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Exploring Transition in Higher Education: Engagement and Challenges in Moving from Teacher-Centered to Student-Centered Learning

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ABSTRACT

The overall purpose of this study is to prefigure the feasibility of Problem Based Learning (PBL) for building research and employability capacity of MA-students in the context of Gulu University. Following a description of the basic tenets of PBL, we explain how PBL was used in experimental community outreach workshops for MA-students between 2016 and 2019. More specifically we identify traces of traditional learning practices and discuss to what extent the new learning approach might change the student-teacher power relationship. Methodologically and analytically, our study draws on a practice theory model developed by Kemmis and Mutton (2012). Although our findings indicate subtle traces of a traditional student-teacher relationship, the analyses indicate that the PBL learning mode is a promising candidate for strengthening research capacity in view of preparing students for post-graduate employability and community transformation. The workshops were organized collaboratively as part of the Danida-funded programme Building Stronger Universities.

Keywords: PBL, practice theory, qualitative methods, quality teaching, Uganda

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INTRODUCTION

The educational system in Uganda currently undergoes important changes. Since its introduction in the British colonial era, it has followed the same conventional post-colonial learning approach even after Uganda gained independence in 1962. Recently, however, employers in the private and public sectors have been complaining that graduate students do not have the skills needed in present-day society, and to comply with these requirements Gulu University has taken the first step into a process of transforming education. In Uganda, there is a growing interest in higher education, not only as a source of knowledge generation, but as part of the solution to community problems. Many ideas have centered on technical education, entrepreneurship education, and information communication technology as components of generic competencies required in view of job opportunities after university education. This relates to the fact that university education is considered to play a major part of the solution to community problems.

This article presents an emerging Gulu-Aalborg model, which is one of the international efforts of Gulu University to work for 'community transformation' in higher education in a local context. To achieve this objective, the article shares experience of students and supervisors, working together with community enterprises and organizations to share knowledge and to find possible solutions to societal problems through a problem based learning approach in post-graduate education. Focusing on the specific case of PBL workshops held at Gulu University in Uganda between 2016 and 2019, the study throws a critical gaze at the educational practices that have dominated higher education in the context of Gulu University. As an important part of our inquiry, we explore traces of traditional practices and architectures as they operate in a new social space, and we discuss how traditional practices may have a bearing on relations among students and teachers in a changing site of practice where interpersonal relationships find a new balance. This may give rise to contestation, tension and discursive struggle, thus inviting questions about what actions are possible to participants when new power dynamics are at play (Mahon, Francisco and Kemmis (2017, p. 20). We analyze and discuss this overall problem by asking the following research questions:

1: To what extent do traditional learning practices leave traces in a student centered learning space aimed at promoting post-graduate employability and community transformation?

2: How are discourses and inculcated practices negotiated among students and supervisors in the new student centered learning and research context?

RESEARCH CONTEXT AND BACKGROUND OF THE STUDY

Gulu University (GU) was established by statutory instrument in 2002 as one of the public universities to increase access to higher education, which was one of the post-war recovery programmes initiated by the government of Uganda. Since then the university has been growing steadily with approximately 240 academic staff members and more than 4,000 students. The university plays a major role in stabilizing the area, and it operates under the motto: for community transformation. Though a relatively new university and one of the smallest higher education institutions in Uganda, GU was ranked as the seventh best university out of 44 Ugandan universities in 2019 (UniRank, 2019). GU has six faculties and two institutes and it offers undergraduate, postgraduate and doctoral degrees in several study areas, including medicine, agriculture, science, education, law and business and development studies. Teaching methods have so far followed a teacher-centered approach for content delivery, but according to a management decision from 2011, student-centered pedagogy is now gradually being introduced in some of the programmes and courses.

