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The Way We Were

Introduction to the Readings

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On behalf of the editorial team – Camilla Rams Rathleff, Kathrine Liedtke Thorndal and David Kergel – I have taken it upon myself to write this short introduction to our 2024 Special Issue *Essential readings in Problem-Based Learning*. Like the contributions in this, very special Special Issue, it has an informal tone driven by a personal narrative.

In this issue, we have asked for essential readings. We went looking for texts that could introduce the field to a newcomer, and at the same time were texts that mattered. That carried a special meaning.

About a year ago, I asked my colleagues to look at their own journey and rediscover texts that had helped them, and that had shaped them as researchers. And then I asked them to tell their story and present their chosen text to the rest of us. The exercise started as an activity for a Christmas gathering at IAS-PBL at AAU, and after that, I expanded the idea into the Special Issue call that now has become the issue that you hold in your hands.

It was important to me that the researchers, or should I say, authors viewed their contribution not as an academic work or a scientific publication, but as a chance to speak, to tell their story or any story they believed was important for others in the field. Therefore, we stimulated an informal tone, even personal at times, and a shorter format than a normal scientific paper (in our field). I wanted the Scholar to emerge, and for this Scholar to sit down with me, and talk to me. Inspiring me to read, to think, to wonder. Ralph Waldo Emerson's *The American Scholar* was both an inspiration and an example of mine for this idea and for this Special Issue.

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However, we are a scientific peer reviewed journal, and we needed to frame the issue with something more systematic and methodologically acknowledged. This I found, in a talk at a conference on the scholarship of teaching and learning, as I heard about slow reading and the slow movement. The movement has been around for a while and has many cousins, such as slow-food, slow-travel and even slow-medicine. In relation to academia, the movement is mostly a form of counterculture or resistance to 'the modus 2 science', 'the corporate university' and the present paradigm of quantification, growth and speed in the comprehension of higher education. As such it is often focused on providing a ground for criticism of neoliberalism, capitalism and colonialism while promoting and siding with e.g. feminist and post-human positions. However, it does not have to be as radical as that. In short, slow reading is just a more careful attitude, focusing on working with dense, complex, and important texts, sentence by sentence, paragraph by paragraph. To not merely trust in numbers of citations, or in endless needless empirical studies with dubious scientific value, but instead to indulge in the text, making meaning and enriching comprehension. Presented as that it might look like a nostalgic longing for 'the way we were', a dream of another time, but I think it can represent an ideal and a method that certainly is achievable. In this Special Issue, the authors take themselves back to 'the way they were' at some part of their academic journey and allow themselves to return to a text that meant something, that required attention and that made a difference. A text worthy of a slow reading both then and now.

Nineteen scholars from all over the world answered our call with good and intriguing abstracts. For different reasons, some had to leave along the way, but we thank them for their interest in the idea. In this issue, we present 11 daring and fascinating papers, written by researchers based in Denmark, Sweden, Great Britain, Turkiye and the Netherlands.

Any issue on essential readings in PBL will probably include a reading of some text by the American philosopher, educationist and pragmatist John Dewey. Dewey is inescapable if you want to engage seriously with PBL. He surfaces in papers, dissertations, books and projects, often as a framework, or as a foundation, but sometimes as the very object of investigation. In our issue, we have two papers addressing texts by Dewey. Petersen reads closely the classic work *Democracy and Education* (1916), using this reading to argue for the values of PBL to be in learning itself, and less in extraneous aims like employability. Feldt is reading Dewey's perhaps slightly less known *Human Nature and Conduct* (1922) and chooses to, as he says, dwell on two passages. His close and slow reading carries a similar argument as Petersen's, warning us of placing too much value on the external goods (here represented by utilitarianism), and instead profoundly valuing the unique and present learning event for its own

sake. Both papers are deeply insightful, and allows for both a stimulating reading of Dewey, and some well-argued thought on the present discourse on the virtues of a PBL approach in education.

For Scandinavian researchers in PBL, some more local theorists carry a lot of weight. Here we are very happy to present three such thinkers in three intriguing papers. Feilberg presents us with Eva Hultengren and her title *Problem-orientation, project work and report writing* from 1976. It had a huge impact on the design and comprehension of PBL at Aalborg University. However, Feilberg succeeds not only in giving us a historical account but is much keener on showing us the ideas in the book as valid approaches to project work and supervision that certainly enriches the present debate and research on the subject. It is a pity the work in focus is only available in the Danish language. Another Danish language work, Jes Adolphsen's *Problems in Science – an epistemological reason for problem orientation* (1992), was mandatory reading for students at Aalborg University. Two such students, Nøhr and Jensen, revisit the book, and take us through their slow reading and through their memories, effectively showing us the two important principles of PBL: student-driven and problem-based. Finally, is the paper by Boelt, that concerns itself with Knud Illeris' *Problem orientation and participant management – an alternative pedagogic* (1974). Boelt's writing is controversial and stretches our understanding of academic texts and academia. For some he goes too far into the personal and illustrative imaginary, for others, he might be spot-on, in terms of refreshing and reshaping the academic format. We will let the reader decide for him- and herself. Regardless, Boelts reading of Illeris is a journey back to a time of alternatives and countercultures, that also come to predict the outcome-based learning that we have today. This makes it interesting to read Boelt's presentation alongside the ones from Petersen and Feldt, but also to reflect on which predictions today's alternatives and countercultures might unleash.

Jørgensen wants us to understand that the philosophers Michel Foucault and Hannah Arendt are important to engage with for PBL researchers, even though they never explicitly wrote about the pedagogical approach of PBL or even about the pedagogical philosophy of problem orientation. But Jørgensen creates a compelling argument that the two well-known thinkers allow us to comprehend PBL as "a personal process of self-formation with important political and ethical implications". By all means, Jørgensen opens the door for Foucault and Arendt showing us that there is definitely something there to be explored.

Savin-Baden does not, like the others, so much look back for her reading, as she chooses to look ahead. Taking us through the creation and deliberation of her own work, co-written with Heather Fraser, *Rethinking Problem-based Learning for*

the Digital Age: A Practical Guide for Online Settings from this year 2024. It is immensely fascinating to read the personal reflections that come from revisiting your own work, now not as a writer, but as a reader. It is an enlightened paper, that, as a bonus, introduces many of the theoretical concepts that the book develops, and that anyone researching or practicing digital PBL undoubtedly will benefit from knowing.

Teaching by means of PBL is central to Kirkgöz, who provides us with her application of Suzy Edwards and Marie Hammers *Laura's Story: Using Problem-Based Learning in Early Childhood and Primary Teacher Education* (2006). You never doubt Kirkgöz' commitment and the importance of the book to her own development of teacher education, but at the same time, she gives us a slow reading that allows the book to shine and to make itself important. A central theme in the book, as well as in the paper, is the mixture of theory and practice that PBL allows for.

From teaching to research. Velmurugan, as Kirkgöz, is also slow reading a work of great importance for him and his professional development. But this time for researching PBL. The work is *Nexus-Analysis – Discourse and the Emerging Internet* (2004) by Ron Scollon and Suzie Wong Scollon. Velmurugan presents the book well, and connects the dots to PBL research, by highlighting the social actions and their expressions of meaning by historical bodies, interaction order and discourse. The book might be new to many PBL researchers, but Velmurugan makes sense of it, not only in his own story, and it is always important to recall and reinvestigate the inherited social aspect of PBL.

Forementioned Maggie Savin-Baden is an important thinker for the modern development of PBL, and for Børsen, she provided the paper that unlocked the issue of facilitating successful learning processes in transdisciplinary student groups. Børsen faced the problem as he was making crucial revisions to an educational program involving different disciplines and enrolling students with different disciplinary backgrounds. Savin-Baden's 2016 paper "Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning" was the key that Børsen needed, and he gives a gripping tale thickened by practical experience and theoretical deliberation. Along the way we become nicely acquainted with Savin-Baden's article and with its ideas, showcasing both papers as indeed an essential reading.

From Ryberg, we have so much more than just a fascinating title. Ryberg also reads an article, or actually two articles. First, he presents "The Tyranny of Participation and Collaboration in Network Learning" (2008) by Debra Ferreday and Vivien Hodgson, and later he supplies us with "Here be Dragons: Approaching Difficult Group Issues in Network Learning" (2014) by Linda Perriton and Michael Reynolds. In a wonderful mixture of personal story and

theorizing the darker sides of group work and collaborations are explored and nuanced. Ryberg manages the difficult task of both engaging and valuing PBL, as he simultaneously criticizes or questions some of its 'taken for granted' perceptions. There is wit, there is humor, and there is a good deal of inspiring slow essential reading.

That sums up the contributions you will find in this Special Issue. It is a great pleasure to present it to the world, and I'm proud of all the authors who dared and shared their stories and readings. Thank you so much!

Finally, I would also like to thank my co-editors for their hard work and commitment to the issue. Without you, the issue would not be. Thank you!

Please, enjoy your reading.

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Extracts from John Dewey's *Democracy and Education* (1916)

Negating Extraneous Aims in PBL

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Abstract

In this article, I present selected extracts and formulations from John Dewey's seminal book *Democracy and Education* (1916) that speak to the question of the educational purpose of PBL. Dewey's work, and in particular this book, is in many ways foundational in regard to arguing for PBL as an educational approach. However, in contemporary discourse, PBL is predominantly tied to what Dewey argued against, namely extraneous aims. Rereading Dewey might help us recover PBL as a form of education 'worthwhile in its own immediate having' (p.109).

Keywords: John Dewey; educational aims; employability; means and ends

Introduction

When you survey the contemporary presentation of Problem-based Learning (PBL) on university websites and in the literature, there is almost no end to what it is good for. Acquiring knowledge and skills, developing solutions to professional problems, cooperating with the business community, teamwork abilities, project management skills, 21st century skills, etc. In numerous instances, these outcomes are tied to labour market readiness/employability as

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the ultimate outcome (see e.g. Wyke, et al., 2022; and Siddamal & Despande, 2021). While we might be swayed by all this, and while these outcomes may well be desirable, I wonder what it means to continuously constitute and measure PBL's merits in this way. What are the implications of speaking about and evaluating an educational approach this way? More generally, how is it possible to justify an educational approach in our day? What is the scope of possibilities? Which rationales and outcomes are deemed sensible and convincing, and which seem preposterous or downright irresponsible?

Thinking about these questions has led me once again back to John Dewey and his landmark book *Democracy and Education: an introduction to the philosophy of education* (1916). Not only is John Dewey considered to be, if not *the* or a founding father, then a significant influence on the development of PBL (see e.g. Barrows & Tamblyn, 1980; Savery, 2006; Kwan, 2009; Dar, 2021) but in this book, he also specifically discusses the outcomes and aims of education in a way that may help us to reflect on the questions posed above. What was his understanding of the aims and outcomes of education, and what ideas and practices did he warn us against? Is there something in his philosophy of education that we need to bring back into the conversation about the merits of PBL?

Democracy and Education

John Dewey's *Democracy and Education* (1916), introduces several ideas that were considered novel at the time and have had a lasting impact on educational theory and practice. Dewey proposes that education is "a necessity of life" and the means to the "social continuity of life", through "a communication of habits of doing, thinking, and feeling from the older to the younger" (p. 3) – where learning and growth occurs through interaction with others and with the environment. This was a shift from the traditional view of education as a process of transmitting fixed knowledge from teacher to student. At the forefront for Dewey is a concern to safeguard a democratic society. Dewey views democracy as more than just a political system however, it is a way of life that requires the active participation of all members of society. Democracy will not happen automatically but must be cultivated by the individual's ability, will and willingness to participate. Dewey envisions educational institutions as democratic communities where students learn through decision-making, deliberation and active engagement, rather than passive absorption of given information. As such, democratic participation is both the means and the ends of what Dewey considers to be 'true' education.

Educational aims

While the book clearly puts a direction to our educational efforts – democratic participation – Dewey introduces some important distinctions in regard to how we think about educational aims/purposes and outcomes. His thought challenges us to consider or reconsider what a purpose might be and what might be a more or less desirable side-effect. Fundamentally, Dewey believes that all human action is guided by what he calls 'ends-in-view', but these are not predetermined, fixed, or final. Instead, they are provisional and subject to change based on the circumstances, the environment, and outcomes of the actions taken (Dewey, 1922). While educational efforts should be guided by aims, to be considered both 'intelligent' (analytical and based on situated observation) and 'conscious' (purposeful and deliberate), it transpires that this way of thinking about human action should be carried over into pedagogy.

So, Dewey argues for the importance of formulating educational aims "to be aware of what we are about" (p, 104). Meanwhile, not any aim will do. He offers some criteria for what he calls 'good' aims (pp. 104-106). First the aim set up "must be an outgrowth of existing conditions", that is, based on "a consideration of what is already going on" and take account of resources and obstacles. Second, as mentioned above, the aim as it "first emerges is a mere tentative sketch. The act of striving to realize it tests its worth". An aim must therefore be "flexible; it must be capable of alteration to meet circumstances". The aim, in short, should be *experimental* (p. 105). This resonates with the notion that all human action is experimental and outcomes to some degree unpredictable, in that every activity "leads out indefinitely into other things" (p. 109). Third, and quite intricately, "the aim must always represent a freeing of activity". In other words, perhaps also intricate, the "doing with the thing, not the thing in isolation, is [the] end" (ibid.). As Dewey explains,

> "In contrast with fulfilling some process in order that an activity may go on, stands the static character of an end which is imposed from without the activity. It is always conceived of as fixed; it is *something* to be attained and possessed. When one has such a notion, activity is a mere unavoidable means to something else; it is not significant or important on its own account. As compared with the end it is but a necessary evil; something which must be gone through before one can reach the object which is alone worth while." (p. 106, emphasis in original)

Here Dewey cautions that we do not sever ends and means and thereby relegate the activity itself to mere hoop-jumping. "Every divorce of ends from means diminishes by that much the significance of the activity and tends to reduce it to drudgery from which one would escape if he could" (p. 106). As he continues,

> "The vice of externally imposed ends has deep roots. Teachers receive them from superior authorities; these authorities accept them from what is current in the community. The teachers impose them upon children. […] The latter receive their aims through a double or treble external imposition and are constantly confused by the conflict between the aims which are natural to their own experience at the time and those in which they are taught to acquiesce. Until the democratic criterion of the intrinsic significance of every growing experience is recognized, we shall be intellectually confused by the demand for adaptation to external aims." (p.108-109)

General and handfast aims that are formulated in advance become anything but experimental, rather they are abstract or detached from specific context,

> "And such abstractness means remoteness, and throws us back once more, upon teaching and learning as mere means of getting ready for an end disconnected from the means. That education is literally and all the time its own reward means that no alleged study or discipline is educative unless it is worth while in its own immediate having." (p.109)

Discussion

As I suggested at the outset the ways in which the worth of PBL is asserted and measured these days is predominantly with reference to useful and sensible skills that lead to employment in the future. These are precisely the kind of remote treble or double external impositions that Dewey warns us against. Employment is a somewhat abstract end, a remote future, the reward for undertaking the series of skill-accruing activities asked of you in the present. In the course of this then, we might not be so surprised if students become instrumental and disengaged. Of course, many of those who use PBL as an 'activity' tie the problem very closely to the field of practice that ultimately will employ the graduate. This is a way of reducing the distance between means and ends. The question is, though, if the problems posed by practice, may also not feel like a remote imposition. To remove the distance entirely would mean to situate the entire educational program as workplace learning.

Those of us involved with PBL in practice continue to see it do its 'magic' almost in spite of the ways it is framed in institutional discourse and in study regulations with their preconceived learning outcomes. With regular occurrence students, especially those who are invited to define their own problem, become engrossed due to the intrinsic significance of the activities. We all forget about learning outcomes and the labour market for a while and experience education "worthwhile in its own immediate having" (p. 109). This

is why educationalists 'believe' in PBL beyond the marketing hype. They can see it happen, even if the approach is never measured on engrossment.

From this we could surmise that it is insignificant how we assert and measure PBL as an educational approach; the Deweyan 'magic' happens regardless so why quarrel? Here we have to consider two issues. First, PBL advisors report that the magic does not, in fact, happen by itself. They explain how they continuously have to intervene with what seems to be preconceptions about 'how to school' that students bring to the table. 'How to school' is predominantly about cracking the code to a good grade towards a smooth completion of a degree. In this, the PBL-activity becomes construed as just another hoop to jump to achieve an external and remote reward. This suggests that the external imposition has now become internalised. That this is so does not change the fact that the activity becomes a 'necessary evil' and not as such immediately significant. Faculty intervention is about trying to turn the attention to the worthwhileness of the activity itself, i.e. the *interested* inquiry, where to

> "be interested is to be absorbed in, wrapped up in, carried away by, some object. To take an interest is to be on the alert, to care about, to be attentive. We say of an interested person both that he has lost himself in some affair and that he has found himself in it. Both terms express the engrossment of the self in an object." (p. 126)

What Dewey notes, though, is that

> "When material has to be made interesting, it signifies that as presented, it lacks connection with purposes and present power, or that if the connection be there, it is not perceived. To make it interesting by leading one to realize the connection that exists is simply good sense; to make it interesting by extraneous and artificial inducements deserves all the bad names which have been applied to the doctrine of interest in education." (p. 127)

So, if students have internalised the extraneous argument of value we consistently offer to them, PBL advisors are in a precarious position: to make the PBL activity 'interesting' they may feel that they need to connect with 'bad inducements' – good grades or job market relevance – simply because the 'magic' argument is weak and a bit ridiculous in the context. "In education, the currency of these externally imposed aims is responsible for the emphasis put upon the notion of preparation for a remote future and for rendering the work of both teacher and pupil mechanical and slavish" (p. 110). So, if we accept the extraneous reasons for PBL, they will become further normalised, potentially making it increasingly difficult for the 'magic' to happen.

