Enculturation of Psychologists through Problem-Based Learning in Aalborg University's Children's Clinic

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ABSTRACT

Problem-based learning (PBL) involves using problems as a starting point of learning rather than relying on traditional learning settings. In the present paper we present the theoretical framework behind a specific PBL setting we have developed since 2012 for training Danish psychologist students in a small university children's clinic (Børnesprogklinikken) at Aalborg University, Denmark. We argue that our approach can serve as students' enculturation into a specific profession, and that concepts from the theory of cultural learning and the concept of mediation can elucidate why this type of learning is effective for human beings, and specifically for students learning a profession. Finally, we discuss some of the learning outcomes of the PBL programme.

Keywords: Psychologist, problem-based learning (PBL), enculturation, children's clinic, mediated learning

INTRODUCTION

It is a well-known challenge for teachers in higher education to prepare students for their future profession. One important question related to this challenge is how to minimize the natural gap between life as a student and life as a professional. Working in professional healthcare services with daily face-to-face interactions involves a high level of responsibility, which again may cause the gap to become particularly large and cause anxiety within novice professionals. Danish student psychologists[1] often struggle with

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personal worries and anxiety about whether they ever will be ready to take on the responsibility linked to being a professional psychologist. In our PBL approach we argue that one means of closing this anxiety-creating gap is through the implementation of problem-based learning (PBL), an approach highly relevant when teaching and learning psychology in higher education (Wiggins et al., 2016).

In Denmark, the academic title 'psychologist' is a protected title and only individuals who hold a university Masters degree (MSc) in psychology are entitled to use the title. Once holding a psychologist degree, it is common to then become an authorized psychologist (Law for Danish psychologists, 2018 [Psykologloven]), The requirements to become an authorized psychologist consist of two years of supervised psychological practice, as part of a full-time paid job. Following this process, psychologists are then able to become specialized within a specific area, indicating a yet higher level of expertise and they are expected to be able to supervise colleagues.

The aim of the current paper is to provide an introduction to the theoretical underpinnings of a particular PBL and practice-based pedagogical setting. We describe and discuss how experiential learning within a specific PBL programme, which consists of a child and adolescent program currently offered at the Aalborg University Clinic for Developmental Communication Disorders (DCD), supports Danish student psychologists towards their *enculturation* as new practitioners, and in learning how to understand concrete psychological concepts and problems within the established practice of Danish psychologists.

THE AALBORG PBL MODEL

In order to understand the setting of our PBL program, we first briefly introduce the general PBL framework of Aalborg University (AAU), Denmark. At AAU, PBL is the cornerstone of all teaching, and approximately half of the teaching consists of longer problem-based project work in groups, followed by group exams, while the other half involves study courses (teaching basic and general skills, competences and knowledge) with individual examinations.

The Danish psychologist education consists of a five-year university degree: the first three years lead to a bachelor degree and the final two years, the "kandidatuddannelse", lead to the professional psychologist Cand.Psych. degree, broadly equivalent to an MSc in psychology.

Although the Cand.Psych. degree is not a specialized degree, each student at Aalborg University must enrol in a specific professional programme ("professionsprogram") during their final two years, and which accounts for 55 of their total 120 ECTS credits

for this period. In addition to the Masters thesis, which is worth 30 credits, students take compulsory introduction courses within applied psychological areas (psychological testing, psychological professionalism, psychological practice and intervention methods), and two topic-based elective courses as well as advanced research methods worth a total of 35 credits.

The courses offered during the 1st semester of the programme at the DCD 'professionsprogram' provide the students with relevant background knowledge concerning theory, practice and intervention for children with language and communication disorders and other neuropsychological disorders (autism, ADHD), and the principles of dynamic assessment (DA) and systemic family therapy.

During the 2nd semester, students enter an internship, where they engage with clients at the clinic, and which is worth 15 credits. Finally, for the 3rd semester, students conduct a problem-based empirical or theoretical project, in which they are required to link theory, method and practice.