At Gulu University, PBL is primarily being introduced in graduate education, with the first cohort of master programmes in social sciences and humanities. The aim of introducing PBL is to transform or complement the existing delivery of higher education in social sciences and humanities. Elsewhere PBL has found its usefulness in health sciences without adequate appreciation in Uganda's higher education. For example, Makerere University health sciences restructured their programmes to accommodate PBL where students, put in groups of five to ten, worked together with a facilitator or faculty member to explore what they need to know more about, but the problem was selected and prioritized by a faculty member. The approach has thus been teacher-oriented. In order to institutionalize delivery, they borrowed the idea from Moi University in Kenya, Maastricht in the Netherlands and Newcastle in Australia (Kiguli-Malwadde et al. 2006). Similarly, Mubuuke et al. (2016) showed the importance of students' experience in a tutorial for designing a feasible facilitation delivery guide. They found that most students demanded comprehensive feedback. We have seen fewer attempts at pedagogical change in the social sciences and humanities than in the health sciences. Firstly, most of the PBL has been documented across the health sciences in Uganda and particularly at Makerere University. Secondly, most of the information has focused on technical guiding, and also student-facilitator interactions through tutorials and feedback sessions. Thirdly, the focus has been on undergraduate education since 2003/2004 academic year.

WHAT IS PROBLEM BASED LEARNING?

Problem based learning is an approach to learning where students explore a problem, which is often an ill-structured societal issue that they explore to reach a solution or to obtain wider knowledge. A problem combines theoretical and experiential knowledge to a learning context in which a group of students take ownership of and share responsibility for the individual and social learning processes of the project (Kolmos, Fink and Krogh, 2006).

PBL scholars and practitioners (e.g. Kolmos, Fink and Krogh (2006), Krogh and Jensen (2013; Barrett, 2017); Jensen and Lassen (2019)) refer to seminal work by Dewey 1916, Piaget 1974, and Freire, 1972 when describing the philosophical principles behind PBL as being rooted in democratic ideology and learning rights of the individual. There are almost as many definitions of PBL as there are scholars, but among scholars who offer centrality to a problem-driven learning process we find Barrows and Tamblyn (1980), who define problem based learning as "the learning that results from the process of working towards the understanding of a resolution of a problem" (in Barrett, 2017).

Although the majority of literature on PBL has been written by Western scholars, the philosophy behind student-centered learning approaches is mainly attributable to the Brazilian educationist Paulo Freire (1972), who argued that only learners who become "knowing subjects" will have the capacity to change socio-cultural reality as a crucial aspect of transformative learning (Jensen and Lassen, 2019; Armitage (2013, p. 3). In a similar vein, Dewey (1916) developed a theory of learning based on the idea that as members of a group, individuals have learning rights that are best developed through practice, actions and experiences (Jensen and Lassen, 2019, p. 4).

Since the first attempts at introducing student-centered learning, PBL has spread to 500 higher education institutions (Servant-Miklos, 2019), addressing problems across disciplines. There is great variation in how PBL is taught in different universities, but in words borrowed from Servant-Miklos (2019, p. 3) the principle still stands that learning "begins with a realistic problem tackled by a small group of students in a class guided by a tutor who does not lecture but helps the students structure their learning".

In a Danish context Illeris (1974) conceptualized problems-based-learning through his master piece entitled 'Problem orientation and participant direction: An introduction to alternative didactics'. This laid the foundation of new didactic concepts such as problem-orientation and participant direction in the sense that learning departs from subject related knowledge, methods and theories of relevance to a specific problem identified and defined by the students. This would guarantee that students would find the problem

relevant and be absorbed in the learning process (Krogh and Jensen, 2013, p. 23). An important element in the learning process is that of gaining experience by learning in context. This is done through exemplary practice which requires that the student engages in a deeper understanding of contextual dimensions of a complex problem statement (Kolmos, Fink and Krogh, 2006, pp. 11-12).

On the African continent, there has been a general interest in exploring new learning approaches in higher education, but experiments with PBL carried out in South African universities have at times met some resistance among staff. Objections have been raised on grounds of heavy demands on resources and time to be vested in project work, and the problem of high student-teacher ratios has been raised as an issue. It has further been noted that institutions are "stuck in the old non-democratic, teacher-centered practices" (Mahlomaholo, 2013; Jensen and Lassen, 2019, p. 4). Irrespective of such objections, other experiments – especially within the medical field – have indicated that PBL has many benefits to offer. This is corroborated by an example from Cape Coast University in Ghana, where PBL was implemented in the curriculum in 2007 (Amoako-Sakyi and Amonoo-Kuofi, 2015; Jensen and Lassen, 2019).