The second issue relates to the question of who has the responsibility to create or even uphold an alternative discourse for the worth of PBL education? Could we not expect educational institutions and researchers to do so? If institutions continue to see for instance disengagement, instrumentalism, or strategic learning from students, perhaps they need explicitly intervene in un-educational discourse and offer education worthwhile in its own immediate having? In doing so, we might borrow the language and philosophy Dewey depicts here:

> "Gardening, for example, need not be taught either for the sake of preparing future gardeners or as an agreeable way of passing time. It affords an avenue of approach to knowledge of the place farming and horticulture have had in the history of the race and which they occupy in present social organization. Carried on in an environment educationally controlled, they are means for making a study of the facts of growth, the chemistry of soil, the role of light, air, and moisture, injurious and helpful animal life, etc. There is nothing in the elementary study of botany which cannot be introduced in a vital way in connection with caring for the growth of seeds. Instead of the subject matter belonging to a peculiar study called botany, it will then belong to life and will find, moreover, its natural correlations with the facts of soil, animal life, and human relations. As students grow mature, they will perceive problems of interest which may be pursued for the sake of discovery, independent of the original direct interest in gardening—problems connected with the germination and nutrition of plants, the reproduction of fruits, etc., thus making a transition to deliberate intellectual investigations." (p. 208)

Concluding remarks

The intention of the above has been to dust off some important insights that originally sparked the interest in and employment of PBL and affiliated approaches. PBL became a vessel for and a practical manifestation of some ideas about education, key amongst which is the relationship between ends and means. It has been an approach that seeks to negate extraneous interest for the simple reason that it stands in the way of true education. The last three decades of outcomes-based education discourse, the graphic language of learnification (Biesta, 2010) and skillification of education, and the prevalence of human capital ideology have all but stamped out alternative ways of arguing for the purposes of education (see also Sarauw, 2011). They have formed a hegemony that makes other notions appear almost ridiculous or embarrassingly nostalgic (e.g. 'education for education's sake'). Resurrecting Dewey, and understanding

his philosophy and arguments, will help us to strengthen an alternative way of insisting upon the role and purpose of PBL and to remind us to protect its magic. It will also make us reflect on whether our 'innovations', such as setting the problems students should solve, rather than working with their experiences, powers and interests, may in fact be unhelpful perversions that contribute to the instrumentalism and disengagement we otherwise lament.

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On the Uniqueness of "Good" in PBL

Reading Dewey's *Human Nature and Conduct*

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Abstract

In this short piece, I will dwell on two passages from John Dewey's book *Human Nature and Conduct* (1922): the section entitled "Deliberation and Calculation" and the following section "The Uniqueness of Good." In these passages, Dewey explains the crucial differences between utilitarianism and his own philosophy, and he elucidates how and why what is "good" happens only once: "In quality, the good is never twice alike. It never copies itself. It is new every morning, fresh every evening" (p. 146). I wish to dwell on these passages because they, as I see it, represent a major challenge to the utilitarian impulse in normativizing PBL and related approaches for the sake of learning or for some societal good. Dewey's problem-based philosophy, while central to PBL, is also a critical resource for critiques of how we implement PBL programs and practice PBL pedagogies. In these passages, Dewey reveals his belief in the educational event as a unique situation, a happening, which purposefully imagines an outcome but in a fundamentally different way than what we today call outcomes-directed or evidence-based education.

Keywords: John Dewey, pragmatism, experience, the educational event, utilitarianism

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Introduction

There are some central contradictions in the reception of Dewey's work, possibly also in Dewey's work itself. Most would agree that Dewey's work is crucial to the evolution of problem-based learning (PBL) in its many forms. Yet, it seems that core dimensions of Dewey's thought, those which resist being set in a formula for good teaching and learning, are often overlooked. Crudely put, one outcome of Deweyan educational thought is highly programmatic. It seeks good and right ways to teach and learn. It contains a rather strong utilitarian impulse in the sense that Deweyan thinking and PBL inspired by Dewey are good for something else such as learning in general, for culture and society, and of course for individuals. It would be really good if we did more of it. And it would be great if we could prove that it worked. Another outcome of reading Dewey is deep scepticism towards programmatic and outcomes-based learning. In this latter reading, Dewey is situationist, committed to education and learning as an event, a happening, and his pragmatic naturalism places the flashlight on mutations, offspring which we did not know that we needed. This short essay will present discussions and passages from *Human Nature and Conduct* (1922) which support the situationist Dewey. Being a passionate reader of Dewey for around 25 years, my reading is bound to be personal, biased, and probably somewhat idiosyncratic. I have taken the opportunity with this special issue on PBL to not curb my enthusiasm for particular sections and passages in what I find to be one of Dewey's most poetic and heartfelt books. In the process of reading certain passages slowly and carefully, we will come across essential problems in PBL from a Deweyan perspective. In this way, we might find confirmation that Dewey's thought is indeed essential for PBL but hopefully, we will also find equally essential mementos. Most importantly, that Dewey was deeply disdainful towards utilitarianism, and that he opposed the instrumentalization of "the good." Here, Dewey can help us save PBL from strong impulses within its own evolutionary history.

Think about the radicality of this sentence: "In quality, the good is never twice alike. It never copies itself. It is new every morning, fresh every evening" (Dewey, 2008 [1922], p. 146). Nothing is ever the same. From an educational and pedagogical perspective, this is haunting. Every situation is its own unique situation. What worked yesterday might not work today. The students in front of you are not the same as the students you had yesterday. Your program, your tricks, your jokes, your profound comments about important texts played out beautifully yesterday but today they just linger helplessly in open space. Imagine groups of students following guidebooks about how to do PBL. How the books implicitly promise them good outcomes. Do this and you will get that. How easy it is to go through the motions while "the good" escapes us. Every student knows from experience how "the motions" of sitting through classes,

reading about theory and method, listening to tips and tricks, imitating phrases in the hope of decoding the discourse, can be menacing. Still, many students wish for exactly that and most of us as teachers want to provide the magical tools. But it is possibly as far away as you can get from authentic learning situations as Dewey saw them. In this regard, PBL can both enact itself like any other kind of teaching and learning through manuals and guidebooks, but it can also be something quite different insisting on the unique experiences of individual students. As Dewey writes elsewhere: ideas cannot be conveyed from one person to another. They must be had (Dewey, 1916, p. 166).

It can be hard to grasp that in a Deweyan sense there is no manual for facilitating authentic learning situations. When experience is the educator, and learning happens in situations as events where and when experiences are had, effectful learning can happen in unforeseen places as well as in situations we would not consider good pedagogy. Even the best and most well-planned and well-intentioned pedagogical design can be lifeless and numbing. We might even think that this is often the case. Dewey's demand for authenticity, for concrete and real problems, his demand for "life" and genuine stakes in the given present is in many ways a critical challenge to well-designed curricula which gently and safely lead students towards learning goals. When experiences cannot be conveyed and the good can never repeat itself, everything is at risk. But the risk is also the promise. The promise of having meaningful experiences which change your ideas, your perception of things, your perception of yourself, and maybe even change your life. The enemy is indifference, ulterior motives, shallow performativity, primitive causalities (stimuli-effect logics), and particularly cynical calculation. And everything rests on the subject matter. In the absence of any issue, nothing will swirl together, nothing will gather itself as a situation to be learned from (Dewey, 2016 [1927], p. 76).

A Philosophy of the Present, a Philosophy of Being Present

In the section entitled "Deliberation and Calculation," of *Human Nature and Conduct* Dewey opposed his concept of deliberation to that of calculation. Derogatorily, he called utilitarianism "calculation theory," thereby installing a fundamental difference between two ways of being present and two ways of thinking about the future. I suspect that one of the reasons for his harsh depictions of utilitarianism is the seeming similarities between the aims of utilitarianism and pragmatism. Utilitarianism's fundamental notion of utility and good for as many as possible has similarities to pragmatism's focus on the practical effects of actions. Dewey recognized that utilitarianism has basic commonsensical points about doing good but: "Its commendation of an

elaborate and impossible calculus was in reality part of a movement to develop a type of character which should have a wide social outlook, sympathy with the experiences of all sentient creatures, one zealous about the social effects of all proposed acts, especially those of collective legislation and administration. It was concerned not with extracting the honey of the passing moment but with breeding improved bees and constructing hives" (Dewey, 2008 [1922], p. 143).

Thus, we must gather that Dewey's problem-based learning is not about educating improved bees or constructing hives. Deweyan bees do not work to improve themselves for the future or for the benefit of societal hives. They do it for the honey. "On the contrary, let the future go, for life is uncertain. Who knows when it will end, or what fortune the morrow will bring" (p. 143). It is hard not to think about how easily and how often PBL is also a utilitarian educational philosophy. A philosophy concerned with breeding improved bees and better hives for the benefit of future societies. We cannot write *carpe diem* on our universities' webpages, or that we aim for our students to bathe in the honey of life, letting tomorrow go. Instead, we labor hard to convince students, employers, and politicians that our bees are indeed better bees. And the best thing would be if we could prove it through learning outcomes and employability statistics. That is the order of the educational world of today. But what do we do with the romantic and vitalist legacy inside Deweyan PBL?

One thing we could do is to reflect on the relationship between the past, the present, and the future. Experiences are always pasts. They happen as experiences when we reflect over past events. Experiences mark a difference between a before and an after. In his famous article on the reflex arc, Dewey explained that what moves (stimuli) and what is being moved (effect) is not known in the situation itself but it, the causal relation, happens as reflection on experience (Dewey, 1896). This thinking is the expression of a variation of presentism in which the past is (of the) present as experiences, marks of differences which find order through reflection. When new experiences are had, the past changes sometimes a little, sometimes dramatically. That the past in Dewey's thinking is of the present, a feature of the present, does not minimize its impact. Rather the opposite. The past is a living reservoir of experiences, many of which have become habits, while others are present as problems with structuring duration. We can say that the problems of what is truth, beauty, evil, justice, or how we learn, are structuring problems which we have built institutions around. Such reflections on experiences and on organizing knowledge are central to many PBL pedagogies.

The future is also of the present in Dewey's thought but in a different modality than the past. The future is a fictional drama. It is always ahead, not yet happened, and in principle the future cannot begin, paraphrasing Luhmann's

catchy title (Luhmann, 1976). The key concept for Dewey in this regard is deliberation. "Deliberation is an experiment in finding out what the various lines of possible action are really like. It is an experiment in making various combinations of selected elements of habits and impulses, to see what the resultant action would be like if it were entered upon (p. 133). […] Deliberation is rational in the degree which forethought flexibly remakes old aims and habits, institutes *perception and love* of new ends and acts (my italics, p. 138)." Deliberation's rationality is not about choice. Rational, calculated choices are an illusion in Dewey's world because our choices are guided by habits and impulses. Many habits are invisible to us and impulses are impulses, emotions, not rational in the common sense. Deliberation pertains to the conditions of futurity-as-love, or a desire to understand and to act in the world.

The opposite, the enemy, of this kind of past-present-future relation is for Dewey utilitarianism. He wrote: "Some one may ask what practical difference it makes whether we are influenced by calculation of future joys and annoyances or by experience of present ones. To such a question one can hardly reply except in the words "All the difference in the world" (p. 140)." On Dewey's thinking, the calculated future regulates actions in the present based on profits and losses. It installs a real future toward which all actions in the present are directed. If our calculations are strong enough, we would know exactly what to do, and there would be no real need for deliberation. Desires, joys, love, impulses, dramas of life, all sorts of honeyed experiences would be disturbances misdirecting us from the right path towards the calculated future. For Dewey, this is a pathological problem. The richness of the present comes under the control of the calculated future which deafens life and creates "sickly introspection," an almost prophetic formulation we might say in the light of today's systemic focus on mental health and emotions. In his quarrel with utilitarianism, we find Dewey's romanticism and vitalism at its fullest expression.

The Love of Nature, the Nature of Love

Most often when Dewey used the word nature, he meant nature in its scientific sense. When he wrote about human nature, he did not mean human cultural habits. Even today, this is a radical thought, and it enters into our current discussions about human-culture-nature relations. Dewey's naturalism can be understood as a to many chimerian construct of Hegel and Darwin. Coming to terms with Dewey's naturalism might be one of the hardest challenges for Deweyan educational thought. How can we think about something as constructed, normative, powerful, discriminating, and instrumental as education on such a backdrop? With our critical tools, it is easy to construe the

idea that humans are also organisms which adapt to the environment seeking their own "growth," their survival, as any other living thing does as fundamentally problematic and uncritical. And what can love possibly mean for a naturalist?

Towards the end of this paper, I will very tentatively probe at possibilities for understanding Deweyan naturalism without falling into the utilitarian trap of thinking that it explains best ways to learn most in concordance with human nature. This demands a reconsideration of what nature meant as a social ethics for early pragmatists. Dewey was part of a circle including C.S. Peirce, William James, Jane Addams, G.H. Mead, and others, who read Darwin as *the* watershed of modern thought. They considered the Darwinian universe to be ever-expanding, diversifying and regularizing, at the same time, ever seeking more life. The engine, the prime mover, was experiments, mutations, within trained habits, leading to a regularized pluralism. Spontaneous regeneration, or in Peirce's phrasing "evolutionary love" (Peirce, 1893). Objects in the way of the flow might provoke an experiment, but sometimes mutations just happen, offspring we did not ask for might appear and we would have to consider its existence. Objects are in this way concrete, material problems. Not in a value-laden negative metaphysical manner but in a matter-of-factish, pragmatic, manner as what we are facing in front of us.

In my reading, *Human Nature and Conduct* is permeated with this sentiment. Paradoxically, the sentiment is tragic. Actions are reactions and reactions are actions. Experiences cannot really be planned. The social ethics have a, to some, dark tinge of Hegelianism in the sense that all life forms carry with them some right, but they will die or disappear anyway despite being justified. There is no redemptive horizon, except perhaps as reflected by Dewey's friend Horace M. Kallen who could find comfort in Jahve's indifference to man (Kallen, 1918). Then something beautiful arises such as the good which is new every morning and fresh every evening. Then learning is a mode of being instead of a calculus or a design. Then the future is that drama which can never happen while the present is where our deliberations play out, where the plane of the possible might expand. All of this on a minor scale, mostly, in the mess of our habits and impulses.

Conclusion

John Dewey's philosophy, particularly as articulated in *Human Nature and Conduct* (1922), offers mindboggling queries into what we can call the other nature of problem-based learning (PBL). Dewey's critique of utilitarianism, which he derogatorily terms "calculation theory," underscores his belief in the

uniqueness of educational events and the value of unconveyable experiences. He argues that "the good" is never the same twice, emphasizing the importance of situational and experiential, "evental," learning over standardized, outcomes-based approaches. Dewey's concept of deliberation, as opposed to calculation, highlights the role of imaginative rehearsal in understanding and acting in the world. This perspective challenges the current educational focus on measurable outcomes and employability statistics, advocating instead for authentic learning experiences with a strong taste for romance, life excess, and honey.

The essay also highlights Dewey's naturalism, influenced by Hegel and Darwin, as a core dimension of his presentism which views humans as organisms adapting to their (immanent) environment. This perspective raises critical questions about how to understand the role of education in fostering growth and survival in a pragmatic, non-instrumental, yet ethical manner. Dewey's romantic and vitalist legacy, valuing the richness of present experiences, stands in stark contrast to the utilitarian focus on future benefits. Moreover, Dewey's emphasis on the unplanned and spontaneous aspects of learning challenges well-designed curricula that aim to safely guide students towards predetermined learning goals. His demand for authenticity and genuine stakes in education underscores the potential for meaningful, transformative experiences that can change one's ideas, perceptions, and even life. Perception and love being the keywords, earlier in the essay summated as "futurity-as-love".

Ultimately, Dewey's philosophy as he presented it in *Human Nature and Conduct* offers a critical and constructive lens through which to view PBL through its other nature, advocating for a more nuanced and experiential approach to education that values the present moment and the unique, unrepeatable nature of each educational event. This perspective not only enriches our understanding of PBL legacies broadly speaking but also provides a necessary critique of the utilitarian impulses that often drive contemporary educational practices including PBL.

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The Potential of Process Orientation

Rereading *Problem Orientation, Project Work and Report Writing* by Eva Hultengren (1976)

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Abstract

What Illeris' *Problem orientation and participant direction – A proposal for alternative didactics* (1974) signified for Roskilde University, Eva Hultengren's *Problem orientation, project work and report writing* (1976) signified for Aalborg University. Both books were soon published in a second edition, but only Hultengren (1976) focused specifically on higher education and the developing experimentation with group organized project work at Aalborg University (SSH faculty), which later introduced project work into the PBL-tradition. In this paper, I argue that *Problem-orientation, project work and report writing* (Hultengren, 1976) is not just of historical interest. On the contrary, it offers rich analysis and perspectives on issues which are still debated today internationally regarding the role of the supervisor with respect to process orientation, the degree of participant direction and the knowledge interest underpinning project work.

Keywords: Process orientation; Problem orientation; Project pedagogy; Supervision; Bildung

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Introduction and Who is Eva Hultengren?

Eva Hultengren is a psychologist and was associate professor and part of Aalborg University from its foundation in 1974. Hultengren taught and supervised within the basic year of the human sciences and the social sciences, specializing in pedagogy and social psychology. Hultengren is the author of several books on education, notably on project work in higher education (1976, 1979a), workers' education (Hultengren & Olesen, 1977) and on political and interdisciplinary education (1979b). In 2012 she was awarded an honorary membership of the Danish Psychological Association (Hultengren, 2012). As part of the 40th anniversary of Aalborg University, Hultengren was invited to reflect on the introduction and development of problem- and project-based learning at Aalborg University (Hultengren, 2014). The work and impact of Hultengren is discussed in *The construction of teaching roles at Aalborg university centre 1970–1980* (Servant-Miklos & Spliid, 2017) and more recently in *Forskellige forståelser af problemorientering* [Different understandings of problem orientation] (Dahl, 2022) and *Projektarbejdets Dannelsespotentiale* [The Bildung Potential of Project Work] (Feilberg et al., 2022, chap. 1). However, in this paper, we will focus on *Problem-orientation, project work and report writing* (1976, 2. ed. 1979a) and its contribution to current international discussions within the practice and tradition of problem-oriented project work: the role of the supervisor with respect to process orientation, the degree of participant direction and the knowledge interest underpinning project work.