PROBLEM-BASED LEARNING: PROS AND CONS

Existing reviews of concrete PBL practices in higher education often reflect the case of students within the disciplines of healthcare sciences such as medicine (Dochy et al., 2003; Prozzer & Sze, 2014; Tudor Car et al., 2019) but also psychology (Wiggins et al., 2016). However, disciplines within humanities or social sciences, and in particular those including professional practices such as addressing neuropsychological disorders have been described to a lesser degree (Prosser & Sze, 2014).

The PBL approach at Aalborg University is comparable to other approaches within the field of PBL in that we use problems as a starting point of learning. It must be student-centred, organised in small groups of students with a guiding or facilitating tutor, and must focus on complex problems (see Illeris, 1981; Barrows, 1986; Kolmos, Fink & Krogh, 2004). Consequently, exams also require students to apply their knowledge to problem-solving situations.

Following the arguments raised by Wiggins et al (2016), psychology - due to its nature as a discipline about human beings, their development, social interactions, thinking, learning etc. - has plenty to offer within the framework of PBL. Characteristics of PBL include the development of students' cognitive and meta-cognitive abilities, motivation, knowledge, problemsolving and collaborating skills (Hmelo-Silver, 2004).

A meta-analysis by Dochy et al. (2003) showed that PBL students are advanced in *applying* their knowledge compared to students in traditional learning settings. These

findings were supported in a study within an undergraduate educational psychology course. Here PBL students performed significantly better on the ability to apply theories to real-world settings compared to students in a lecture/discussion condition (Bergstrom et al., 2016). However, PBL settings sometimes also seem to influence the development of students' *knowledge base,* in a negative direction*,* compared to more traditional learning situations (Dochy et al., 2003).

In relation to transfer of learning between different settings, studies have demonstrated that, if a principle is just taught, transfer is approximately 5% (Quilici & Mayer, 1996 in Norman, 2009), if demonstrated with an example, transfer may be 25%, and finally, if demonstrated with *several* examples, transfer may reach 47% (Catrambone & Holyoak, 1989 in Norman, 2009; Lowenstein et al., 2003 in Norman, 2009). Active problem solving, on the other hand, seems to provide the highest transfer of up to 90% (Needham and Begg, 1991). Moreover, PBL supports students' abilities to develop collaboration and interpersonal skills (Papinczak, Young & Groves, 2007; Rosander & Hammar Chiriac, 2016).

Collaboration implies providing positive as well as negative critique to peers which sometimes may be difficult for students to engage in. In a study with PBL students during their first year in the Swedish psychologists' programme at Linköping University, Rosander & Hammar Chiriac (2016) asked the students in a PBL course to reflect on the purpose of the tutorial groups. The statements roughly fell into two categories, opinions on learning and on social influence. Related to the group's social influence were positive elements such as support, friendships and personal development, but also more negative elements such as feelings of being controlled, and pressures to adjust to group norms and to work hard enough.

The question of peer assessment was addressed by Papinczak et al. (2007) in a PBL study with medical students. In this study the students commented that they find it hard to criticise friends. Providing close colleagues with constructive critique that gives them the opportunity for developing their professional capability is a challenging task for students.

Offering and receiving supervision is an important aspect of qualification within the Danish psychologist profession. In Denmark, most psychologists achieve authorisation from the Danish Psychological Association, which for example implies 160 hours' supervision from experienced psychologists. In the case of the learning setting of our DCD university clinic, we apply the concept of reflective team from systemic family therapy in order to provide a secure and also constructive setting for students to practice the professional skills of providing and receiving supervision.

While the notion of transfer of knowledge is well-addressed in the literature on PBL, the challenge of educating to professional practices within a specific cultural setting, where the students need to construct their emerging identity, as for example, a Danish psychologist, has been less addressed as a cornerstone for their ability to learn. In order to develop this specific type of professional identity, the student needs to engage actively in what is known as the process of *enculturation*.

In the following, we present the theoretical underpinnings of the PBL setting applied in our DCD programme in terms of the process of professional enculturation by means of mediated tutoring, which is nested within the theory of cultural learning, and the principles of mediation applied within dynamic assessment.