In a Ugandan context, Makerere University's Faculty of Medicine introduced PBL in their five bachelor programs. However, according to Kiguli-Malwade et al., (2006) this was a very new approach regarding the role of expert in the process, where some members reportedly did not understand the new curriculum. Thus, lecturers complained of their changing roles and they found that tutoring was not rewarding and very time consuming (Kiguli-Malwade et al., 2006). Similarly, Makerere College of Engineering, Design, Art and Technology (CEDAT), together with consortia in East African Universities (Nairobi, Dar-es-Salaam) collaborated with Alto University in Finland to foster an innovative approach to higher education in plastic recycling (CEDAT, 2018). In contextualizing this to social sciences and humanities, the Faculty of Business and Development Studies and Faculty of Education and Humanities have been experimenting on PBL at Gulu University since 2016, in view of introducing PBL into graduate education. Both faculties have recently reviewed graduate degree curriculums while experimenting with students and facilitators through workshops, seminars and outreach activities. In Uganda, the need for Higher Education is to help the students develop higher order subject and generic competence on the basis of university experience. As such, little attention has been given to higher education improvement, experience and engagement with the community in general.

Problem Based Learning and Practice Theory

Practice theory is a relatively new philosophical-sociological approach formed by a critique of the dualism, for example between actor and structure, body and mind,

individual and collective, micro and macro. Practice theory is based on the assumption that social action (the practice) is a precondition of all existence. According to this view, the practice concurrently constitutes both the subject and the object. Practices train subjects to develop certain ways of acting and handling objects (materiality). Likewise, the objects form the subject (Schatzki, 1996; Reckwitz, 2002; Kemmis & Mutton, 2012). Furthermore, a practice is characterized by being recognizable by persons who are familiar with the practice (Reckwitz, 2002), and by being related to normativity (Rouse, 2007). All practices are thus a performance of social negotiations regarding what is deemed as appropriate in a specific practice. According to Theodore Schatzki practices are defined as organized nexuses of actions. This means that the doings and sayings composing them are interrelated. More specifically the doings and sayings that compose a given practice are linked through 1) practical understanding, 2) rules, 3) a teleoaffective structure, and 4) general understandings (Schatzki, 2002, p. 77).

The Australian researchers Stephen Kemmis and Rebecca Mutton (2012) have operationalized the main lines in the work of Schatzki in their well-known model (shown below) in which they illustrate how practices are interconnected and how a practice seen from the side of individual can be described as the practitioners' diverse arrangements.

<table>
<tr><td colspan="4">Individual side ← Practice → Extra-individual side</td></tr>
<tr><td colspan="2">Projects/teleoaffective structures
How purposes and intentions expressed by practitioners direct activity</td><td colspan="2">Practice landscapes
How practitioners and objects are enmeshed and entangled in activity and how materiality, rules, and procedures prefigure actions by infrastructural sedimentations</td></tr>
<tr><td>Practitioners' characteristic 'sayings'</td><td colspan="2">← How 'sayings' performatively enacts a practice in semantic space through language →</td><td>Cultural-discursive arrangements</td></tr>
<tr><td>Practitioners' characteristic 'doings'</td><td colspan="2">← How 'doings' enacts a practice through the medium of activity and work →</td><td>Material-economic arrangements</td></tr>
<tr><td>Practitioners' characteristic 'relatings'</td><td colspan="2">← How 'relatings' enact power and solidarity →</td><td>Social-political arrangements</td></tr>
<tr><td colspan="2">Dispositions/practical understandings
How actors are attuned to participate in practices, how they have a 'feel for the game', and how they know how to 'go-on': practical knowledge, skillfulness, and appraisal of specific values.</td><td colspan="2">Practice traditions/general understandings
How current practice is enacted to reproduce or transform the traditions and history of the local practice or—more broadly—in relation to the traditions and history of practices that span multiple sites.</td></tr>
</table>

Figure 1. Elements of practices and practice architecture in the site (adaptation from Kemmis et al. 2014, p. 38-39).