Problem-orientation and Process-orientation

Problem-orientation and interdisciplinary inquiry were associated with project work from very early on in the Danish tradition of Project Pedagogy, dating back to the 1960s. But when Hultengren published her reflections on group organized project work in *Problem orientation, project work and report writing* (1976) she added process orientation as an integral part of project work and problem orientation. Let us revisit these fundamental concepts.

According to Hultengren, *problem orientation* is the process through which students learn relevant subject theory, methodology, methods and techniques in order for them to become able to prepare and carry out their specific investigation concerning an independently identified problem and answer their research question (problem formulation) (1979a, p. 7). All theoretical and methodical choices must relate to the specific problem and research question, and the process must produce something, often a report – hence Hultengren's urge to write a book on the art of developing a research report via problem-

oriented project work (1976). In the process of taking on a 'real problem' from the 'everyday life' as part of the problem orientation, students would often find it relevant to combine knowledge from different scientific disciplines, hence developing meaningful interdisciplinary work stemming from the problem itself - and not as a product of preestablished learning goals. This is a very demanding process that takes a lot of effort on the part of the students and the supervisor. According to Hultengren, process orientation conceptualises the important work done by the students and the supervisor in order to succeed in this endeavour. This early focus on process by Hultengren has been recognized by other scholars (e.g. Servant-Miklos & Spliid, 2017, p. 797; Dahl, 2022).

Hultengren defines *Process-orientation* as being oriented towards group processes, and as "being aware of the group psychological conditions that promote or hinder groups in their work" and in succeeding in their collective task (1979a, p. 20, my translation). There is no contradiction between process-orientation and product-orientation, argues Hultengren, as process-orientation is about advancing the processes that ensure the creation of the product or work which the group set out to accomplish. Thus, group organized project work is both about the *co-operative process* as well as about the *epistemological processes and the final product*.

Process orientation addresses all the processes that the students *and* the supervisor must reflect on and address to succeed in their scientific inquiry, with respect to the supervisor, the student and the project group. Hultengren lists these processes specifically:

- Verbal and non-verbal communication.
- Decision-making processes (eg. maintaining a critical-constructive discussion culture: handling different perspectives and developing new understanding).
- Domination, submission, manipulation (power relations and other unconscious processes).
- Leadership and organizing functions (taking initiative, information sharing, supporting each other, evaluating and discussing the work of each other).
- Cooperation and maintaining an effective division of labour (while reflecting the psychological processes at play with respect to this).
- Listening to others, understanding and receiving information. (Hultengren, 1979a, p. 20)

The list shows that Hultengren puts an emphasis on both group dynamics, power relations and manipulative behavior of students and supervisor (1979a, pp. 22-38, 64, 119-120; see also Dahl, 2022).

As an example of manipulative behavior, Hultengren takes the supervisor who pushes her own ideological or theoretical agenda to the students, undercutting their autonomy:

> "When the supervisor, under the guise of a problem-oriented pedagogy—and maintaining the subject-object roles—sets a series of learning objectives (data, theories, methods) for themselves and pushes the group in this direction, I would call it manipulation. This is regardless of which data, theories, and methods are involved." (Hultengren, 1979a, p. 64, my translation)

Instead, Hultengren promotes what can also be conceptualized as a self-reflective and understanding habitus in students as well as the supervisor, with a high level of awareness of roles and responsibilities (Feilberg, 2022a). Student-direction entails the stepping back of the supervisor, but not letting students on their own. According to Dahl (2022, p. 20), Hultengren strikes an importance balance between supporting the autonomy of the students while at the same time honoring the scientific and pedagogical responsibility of the supervisor.

The role of the supervisor

This dual-focus of the project group must also be supported by the supervisor's dual attention toward the scientific process and the cooperative process and end result (e.g. a written report). The supervisor is both consultant of the scientific inquiry as well as consultant of the processes of the group and their internal and external cooperation with supervisor, project partners and/or respondents. Through case examples, Hultengren (1976) presents her pedagogical vision of the project supervisor. The attitude of the supervisor is one of continuously striving to *understand* the students and their group processes even better, and what is holding them back. Hultengren (1976) describes the practice of process analysis, i.e. when a supervisor writes a report to students on her observations of group processes, and how she goes into dialogue with students about their process problems in order to help them work more efficiently and creatively together.

What strikes me is the principal discussion of the role of the supervisor that Hultengren presents: should the process aspect be addressed by a 'process supervisor' or by a non-scientific support unit (e.g. counselor), or is it the responsibility of the supervisor as part of the dual-focus of supervision? This is still up for debate (see e.g. Jensen & Lund, 2016). According to Hultengren, the responsibility of the process must not be taken away from the scientific supervisor, as she is the only one with the needed intimate understanding of

the scientific processes of the group. And splitting this responsibility off from the supervisor would also mean that the supervisor is not 'pressured' to learn about processes and her own role as a supervisor (1976).

It is important to emphasise that students' individual and private problems should be distinguished from epistemological and pedagogical issues, as only the latter fall under the supervisor's responsibility. For personal issues, students can find assistance from the student counselling services.

The knowledge interests of problem-oriented project work

The 'alternative didactic' that Illeris (1974) develops to support and substantiate problem-oriented project work as an educational activity is following an emancipatory knowledge interest (Habermas 1968 cf. Illeris, 1974, p. 18). The aim of his alternative didactic is to give:

> "…participants of educational institutions the opportunity and preconditions to realize the societal function of their education and thus the objective conditions necessary to follow their own, societally conditioned, and in the final analysis class conditioned interests." (Illeris, 1974, p. 18, my translation)

This general aim of education to emancipate students in order for them to be able to pursue their own interests with respect to, for example, societal change (individually or class-collectively), evolves later in the book into an expectation that students doing problem-oriented project work must choose "societal exemplary" problems *and* analyze them in a "societally exemplary" way in order to uncover "general societal structures" (Illeris 1974, p. 253; see also Hultengren, 1979a, p. 75). What does Illeris mean by exemplary? Illeris is inspired by the exemplary principle of Oskar Negt (1971) who identified the emancipation of the worker as the aim of the workers' education (Illeris, 1974, pp. 178-187). Negt took his own experiences with workers' education in Germany as the contextual starting point of his influential book *Sociological Imagination and Exemplary Learning* (Negt, 1971, German original).

Hultengren (1976) also stresses the emancipatory potential when students undertake problem-oriented project work within higher education. But as opposed to Illeris, Hultengren distinguishes between several research interests and not only an emancipatory knowledge interest as in the case of Illeris (Hultengren, 1979a, pp. 75, 85-92). Hultengren (1979a, p. 75) specifically criticizes Illeris when he argues that students in higher education should approach their problem-orientation and the scientific project work in an "societally exemplary" way in order to uncover "general societal structures". According to Hultengren demanding this of the students is problematic,

because Illeris does not consider 1) that the experiences and background of the working-class workers that are the context of Negt (1971) are very different from those of the Danish students in higher education, and 2) that the students often view groups within society (e.g. employer and worker) as enjoying equal status and possibilities, and fundamentally sharing the same interests (Hultengren 1979a, p. 76). Hence there is often no awareness in new students concerning potential differences in interests, objectives and values across groups in society such as between worker and employer. But from such a point of view, argues Hultengren, "all cats are grey in the dark" and an exemplary approach to the problem is not possible.

Instead, higher education must meet and address the students considering their context, background and lifeworld and educate them in a non-indoctrinating way to become able to 'understand society' based on good teaching and curriculum (1979a, pp. 80, 82). There are several possible theoretical traditions to choose from within social theory, but the personal favorite of Hultengren is some version of Marxism. According to Hultengren, however, a Marxist ideology (or any other) cannot be expected to be accepted by students in their problem-oriented project work; instead Hultengren highlights that indoctrination only leads the student to take on the way of thinking "as an external quality of the subject" (1979a, p. 82). Teaching, not least problem-oriented teaching, must give the students a firm understanding of society that actually makes sense to the individual student, according to Hultengren.

According to my analysis (Feilberg, 2022a), Hultengren presents here a very early example of practicing ontological and epistemological awareness of the assumptions that a project group of students must express in their scientific report to pursue emancipation as an interest. Though Hultengren (1976, 1979a) does not refer to Habermas' distinction between three knowledge interests – a practical understanding, a technical and an emancipatory knowledge interest (Habermas, 1968) – she distinguishes between a wondering or understanding interest (e.g. problems "that one wonders at") from a critical interest (e.g. problems "one is outraged about") for instance (Hultengren, 1979a, p. 85). I argue that Hultengren thus differentiates herself from the position of Illeris and sets problem-oriented project work free and up to the participant-direction of the students and their choice of guiding interest. Just as the students are free to identify their own research interest, in the case of an emancipatory interest, the choice of social theory is also free and up to the students (today we could mention, besides Marxist historical materialism, Weberian antipositivism and a version of post-modernism as other examples of social theories) (Feilberg, 2022b).

Inspired by the work of Hultengren, I have argued (Feilberg, 2022b, pp. 86-87), that students of higher education within SSH faculty contexts always (as part of their participant-direction) can choose between at least two knowledge interests during their project work (practical-understanding or emancipatory, or technical or emancipatory) thus highlighting their freedom to direct and identify the knowledge interest of their project work, as well as the social-theoretical, ontological and epistemological assumptions, depending on the thematic framework and the study regulation of the specific project module.

Participant-direction and Bildung

To a greater extent than in much other literature at the time on students' project work in higher education, Hultengren describes and is sensitive to the frustration and insecurity that the "Freedom of choice of project/problem complex" arises in many students (1979a, p. 38). According to the observations and experience of Hultengren as a supervisor herself, the "freedom of choice of problem" often evokes insecurity in students due to the unknown character of the present possibilities within the project process, the lack of overview, insecurity due to the unclear goals of education and the goals of one's own, insecurity due to the lack of insight into the intentions and wishes of the other members of the project group (1979a, p. 38). This and other sources of insecurity and frustration in the individual and in the project group more times than not lead to "an appeal to the supervisor" to decide on the research question, the problem complex, the choice of theory and methodology and so on (1979a, p. 39). This is still true of students today (Jensen & Lund, 2016). But participant-direction is not only about giving students the opportunity to follow their personal motivation within the thematic frame of the project, "the goal of the supervisor must be to support the independence of the project group's choice of problem" according to Hultengren (1979a, p. 39). The aim of the supervisor is to help students over time to become able to independently inquire into questions and identify and learn the new knowledge and skills needed to succeed in the inquiry or the practical intervention.

The spirit of this thinking can perhaps be expressed as a personal-professional embodiment of a habitus by each individual student, each with their unique variation of the general habitus of the profession or academic group, a process in which independence is a key aspect. Elsewhere I have also highlighted the democratic, process-oriented and group-sensitive approach of Hultengren as a contributor to the political Bildung of students (Feilberg, 2022a).

Inspirational ideas in the work of Hultengren for the future of the world

In few words, the work of Hultengren carries within it a strong belief in two fundamental forces of development and education:

- **Strong Professional-Scientific Communities** *(The Collective level)*
  (This takes many different forms: The project group, the semester group of students, and after graduation the work groups, being a member of society as a citizen)
- **The formation of independent thinking and a Personal-professional habitus** (*The Individual level*)

  (Where do I stand in relation to this question or scientific discussion, or that professional field and situation?)

Both the power of the collective and the responsibility and formation of the individual are dependent on each other, and in the work of Hultengren (1976) you find a push to cultivate these forces because our shared social world depends on it. This is a collective responsibility according to Hultengren. Returning to the question, who is responsible for the group processes and the epistemological processes and products, Hultengren answers: both supervisor and students have a responsibility for process and product. But their responsibilities differ:

- The supervisor is a scientific and process-oriented consultant for the students with an understanding of and overview of the entire process, and ongoing feedback on process and product.
- The students identify the problem and choose and justify the investigation of it, and they are responsible for both process and product.

Hultengren (1976) argues that within Higher Education you keep the scientific and procedural responsibility with those who really have a chance to understand them, because they are close to them and a part of them: the students *and* the project supervisor. This would also bring the greatest potential for development. "Necessity is the mother of invention", an old proverb goes, and this can also apply here, meaning, having the responsibility as students and as supervisor also motivate to understanding the problems. In contrast, if the responsibility for process-orientation is relegated to an outside consultancy unit outside the student-supervisor relation, how would it benefit the supervisor or the students? Instead, Hultengren (1976) argues that project supervisors should be offered all the training and supervision they need regarding process orientation, conflict management and group processes and the supervisor's role.

The positive side effect? It would contribute to cultivate a better world by making more supervisors aware of the importance of individual and group processes in a pedagogical and professional context. To strive to understand the process aspects, the situation of others, the group life, one's role as a supervisor and so on in an infinite process of part and the whole – that is the aim of process-orientation.

A process-orientation focus in supervisors and lecturers supports a culture of understanding (the other, power relations, own role etc.) and a practice of setting boundaries of for instance destructive behavior and communication. Process-orientation is therefore a contributing factor in supporting:

- Students' well-being and the integration of new students academically and socially into higher education institutions.
- Students' positive experience with larger project groups (4+ students)
- Professional development with respect to process-orientation aspects as a competence and as a Bildung value
- Students' belief in and ability to contribute to and realize the strength of professional groups and communities such as
    - the project group
    - the working groups and initiatives within the larger groups and organizations
    - the future working life and as a citizen of a democratic society.

In all these instances and many others, there is a need for independent individuals who can cooperate with others within well-functioning and successful project organizations.

Conclusion

Hultengren (1976) can help us re-imagine the power of group work, when it is able to function as a collective and at the same time respect the individual. We need this in all kinds of current problems that we face.

Hultengren must also be commended for highlighting what today can be called a sensitivity toward the social theoretical, the ontological, epistemological and methodological assumptions of a scientific and empirical project work as well as her emphasis on the potential of interdisciplinarity in project work. Within SSH today this is still widely discussed in theory and practice and the work of Hultengren presents her experiences with and reflections on the aspects of project work that still stimulate discussion.

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A Critical Review of Jes Adolphsen's *Problemer i Videnskab: En Erkendelsesteoretisk Begrundelse for Problemorientering* (1992)

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Abstract

This critical review examines Jes Adolphsen's *Problemer i Videnskab*, positioning it as a foundational text for problem-based learning (PBL) within higher education. Amidst the neo-liberal constraints that have diminished philosophical engagement among students, we argue that this book proposes a much-needed transformative approach to scientific literacy. The review proceeds in three steps: First, we consider the book as both a source and resource; second, we show how the book opens a space for students to engage in PBL; and third, we explore how the books incite students to think about problems in relation to society.

Keywords: Problem-based Learning; Philosophy of Science; Practical and Theoretical Problems; Societal Problems

Introduction

An elementary understanding and basic literacy in the philosophy of science should be considered essential to anyone pursuing a degree from a university. Today, however, few read philosophy of science out of their own volition, least

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of all students. With the structural constraints of the neo-liberal university, courses such as *examen philosophicum* quickly became a relic of the Humboldtian era of education. No real alternative has since taken its place and instead, a generation of students have been produced that either take science for granted or treat its underpinnings with apathy. At best students can regurgitate some cookie-cutter approaches based on abstract concepts of ontology and epistemology – neither of which they find much use in later in life. They leave the university with a positivistic understanding of science centred around notions of objectivity and values of disinterest that they were already familiar with when they arrived. If students do not possess theoretical and scientific literacy after receiving their degree, then the philosophical foundation of higher education is not doing well.

It is against this situation that we will assess Jes Adolphsen's '*Problemer i Videnskab: En Erkendelsesteoretisk Begrundelse for Problemorientering'* [Problems in Science: An Epistemological Justification for Problem-based Approaches] as an introductory text to problem-based learning. We will argue that the book is useful for providing students and teachers with an introduction into theoretical and scientific literacy. To be literate at something is akin to having proficiency at playing a game, of having familiarity with the basic moves, the available strategies and most common tactics. It is not merely about being a good spectator who can appreciate the efforts of others, but also, and more importantly, about being able to turn knowledge into action. Our argument follows three steps: First, we consider the book as both a source and a resource. Second, we show how the book opens a space for students to involve themselves in the process of problem-based learning. Third, we show how the book encourages students to think about problems in relation to society more broadly.

The book as a source and resource

Adolphsen's *Problems in Science* can be read both as a source and a resource. As a source, the book offers a view into the academy of the late twentieth century. The style of writing gives the reader a sense of the changes within academic writing since the book was written. As such, the book constitutes an antidote to the formulaic and unembellished writing style of today; it is both lucid and punchy, while still being very appealing to the reader. The reader gets a real sense of the author and that the philosophy of science is neither a disinterested nor an impassionate discourse. In many ways, the style of writing closely resembles Adolphsen's direct and at sometimes confronting teaching style. For instance, the book commits the fundamental crime that it refuses to cite its biggest influences. Rather, Adolphsen shortly cites Marx, Popper, the late

Wittgenstein, and others in the introduction and unassumingly notes that references to these neither contributes nor weakens the argument of the book. The book makes an argument, and it is the responsibility of the author that it is sensible and coherent.

What makes the book interesting as a resource is that it is an attempt to ground the most basic problems in the philosophy of science in the concept of the problem itself. The central argument of the book is that "problems" are central to all knowledge production. Thus, if we orient the scientific enterprise accordingly, a range of long-standing debates in philosophy of science are resolved. Accordingly, the book is focused less on the pedagogics of problem-based learning and more about why and how to apply the problem-based approach as well as the epistemological foundation for such activities. Thus, it is as a resource, we argue, that the book can be used to teach students the theoretical and scientific literacy. The direct argumentation certainly can provoke those who disagree to ask questions.