PROBLEM-BASED LEARNING AS ENCULTURATED LEARNING

According to the theory of cultural learning developed by the American developmental psychologist Micheal Tomasello, human beings are biologically adapted for culture and hold a unique understanding of other persons as intentional agents like themselves. Human cognitive development and learning must therefore first and foremost be understood in the context of culture (Tomasello, 2000).

We know from developmental psychology that infants are born with an ability to *imitate* others, and this ability gives them access to a unique way of acquiring skills from more competent others. Following imitative learning the more complex learning style, namely learning via verbal *instruction,* which requires the ability to read the mind of the adult or the instructor, emerges later in older children and adults (Callaghan, Moll, Rakoczy, Warneken, Liszkowski, Behne, Tomasello & Collins, 2011).

Collaborative learning, a yet more advanced learning style addressed within the theory of cultural learning, additionally involves peer interaction holding a clear common goal and the opportunity to exchange perspectives (Callaghan et al., 2011). From a phylogenetic perspective, collaborative learning is viewed as the most impressive human cognitive achievement and has resulted in groups working together to create artifacts and practices that accumulate improvements across generations over cultural-historical time, also known as the ratchet effect (Cole & Cagigas, 2010; Tomasello, Kruger & Ratner, 1993; Vygotsky, 1978). This important knowledge from developmental psychology underlines the collaborative nature of human beings, and the importance of collaboration for learning.

On a similar view, within e.g. educational psychology, culture has likewise been argued to be the cornerstone of learning (Brown, Collins and Duguid, 1991). In a criticism of the structure and practices of traditional educational systems which separate *what* is learned

from *how* it is learned, Brown et al. (1991) argue that learning and cognition are situated, and states that "activity, concepts, and culture are interdependent. No one can be totally understood without the other two. Learning must involve all three" (Brown et al., 1991, p. 249).

Echoing the sociocultural theory of Vygotsky (1978), the authors stress that in order to learn to use physical tools, as well as conceptual knowledge, characterised as an abstract tool, students must be enmeshed within a community and its culture, where learning is unfolded within the process of enculturation and where collaboration within the culture leads to the understanding, reflections and discussions of concepts and strategies (Brown et al., 1991). The concrete actions of this kind of learning should occur in the following sequence: 1) in an activity setting, teachers model strategies and provide their tacit knowledge to the students, 2) teachers support the students' own attempts, and finally, 3) teachers encourage students to continue on their own (Brown et al., 1991).

Lave and Wenger (1991) similarly describe how newcomers initially engage with a community of practice through legitimate peripheral participation, where tasks typically are short and simple, and often only enter actively into the beginning or end of a 'work-process'. By participation in the community, the newcomer then gradually becomes a veteran, and a full participant in a socio-cultural practice.

The theory of cultural learning is an important cornerstone of the problem-based setting we apply in educating student psychologists at the DCD clinic. For example, while practicing in the clinic students learn to apply the interactive assessment method known as dynamic assessment, which, similarly to cultural learning, rests upon the cultural-historical theory of Vygotsky, and which holds the concept of dynamic mediation as the key to learning in an interpersonal context. In the following, we first describe the concept of mediation and then describe how we have implemented the concept in our PBL setting.

MEDIATING-MEDIATED PBL PRACTICES

The concept of mediation is a central concept that the students in the clinic need to come to understand from a theoretical and a practical perspective, and in parallel a concept to which they themselves are *exposed* to through the teaching style we employ during their internship at the clinic. Students thus experience the concept of mediation from three different perspectives and at three different levels of learning: 1) as the interpreter of theoretical descriptions of the concept, 2) as the student clinician applying the concept with the clients in the clinic and 3) as the learner being exposed to the notion of mediation while being enculturated as a psychologist (during supervision etc.).