Sayings, Doings, and Relatings refer to the way actors talk and act and relate to each other regarding the practice under examination. *Cultural-discursive arrangement* refers to established or appropriate ways to talk about e.g. students and teachers. Some discourses will describe students as independent actors and learners while other discourses will describe students as passive subjects. *Material-economic arrangement* refers to formal rules and regulation and materiality in the field. It could for instance be rules in the curriculum. *Socio-political arrangement* refers to for instance a political goal for the university as for instance Gulu University, working for social change and innovation.

Kemmis and Mutton argue that these different arrangements add up to a practice architecture in which practices are interconnected and a configuration of one another (Kemmis et al, 2012). According to Kemmis et al. the overall consequence of this assumption is that "We cannot transform practices without transforming existing arrangements in the intersubjective spaces that support practices*"* (Kemmis et al.,2012, p. 6). Therefore, "sayings, doings and relatings of one practice are shaped by the sayings, doings and relatings of *another* practice" (ibid.).

METHODOLOGY, ANALYTICAL FRAME AND DATA

Methodological approach

The method used in this study can be characterized as practice theory combined with what the Swedish sociologist Mats Alvesson (2003) describes as self-ethnography, although our study was conducted as a team. "A self-ethnography is a study and a text in which the researcher-author describes a cultural setting to which s/he has a 'natural access' and is an active participant, more or less on equal terms with other participants. The researcher works and/or lives in the setting and then uses the experiences, knowledge and access to empirical material for research purposes" (Alvesson, 2003, p. 174). The methodological affordances of producing self-ethnography as a team has the strength of not being subjective because all interpretations have been discussed from different positions of experience.

Analytical approach

The analytical affordances of practice theory is that because focus is on practices rather than on subjects it opens up for a general understanding of how practices are carried out. Another analytical affordance of practice theory is the assumption that a practice never occurs in isolation but always must be understood (read) as interconnected with other practies. Each practice is imbricated in a practice architecture (Kemmis & Mutton, 2012). This has implications for our analysis of possible interconnectedness of traditional practices and the newly introduced PBL and research practices, as they unfold in the

discourses (sayings), practices (doings) and relatings (power). Together these discourses and practices form the mainstay of the practice architecture. Analysing these elements will help us prefigure the feasibility of PBL for building research and employability capacity of students. Against this background practice theory, practice analysis and PBL seem to inform each other in useful ways.

In this article, we will use the model shown in Figure 1 as our analytical frame. This means that the analysis will begin with a description of the traditional practice architecture, focusing on the material-economic arrangement and 'doings' in terms of how teaching has been organized traditionally. Subsequently, we focus on interpersonal relationships and the discourses that enact these social-political arrangements.

Workshop format

The three research capacity building workshops we focus on in this article were planned jointly by a planning group consisting of three lecturers from Gulu University and three lecturers from Danish Universities. The programme was tailored to students from the faculty of Business & Development and Faculty of Education & Humanities during their first year of post-graduate study. At the end of 2019, more than 150 students had been introduced to problem based project work through practical experience and interaction with external stakeholders. Lecturers (around 25) from the two faculties were trained in project supervision in previous training-of-trainer workshops held by partners from Denmark, and supervision skills were further developed through the practice obtained in the course of the workshops. The planning process, which took place via Skype meetings, began several weeks before the actual workshops and found a final form in two courses: one for students and one for supervisors. The planning group met with supervisors two days before the actual workshops were to take place, offering tutorials on PBL, student-supervisor relations, qualitative and quantitative research methods, ethics and data analysis.