Opening a space for students to do problem-based learning

The second quality that we want to bring forward is how the book opens a space for students to get familiar with problem-based learning. Appropriately, the book starts with the modes of thought in which the students already exist and are familiar with. That is the comfortable world of common-sense knowledge. The knowledge and habits of thought found here are scientifically speaking unproductive and therefore must be unlearned. Accordingly, the book rejects the image of learning and education as an accumulative exercise in which we can build upon prior experience. Education is innately cathartic; it is a process of change. The students must change their being –they must *become* something other than what they were when they arrived at university– and this journey starts with a confrontation of what they already are, what they take for granted, with the things that are natural where they come from.

This pedagogical approach of starting with immediate reality of common-sense knowledge that the students are already embedded in can also be found elsewhere in the philosophy of science. The first obstacle to scientific knowledge is always common-sense knowledge, which prevents us from apprehending problems scientifically. The only way to overcome this state is through problematization, that is, is to *demonstrate* a problem – to go from rough (often contradictory) themes or a set of questions to a precise problem. Problems are not really problems until they have gone through a process of problematization.

The book uses this cathartic moment that students find themselves in when starting the quest for knowledge to teach about the distinction between practical and theoretical problems. A practical problem, Adolphsen tells us, is a problem in relation to our practices: Something in our surroundings, or with ourselves, that does not behave as we expect or desire. The criterion for a practical problem is that it can be solved by a coincidence; or that it can disappear without us knowing why it disappears. Thus, we can say that a practical problem is defined by not requiring cognition to be solved. In a world like ours, there are many practical problems: that we don't have money enough for the rent; or international problems such as war. We might not even know that we have a practical problem.

However, if we want to know *why* – why we don't have money for the rent, or why there is war, these practical problems turn into theoretical problems: they are about "perceiving the hidden mechanisms that determine phenomenon" (Adolphsen 1992, p. 30), and they do not simply disappear because the practical problem disappears.

Theoretical problems, according to Adolphsen, are therefore concerned with anomalies in relation to our knowledge or our theories about the world. Hence, a theoretical problem is an anomaly in relation to our prior knowledge or perception of the world. Theoretical problems often arise out of contradictions that we are directly confronted with in the form of practical problems. Thus, to every practical problem there is a corresponding theoretical problem: Why is the practical problem there?

Those who have studied at Aalborg University may have come across Adolphsen's, by design, outrageous story about him swinging a dead cat over his bike. He had come to do so, the story goes, because he had taken a dive over the bike as its front wheel suddenly blocked while going really fast down a hill. In the ditch where he landed, he found a dead cat, which he reasoned he could use to fix the bike. In this belief, he proceeded to swing the cat over the front wheel of the bike until it could spin again. As he anticipated this to happen again, he strapped the cat to the back of the bike. The episode repeated a few times, and swinging the cat seemed to work until he got a puncture and had to take the bike to the mechanic. Puzzled at the cat strapped to the bike, the mechanic explained that the real reason for the wheel blockage was that the bearings in the wheel had clogged up in the heat. The reason why swinging the cat had seemingly worked was merely because, in the time it had taken to swing the cat, the bearings would have cooled down as well.

The practical problem (the bike breaking down), the existence of common-sense knowledge (the swinging of the cat), and the theoretical problem and explanation (the bike-mechanics diagnosis) were all included in the story. The

delivery of complex ideas like these, in a straightforward language, is present throughout the book. Also, several criticisms of various common notions in positivistic science of objectivity and testability are put forward, questioning if theories can be evaluated and compared by some kind of universal approach using concepts like epistemology and ontology. Instead, the common lists of demands and criteria for what counts as a scientific theory are met with an unambiguous rejection:

> "In most cases, it is of course an advantage if a theory is formulated in a clear and systematic manner. And it is wholly possible to call the theories on this part of the spectrum for scientific theories. However, it must be maintained, that this does not necessarily make them either true, coherent, or relevant" (Adolphsen 1992, p. 48).

This doesn't mean that theories should not be evaluated, but rather that doing so involves thinking – and this is where the book truly excels: in the pedagogical demonstration of thinking.

In the book, we read about how the great mystery of scientific theory is dispelled as merely an explanation that can only be evaluated by thought, about how a theory takes shape through concepts and models, and about how the minimum requirement of a theory is the conceptualization of a theoretical object. We read about theory traditions and theory buildings – we hear about how many theoretical problems consist of a contradiction between their general and specific levels of applicability. We read about the process of abstraction, and about German cartographers, who, as if picked out from a Borges story, misunderstood their assignment of creating the perfect map. The point of creating models is neither to leave the world alone, or to simply describe it, but rather it is to do something to it so that it is ordered according to purpose. We read about *relevance* and *perspective* through a story about how Adolphsen's son Peter threw a stone through the window (Adolphsen 1992, p. 70). We read about how methods and empirical work are not essential components of science, but they can of course be useful sometimes, even if there are rather costly affairs that lead nowhere. This is exemplified by an overconfident American anthropologist who mistakenly believed that a nomad society in Mongolia had a large population of castrated men after observing that everyone had a beard (Adolphsen 1992, p. 89). The book is filled with these small gems of insight and stories, delivered with an intimacy and rhetorical punch that is hard to come by in contemporary academic writing.

Throughout the book, Adolphsen demonstrates how to think about these parameters and how theories can be compared and assessed as answers to theoretical problems – theories that students themselves can read about and replicate in their own projects. Taken together, all these examples and

discussions are essential to acquiring what we above refer to as theoretical or scientific literacy.

Encouraging students to think about problems in relation to society

A recurring theme throughout the book is that science is but one human activity amongst many other activities. Thus, despite the ambition of the book not to explore the relationship between science and society more widely, there are still many aspects that point the reader in that direction. This also happens when taking the implications seriously of what Adolphsen calls the "internal paradigmatic process of science" (Adolphsen 1992, p. 23) – a model for the science that is less about methodological rigidity and more about the process of thinking in terms of theoretical problems and their explanations. What is interesting here is the status of the model in a socio-political context.

According to Adolphsen, the model is only politically neutral if the determination of something as a problem is an activity that does not predetermine a particular political orientation. There is no inherent emancipatory content in the model either. It is, however, political in the sense that it fundamentally calls into question the knowledge that we already possess. Thus, it is political in an epistemological sense: to formulate a theoretical problem will always be an act of questioning what we think we know.

Science deals with theoretical problems, which in turn have their basis in practical problems. The activity of scientific knowledge creation therefore has a close relationship in our shared practical problems. For this reason, scientific activity can never become a disinterested activity, which is not the same as saying that scientific activity should be guided by particular interests. However, once we ask what interests form the basis of scientific activity, we must supplement Adolphsen's foundational distinction between practical and theoretical problems with a parallel definitional set of *individual* and *societal* problems.

We all have our individual problems that can be more or less troublesome or consequential for our lives. To contemplate such problems is to adopt the perspective of an individual. These are my problems, mine to overcome with the means at my disposal. However, limited by our everyday lives and the recourses that it offers us, we are ultimately unable to solve all our individual problems; especially today, the more we become aware of this, the more we may feel confined by it. There is something outside of ourselves and our immediate social environment that prevents us from overcoming our

individual problems; forces towards which we are neither equipped mentally nor wilfully to deal with.

Take for example the problem of transportation. An individual might experience a problem getting to school or going on vacation, but when a lot of people are trying to do the same thing at the same time, it results in congestion on the roads which is an indication that there is some structural issue with our infrastructure.

In contrast to individual problems, what characterises societal problems is that they transcend, overlap, and interpenetrate the local milieu and inner life of the individual. However, like an individual problem, a societal problem still is a problem to someone – or rather, a societal problem is a problem that *we* have and share with others outside our immediate social milieu. In other words, societal problems are shared problems: they have to do with the organisation and coordination of the many individual milieux into a historical society in its totality. Societal problems are of public concern as they perceive our shared values and goals as endangered. Often when we debate such problems, we are neither certain of what our values and goals are, nor what exactly it is that endangers them. This only follows from the very nature of the societal problems, as they cannot be defined in the same way as individual problems. This is so because such problems often involve contradictions between different parts of the social structure, our possible individualities, or the historicity of both. To further complicate this image, these kinds of problems often have compounding effects: some social practices that may not have been problematic in and of themselves become so when combined with another set of practices. The range of societal problems is therefore in principle endless as society is constituted by increasingly complex social formations.

It might be obvious that the act of formulating societal problems as theoretical problems is the foundation for an effective social science. However, sciences dealing with other classes of objects are not except from the challenges associated with their theories about the world. Although this does not directly follow from the theoretical problems as previously formulated, these may be engaged in the production of social effects and thereby form constitutive elements of societal problem complexes.

Students therefore must learn how to master the concurrent process of problematization that occurs when individual problems become societal problems and when societal problems become theoretical problems. In this way, theoretical literacy is the convergence of theoretical and societal problems; the capacity to adequately define societal problems as theoretical problems. The primary way that science engages politics is in the form of problematizations: it

is only by exposing the inherent contradictions in the prevailing socio-political practices that science and knowledge become effective.

The distinction between practical and theoretical problems is central to this endeavour. Practical problems are always problems for someone as they derive from the contradiction between intention and possibility. When we attempt to solve our practical problems with actions or through social practices, it becomes a question of how good our knowledge and understanding are. Knowledge and action are intricately linked by theory. As fundamental parts of problem-based learning, it is therefore difficult not to situate the process of knowledge creation in a socio-political milieu. What *Problems in Science* therefore offers to students is a guide in the activity of science that prevents them from being useful idiots.

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A Personal Introduction to Knud Illeris' *Problemorientering og Deltagerstyring – Oplæg til en Alternativ Didaktik*

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Abstract

This paper presents a personal introduction to Knud Illeris' *Problemorientering og deltagerstyring – oplæg til en alternativ didaktik* [problem-orientation and participant-direction – a draft for an alternative didactic], published first in 1974. Illeris is one of the founding fathers of PBL in Denmark, and 50 years after its first publication it seems fitting to re-read the book, and I hope others will do the same. Introduced to PBL as something sprawling from the counterculture, youth rebellion, and progressive pedagogies, I found Illeris' book to be both inspiring and a bit underwhelming, and in many cases foreshadowing neoliberal conceptions of outcome-based education.

Keywords: PBL; Problem-oriented and project-oriented learning; Didactic

Introduction

God knows how many times I have deleted and written a new introduction. Today, a grey Wednesday in September is yet another one. On my way to work while stuck in a queue on the motorway with my fellow commuters, most of them alone in their car like me, I wondered – if I were to convince the persons in the cars surrounding me to read what I consider an essential work on

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problem-based learning what would I say? Why would they care about a book first published in 1974 concerning an alternative didactic suitable for a complex capitalist society? 'Get on with it,' I imagine one shouting, much like in Monty Python and the Holy Grail.

The book is quite practical and hands-on, and several pages are dedicated to the planning and completion of Illeris[1] proposed solution to an educational system in crisis. I find the toolbox part of the book interesting, but it is very much a cookbook – what do I need for this pedagogical stew and how should I serve it? However, I find the trip to the grocery most exciting – what are the broader societal claims for why the time is right for stew? (GET ON WITH IT!) *More pragmatic than ideological*, I would shout, *some PBL are more equal than others*. The commuter in the car next to mine looks at me like I am psychotic as I mime 'hello' out the window as our eyes meet. One less to convince.

Illeris' book is an important one, an essential one in my opinion. But also, a surprisingly pragmatic one that in many ways is in tension with the rebellious and mythologised narrative presented to me as a new student at a PBL institution. Even more, PBL continues to be hailed as an innovative pedagogical model fifty(two) years after its inception. So does the emphasis on origins and hero inventors (here too!). The powerful rhetorics of a model. In Illeris' (1974/1978) *Problemorientering og deltagerstyring – oplæg til en alternative didaktik [problem-orientation and participant-direction – a draft for an alternative didactic]*, (my translation), however, I found little of what I thought the youth rebellion was. Following Barnett's (2024) critique of the sacred and profane, Bildung and the Humboldtian university, I can help but wonder if I feeling a loss for something that perhaps wasn't there in the first place, and have since been romanticised into being or subsumed into invisibility? A strange case of solastalgia of an imagination. My initial response was disdain, this can't be the alternative that set things in motion, why are Illeris' ideas so closely aligned with capitalist management and employability conceptions of education? A necessary alignment, Illeris acknowledges (1974/1978, pp. 251), if the draft is to become more than an idea.

The perceived mismatch between education and industry based on anticipated means of production was a primary argument laying the ground for my own Ph.D., and perhaps it was Ph.D.-fatigueness that made me think *not this strained argument yet again, why hasn't this horse turned into pulp yet*. The unknown future as a steering mechanism (see Hultqvist, 2008) – an organising technology through which we address uncertainty with fictionalised certainty. The everchanging structure of the pulp poses challenges for educational institutions. What the pulp was is not important, it is there and from this, we

shall make our juice and drink it too. What are our tools, and what processes can we think of? Problem-oriented and participant-directed education or student-centered learning, of course. Let the students bring their bottles. *Get on with it, the pulp metaphor is disgusting*, somebody whispers.

No more stew or pulp

Uncertainty is often a hallmark of the language of educational reforms, and as *the fight for education is too important to be left solely to the educators*, we get plenty of those. An ever-increasing amount of contextually demarcated literacies, and the introduction of competencies defined now for a future we do not know. *Educational lag*, paraphrasing Ogburn's (1922) cultural lag, concerning technological acceleration and changes in means of production seems like a persisting lag (see for instance Rosa, 2015), and educational institutions are often lambasted for not keeping apace (Cuban, 1986; Labaree, 2008; Peters et al., 2018).

In Illeris' (1974/1978) draft this educational lag runs as a central argument for an alternative didactic suitable for *the modern, complicated, capitalist society* (p. 31). I managed to find and purchase the second edition from 1978, containing, according to the author, only a few corrections made to the first edition. This, the second edition from 1978 (my copy), is the subject of the personal introduction presented in this paper. Illeris is often highlighted as a key figure in the Danish rendition of PBL – even though he, as far as I can tell, did not use that acronym. Recently, Sørensen (2023) provided a careful reading of Illeris' 1974 draft and noted that several scholars consider Illeris fundamental or at least influential for Danish reform pedagogy emerging in the 1970s (p. 76).

To a critical reader, Illeris' essential work may seem a bit too oriented towards local and less generalisable perspectives on problem-oriented and project-organised learning (POPBL). The book is even written in Danish! Not much concern for impact factor!? However, the theoretical foundations for Illeris' draft are present in the medicinal PBL emerging nearly simultaneously (see Clausen, 2023 or Servant, 2016) – although curing different ailments.

Following the brush

In the following, I shall follow the brush, described by Thomas J. Harper in the afterword to Tanizaki's *In Praise of Shadows* (1977):

> "One of the oldest and most deeply ingrained of Japanese attitudes to literary style holds that too obvious a structure is a contrivance, that too orderly an exposition falsifies the ruminations of the heart, that the truest representation of the searching mind is just to "follow the brush" (…) It is not that Japanese writers have been ignorant of the powers of concision and articulation. Rather they have felt that certain subjects – the vicissitudes of the emotions, the fleeting perceptions of the mind – are best couched in a style that conveys something of the uncertainty of the mental process and not just its neatly packaged conclusions." (p. 45)

Turning my attention to my physical copy of Illeris' book published in 1978 on my table, the faded reddish cover is ripped and hinges desperately to the spine. The difference in saturation on the front and back cover suggests the book has spent ample time facing front-up in the sun. The title, *Problemorientering og deltagerstyring – oplæg til en alternative didaktik* is printed about two-thirds from the tail, around the golden ratio. Two-thirds down from the head, an arrow points to the right, inviting the reader to open the book. Opening the book reveals a quite prevalent coffee stain almost as if a previous reader at some point became so startled the coffee mug dropped in excitement or was spat out in cartoonish fashion, (*or disappointment – the book may provide an outline for an alternative pedagogy, while it simultaneously is surprisingly complaisant to capitalist society and thinking. And it seems that Illeris (1974/1978) anticipated such critique as he towards the end of the draft has a two-page section called 'For the people or profit?' - and subsequently, addressed the predicted critique in the introduction to his book from 1981*). I think Tanizaki would have appreciated this slightly worn and faded edition of the book.

Education and qualifications

The purpose of Illeris' draft is to develop and sustain a critical didactic based on societal and psychological conditions while guiding practitioners. Didactic does not mean patronizing or moralizing, but is used as a direct translation of the northern European Didaktik. For readability and flow I use *didactic* (for more on the actual differences between German Didaktik and Anglo-Saxon curriculum see Gundem & Hopmann, 1998).

The draft can be divided into three general parts: contemporary societal conditions and challenges and pedagogical and psychological theories, a practical guide for planning problem-oriented and participant-directed education, and completion of problem-oriented and participant-directed education. The three parts are wrapped by an introduction framing a perceived

instrumentalisation of didactic, and a short final chapter briefly outlining societal warrants for Illeris' draft with a very pragmatic approach. I will focus on the first half of the introduction wrapper: the first half of chapter one. Not that other parts are irrelevant, but I find the rationales for educational change and reform most interesting as they seem so persisting.

A central argument found in the first pages of the draft is descriptions of an instrumentalised didactic, concerned mostly with transmission and methods of teaching; state-induced ideological manifestations, often in internal conflict, and not subject to further inquiry. Illeris argues that political conditions and structures affecting education should be part of a critical and emancipatory didactisc and outlines a solution to an educational crisis reminiscent and recurrent challenges associated with education - the alignment with changes in means of production, technology, and economy. These challenges are not new but are ready allies when education requires reform (see for instance Callahan, 1964 and Labaree, 2008). Unlike modern panaceas, additional literacies are not even mentioned, but rather the whole structure of education ought to be changed to keep up with an accelerating society, furthermore, in Illeris' draft even disciplines are no longer a suitable structuring mechanism for education – outdated and for traditionalist only (perhaps even Luddites). Instead, education should be oriented towards problems transcending disciplinary boundaries and individual capabilities, emphasising project-based group work (Illeris, 1974/1978, 1981).