Dynamic assessment is a Vygotsky-inspired interactive approach to psychoeducational assessment with a clear purpose of teaching cognitive tools with the conscious, purposeful and deliberate effort to produce change in an individual (Haywood & Lidz, 2007). Within dynamic assessment, teaching is mediational rather than giving concrete answers, and the method strives to identify and support the individual's learning potential rather than to assess their current level of independent functioning. This focus overlaps with Vygotsky's concept of the zone of proximal development, where learning is seen as the individual's ability to learn with the support of more experienced teachers (Vygotsky, 1978). In this sense learning is very much a joint enterprise.

The concept of mediation is central to the dynamic assessment tradition, and draws on Vygotsky's (1978) initial theorising about the dialectic interaction between the learner and the teacher, where concrete or abstract tools are intentionally used to engage the participant as an active learner towards a predefined learning goal.

Activities of mediation provide the learner with practical metacognitive knowledge on how to resolve specific problems and the teacher with knowledge about the learners' learning potential and zone of proximal development. Crucially, the learner is explicitly *invited* to become an active agent in practicing newly learnt strategies, concepts and metacognitive knowledge, but also in determining how to self-regulate his/her own learning. In this way, the programme strives to develop the students' intrinsic motivation to learn. According to Haywood and Lidz (2007) intrinsic motivation is associated with persistent and diligent learning in which students learn effectively, showing good retention of knowledge, while displaying a preference for novelty and complexity.

As mentioned, the theoretical framework underlying the PBL setting of the DCD clinic rests on the principles of dynamic assessment, which is practiced by the students across two intertwined levels of learning and practising. On the initial level, students first become familiar with the theories and concepts underlying dynamic assessment and with concrete case studies, where the principles of dynamic assessment are applied. This theoretical practice is introduced during the student's 1st semester and in conjunction with their gradual introduction to the daily activities of the clinic, which mainly consists of peripheral participation (Lave & Wenger, 1991) during booster sessions led by 3rd semester students.

An additional example of how the notion of apprenticeship is experienced by the students during their 1st semester in the clinic is in the students' first meeting with the clients (children and families) referred to the clinic. The responsibility of the student during these meetings is to take minutes, to show the families the clinic's facilities, and in a follow-up team meeting to pinpoint the specific challenges articulated by the respective families. During this early stage, the role of the student is more or less that of an observer who is

invited to participate in the phase of identifying the specific psychological challenges that need addressing in the clinic, but still without holding any professional responsibility. In the subsequent semester, the students become responsible for practising the principles of mediation in closely supervised dynamic assessment sessions with individual children in the clinic, and are also responsible for informal counselling with the parents.

At the end of the 1st semester, the students' newly gained theoretical and applied knowledge and their assimilation of an extensive compulsory literature is assessed through a graded oral examination. During this stage of learning, the students seem to fluctuate between acts driven by extrinsic motivation and acts driven by intrinsic motivation, with much focus on rote learning of the literature, and detached from their own professional and original reflections.

On the one hand, the students' participation in the practical activities in the clinic mostly seems driven by an intrinsic motivation to gain their first real-life psychologist experience in a real setting, despite this not leading to a specific grade or credits. On the other hand, their concentrated effort to do well on the curriculum-based formal evaluation of their theoretical knowledge seems to reflect an external motivation driven by the desire to gain a good grade *per se*.

This contrast is quite intriguing given that the students are clearly aware that the theoretical knowledge behind the principles of dynamic assessment is necessary for them to be able to plan and execute dynamic assessments in the clinic in the following semester. Nevertheless the underlying motivation of the students to internalise the theoretical knowledge often seems highly extrinsically driven. Original or real intrinsic motivation only emerges as the students enter into their main internship period during their 2nd semester. Here they finally get to "meet the client" and are given the major responsibility of planning and conducting the assessment.