During the workshops, students would plan how to collect data, prepare data collection instruments and, after prior agreement with stakeholders, they would do fieldwork such as interviewing, distributing questionnaires or making observations. The next two days were spent on data analysis, interspersed with tutorials in support of their work. The final day of the workshop was set aside for presentation of projects and results. In addition, the students were allowed to replace 50% of coursework by a project report to be submitted by each project group. This was in accordance to provisions for coursework in the curriculum. (For a description in more detail, see Alidri, 2019).

Description of data

For the purpose of this article, we used three categories of qualitative data as illustrated in Table 1.

Post-workshop questionnaires (supervisors)
Post-workshop questionnaires (students)
Audio-recorded debriefing meetings (students)
Audio-recorded debriefing meetings (supervisors)
Observation of practices

Table 1. Types of qualitative data.

Post-workshop questionnaires for staff and students were used to assess and share the experience of engaging in problem based project work compared to traditional lecture based method. In the questionnaires, supervisors and students were asked to evaluate the workshops in terms of learning outcomes and possible challenges they had met from exposure to a new learning practice. The questionnaires asked supervisors and students to evaluate the research process, including ethical issues and letters of consent. The participants also assessed to what extent they had been able to use the learning management system (Moodle) in the workshops.

The debriefing meetings took place at the end of each workshop day. The aim of the debriefing meetings was for the workshop facilitators to closely follow the process of each project group. Because of the large number of students, each project group sent a representative to report on the activities and possible challenges of the day. This made it possible for the students to obtain advice on how to solve any pertinent issues and for the workshop facilitators to offer additional input if required. In a similar way, the workshop facilitators arranged debriefing meetings with the supervisors to enable the supervisors to voice any concerns about the project groups they were supporting. This resulted in a request for an additional tutorial because supervisors as well as students had expressed concern that they needed more knowledge about qualitative research methods to be able to apply it in their PBL projects.

Observation of practices aimed at understanding what learners and teachers were doing, saying, and how they were relating in a traditional setting versus the PBL environment, with a particular focus on the power relations between the students and supervisors (teachers).

ANALYSIS AND DISCUSSION OF FINDINGS: CHANGING PRACTICES

Traditional order of practices – classroom observation

To have an impression of traditional practices and content delivery at Gulu University, we had observed class teaching as practiced in the normal routines of the institution. In what follows, we exemplify this by representing our observations of a course taught to 60 first-year undergraduate students. The classroom, which was highly congested, had chairs placed in rows all facing the teacher's desk. Students chose a seat as they entered the room, bringing notebooks and pencils. The teacher opened the class by writing the topic of the day on the painted blackboard. For a start, the teacher revised last week's questions and some students were called to the blackboard to make an analysis.

Material-economic arrangement in the traditional order

The learning situation was characterized by teacher-centeredness as the teacher was at the forefront throughout the class – apart from intervals when students did independent work or group work. The students performed traditional student roles, answering questions and taking notes. Apart from ten students who were active, raising their hands when questions were asked, the vast majority of the students were silent and inactive in the situation. At times, the whole class would answer simultaneously in chorus, and we noticed that humour played an important role in keeping the students' attention. The 3-hour slot was structured by the teacher and varied between teacher-student interactions, the teacher asking comprehension questions, individual work and presentations on the blackboard. After two hours, the students were asked to go into groups, which created a very chaotic situation due to the congestion and high number of students, and it took a while before work could be resumed.

Social-political arrangement (interpersonal relations) in the traditional order

The teacher was a friendly and likeable person, who often shared laughter with the students. S/he seemed very interested in the students' learning process and asked probing questions to check understanding. S/he praised those students who performed well in class and reproached, warned or made slight fun of those who did not. From time to time, s/he included elements of obligation like "your notes should be read in your free time and not in class". There were also examples of reproach and mild threat as in "Some were not here last week. I don't know why…those who missed the lecture have missed out" or "You do not have much time before November", thus warning students about the upcoming exam period. These examples indicate an unequal power relationship between the students and the teacher who was in control of the situation through a constant focus on the subject matter and through shared humour, at times at the expense of a student not able to answer a question. Overall, however, the atmosphere in the classroom was good although many of the students seemed timid and performed traditional student roles.