While societal challenges and psychological factors are pivotal for changing education, the purpose and societal function remain – qualification of the prospective labourer (p. 30). However, educational qualifications during feudalism were relatively different than the flexible qualifications demanded by modern society (denoted as a unified entity with agency). Qualification as a singular concept is a bit too all-encompassing, and drawing on Masuch (in Illeris, 1974/1978, p. 30-53), Illeris presents three categories, each concerning different skills for sustaining and developing capitalist society. The first, *skills-related qualifications* are those necessary in a labour process which can be defined by the processes, tools, or machines part of the labour process. This qualification category can be further divided into general skills not defined by the parts of the labour process, and special skills needed for specific occupations (p. 33-34).

The second category was an unexpected one when I first read Illeris' draft – remember counterculture, youth rebellion, and whatnot: adaptive qualifications that are general and common across all systems within a society, address the intensity of labour, diligence, and tenaciousness. Furthermore, obedience and positive dispositions towards existing conditions for work and

society are also a part of the adaptive qualifications: "*These* ["negative" qualifications] *mean that one willingly and obedient do what one has been told to do to the best of one's abilities*" (p. 34) (my own translation, *told* does not quite capture the Danish *bliver sat til* in the original, but captures somewhat the external force putting someone to work). The last aspect of the adaptive category is those qualifications that suppress the workers' apathy and indifference which can harm the activities of the business (the rate of profit, Illeris notes).

The third and last category of qualifications are the creative ones necessary for the ongoing development of a capitalist society. Illeris splits these into two subcategories, one societal emphasising the increased efficiency in the means and organisation of production requiring qualifications to do scientific and innovative work. For the individual this entails qualifications for continued personal renewal, partake in new functions, and to collaborate. The creative qualifications are exemplified in attributes such as critical thinking, independence, openness, creativity, and constructive collaboration (p. 35). The general, acceptable adaptational and creative qualifications are, however, not to be imagined as insulated parts but as a harmonious triad represented as a singular qualification requirement in a modern, highly industrialised society (p, 43).

It is in the latter category, the creative qualifications are charged with possibilities for societal changes. Illeris notes a tension between the adaptable and creative qualifications, where the former fundamentally delves into complacency with the existing society, and the latter traits to transcend it – not for the sake of leftist or progressive demands, but for the sake of necessity. Illeris almost foreshadows Rosa's (2015) dynamic stabilisation, that is when a modern society in its reproduction requires growth, innovation, and acceleration to maintain status quo. The tension outlined in Illeris' draft poses dilemmas for the "system" – the development of the potentially subversive creative qualification within the existing boundaries defined by the system. The changes in educational structures, and the subsequent success, are then a carefully choreographed dance, balancing the existing while trying to change it within the already confined space. Illeris quotes Masuch (pp. 52-53) and introduces an emancipatory (or liberating) perspective to education, but this is only possible where the ruling parties and pedagogy share a common interest. So, what does emancipation truly mean? To be rebellious – but only if it is aligned with the values of those in charge? Illeris continues, and closes the section concerning societal conditions with an important statement – in my reading almost a careful warning to those who might have forgotten: educational change must correspond to the societal demands of education, and if "*the educated in these fields* [the three categories of qualification] *do not perform as well as the traditional*

educational products, the changes have not only lost their impact, but also the warrant for their existence" (p. 53). Emancipation and liberation for the product of education – a qualified graduate.

The next section of the chapter continues with the pedagogical and psychological warrant for the following two chapters on implementation, planning, and completion. For a fuller summary and analysis of these sections, I recommend Sørensen (2023) recent reading of Illeris' draft and Clausen (2023) for a recent overview of pertinent literature and development of self-directed learning, which in my reading runs as a theoretical backbone throughout Illeris' draft. In this vein, though Dewey has since gained a prominent place in the literature concerning PBL, there is very little Dewey in Illeris' draft. The only reference is to Dewey's small pamphlet *The Child and the Curriculum* from 1902.

So, my fellow commuter, should you read Illeris' draft?

YES, GET ON WITH IT! Why? If you like me never have been part of a youth revolt and reforming pedagogy, it brings the notion of rebellious thinking into the safe confinements of contemporary hegemony and demands for education – and not that much seems to have changed when it comes to why educational institutions must change every so often. It surprised me that many of the current terms and concepts about education are already found in Illeris' draft from 1974/1978 – learning to learn, the basis of lifelong learning, employability-qualifications spiced with dangerous creativity (*if allowed that is, and it doesn't disrupt business*). Go on, get on with the draft, you won't be disappointed. You might even spit your coffee out.

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[1] When I write *Illeris* with no reference, I reference the 1978 edition of *Problemorientering og deltagerstyring – oplæg til en alternative didaktik* [*problem-orientation and participant-direction – a draft for an alternative didactic*]. The same is the case when I write *the draft*, *Illeris' draft*.

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Storytelling

How to Become Who You Are Through Problem-based Learning

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Abstract

This article discusses how problem-based learning combines with what I from Nietzsche call "becoming who you are". It argues against thinking of problem-based learning merely as a method that integrates theory and practice. Using Foucault's genealogy and Arendt's notion of storytelling as theoretical anchor points, I suggest that problem-based learning is a personal process of self-formation with important political and ethical implications. Through Foucault and Arendt, I argue that problem-based learning is helpful in teaching people how to think. Problem-based learning provides an occasion for self-overcoming through understanding and working creatively with the world's multiplicity. I discuss concrete implications of using history and storytelling in problem-based learning in my field, organization studies. In the last part, I discuss how storytelling can inspire writing differently about organizations.

Keywords: Problem-based learning; Storytelling; Becoming who you are; Arendt; Foucault

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Introduction

My contribution to this special issue is how problem-based learning (PBL) helped me to become who I am. "Becoming who I am" is inspired from Friedrich Nietzsche. In the book considered his autobiography, *Ecce Homo* (2007), he does not deal with the question of how history has influenced how he became who he became. His gaze is turned inwards. He uses history to interrogate *how he became who he was*. It is in other words a personal search process, which has the purpose of overcoming oneself. In this article, I will account for how Foucault and Arendt were helpful to frame an approach that simultaneously interrogates the problems of the world as well as who one is.

When I reflect on my journey with PBL, it provided a space to express myself through and think with the societal phenomena that I engaged with. It gave me what Arendt calls *space of appearance* (Arendt, 1998, pp. 198–199)—a space where I could step forward as an actor who was allowed to think and engage with a problem in my own way. This involves theorizing, problematizing, experimenting, failing, and succeeding. Today, I am a professor of organization studies at Malmö University. PBL is an old friend that I think with when organizing education.

In education, we think with the practical world through thinking with the world of ideas. Arendt argued that true thinking is a dialogue, a two-in-one conversation with oneself (1978, 2003). This two-in-one reduces into a duality while still being multiple. It is furthermore founded in a curiosity towards the world. Thinking through the problems of the world is therefore not a method but a way of being that entails curiosity and compassion in how one approaches the world. PBL therefore also evades precise definition. A loose conceptualization of it is that it is associated with self-directed learning and are organized around practical problems (Kolmos & Fink, 2004). From this starting point, it is however approached differently and can also be quite instrumental and technical.

I believe thinking is critical for PBL to become true. My own take can be clarified through distinguishing between John Dewey's and Paolo Freire's pedagogical philosophies. They both argued that education should be concerned with the practical problems of the world. A difference is however that Dewey theorizes how to integrate theories into practice by continuously exploring what works in practice. This also includes an understanding of why these theories work (Dewey, 1938, 2004; Thomassen & Jørgensen, 2021). For example, Dewey's concept of thinking depicts how expertise evolves through the inscription of theories in practice, even if one's practice over time becomes intuitive and tacit (Polanyi, 2009; Schön, 1983).

Freire is critical about established conceptual frameworks. The accumulation of scientific knowledge serves the establishments and reinforces dominant narratives that marginalize and exclude (Freire, 2017). Dewey's philosophy is abductive and is embedded in an enlightenment tradition (Frega, 2010). For Freire, education is political and must be understood from the power relations it serves. For me, Freire's philosophy is inspiring because it challenges us to go beyond the boundaries of what we know in a way that breaks with knowledge accumulation. We must move from the ground-up.

Following Foucault, understanding emerges through performing an *ascending analysis* (Foucault, 1984; Jørgensen, 2002), where we follow histories to understand them on their own terms. What helps us in this respect are not theories but concepts that help organize our thinking. Thus, the research agenda in this understanding is not to confirm or validate theories or models. Concepts instead define a particular take on a multiple world, from which we look, understand, arrange and engage in dialogue with the world (Deleuze & Guattari, 1994).

Because we leave our disinterested position in the world, Freire's approach entails engagement with ethics and justice. Problem-based learning therefore implies self-formation. Foucault and Arendt have helped to think of problem-based learning in this manner. Next, I will engage with my story with PBL, and how I make sense of this story through Arendt and Foucault. I furthermore discuss, how problems are understood using Arendt and Foucault as inspiration. In the final part, I discuss how thinking and writing can become one in storytelling.

Becoming who you are

Who am I then? This question can never be answered. Life is a process, and becoming who you are involves recognizing that this question must remain unanswered but is subjected to continuous thinking. Thinking is an ongoing endeavour to find and define one's own point of view, to think again, modify and nuance the viewpoints according to the problems that we are dealing with. Thinking is for Arendt closely associated with storytelling. She defined a true story as where life and thought become one (Kristeva, 2001). This also implies that a true story is grounded in conscience, the inner compass that tells you what is right and what is wrong (Arendt, 1978).

PBL can lead towards becoming a storyteller. As noted by Arendt, storytelling implies making an ethical stance (Arendt, 1968). It entails love and curiosity for a multiple world. Therefore, teaching is one of sharing experiences and of telling stories of how we can approach and understand theories, concepts and

practical problems. In my latest book (Jørgensen, 2024), I have described it as *living life as a story*. Not everyone has a story or lives life as a story. Living life as a story contains an acceptance of and responsibility for the conditions of life, which Arendt (2006b) describes as the multiple world into which we are born.

When I claim that not everyone has a story, it is because not everyone thinks. And even if people think, not everyone has space to express their stories. Without deep thinking, learning becomes mechanical. PBL is one of the phenomena that distinguishes a good university from a bad one because it invites a space for thinking. One of its qualities is the freedom it provides to play with theories, concepts and stories from practices. A PBL scholar cannot accept the standardization of curricula that we are experiencing in education. Accreditation, bench marking and performance metrics are reforming academic storytelling into story selling (Jørgensen & Valero, 2023). It implies that students should write papers instead of projects. The journal article, which Mills (2000) referred to as a memo, has replaced the book.

Storytelling suffocates, and a corporate logic is steadily demolishing the idea of academia as a public library made for the people (Jørgensen & Ingman, 2023). The corporate logic instead entails that our students should be socialized into being *functional idiots* (Alvesson & Spicer, 2016) instead of thinkers. Without thinking, PBL can be used to turn people into obedient subjects. We need storytelling in PBL. A counterwave of storytellers always find ways to make their appearance. PBL has that quality that allows new stories to emerge.

My own political awakening started as a student. I remember all the projects we did. I often say that I got an academic career because of PBL. However, it was not until I became an academic that I got a language to express my own take on problem-based learning. Because life is a process, this language is still evolving. But the passion, love and curiosity have always been there. One of the inspirations that helped me was Michel Foucault's (1984) concepts of genealogy and power. They changed my view on organizations and how they should be studied. Genealogy is about writing history as a means of breaking with dominant narratives.

Writing the history of one event in the bank allowed me to understand the political landscape of small stories that exist in an organization and through which organizations are created and changed (Jørgensen, 2002). The vibrant story nets (Ingman, 2024) provide a diverse and living image of organizations. Genealogy is critical for opening history in that it allows for thinking differently about the present. Genealogy had the side effect that I began to think about my own history and how this had influenced my own moral concepts, understandings and choices throughout my life. One side effect was in this

context to engage with Foucault's practices of caring for the self (Foucault, 1997).

Foucault is often discarded because he is writing critical history. But this is rooted in a misunderstanding of critique. Deleuze (1986, pp. 2–3) points out how genealogies write history in a way that embraces the noble and vulgar, the honorable and lowly and so on. Recognizing multiplicity is the foundation of genealogy. Therefore, its criticism is the most positive. It should be used to examine, reconcile with and open history for other interpretations. Criticism is an action that makes a difference. The historical sense emerging from genealogy is crucial for visualizing the diversity of the world that is necessary for judgement (Arendt, 2003). Thinking needs to find its own roots and is never strong when it is based on resentment.

Storytelling

Foucault's historical sense was later combined with storytelling as a way of understanding how the subject actualizes power relations but also paved an entry into understanding how to work with practices of self-formation within power relations. This requires thinking about the stories created through thinking in action, which I perceive as containing the possibilities of new beginnings. It is here that Arendt's storytelling is important because she believes storytelling is a new beginning (Arendt, 1996, 2006a; Jørgensen, 2022). She pointed out that beginning again is an existential condition. The reason we make stories is simply because of life itself. For me, Arendt's concepts of thinking and storytelling open the mind to engaging differently with the world's problems.

Storytelling implies the trick of turning my research field, organizations, into an everyday theatre of life that unfolds differently in the different spaces that make up organizations (Boje, 1995). There are also official narratives and stories that are performed for the public and then there are many back-stage stories that align with or contrast dominant stories. We also call these dominant stories for institutionalized narratives (Jørgensen & Boje, 2010), which have the purpose of maintaining and controlling the multitude of lived stories in organizations. To understand organizations in this way is also to understand how stories are made in a material and embodied way (Bager & McClellan, 2024; Strand, 2024).

In this everyday theatre of life, people have different things at stake. There are engineers, economists, lawyers, teachers, accountants, blue-collar workers, cleaners and all kinds of different professions and vocations. The problematic

relations between personal and collective interests run through all these different stories in different ways. The mapping of what is at stake for these people is to map how this landscape of different and entangled stories works in relation to organizational problems. We want to understand who did what and why.

Who killed ARAMIS, a technology project in France (Latour, 1996). Who committed the strategic management decisions in a bank (Jørgensen, 2007). How do architects work to create urban landscapes (Askehave, 2024). How do ecological farmers organize their life with the mountain in Puerto Rico (Trägårdh, 2022). How do immigrants think of their work and why do they become entrepreneurs (Hassin Pritha, 2022). How do doctors work to create their understandings of diseases (Mol, 2002).

To use storytelling to inquire into organizational problems is to inquire into the politics of everyday life (Jackson, 2013). It requires treating the people as "strange" in the positive way that all of them are unique and therefore invites curiosity. Understanding the games that people can play in organizations, also turns these sites into strange places. What takes place there is hard to imagine at a distance. Storytelling therefore resists normalization. Using Arendt's storytelling furthermore moves us beyond disinterested mapping and documentation. The landscape we depict requires our thinking and judgement. Storytelling does not just depict landscapes but intends to open them for questioning and imagination of how things can be otherwise.

Genealogy (Foucault, 1984), deconstruction (Derrida, 2004) or developing new concepts to understand organizations (St. Pierre, 2018) are ways that rearrange how an organized field appears at first sight and allow us to tell different stories of what we encounter in organizations. Through understanding the complexities of lives lived in organizations and through being open and curious, we can also begin to understand and work with who we are. We can combine such inquiries with experimenting and co-creating new worlds through the ongoing encounters, we have with people in organizations. The world of today needs our attention and care. We are responsible for this world. This changes PBL towards a position of political engagement.

Writing stories

PBL allows for self-formation through providing a space for people to appear and take control over their own learning process. PBL has nothing to do with case-based methods. And I am not suggesting using stories to communicate scientific knowledge in a more exciting way. Storytelling is exciting because the

student through using storytelling engages differently with problems as well as with oneself. Writing is for me an intense way of thinking in the act (Manning & Massumi, 2014). When teachers and students think of writing as a mere means of representation, they misunderstand how writing and thinking are one. Writing is storytelling done for a particular purpose. Academic storytelling engages the person, who becomes a mouthpiece for collecting and relating the world of ideas (theories and concepts) with the practical complex world. Such personal storytelling therefore ideally mobilizes a richness of perspectives in a dialogue with the multiplicity that is the world. Everything recurs in everything—but in different shapes and forms (Deleuze, 1994; Latour, 2007).

This is why, it makes sense to follow groups or people, interesting events or decisions, or specific "things" like diseases or the birth of a bus terminal in the old historical places of a city (Flyvbjerg, 1998). Such cases contain the complexities of the world—politics, ethics, identity, beauty, ugliness, money, class, gender, sexuality and so on). This is also why the case study is so good at creating general knowledge (Flyvbjerg, 2006). Writing about people and phenomena is to travel with them and see how these people and phenomena change over time (Certeau, 1984).

Writing is therefore a way of thinking with these people and phenomena, which inevitably also leads to a re-storying of these events. Writing therefore requires mobilizing the voice of conscience (Eco, 2001). Engaging the writer in thinking with and through the problems of the world is also how PBL combines with self-formation. Kirin Narayan (2012, p. 3) argues that when words come together with energy, other places and other people in a parallel life, the storyteller can feel more alive, aware and connected to an inner force that flows outwards towards other people and the world. Storytelling is creative writing where the author's personal stories begin to tangle with the world of ideas and the practical and material world (Trägårdh & Jørgensen, 2024). Writing never reflects the world but creates it.

Storytelling is integral to PBL in connecting personal stories with practical new worlds and new concepts. We can redo two of our Arendt's (1968) phrases of what storytelling does to illustrate how. *Repeating life in imagination* is how the person recurs and changes through engaging her past with contemporary problems. It requires personalizing concepts and being able to think freely with these concepts in regard to what they can and should do. In contrast, true thinking vanishes if the person only repeats discourse and takes herself out of the equation. To become a person is to engage critically with both concepts and the practical world. There is no alibi in theories and concepts (Bakhtin, 1993).