Students also engage in regular supervision meetings during their internship in the clinic. Again the principle of mediation derived from dynamic assessment is central with the purpose of fostering more advanced metacognitive and reflective thinking in the students. In this way the framework unfolded in the PBL setting of the clinic appears in two planes: first the supervisors guide the student in how to apply the principles of mediation in real-life psychological and clinical settings, and in parallel to this, the students themselves are exposed to mediation-based supervision related to their own clinical work. Together these two co-existing levels of learning can be understood within the learning context we have called *mediating-mediated practices.*

THE CIRCLE OF ENCULTURATION – THE CASE OF DANISH CHILD PSYCHOLOGISTS

The specific professional knowledge students learn during their higher education may change rapidly, as the field develops. This stresses the crucial necessity for students to learn *how to learn* within the context of PBL, rather than just *what to learn,* and provides them the opportunity to internalise principles that may serve them in their lifelong learning.

Students in the DCD clinical programme typically go on to work in positions within the are of child psychology. In fact, the majority of Danish psychologists working with children and adolescents are employed in public Educational Psychological Counseling Units (PPR) (Danish Psychologist Organization, 2021). These are interdisciplinary units including a variety of professionals such as psychologists, speech and language therapists and special educational consultants.

Models and practices of working amongst Danish psychologists in Educational Psychological Counseling Units comprise a huge variety of intervention methods, from an indirect, consultative approach to interventions and assessments delivered by the psychologist directly to the child (Deloitte, 2020). Regardless of the intervention, *cooperation skills* are deeply embedded in the culture of Danish child psychologists, and where there exists a common agreement that one can never evaluate a child without taking into account the specific context, including families, schools, kindergartens, hospitals, psychiatry and doctors, etc.

In the following section we present a model that describes how PBL is unfolded through the process of enculturation in the case of the University clinic. The model is adapted from the PBL tutorial cycle, formulated by Lu, Bridges & Hmelo-Silver (2014) (see Figure 1).

The overall setting of the clinic provides students to work in reflective teams of four, centred around one specific child and its family. One student holds the main role as the student therapist, and is responsible for the assessment and intervention of the child. Another student colleague is responsible for informal counselling with the parent(s) of the particular child, while the remaining two team members carry out systematic observations of the dynamic assessment techniques applied by the student therapist in order to provide feedback and manage the technology (audio and video recording) during the therapy session.

Based on the information gained from the assessments with the child, the parents and other professionals, e.g. school teachers, the students in collaboration with the two supervisors meet and discuss how to generate hypotheses about causes behind the

challenges observed during the assessment and reach agreement about appropriate psychological support that should be provided to the child in the next therapy session. During this circular learning process, students immediately identify gaps in their existing professional knowledge and are encouraged to return to the research literature to find suggestions and specific professional tools. This supervised preparation nested within the PBL setting provide students with opportunities to engage in self- and other-directed learning on how to prepare concrete sessions of assessment and intervention directed towards a specific child and concrete challenges.

After each intervention session, students view the video from the session and select concrete challenges, which are then discussed in the following supervision meeting with the reflective team and the supervisors. Supervision sessions are led by open-ended and Socratic questions such as 'why do you think the child responded as he/she did? Why do you feel the session went well/not so well? What additional knowledge is needed in order to test specific hypotheses regarding the challenges and learning potentials that seemed to present themselves? Do you know of concrete tasks or materials that could be used to mediate a targeted response within the child? How did the parents address this notion?' In addition to this, supervision involves concrete guidance on how to prepare for and proceed in the next therapy session.

The dialogues arising between the student therapist, the reflective team and the supervisors offer an opportunity to discuss and reflect upon the 'how' and why' of Danish psychological practices and to challenge students' novice understanding and interpretation of children's behaviour. The students' established theoretical knowledge, together with the experience they gain through their PBL practices, provides a basis from which they gradually come to understand the professional world of Danish psychologists and to comprehend the complexity of this practice, which we address as the activity of learning how to 'wear psychologists' glasses and feel comfortable'.

After attending a supervision meeting the students plan the next therapy session, potentially revising their initial problem formulation and hypotheses, and the circle of enculturation continues, but now at a deeper level, allowing the students to identify new facts, etc. During the process of planning the sessions and preparing for supervision, students become encultured into the practice of psychologists, and this activity is mediated through their acquaintance with new experiences, new knowledge, understanding theoretical concepts in practice, and applying psychological assessment materials, but also importantly by practicing the use the professional concepts, language, perspectives and logic of Danish psychologists.