Material economic arrangement in the changing order of practices

For a discussion of the first research question, which aims at following a trajectory of traditional learning practices into the new transformed site of engagement, we find it relevant to compare the 'doings' of the material-economic arrangement (Kemmis and Mutton, 2012; Mahon et al., 2017) with the practice architecture prefigured in the problem based learning workshops. In line with Mahon et al, 2017, we look more closely at changed aspects of the physical environment that may shape the actors' doings and sayings. These may include material aspects such as buildings, furniture, audio-visual equipment, timetables, access to support and ratios between teachers and students (ibid).

Whether education follows a teacher-centered or a student-centered approach, the point of departure is a material-economic arrangement represented here by curriculums approved by university management and relevant accreditation boards. Before making the workshop experiments with PBL, we had mapped current curricula for three MA programmes: Master of Education in Education Management, Master of Business Administration and Master of Public Administration and Management. We had done this to identify courses that would be suitable for introducing problem based learning. We found that the traditional curricula had described the following modes of delivery: classroom teaching, formal lectures, question & answer sessions, explanation, drilling, group discussions, presentations, case studies, and guest lectures (MBA, 2010; MED, 2015).

Unlike what we had observed in traditional classroom teaching as described above, the PBL workshop made it possible to avoid a high student-teacher ratio and congestion of many students in one room. This is corroborated by the following observation by a supervisor who makes implicit reference to classroom limitations: "This was so good and has added a lot to our learners which we could not have covered in class" (Post-workshop evaluation 2016). Instead of chairs organized in rows that faced the blackboard, the chairs and tables used for group work were placed in such a way that the participants were able to face each other for ease of interaction. More often than not, groups had organized themselves with a table and chairs outside the classroom, and they only entered the classroom for input or debriefing at the end of the day. Because of the reorganization of classroom activities, the supervisors also found themselves in new locations instead of lecturing in front of a blackboard. This gave the students possibilities for working independently, and supervisors were able to attend to other activities and only intervened at critical moments in the process, such as problem identification or fieldwork preparation.

Because the project was designed as an ICT-supported activity, the students brought laptops to the site, and unlike what was the case for traditional classroom-teaching,

students used the Internet for literature search and for project planning purposes. The location of the first two workshops was in international hotels with internet access; however, the last workshop in 2019 was held on university campus in a new building constructed for problem based project work. The building, which was originally a container, was equipped with a router for internet connectivity and furnished with tables and chairs to accommodate more than 50 people.

Although there were many power cuts during the project period, the use of ICT-technology did assist the whole planning process. In the first two workshops, it was possible to communicate changes in the time schedule to workshop participants via Moodle, and in the third workshop, changes in the schedule could be projected at the beginning of each workshop day. Using the Internet for literature search made the students more independent and responsible in terms of deciding on readings, and it released the teachers from the task of providing texts for the students. However, some supervisors drew attention to a lack of basic ICT skills and one respondent commented that "participants lacked not only PCs but also basic skills in ICT", while another supervisor made the point that "supervisors should acquaint themselves more than the students to Moodle usage" (post-workshop evaluation 2016). This indicates that in the new learning situation, some supervisors implicitly traced a trajectory of absent skills back to the traditional practice architecture.

Socio-political arrangement (relational practices) in the changing order or practices

Drawing on Kemmis and Mutton (2012) this part of the analysis focuses on 'relatings' in the socio-political arrangement in order to answer our second research question, which we repeat here for convenience:

How are discourses and inculcated practices negotiated among students and supervisors in the new student-centered learning and research context?

We then discuss the socio-political arrangement in relation to the 'sayings' of the cultural-discursive arrangement as the two arrangements are intertwined and seem to inform each other.

Social-political arrangements: student conceptions of supervision

The overall impression from the post-workshop evaluations was that the students appreciated the assistance by their supervisors very much. Comments like: "The presence of supervisors was a strength – everybody was very much interested" (debriefing 2016) or "there was free interaction between supervisors and students" (post-workshop questionnaire 2016), which prefigures a change in the traditional power hierarchy of teacher-centered learning. However, the evaluations also included comments like: "I

think as students we need to listen and be guided although supervisors shouldn't be rigid to what they already know" (Post-workshop questionnaire 2016), Here the student alludes to a situation when a supervisor does not accept that students should take responsibility for their own project, indicating a trace of a traditional power relationship.