Allowing the imagination to go visiting (Haraway, 2016; Wilkinson, 2004) is to use new concepts, new images and metaphors to break up established stories in order to see something new. Such storytelling uses unusual learning methods, metaphors or writing styles to produce something unexpected. This new is already there but is hidden or suppressed and cannot be actualized through conventional means. This involves using fiction, artefacts, movies and pictures to tell new stories. It involves exploring the margins of a field. Storytelling requires a lot of reading and imagination and is a kind of engaged and slow thinking that is different from simply reviewing literature.

Conclusions

Self-formation is critical if PBL should enable managing ecological and social injustice. Self-formation implies spirituality, but this should not be understood as dogmatic religious belief or a belief in higher powers. Storytelling is to extend oneself in time and space and think about how one connects and relates to others, human as well as nonhuman. We all need stories to be in this world. We make them because of life itself. Nietzsche (2006) was horrified by the emergence of a modern world without moral or value anchors. Michel Foucault (1997, 2005) argued for the need to balance between knowledge and spirituality. From his work, we can deduce that management training began in the ancient Greek academies. The focus here was on looking inward at the soul and working with ethics and values. Using PBL in organization studies can be a way of rebalancing knowledge and spirituality. This requires an emphasis on thinking actualized in the personal engagement in storytelling and writing.

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A Personal Introduction to *Rethinking Problem-based Learning for the Digital Age* (Savin-Baden and Fraser, 2024)

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Abstract

This reflection provides an introduction to, and reflection on, the new text *Rethinking Problem-based Learning for the Digital Age* (Savin-Baden and Fraser, 2024). It begins by telling the story and rationale for the creation of the book and then provides an overview of the text of the whole. The next section discusses the purpose of the book, and the final section analyses the importance of the notion of the postdigital for PBLonline. It argues that the postdigital as a concept and an approach is important in PBLonline because it prompts a rethinking of learning and the impact of neoliberalism of the university worldwide.

Keywords: Problem-based learning, Problem-based learning online, Digital age, Postdigital, Neoliberalism

Introduction

This personal reflection will explain the rationale for producing this text which occurred post-COVID. Its construction was prompted by the shift towards online learning during the pandemic the ways in which this had an impact on how learning is seen and valued in online spaces. During the post-pandemic

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era it has become clear that students' experience of learning online has changed the educational landscape, with students expecting more fluidity to the learning spaces offered to them, with some students preferring online modalities to fit around other life/work commitments. Finally, this reflection will explore the impact of the postdigital and how this has an impact on problem-based learning.

The story

In 2020 during the COVID-19 pandemic, Heather Fraser and I were often asked about the current, new and future possibilities for PPLonline. We had a number of online meetings with academics in our own and other institutions to consider creative possibilities. As a result of these meetings and many discussions Heather and I realised that my original texts in this area (Savin-Baden, 2007; Savin-Baden & Wilkie, 2006) needed to be not just re-edited but rewritten. At the same time Heather, an experienced problem-based learning facilitator in online and offline settings, was completing her PhD. Heather kindly agreed to co-author this text and bring her own research and new insights to bear. The result is this new textbook *Rethinking Problem-based Learning for the Digital Age* (Savin-Baden & Fraser, 2024).

The overview

The book is divided into 3 parts. Part 1, Deciding how to implement Problem-based Learning Online begins in Chapter 1 by providing an overview of the current landscape of problem-based learning. It builds on and adapts constellations of problem-based learning and problem-based learning pedagogies for online settings. Chapter 2 then explores the many reasons why problem-based learning is being moved away from an onsite face-to-face mode of learning to a digital form. It presents the relevant literature and examines the new forms of online learning and their relationship with PBLonline. Chapter 3 explores four central assumptions about the state of learning in higher education, namely the learning context, curriculum design, pedagogy and quality and provides a section on assessment. It explores the mistakes that are often made, including the choice of scenarios, the approach to facilitation and assumptions about students' capabilities online.

Part 2, The Art of Facilitation comprises three chapters. Chapter 4 focuses on tutors and argues that different approaches to facilitation are required, depending on the form of PBL adopted. It discusses the need for conscious consideration to be given to tutors' move to facilitation and to their transfer to

online learning, offering some practical strategies to support this. Chapter 5 presents recent research but begins with a discussion around the notion of disciplinarity, highlighting some of the variances in teaching and learning practices across disciplines. It then focuses more specifically on PBL, detailing some key findings depicted in Fraser's (2022) multi-site research study which explored the influences on PBL facilitation across five different disciplines. The final chapter in this section, Chapter 6, considers PBL from the perspective of the students and offers some practical strategies to support them in maximizing the learning opportunities that they are offered.

The final section, Part 3, focuses on Designing Problem-based Learning Online. Chapter 7 analyses the tech and the platforms. It considers the impact of advances in technology and the increased use of synchronous online learning. It outlines some of the more commonly used online learning platforms, exploring their use in PBLonline. From here Chapter 8 presents the use of PBL in virtual worlds. It explores digital learning spaces such as virtual worlds and virtual and augmented reality, suggesting that understandings of these have an impact on the diverse ways in which PBL is implemented in virtual worlds, simulation and augmented reality. The final chapter, Chapter 9 presents the idea of the postdigital and then suggests why it is important to PBLonline. The final section offers a new model of PBLonline and argues that universities and tutors wishing to create effective PBLonline need to embrace and implement this model in order to harness PBL for a digital age.

The purpose

The purpose of the book is to provide highly grounded research-based ways for those wanting to change problem-based learning modules and programmes from face-to-face to online approaches. It is also useful for those who have developed online learning modules but who want to change to problem-based approaches. Using online and blended approaches to learning has developed exponentially in recent years, and there is a need for an up-to-date compendium on curriculum making for all disciplinary areas. In this text the following arguments are made:

- The shift towards online learning during the pandemic has had an impact on how learning is seen and valued in online spaces (Dhawan, 2020; Jones & Sharma, 2020).
- The changing learning practice in online and blended learning has resulted in a renewed interest in active learning online, particularly in PBL (Bouilheres et al., 2020; Haslam et al., 2021).
- Students' experience of learning online has changed the educational landscape, with students expecting more fluidity to the learning spaces

offered to them, with some students preferring online modalities to fit around other life/work commitments (Dhawan, 2020; Dost et al., 2020).
- Learning has become postdigital and the academy needs to respond to this (Savin-Baden, 2021).

The book is designed to do the following to help readers consider how to implement problem-based learning online effectively in the changing climate of higher education and illustrate grounded models and examples of the ways in which problem-based learning has been implemented. It begins by describing the theoretical foundations of problem-based learning and linking it with the literature on diverse forms of e-learning. The text also suggests ways of implementing problem-based learning online, which will include a consideration of the use of different components such as blended forms of problem-based learning, the use of simulations, virtual reality, and multimedia resources. It then provides concrete examples of how different models of problem-based learning can be integrated with online learning. In short, it is a book whose purpose is to serve as a practical source for readers by addressing the complexity of virtual learning environments and new online learning spaces such as augmented and virtual reality.

The importance of the postdigital for PBLonline

The postdigital is defined here as a stance towards the digital which seeks to challenge the educational, economic and ethical impact of digital technology on humanity and the environment. For example, whilst learning at universities through digital technology in the past has been seen as largely supplemental, it now takes centre stage. What I mean here is that although virtual learning environments were developed and became popular in the 1990s, online learning was still seen as additional to onsite face-to-face learning. The growth of PBLonline has been relatively slow but the COVID-19 pandemic has resulted in increasing interest and adoption in this area.

We live in a postdigital world, and this is having an impact on problem-based learning. The postdigital is seen as a stance which merges the old and the new, it is not seen as an event or temporal position, rather it is a critical perspective, a philosophy, that can be summarized as a collection of stances (Jandric, 2019; Peters et al., 2021a, 2021b). The postdigital then is not just about positions or spaces inhabited just for a time, it is essentially ungraspable (Savin-Baden, 2021). Postdigital humans are located in liquid spaces; people are both central to the postdigital and key players in its formulation. Until now this area has not been explored in relation to problem-based learning online.

The postdigital as a concept and a practice is important in PBLonline because it prompts a rethinking of learning and the impact of neoliberalism of the university worldwide. This neoliberal stance highlights the belief in competitive individualism and the maximisation of the market. The notion of the postdigital includes disenchantment with current information systems and media, and a tendency to focus on the experiential rather than the conceptual. The postdigital might be perceived by some authors as signalling a period of change (Fuller & Jandrić, 2019); here it is seen as a liminal and disruptive space in which to untangle the impact of the digital on diverse systems (economic, sociological, political and ethical) and relationships.

Why is postdigital learning important for PBLonline?

Postdigital learning encourages students to stand at the borders of knowledge and to question and critique. Such questioning and critique mean that students will be encouraged to explore the knowledge put before them and, indeed, the way it is presented to them. Thus, it is political, because it seeks to interrupt and disrupt through a stance that is always querying the *status quo.* Yet this form of learning and the teaching that prompts this kind of critique is not comfortable. To learn and teach in the postdigital is to continually experience conscientisation and disjunction. Freire (1974) explored how deeply embedded values affect dialogue, adopting the term 'conscientization' to describe the process whereby people come to understand that their view of the world and their place in it is shaped by social and historical forces that work against their own interests. Students need to engage with complex issues and experience consciousness raising as well as realising the value of getting stuck in learning

Tutors need to embrace the idea that PBLonline is a flexible pedagogy, as mentioned in chapter 1. If flexible pedagogies are to be adopted, that focus on human becoming rather than just human beings, then the use of behavioural objectives needs to be dismissed in favour of Stenhouse's (1975) learning intentions. The idea of conditions of flexibility is a challenge in the face of claims by tutors that students remain entrenched and still want to be given lectures and write essays, despite little reflection from academics about how students may have become quite so entrenched in the first place. Some of the questions that need to be asked in the context of a desire for flexible pedagogies are as follows:

- Why are objectives still useful?
- What are the boundaries and borders of a discipline and who decides?
- To what extent does credit transfer and modularity result in flexibility?
- What are the most effective ways of ensuring quality?

- How can shifts be made away from quality standards and professional bodies that are risk-averse?
- To what extent are disciplinary norms and learning outcomes useful in the 21st Century?
- How can institutions become 'unmanaged' by bureaucratic administrators?

A PBLonline curriculum should be a creation and a composition, a thinking space that is complex and multi-layered.

Reflections on why we wrote this book

The COVID-19 pandemic precipitated an abrupt shift from online teaching being considered optional, to being considered necessary (Dhawan, 2020). However, this radical and imposed change happened within an educational context that already had an increasing focus on blended and online learning, with growing interest in synchronous models of delivery (Wu, 2016). This is concurrent with a growth in the use of problem-based learning, yet there is still relatively little information about the theory and practice of using problem-based learning online. There is global interest in using problem-based learning online; however, experiences of these are only just beginning to emerge. With ongoing pressures for physical classroom spaces (Oude Vrielink et al., 2019), it is envisaged that higher education institutions will seek to preserve and develop the online learning approaches that have proved most valuable.

Even prior to the COVID-19 pandemic, it was argued that any discussions about face-to-face problem-based learning transforming into online problem-based learning should be about 'how best to', rather than 'whether to' (Kek & Huijser, 2017). The nature and processes of online learning have changed considerably over the last few years, during the COVID-19 pandemic, when pedagogic change was more reactive than considered (Dhawan, 2020). There also continues to be debate at both local and global levels about what counts as problem-based learning and what does not. Yet there remain difficulties in attempting to marry diverse types of problem-based learning with online learning, because some problem-based approaches become overly managed through the online environments. The result is that in some cases, undertaking problem-based learning online becomes more about managing knowledge and information and developing a virtual space to deposit such knowledge, than actually engaging students in a collaborative online process. This book engages with these dilemmas and offers possible solutions.

Problem-based learning as a learning approach relies heavily on effective team collaboration; a skill deemed invaluable for graduate employment (Martin et al., 2008). To date, many universities still use virtual learning environments (VLEs) for learning as they are seen as safe learning spaces (Farrelly et al., 2020), yet such spaces do not always facilitate effective team learning. The success of collaborative working often centres around the meaningful interactions within these spaces and the ways in which they are facilitated (Saqr et al., 2020; Wu, 2016). There is a need to explore the kinds of technologies that support problem-based learning most effectively and how collaborative learning can be supported therein. This book explores new environments, suggesting some practical ways to improve online collaboration for effective teamwork.

Conclusion

Problem-based learning remains a contested area of pedagogy, practice and research. While problem-based learning is still undergoing a process of change worldwide, such change has been analyzed by few in the field of higher education. This book brings together new research and ideas about how PBLonline might be rethought for the 21st-century university.

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Exploring Problem-Based Learning in Teacher Education Through *Laura's Story*

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Abstract

This article critically examines "Laura's Story: Using Problem-Based Learning in Early Childhood and Primary Teacher Education" by Suzy Edwards and Marie Hammer (2006), highlighting its significant impact on Problem-Based Learning (PBL) research. This seminal work is distinguished by its practical focus on teacher education, using the narrative of Laura's story to demonstrate PBL's effectiveness in real-world teacher education scenarios. The article employs a slow-reading approach, offering a detailed and reflective examination of the sections of the text from introduction to conclusion. This thorough analysis aims to uncover deeper meanings and assess the text's influence on the role of PBL in developing essential teaching skills. Through this meticulous process, the article seeks to provide valuable insights into PBL's application in teacher education, highlight its pedagogical implications, and suggests directions for future research.

Keywords: Early Childhood Education; Laura's Story; Primary Teacher Education; Problem-Based Learning (PBL); Scenario; Slow-reading Approach

Introduction

In the evolving landscape of teacher education, Problem-Based Learning (PBL) has emerged as a critical pedagogical approach (Kırkgöz, 2015). Among the

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significant scholarly contributions to this field is the seminal work titled "Laura's Story: Using Problem-Based Learning in Early Childhood and Primary Teacher Education" by Suzy Edwards and Marie Hammer (2006). By exploring PBL through a practical case study, this text provides researchers with a valuable example of how PBL can enhance critical thinking and problem-solving skills in early childhood and primary education, making it a crucial addition to any curriculum aimed at developing effective and reflective educators.

The purpose of this article is to analyze and reflect on the mentioned text using the "slow-reading approach" to gain a comprehensive understanding and extract meaningful insights into its contributions to PBL research and teacher education. The next section provides a brief summary of Laura's Story, which serves as the PBL framework, guiding our examination of how the text addresses the core principles of PBL. The methodology section offers a detailed analysis of the text through the lens of the "slow-reading approach." Additionally, reflections explore how the authors' insights align with or challenge existing paradigms within PBL research and practice. This thorough exploration concludes by highlighting the impact of the text on advancing PBL methodologies and its implications for the future of teacher education.

"Laura's Story" as a Practical Framework

Laura's Story is a significant scholarly work that highlights the common challenges faced by early childhood and primary educators. Through this narrative, the authors (Edwards & Hammer, 2006) demonstrate how PBL can be used to address these challenges. What distinguishes this text is its practical approach to teacher education. Rather than simply discussing theoretical concepts, the authors embed them within a real-world scenario—Laura's story—providing pre-service educators with a concrete framework to develop the essential skills and competencies required for their roles. The text also offers a detailed background on the origins and principles of PBL, tracing its development from the medical field to other disciplines, including education. This historical context helps readers understand the rationale behind adopting PBL as a pedagogical approach.

Method

This study employs a slow reading approach to evaluate the text. Unlike rapid reading, which focuses on speed and surface-level understanding, slow reading involves engaging with the text at a deliberate pace to deepen comprehension and reflection. The text is read in short manageable segments, such as one

paragraph or section at a time. During this process, the reader takes notes on key points, pausing frequently to reflect on the author's purpose and effectiveness. By carefully working through each section, readers can uncover deeper meanings and insights, gaining a fuller understanding of the author's arguments and assessing the overall coherence of the article. The deliberate pace helps readers develop a more informed and critical evaluation of the text's contributions and limitations (Baldi & Mejia, 2023; Honoré, 2004).

Application of slow reading to Edwards and Hammer's work

The Introduction effectively establishes the context by discussing the growing significance of problem-solving, critical thinking, and collaboration skills across various professions, including teaching. The Theoretical Framework builds on this foundation by linking the principles of PBL to constructivist and social-constructivist theories of learning. Through a slow-reading process, the authors emphasize the development of key competencies essential for educators, such as critical thinking, problem-solving, and collaborative skills. By situating PBL within a real-world context, Edwards and Hammer (2006) provide pre-service teachers with a practical and valuable tool to navigate the complexities of teaching. This alignment justifies the suitability of PBL for teacher education by underscoring its focus on active learning and problem-solving.
The Methodology section emphasizes the significance of child development theories in early childhood education and highlights the role of pre-service educators in supporting children's learning. The study is reported to have emerged from:

> "an examination of pre-service educators' responses to their participation in a PBL scenario designed for use in a unit of study associated with the Bachelor of Early Childhood Education and the Bachelor of Primary Education at Monash University (Victoria, Australia). The unit, EDF 2202 Child Development 2, had a theoretical focus on the influences on children's development from within and beyond the family." (Edwards & Hammer, 2006, p. 468)

The previous approach to the unit followed a conventional lecture-tutorial format, where:

> "preservice educators were lectured on a range of developmental theories, offered opportunities to discuss these during tutorials and expected to complete a case study and presentation on the relationship between theories of development and education." (Edwards & Hammer, 2006, p. 468)

The preservice educators enrolled in the unit of study were second- and third-year Bachelor of Primary and Early Childhood Education students (aged 19–40)

who had prior field experience, having completed at least a 1–3 week teaching practicum. The PBL scenario involved pre-service educators working in groups of five to address the learning and developmental needs of a fictional child named Laura. While Laura was technically 'fictional', her challenges reflected real problems the lecturers had encountered in their professional practice. Edwards and Hammer (2006) describe the role of each group as follows:

> "Each member of the groups of five were randomly assigned a different stakeholder role in Laura's life including, her mother (Chantelle), her early childhood educator, her case-worker (assigned to Laura as a child 'at risk' of neglect), her future primary school teacher and parents of Laura's peers at the kindergarten in which she was currently enrolled." (p 469)

The text emphasizes the thoughtful integration of lecture material into weekly chapters about Laura's life, noting, "issues arising from the weekly lecture content were embedded into the chapters about Laura's life that were posted to the website" (p. 270). This approach effectively connected theoretical knowledge with practical application, enabling students to explore real-world complexities through their assigned stakeholder roles. The episodic structure immersed students in Laura's evolving narrative, encouraging deeper engagement with her circumstances and needs. For instance, in the initial chapter, Laura is introduced as "a child of 4.9 years and tall for her age," alongside details of her recent traumatic experiences, such as being removed from her mother's care following her mother's arrest. This vivid portrayal grounded the learning process in a realistic and emotionally resonant context, fostering both empathy and critical thinking. The phased structure ensured that students systematically progressed from understanding the problem-to-problem-solving and reflection.