Figure 1 illustrates the components of the process of enculturation, where the students collaborate, articulate and reflect on their learning under supervision. After completing

the final therapy session, the students collaborate with the supervisors in writing an assessment report, which includes recommendations for future pedagogical practices that can be applied in the child's home and school and which is then presented by the student at a final meeting with teachers and parents. The assessment report is an official requirement of the Danish Psychologist Association.

Once having passed the 2nd semester and the clinical internship, the now 'experienced' 3rd semester students are in a semi-independent fashion allowed to lead a short 'booster session' and now responsible as role models for integrating the newly-arrived 1st semester students as 'peripheral participants' (Lave & Wenger, 1991) in the initial stages of the 'Circle of Enculturation'. This allows the newcomers to gradually achieve full, legitimate participation in the specific community of practice by learning from the more advanced students, which seems to descrease their level of anxiety.
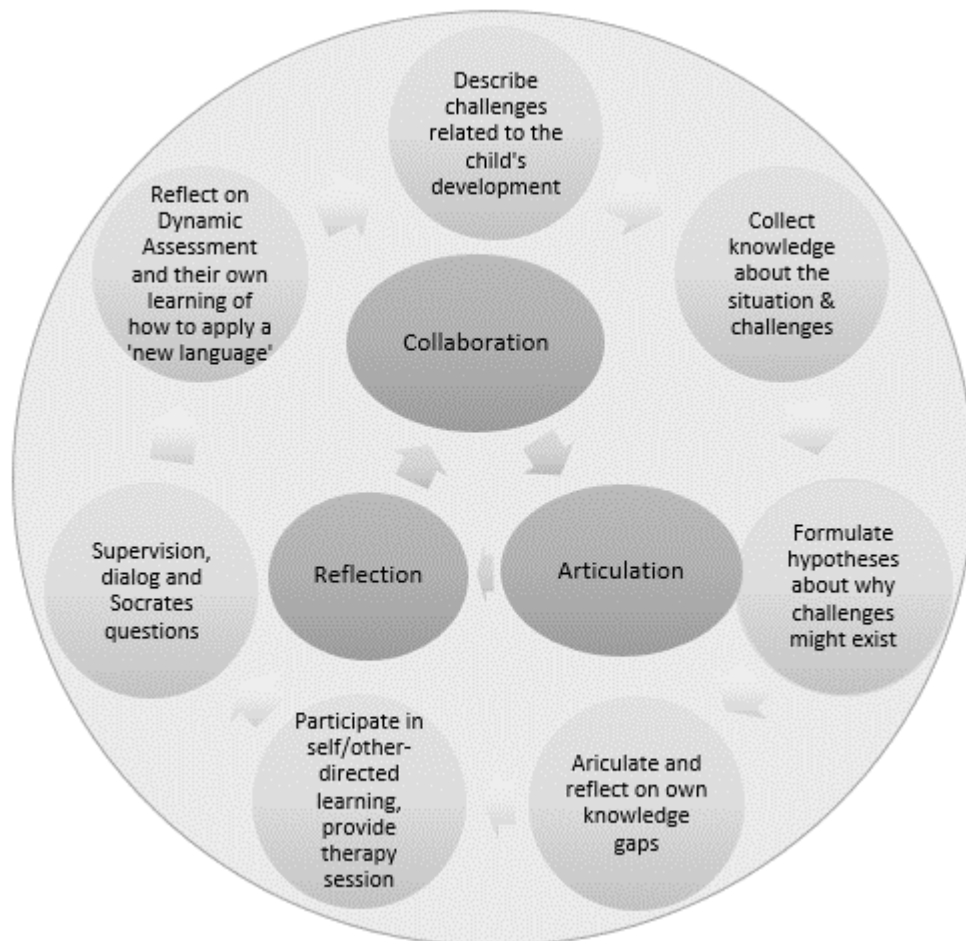

Figure 1. The Circle of Enculturation (adapted from Lu, Bridges & Hmelo-Silver (2014) 'The PBL tutorial cycle'.

