 40 (4), 466-485. doi: 10.1080/0309877X.2014.984598
- Simons, H, & Hicks, J (2006). Opening doors: Using the creative arts in learning and teaching. *Arts and Humanities in Higher Education: An International Journal of Theory, Research and Practice*, 5 (1), 77-90. doi: 10.1177/1474022206059998
- Singaram, V., D. Dolmans, N. Lachman, & C. P. M. van der Vleuten (2008). Perceptions of Problem-based Learning (PBL) Group Effectiveness in a Sociallyculturally Diverse Medical Student Population. *Education for Health* 21 (2), 1–9.
- Singaram V.S., van der Vleuten C.P., Stevens F. & Dolmans D.H. (2010). "For most of us Africans, we don't just speak": a qualitative investigation into collaborative heterogeneous PBL group learning. *Adv Health Sci Educ Theory Pract*. 16 (3), 297-310.
- Stafseng, O. (2009). Mordet på forelesningskatalogen. *Norsk pedagogisk tidsskrift*, 93 (6), 429-432.