The slow-reading approach reveals that pre-service educators demonstrated their understanding of Laura's development through presentations based on their assigned stakeholder roles and reflective essays. Presentation sessions simulated professional collaboration, with group members engaging in dynamic, role-based discussions to address Laura's needs. The final assessment, a reflective essay, encouraged participants to critically evaluate their interactions and overall learning experiences. This reflective component was particularly impactful, prompting them to connect their practical experiences with their philosophical beliefs about teaching and learning -an essential step in shaping their professional identity.

Student perceptions of the unit were assessed using an anonymous questionnaire comprising both quantitative (10 Likert scale items) and qualitative components (three open-ended questions). The quantitative

responses were summarized with mean scores and standard deviations. Applying a slow-reading approach to the thematic analysis of the qualitative data revealed three key categories. By carefully reading each category, we can fully appreciate the specific insights gained by the respondents. First, "awareness of professional challenges" was the most prominent, with nearly half of respondents recognizing the importance of preparing for potential obstacles and developing strategies to overcome them. This aligns with the PBL approach of simulating real-world challenges. The second category, "connecting theory to practice" (38%), emphasized the value of scenarios in bridging the theory-practice gap in teacher education, helping participants apply theoretical knowledge in practical contexts. Lastly, "communication and collaboration skills" (17%) highlighted the development of teamwork and communication, as students engaged in role-play and collaboration, gaining insights into various stakeholder perspectives in early childhood education.

As a teacher educator, I found the text highly relevant to teacher education, as it effectively demonstrates the value of PBL in bridging the gap between theory and practice. By embedding PBL within a practical narrative like Laura's Story, the study fosters a stronger connection between theoretical knowledge and real-world application. It highlights how PBL cultivates essential skills such as empathy, collaborative problem-solving and reflective practice, which are key competencies for effective teaching. The structured yet open-ended scenario enables pre-service educators to navigate the complexities of child development and educational practice, preparing them for the unpredictable realities of early childhood and primary education.

While the text highlights the many benefits of PBL in teacher education, the slow-reading approach also reveals some potential challenges. The text raises the question of how the actual PBL scenario influences pre-service educators' learning and decision-making processes. The nature of the scenario-learning relationship remains underexplored, leaving a gap in understanding how specific elements of PBL scenarios contribute to or hinder learning.

Although not explicitly stated in the text, the slow reading approach suggests that PBL is a resource-intensive endeavor. Designing realistic scenarios, facilitating group work, and providing continuous support demand considerable time and effort from instructors, which may not be feasible for all teacher education programs. The complexity of PBL scenarios, particularly those involving multiple stakeholders and interdisciplinary challenges, can sometimes overwhelm learners. Achieving the right balance between realism and manageability seems to be crucial to ensure that the scenarios remain engaging without causing cognitive overload. Moreover, the limitation of only

five chapters over a 13-week period may have constrained the depth of student engagement with the PBL process.

The authors acknowledge that "the questionnaire used was not piloted before it was used" (Edwards & Hammer, 2006, p. 470), which limited the broader applicability of the insights gained. While the evaluation method provided useful descriptive data, the absence of a pilot test reduced its rigor. This limitation diminishes the generalizability of the findings, framing the study as a descriptive case. Despite this, the study still offers valuable insights into how students perceive the scenario's role in bridging theory and practice.

In the past, I integrated PBL into my academic work, adopting a practical, student-centered approach that bridged theoretical understanding with real-world applications. I embedded PBL in Materials Development Program by creating scenarios that mirrored authentic challenges faced by English language teachers. PBL provided pre-service teachers with hands-on experience, helping them apply theoretical concepts to classroom situations enabling prospective English teachers to develop problem-solving, critical thinking, and collaborative skills. Reflection practices, including journals and feedback sessions, reinforced learning and helped educators adapt theoretical principles to diverse classroom settings (Kırkgöz, 2015).

Inspired by Laura's Story, I plan to continue integrating PBL into my academic work by expanding its application across various aspects of teacher education and professional development. I intend to further develop PBL scenarios that reflect the complexities of modern language teaching, with a specific focus on addressing pedagogical challenges, technological integration, and classroom management. By using real-world problems, I will help pre-service teachers hone their problem-solving, critical thinking, and collaborative skills, which are essential for their future teaching careers.

I also plan to incorporate PBL more extensively in the design of workshops for practicing teachers, emphasizing areas such as curriculum innovation and assessment strategies. By offering teachers the opportunity to engage with real teaching challenges in a collaborative environment, I believe I can support their professional growth and readiness to address evolving educational demands. Furthermore, I aim to continue researching the effectiveness of PBL in enhancing teacher competence, with a focus on the integration of digital technologies in the classroom and preparing teachers for 21st-century skills. This will involve collecting and analyzing data from classroom observations, teacher feedback, and pre-service teacher performance to assess how PBL influences teaching practices and student outcomes. Ultimately, I envision using PBL as a key pedagogical tool to prepare both pre-service and in-service teachers for the ever-changing demands of the education field, ensuring that

they possess the practical skills and mindset required to navigate the complexities of contemporary classrooms effectively.

Conclusion

The purpose of this analysis has been to employ the slow-reading approach to deeply engage with and reflect on the seminal work by Edwards and Hammer (2006), aiming to derive meaningful insights into its contributions to PBL research and teacher education. By examining the text in detail, from its theoretical foundations and research methodology to its findings, this analysis reveals the profound impact of the work on the field of teacher education. The analysis of Laura's story underscores the profound impact that the work has had on my understanding of the subject. Through a detailed examination of her narrative, I have highlighted the fact that Laura's story serves not only as a compelling illustration of PBL's effectiveness in teacher preparation but also as a practical framework for addressing real-world challenges in educational settings. As such, Laura's story remains a vital resource for scholars and educators committed to improving teaching methodologies and fostering effective PBL learning environments.

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Advocating for Nexus Analysis

Integrating Micro and Macro Perspectives in Problem-Based Learning Research

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Abstract

This paper advocates for the adoption of Nexus Analysis as a robust analytical framework in Problem-Based Learning (PBL) research. Developed by Scollon and Scollon, Nexus Analysis offers a unique lens for examining the intricate dynamics of PBL by seamlessly integrating micro-level interactions with macro-level societal discourses. The approach enables researchers to capture the rich, nuanced interplay between individual behaviors and broader educational contexts. Despite its potential, Nexus Analysis remains underutilized in the study of PBL, where research often polarizes towards either micro or macro perspectives without bridging the two. This paper discusses the foundational concepts of Nexus Analysis, illustrating its relevance and applicability in capturing the complex reality of educational environments. By highlighting its methodological strengths, the paper aims to encourage scholars to adopt Nexus Analysis, to further strengthen the research around PBL.

Keywords: Nexus Analysis; PBL; Mediated Discourse Analysis; Social Interaction

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Introduction

The essential work related to Problem-Based Learning (PBL) that I aim to unfold in this paper is Scollon and Scollon's book titled *Nexus Analysis—Discourse and the Emerging Internet* from 2004. This is not a book usually associated with PBL, as the main aim of the book is to introduce a theory and methodology to study human interaction from both a micro and macro perspective. As I will unfold later in the article, I highlight this book in relation to PBL because I believe there is a lack of studies in PBL that combine a micro and macro perspective to truly understand the affordances and constraints of PBL. As the Nexus Analysis book can be seen as the culmination of Scollon and Scollon's academic careers, I will include more of their scholarship to provide additional context to the thinking of the book. From a personal perspective, Nexus Analysis is, for me, one of the best approaches to study human behavior as it provides a concrete methodology to bridge the three central aspects of social actions: how we interact (interaction order), why we interact as we do (historical body), and how society affects the way we interact (discourses in places).

In the next section, I will address some of the shortcomings as I see it in the current PBL literature. I will then link Nexus Analysis to the field of PBL and explain why I think Nexus Analysis is an essential read for scholars within PBL. Subsequently, I will elaborate on the theory and methodology of Nexus Analysis and how it understands and encourages to analyze social actions, I will finish by returning to why I think this is relevant for PBL. My overall aim with this paper is to encourage scholars to use Nexus Analysis as a methodological framework to conduct research in PBL.

What I miss in the current research on PBL

PBL is an evolving field, and more than 500 educational institutions have been identified globally as having implemented some version of PBL (Servant-Miklos, 2019). This has also led to a great deal of research within PBL. Hung et al., (2019) identify three megatrends within PBL research. The first trend from 1990 to mid-2000 focuses on whether PBL works compared to more traditional ways of educating, they call this trend polarization. According to Hung et al. (2019), this research was meant to justify the PBL approach and prove that it was an effective way of teaching. Often, you would test different cohorts, one taught with a PBL approach and one in a more traditional way, and then measure different outcomes (motivation, retention of knowledge, problem-solving, etc.) The next trend, outcomes to process, took place from mid-2000-2010 and focused on how PBL works. This trend specialized in different parts of PBL (assessment methods, supervision methods, etc.) and concentrated on

how these were performed to make PBL work. The last trend specialization focused on specific disciplines, online platforms, and how PBL was implemented across cultures. Thus, instead of talking about PBL in general, the focus changed to different PBL models.

What I personally feel is lacking in the research on PBL is studies that combine a micro and macro perspective. It seems like in most of the literature, you either do micro studies (Bridges & Imafuku, 2020; Hendry et al., 2016; McQuade et al., 2019; Velmurugan et al., 2021; Velmurugan & Davidsen, 2024) or macro studies (Moallem et al., 2019; Servant, 2016; Sørensen, 2023). To this date, I have only found one study that combines micro and macro perspectives by Thorndahl (2023), but she does this to think about PBL with agential realism. A Nexus Analysis can provide a more accessible framework to analyze PBL. I will unfold this in the following, starting with how I first came to know Scollon and Scollon.

The first time I encountered Scollon and Scollon

The first time I stumbled upon Scollon and Scollon's works was not in relation to the book Nexus Analysis, but rather their book: "Intercultural Communication: A Discourse Approach" third edition published in 2012 (first edition published in 1995), a book that really resonated with me. The work focuses on understanding intercultural communication within the notion of Discourses. A notion they later (after 1995) used to develop the theory of Mediated Discourse Analysis (Scollon, 2001) and the ethnographic methodological strategy of Nexus Analysis (Scollon & Scollon, 2004).

Although I had previously become familiar with the field of Discourse Analysis mainly through Fairclough's Critical Discourse Analysis (Fairclough, 2011) and Foucault's notion of discursive power (Foucault et al., 2000) what I found interesting about Nexus Analysis was its quest to understand social interactions with a lens that focused both on the ongoing interaction, the sociological and psychological background of the actors who perform the social action(s) (what they call Historical Body) and how the context of the surrounding society affects the social interactions of the here and now (what they call Discourses in Places). In other words, what intrigued me was their bridge between understanding everyday interactions and how broader Discourses affected these interactions or put in other words, their bridge between macro- and microanalysis. In their own words, they state:

> "Discourse analysis as a field of study might either be the micro-analysis of unfolding moments of social interaction or a much broader socio-political-cultural analysis of the relationships among social groups and

> power interests in the society. A nexus analysis is a way to strategize unifying these two different levels of analysis." (Scollon & Scollon, 2004, p. 8)

They further elaborate that: "a nexus analysis undertakes a close analysis of not only *what* is said (ethnographic content) but *how* (discourse analysis) and *why* (motive analysis)." They do that by examining social actions, which I will elaborate on in the following after unfolding nexus analysis a bit further.

Unfolding Nexus Analysis

In their book: "Nexus Analysis – Discourse and the Emerging Internet" (2004) Scollon and Scollon are looking back at the first time they tried to conduct e-learning in Alaska in the late 1970's. This was before the emergence of the internet. A toned-down version of the internet was installed in Alaska due to the vast distance between the cities and the booming economy related to the oil in the area. The "internet" was different terminals connected through Alaska that could be used for "advanced communication" (mail and messages). Scollon and Scollon lectured at a university with campuses in different locations in Alaska and traditionally, they would fly to these locations to teach. Until they got the idea to try and use this early version of the internet to conduct their teaching.

Perhaps because these were some of the first attempts in the world to create distance learning programs they were a great source to understand the rituals surrounding learning in higher education, how learning traditionally is facilitated, and what changes when changing what, at that time, were fundamentally and taken-for-granted actions about learning in higher education. Thus, their analysis of how to conduct learning processes through technology leads to their development of a methodological approach to: "study the semiotic cycles of people, objects, and discourses in and through moments of socio-cultural importance." (Scollon & Scollon, 2004, p. x). The main focus of analysis in Nexus Analysis is to: "try to understand how people take actions of various kinds and what are the constraints and affordances of the mediational means (language, technologies, etc.) by which they act." (Scollon & Scollon, 2004, p. 21) Thus, they define a nexus analysis as "the mapping of semiotic cycles of people, discourses, places and mediational means involved in the social actions we are studying." (Scollon & Scollon, 2004, p. viii).

Nexus analysis thus becomes an ethnographic methodological strategy to study social action(s). These actions are then used to understand broader dynamics in society:

> "A nexus analysis entails not only a close, empirical examination of the moment under analysis but also a historical analysis of these trajectories or discourse cycles that intersect at that moment as well as an analysis of the anticipations that are opened up by the social actions taken at that moment." (Scollon and Scollon, 2004 p. 8)

We see how Nexus Analysis not only focuses on the interaction at the moment but tries to analyze why that interaction unfolds as it does. Its main analytical focus is to examine this through social actions, which I will elaborate on in the following.

Defining Social Action(s)

"A social action takes place as an intersection or nexus of some aggregate of discourses [..] – the *discourses in place*, some social arrangement by which people come together in social groups [..] – *the interaction order*, and the life experiences of the individual social actors – *the historical body* (Scollon & Scollon, 2004, p. 19). Thus, Scollon and Scollon define a social action as a nexus of three entities: interaction order, historical body, and discourses in place. This is visualized in the figure below and will be elaborated afterward.

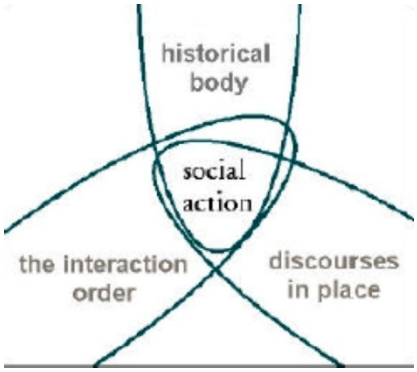

Figure 1. Social Action (Scollon & Scollon, 2004, p. 20).

Discourses in place

"In the simplest and most common sense, we take discourse to mean the use of language in social interaction." They further refer to Gee's notion of discourse with a small d and with a big D. The difference is that Discourse with a big D refers to:

> "different ways in which we humans integrate language with non-language "stuff," such as different ways of thinking, acting, interacting, valuing, feeling, believing, and using symbols, tools, and objects in the

> right places at the right times so as to enact and recognize different identities and activities." (Gee 1999, p. 13 as cited in Scollon and Scollon, 2004 p. 4)

Their use of discourse is focused on how meaning is created and negotiated in social actions, attentive to which discourses the participants of the actions draw upon to accomplish their actions. A central part of their analysis of the discourses, and one of the central aspects in Mediated Discourse Analysis, is the focus on mediation and how discourses are mediated through different technologies, the oldest being language itself. As they state: "Discourse and technology are inseparable […] any change in the technologies of the discourse is inherently and necessarily a change in the discourse itself" (Scollon and Scollon p.7). Take, for example, a group meeting among the students, according to this author's experience, it has become quite normal for groups to have hybrid meetings where some meet up physically at campus, and others participate online. This technology will change the small discourse of the meeting, as other social conventions will become available when one member participates online. Another discourse used by politicians, faculty, and students is the employability discourse, which has a profound way of regulating the number of seats at Higher Education institutions in Denmark and might affect the way students choose their prospective study and how they prioritize during their studies. Where in the 70'ies, the focus could be argued to be centered on how to enhance the motivation of the students to teach them relevant content knowledge and solve societal problems not problems defined by private companies.

The interaction order

Refers to the interaction the participants engage in to accomplish their social action. Thus, by looking at how people interact with each other and which discourses they draw upon in their interaction, we gain an understanding of how social norms and general societal discourses affect micro-interactions and vice versa. In a PBL context, you would look at how the students do PBL, from internal meetings to how they write different parts of their assignments to their interaction with their supervisor. You would also look at how the different discourses emerge and what types of discourses the students use and try to track the trajectory of these discourses.

Historical Body

The best way to understand this term is to relate it to Bourdieu's concept of habitus. The roles and personal habits of the actors who engage in the social actions under study. Scollon and Scollon use the concept of the historical body taken from Nishida because it is understood from a more dynamic perspective

thus the historical body is constantly changing as the participants develop and evolve through their lives. Thus, in a PBL context, you would look at who the students are, who the faculty are, and how their personal preferences affect the way they interact with each other, why they do as they do, what sort of meaning they prescribe to the discourses, and their interaction.

By studying the nexus of discourses, interaction order, and historical body, we thus get an informed understanding of human interaction. In other words, it provides a framework to analyze and understand human behavior focused on social actions.