When asked about possible challenges in the group project work, some students mentioned the problem of identifying 'dependent and independent variables' when doing qualitative research. This was also mentioned by a supervisor who commented: "it looks as if most of the groups were having problems with Dependent and Independent variables [….]". The issue of variables points to a specific research approach that originates in quantitative research as used especially in natural science. This approach is somewhat at odds with the participatory design of PBL and points to taken-for-granted perceptions about 'a correct research approach'. The issue of variables and values also came out in relation to challenges experienced with identifying a problem for exploration. One student mentioned that "supervisors disagreed over approach – this confused us – should we go by values or …." (debriefing 2018). The comment indicates that this group of students expected the supervisors to tell them which approach to choose, in line with traditional teacher-centered practices. This leads us to the next section where we focus on some aspects of supervision.

Socio-political arrangements: supervisors conceptions of students practicing PBL

In one of the debriefing sessions, the supervisors were asked to comment on possible challenges in relation to introducing PBL. Many comments from supervisors indicated that the concept of PBL was not clearly understood by students, and the supervisors positioned themselves as more knowledgeable than the students, as shown in the example: " [….] Yeah, eventually when we noticed misconceptualization of PBL, we had to explain to them what PBL means - we also guided them in terms of what they don't understand [….]" (debriefing 2018). In this example, the supervisor construes the students as 'not knowing' and the supervisors – 'we' – as knowledgeable and experts on PBL. According to this representation, the supervisors 'explained', they knew 'what PBL means'. In the utterance, the supervisor positions the students and the supervisors at two levels of a knowledge hierarchy, which may be seen as a characteristic trace of traditional socio-political 'relatings (Kemmis and Mutton, 2012).

A similar power balance may be seen from the following excerpt, however with the important variation that the supervisor gives the students space for negotiation and discussion among themselves:

> So these students had not met although they registered but they had not met among themselves as a group…to do a project on the topic... and therefore to bring them

> at par was not easy …until I called my troops … my fellow supervisors ….you guys, let us break off from these students so that they can first discuss among themselves …And then after some time we went back, and we found … they were not conclusive on what to do. …they were somehow thinking of something which was outside the topic… and we said ….no no no, you stick to your mandate until you come up with something and then you can start. But along the way, we found they were not understanding the problem. So we said – you guys – you first understand the problem…. And then we gave them another break…and they sat among themselves ….so it took us long to …but eventually they are doing something (debriefing 2018).

In the excerpt, the students are construed as uncertain about how to go about identifying a research problem. Instead of making any decisions on behalf of the students, the supervisor suggests to the fellow supervisors that the students need time to get acquainted with each other and to begin discussing a possible problem for exploration. The supervisor positions him/herself as leader of the group of supervisors – 'my fellow supervisors … you guys, let us break off", which indicates an unequal relationship with co-supervisors. At the same time, the supervisor seems to position the group of supervisors in a relationship with the student group that allows the students freedom to discuss – while still controlling the process ('no, no, no, you stick to your mandate until you come up with something and then you can start'). The supervisor and his/her fellow supervisors thus seem to establish two kinds of power relationships with the students; on the one hand, the supervisors control the process and take on roles as more knowledgeable on PBL, and on the other, they still allow the students space to do their own project. They thus perform the role of facilitators, guiding the students.

Towards analytical synthesis

The analysis began with an observation of practices in a traditional teacher-centered learning classroom. This was an important point of departure for studying how students and teachers practiced learning in a new problem based learning context. Following Kemmis and Mutton (2012), we structured the analysis round three perspectives reflecting practitioners' characteristic ways of 'doing' (material-economic arrangements), 'saying' (discursive arrangements) and 'relating' (social-political arrangements). In the material-economic perspective, we looked at 'doings' in terms of how a practice architecture prefigures what can be said and done in prevailing discursive practices. We then combined the cultural-discursive perspective with the socio-political perspective by analysing how 'sayings' and discourses enact 'relatings' to form shifting power relationships.