Learning is reciprocal and the particular questions, thoughts, ideas and evaluations proposed by the students to the supervisors during their PBL learning situations contribute crucially to the ongoing improvements and adjustments made to the concrete setup and learning practices in the clinic and to the ongoing development of the culture of the clinic. In this way, each group of students leave their personal traces in the clinic, despite them not necessarily being conscious of having done so.

MOTIVATION AND PROBLEM-BASED LEARNING

As mentioned earlier, a key concept behind all learning is motivation. In the case of our PBL in the clinic, low levels of motivation are sometimes identified at the beginning of the 1st semester, which is the semester of transition from the heavily theoretically-based BA programme to the applied MA programme. In this semester, students are obliged to read heavy loads of compulsory theoretical and empirical literature in order to provide them with a minimally sufficient knowledge of the area in which they will work during their internship.

As described above, once entering their 2nd semester and initiating their main period of internship, the students become responsible for planning and executing continuous sessions of dynamic assessment with a child or adolescent and are also responsible for providing psychological consulting to the family. During this semester, we always observe an extensive blossoming of original intrinsic motivation among the students, enmeshed within the development of close long-term relationships among the students, and long working hours in the clinic, while preparing sessions or reading and understanding assessment tools. Interestingly, the semester of the internship is actually not a graded course, which emphasises the point that motivation must have other drivers than high grades. In order to earn credits, the student needs to be actively attentive during the internship and to write a report describing the internship based on reflections of their own learning process during their internship, which is then graded pass/fail.

So the question remains, why does intrinsic motivation increase with the disappearance of the grade system as a final reward? In our experience this is caused by the students' personal PBL experience of finally being able to identify themselves with real-life psychologist practices, as they now are being challenged in how to reach psychologically-based solutions to complex problems, and given original responsibility for real people in real-life situations, albeit under very close professional guidance and supervision. Interestingly, the responsibility arising from forming part of the reflective teams in the clinic, even if this only implies low-level practice activities, is taken very seriously by the students.

In the educational literature, it has been suggested that motivation can be enhanced through increased feedback from the other students or teachers (Dolmans & Schmidt 2006). In the clinic, the students receive feedback from colleagues, supervisors, children (e.g. did they understand or enjoy the therapy?) and the parents immediately after their therapy session, a factor which also seems to contribute to their increased motivation at this stage of learning.

CONCLUDING REMARKS

As addressed by Wiggins et al (2016) PBL processes often are not clearly psychologically informed, and little is yet known about how PBL is used in psychology courses in higher education. When educating psychologists we face the pedagogical challenge of closing the natural gap between the protected life as a student studying to become a professional and the scary high level of responsibility demanded when working in a healthcare profession.

In this paper we have introduced the theoretical framework underpinning the development of a concrete PBL Masters programme in the psychology department of Aalborg University, and how the programme can facilitate students' enculturation into the discipline of psychology. Furthermore, we have illustrated the learning process as the circle of becoming enculturated as a Danish psychologist.

The student- and practice-centred model is expected to bridge the culture of higher education and the culture of child psychology as a professional discipline, and thereby narrow the gap that causes stress and anxiety in the students, thus boosting self-efficacy. The PBL model offers the opportunity to learn *how to learn* as opposed to *what to learn*. Finally, we argue that the changes we experience in the students' motivation from extrinsic to intrinsic during their transition from being exposed to distally defined psychological concepts to actively experiencing conceptual meanings through real-life PBL activities occurs as a dialectical process providing the students with a stronger identity as a child psychologist.

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[1] Education for psychologists in Denmark consists of a 5-year university degree that leads to a professional qualification (MSc in Psychology; Danish: Cand.Psych.). In discussing the content of the 5-year curriculum leading to the protected title of Cand.psych., we term this the psychologist programme rather than the psychology programme. We use the term 'student psychologists' to refer to individuals specifically studying to practise as psychologists, as distinct from those studying psychology as a major.