As for discourses, one may notice that the cultural-discursive perspective was enveloped in a grand discourse of education. This was predominant in the traditional teacher-centered approach as well as in the problem based approach. However, there were slight differences in that in the observation of traditional teaching, teachers tended to focus very much on what students must do to learn the subject matter of what was taught, in order for them to be able to pass the exam. By contrast, the supervision sessions were discursively oriented towards problem identification, methodology and independent project group work with the aim of solving a problem in society. One may thus notice some negotiation going on between a traditional education discourse and a discourse of 'educational emancipation', in which students and teachers strike a more balanced power relationship. It is worthwhile noting that the new orientation towards problem identification through project group work in collaboration with external stakeholders may open a door to future interaction with enterprises and organizations outside of university. This may pave the way for students to obtain a job as they become more acquainted with the local community. The following statement by a group of students who worked on a project on water supply seems promising in terms of future community engagement:

"the district environmental officer went on to show us about causes of water shortage [….] we went up to pumping stations and talked to people. To us this was really more than we had expected. People were asking: are you coming with solutions?" (Debriefing 2016)

Overall, we found that there was a close relationship between the three perspectives of 'doings', 'sayings' and 'relations' in that changes in practice architecture opened up to new ways of physical and spatial organization, which in turn stimulated free interaction among students and between student groups and their supervisors. There was a marked difference between some of the practices observed in the traditional classroom and the practices in the changed environment in terms of 'sayings' and 'relatings'. At the same time, what was said – the discourses – influenced how the participants related to each other. This said, is was, however, still possible to trace some reminiscence of traditional teacher-centered practices in the discourses circulating in the interaction, not least in terms of power relations between students and supervisors. This may be seen, however, as a necessary aspect of project supervision where supervisors may be seen as 'midwives' who have to accept some aspect of control of the process as we saw in the excerpt above. However, we also observed that the way problem based project work opened up to engagement with stakeholders in the local community was a motivating factor for changing supervision practices in that the students were 'set free' to interact independently with enterprises and organisations in the local community.

CONCLUSIONS – SIGNIFICANCE OF A PROBLEM BASED APPROACH TO EDUCATION

Participants generally expressed a high level of appreciation of the new learning approach tested in the workshops. This appears from a typical comment in the workshop evaluations: "To us it has really been more than what we had expected […] if this workshop was conducted earlier we would have excellent performance in all subjects [….] People (in the community) were asking: are you coming with solutions? And one of the hotel owners said: do not let lecturers do this as a joke – we need it" (debriefing 2016). The teachers embraced the student-centered learning approach in the PBL workshop and meetings, however without entirely leaving behind inculcated practices from traditional teaching.

The PBL workshop enabled both teachers and students to interact with the community through their research projects and engagement with peers. Although the community had varied needs and interests regarding their problems, the external stakeholders, who participated in the projects, seemed very keen on interacting with the students. However, student reports showed that assumptions do not always align with community expectations, and the research activity led to addressing some of the community problems and also influenced practices. The students reported that their problem formulations were modified to community challenges in the field, indicating that initial surveys are important in contextualizing real life problems. The problem based approach thus seems to offer new entry points into employability of post-graduate students, thus contributing towards solving the problem raised by employers in Gulu District and corroborated by the Inter-University Council for East Africa (IUCEA), who claimed that there are "long-held concerns among employers that most graduates are not fully prepared for the job market" (Nganga, 2014).

From the narrow perspective of learning, the workshop situation was highly motivational to the students, who competed for producing the best output in their presentations and some reported that it had enhanced their research capacity. Some of the students later on reported that they got promotion on their jobs since they could practice the skills they acquired from the PBL workshop to perform their jobs. On this basis we find that PBL is a promising approach for preparing post-graduate students at Gulu University for employability and community transformation.

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