Some concluding remarks

To this author's knowledge, there have not been any studies using Nexus Analysis to analyze PBL. Velmurugan, (2022) briefly addresses the notion of a historical body in his discussion of Decision-Making processes in students' PBL group work. However, he does not do a nexus analysis. My main message here is that to truly understand PBL and how students enact PBL, focusing on general learning theories is not enough, interaction studies of how students do PBL are not enough, studies that examine how and what kind of digital tools the students use is not enough, discourse analysis of different educational discourses is not enough, a holistic understanding of the field should combine all these perspectives to understand how PBL functions in 2024, what sort of broader Discourses influence PBL and how this is manifested in both students and staff in relation to PBL. Nexus Analysis developed by Scollon and Scollon provides an accessible way to do this.

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Transdisciplinary Threshold Concepts in Techno-Anthropology

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Abstract

This paper reflects on a slow re-reading of Maggi Savin-Baden's *"Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning"* and its relation to the author's experiences as a teacher and curriculum developer in Techno-Anthropology at Aalborg University. It explores four transdisciplinary threshold concepts—liminality, scaffolding, pedagogical content knowledge, and pedagogical stance—as critical to enhancing student engagement in transdisciplinary problem-based learning (PBL). These concepts facilitate transformative learning, helping students navigate disciplinary boundaries and reform their professional and academic identities. The paper critiques traditional scaffolding practices, advocates for balanced guidance, and emphasizes the role of reflective pedagogical stances in fostering trust and deep engagement. It underscores the value of transdisciplinary approaches to addressing complex real-world challenges through PBL.

Keywords: Maggi Savin-Baden; Problem-based learning; Interdisciplinary PBL; Transdisciplinary PBL; Liminality; Scaffolding; Pedagogical content knowledge; Pedagogical stance; Slow reading.

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Introduction

In this paper, I will present and reflect on Maggi Savin-Baden's paper "Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning". It was published in 2016 in the "Interdisciplinary Journal of Problem-Based Learning" as a review paper on student engagement in Problem-Based Learning (PBL).

I first encountered the paper in early 2017 when two good colleagues, (Lone Stub Petersen and Petko Karadechev), and I were engaged in a curriculum development project with the aim of improving the integration between students enrolled in the master's program of Techno-Anthropology at Aalborg University. As many other master's programs with a heterogeneous student population, it faced (and faces) difficulties integrating students with different disciplinary backgrounds. Students found it challenging to collaborate with peers with other backgrounds than themselves. As a result, different disciplinary perspectives were not utilized in project work. We did a literature review that revealed that not much was written about inter- and transdisciplinarity in PBL. The most central hit was Baden's article, and we later used the transdisciplinary threshold concepts as the theoretical underpinning when we analyzed empirical material collected during the curriculum development project. It was a coincidence that Maggi Savin-Baden visited Aalborg University in May 2017 when we had just started the development project. Here she presented her work on transdisciplinary threshold concepts in her keynote lecture (Savin-Baden, 2017) during AAU's annual Day of Learning.

In 2021 we managed to publish our conclusions in the book (Karadechev et al., 2021). Thus, my colleagues and I worked quite intensively with Maggi Savin Baden's paper over a period of four years. Since then, we have asked our master's students in Techno-Anthropology to read her paper as part of the first introduction week of the study-program.

When I decided to contribute to this special issue, it was not difficult for me to select the PBL research paper that had been most influential to me. Thus, I engaged with a slow re-reading of Baden's Transdisciplinary Threshold Concept paper in the fall of 2024.

Slow reading

Slow reading is a deliberate and intentional approach to reading where a reader takes their time to carefully absorb and engage with the text. Unlike speed reading, which focuses on reading quickly to maximize information intake,

slow reading emphasizes depth, comprehension, and reflection. This type of reading is often used to enhance understanding, foster deep thinking, and appreciate the nuances of language, structure, and meaning in a text (Miedema, 2009).

The methodology of my slow re-reading was split into four steps. The first step regards choosing a text that is worthy of a slow read. As an experienced reviewer of manuscripts submitted to the "European Journal for Engineering Education" and the journal of "Science and Engineering Ethics", I know that many academics in their paper introductions quickly mention many references and write no more than one line to describe each reference's content. Most likely they have not read slowly the papers they reference. Slow reading requires reflection to pick a text that one wants to slow read, as time constraints the number of texts that can be read slowly. Above I have presented the context and some reflections on why I chose to slowly read Maggi Savin-Baden's text.

The second step in the applied slow reading methodology deals with the actual reading. Here I thoroughly read in periods of 45 to 60 minutes. I read on an A4 sized digital tablet using the PDF editor LiquidText which enables me to use my digital pen to highlight text passages that I find important, interesting, or difficult to understand. I can also write notes in the margin of the text when thoughts, ideas, and associations pop up in my head when I read.

Reflection is the next step in slow reading. After I read a 45 to 60 minutes part of the text I self-reflected about what I read. With self-reflection I mean that I had an inner dialogue with myself on the meaning of the read text, how and why the text was important for my own work, and if I would have written something differently. This reflection step could easily have been done as a collective process—as a dialogue with peers who also had read the same text.
The final step consists of extracting the outcome of my reflections and connecting its bits and pieces into one argument. This step resemblances book reviews that are (still) published in some journals. Here, I want to highlight the journal "Metascience" edited by Brad Wray and Jonathan Simon as it in each number issues around 30 book reviews from the fields: History and Philosophy of Science and Science and Technology Studies. When I do book reviews I link my reading to my own work. In this essay, I will do the same and link the slowly read text to my own work with Techno-Anthropology.

Threshold concepts

Savin-Baden explores transdisciplinary threshold concepts and their potential benefits in problem-based learning at the tertiary level. To understand these

concepts, the Savin-Baden text first considers Meyer and Land's 2006 definition of a threshold concept, which they describe as a pivotal learning point—a "portal" that offers students a new way of understanding something essential. A threshold concept represents a fundamental shift in comprehension, a "transformed way" of seeing that allows learners to make progress in their academic journey (p. 3).

A threshold concept is disruptive because it doesn't fit neatly within existing knowledge structures; instead, it pushes beyond the limitations of current understanding and opens new possibilities. This "transformed way" involves asking deeper questions such as why we understand knowledge in certain ways, how our current understanding is structured, and what other potential forms of knowledge exist to complement our existing knowledge. Without these disruptive, threshold-induced inquiries, meaningful academic progress would be very difficult.

Savin-Baden emphasizes that threshold concepts play a key role in allowing students to engage with Transformative Learning (Mezirow, 1997; Illeris, 2014) and to form deeper and transcending connections with their disciplines, thereby facilitating new insights and academic advancement. Threshold concepts have five key characteristics. They are:

- Transformative: Changing how students perceive their discipline.
- Troublesome: Presenting ideas that seem counterintuitive or alien at first.
- Irreversible: Once understood, these concepts are hard to unlearn.
- Integrative: Helping students bring together previously disconnected ideas.
- Bounded: Limiting themselves to a specific conceptual domain.

However, before arriving at new and transformative insight threshold concepts give rice to perplexion, frustration, and possibly loss of motivation. Thus, threshold concepts also present themselves as barriers that must be overcome before transformative learning can be achieved. Threshold concepts are central for understanding barriers to students' learning and students' lack of motivation for engaging with PBL. They have a dialectical nature: At first, they present barriers to learning that must be overcome. But when the barriers are overcome and tackled a reward awaits: new learning!

Transdisciplinarity

Having presented the threshold concepts, Savin-Baden argues that,

> "while the idea of threshold concepts being located within disciplines is useful to a degree, they need to be broadened. Instead, particularly in the context of PBL, transdisciplinary threshold concepts are more helpful." (p. 3)

Threshold concepts are not only localized within disciplines. Transdisciplinary threshold concepts share above mentioned traits, but differ in scope, as they apply across multiple disciplines. Thus, transdisciplinary threshold concepts foster a more holistic understanding that transcends disciplinary boundaries. PBL is transdisciplinary in nature. Savin-Baden defines transdisciplinary threshold concepts as transcending…

> "disciplines and subject boundaries, but which are challenging and complex to understand, but once understood, the student experiences a transformed way of understanding, without which they would struggle to progress with the curriculum." (p. 3)

In our book on Techno-Anthropology, we extend this understanding of transdisciplinarity. Here, students enroll in an academic master's program with different bachelor's degrees. Some degrees prepare for academic life in specific disciplines (such as bachelor's degrees in Anthropology or Techno-Anthropology) and some for different professions such as nursing, bio-analytical work, radiography, social work, engineering or medicine. By enrolling bachelors from different professions, some with years of work experience, the master's program in Techno-Anthropology enacts transdisciplinary threshold concepts by staging student transitions between professional and academic practices. At Techno-Anthropology we saw professional bachelors experiencing difficulties in entering academia and academic bachelors experiencing difficulties in engaging with professional real-life problems and practices. Our development project did not (only) address challenges of individual learning and motivation in PBL; it addressed structural problems of translation between academia and other professional worlds.

Transdisciplinarity has been defined in various ways. Some, like Piaget (1974), describe it as a unity of knowledge that transcends disciplines, operating between, across, and beyond them. Others, such as Funtowicz and Ravetz (1993), emphasize its role in addressing uncertain problems by identifying the most relevant problem statements. From a techno-anthropological viewpoint, transdisciplinarity involves continuous awareness of different social worlds involved, blending theoretical understanding with practical application to

tackle real-world societal problems through the interplay of technological, social, and socio-technical perspectives. We experienced that transdisciplinary threshold concepts can also be used to understand and facilitate students' transitions from a professional world to academia.

Based on a literature review on student engagement in PBL Savin-Baden identifies four transdisciplinary threshold concepts that are required to enhance student engagement in PBL and transition between social worlds: 1) liminality, 2) scaffolding, 3) pedagogical content knowledge and 4) pedagogical stance. In the remaining part of the paper, I go through these four concepts one by one and add my reflections on how they relate to Techno-Anthropology.

Liminality

Traditionally, liminality is tied to rituals or rites of passage, marking a transition between states. Turner's ethnographic work (1969) uses liminality to describe a transitional space or time, such as the initiation process boys undergo to become men. In the context of PBL, liminality can be viewed as a threshold concept, representing the oscillation between engagement and disengagement, or being "stuck" between mental states.

Savin-Baden emphasizes that liminality is a transdisciplinary threshold concept within student engagement in PBL because it represents a complex and often confusing learning space. Students (and sometimes supervisors) may not recognize that navigating this liminal space can foster deeper learning and emotional involvement with the material. Unlike traditional educational methods, which aim to impose order and structure, liminality embraces the fluidity and uncertainty of personal development, offering a more holistic approach to student engagement. This oscillating process challenges conventional strategies by encouraging a deeper connection to learning and personal growth.

> "[Liminality] tends to be characterized by a stripping away of old identities and an oscillation between states; it is a betwixt and between state, and there is a sense of being in a period of transition, and an oscillation between states and personal transformation." (p. 7)

I recognize liminality from my interaction with and supervision of Techno-Anthropology students. Those who enter the master's program with a professional bachelor's degree understand they are about to embark on a transformative journey that will bring them towards radical new learnings. Some want to through away their old disciplinary or professional identity. Others realize that they will gain additional skills and add a new layer to and

reform their old identity. Nether the less, all students with a professional degree recognize this liminal space when they join Techno-Anthropology. They are in a good place for transformational learning. Only some of those who enter the master's program with an academic bachelor's degree in Techno-Anthropology realize that they have entered a liminal space, and that their identity as a techno-anthropologist will change in the meeting real life professional problems. Those who do not recognize the master's program as a liminal space miss an opportunity for transformative learning, and only develop more of what they already have.

Scaffolding

Scaffolding involves a gap between a student's ability to solve problems independently and their ability to solve them with guidance. This concept highlights scenarios where students may experience a consequential increase in stuckness. Such stuckness occurs either when students struggle to grasp a supervisor's "map for learning" or when there is a mismatch between the students' and supervisors' approaches. Interestingly, as Savin-Baden notes, "in more cases than we would wish to acknowledge, the student's map is better than that of the [supervisor]" (p. 12), emphasizing how students sometimes possess valuable perspectives that differ from the supervisor's perspective. A central message is that…

> "it would seem that [supervisors'] need to scaffold learning is troublesome and results in student disenchantment. […] Thus, removing or minimizing scaffolding can enable [supervisors] to improve student engagement in PBL." (p. 11)

Student engagement is closely tied to crossing educational and academic thresholds through a balanced approach that recognizes and reinterprets scaffolding concepts. This approach acknowledges the role of scaffolding while intentionally moving beyond it.

Scaffolding, when viewed positively, serves as a starting point for engagement, but it must be reconsidered, deconstructed when necessary, and recontextualized rather than being treated as a fixed method to be followed without question. Effective scaffolding involves operating in a space where individual and assisted learning intersect, allowing diverse approaches to connect and interact. This makes scaffolding a transdisciplinary threshold concept—positioned at the intersection of guided support and autonomous problem-solving, where distinct perspectives converge, exchange, and evolve.
When I supervise and otherwise interact with Techno-Anthropology students, they often ask for scaffolds, including project reports from last year and

illustrative problem-solving examples. I only provide these scaffolds in the initial phase of the project work, allowing the students to transcend the scaffolds and develop their own research design. Thus, reimagining scaffolding as a transdisciplinary threshold concept provides fresh insights into supervision practices that enhance student engagement. I do introduce scaffolds, but they are always accompanied by a call for transgression.

Pedagogical Content Knowledge

Pedagogical content knowledge involves understanding factors that make specific topics easier or more challenging to learn. Bringing together students from diverse academic and practical backgrounds to work productively with a single problem is complex, and the success of such efforts often hinges on understanding pedagogical content knowledge as a transdisciplinary threshold concept.

This concept, as the term implies, centers around the practices and methods that reshape familiar knowledge into new, interdisciplinary frameworks. By drawing on students' internalized background knowledge, pedagogical content knowledge connects past and future learning, leveraging the benefits of previously acquired knowledge. Its transdisciplinary nature arises from its ties to prior understanding, which is activated and reshaped through engagement with fresh contexts, situations, and knowledge.

Pedagogical content knowledge is about re-contextualizing specific types of information—disciplinary content—through the lens of pedagogy, making it accessible and relevant across disciplines.

> "Students may have, for example, studied psychology in high school, but the use and portrayal of psychology in a medical or theology degree is reformulated to reflect the pedagogical content knowledge. The result is that knowledge for a particular discipline is taught and fashioned within it and for it, and thus it is for many students a threshold concept." (p. 14)

Translating existing content knowledge into a new academic context requires open questions from one discipline engaging with another, fostering conceptual thinking that considers new perspectives.

No single discipline alone can fully accommodate real life problems, making pedagogical content knowledge a transdisciplinary threshold concept that enhances student engagement in PBL when expanded beyond traditional disciplinary boundaries.

One of the strengths of Techno-Anthropology is that it draws on knowledge, tools and resources from different disciplines in students' project work. Not only are different resources brought into the program through translation of the knowledge, skills and competences beheld by the heterogenic student population. The study program's curriculum also brings in tools from different disciplines such as technology studies, philosophy of technology, and technology ethics along with technology specific domain knowledge and methods. Neither supervisors nor students fully master all the different lenses evoked and enacted in project work. PBL continues to be iterative and work in progress.

Pedagogical stance

Pedagogical stance reflects how students perceive themselves as learners within specific educational settings. This stance is shaped by the choices they make in learning situations and by the unique learning histories they bring to each environment.
Savin-Baden stresses:

> "These types of pedagogical stance can be seen as transdisciplinary threshold concepts, in that they are stages through which students pass on the way to high-level deep engagement in learning. Thus they journey across multiple thresholds on their way toward reflective pedagogy." (p. 16)

The pedagogical stance involves not only the student's relationship with their educational environment but also the intentional actions of the supervisors. Central to this stance in PBL is trust. Savin-Baden highlights two essential types of trust: (1) the personal trust students need to develop as they apply new knowledge, skills, and competencies, and (2) the trust that supervisors should place in students who require guidance, enabling them to experiment, make mistakes, and explore creatively. While both types of trust are indeed personal, relating to individuals' sense of security, the broader issue at hand is about control within the learning process.

During the first month of all master's programs at Aalborg University students are offered sessions on the PBL model where they are encouraged to reflect on and explicitly formulate the learning strategies, they bring with them into the program. This makes it possible for them to realize that students approach learning differently, and it encourages students to develop new learning strategies.

Conclusion

In this paper, I present the outcomes of a slow reading of Maggi Savin-Baden's "Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning". Four transdisciplinary threshold concepts are introduced—liminality, scaffolding, pedagogical content knowledge, and pedagogical stance—and applied to my experiences as a supervisor and curriculum developer at the master's program in Techno-Anthropology. When students enroll in this program most of them find themselves in a liminal space with good possibilities for transformative learning if they manage to transgress presented scaffolds, reconceptualize background knowledge, and reform their learning styles.

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Dark Sides, Tyranny, and Dragons

Attending to the Shadows of PBL

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Abstract

This article introduces work originating from the area of Networked Learning that seeks to problematise and critically discuss notions such as 'collaboration', 'community', and 'participation'. It argues that there is a dark and shadowy side to these ideals, which we need to attend to in a reflexive manner. To this end, it introduces ideas of heteropian spaces and emphasizes the value of working with difference, and consent over consensus.

Keywords: Tyranny of Participation; Networked Learning; PBL; Heterotopian Spaces; Collaboration

Introduction

While the title could suggest this paper to be a review of the latest season of 'House of Dragons', this is not the case, and if this is your reason for reading the paper you are probably going to be somewhat disappointed with the actual level of dragons and tyrants.

In this paper, I highlight work stemming from the area of Networked Learning that seeks to problematise and critically discuss notions such as 'collaboration', 'community', and 'participation'. It is not work specifically from within the area of Problem-Based Learning (PBL), but from a neighbouring field which I believe

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can contribute to our PBL thinking and practice, as there are many overlaps in the educational philosophies (McConnell et al., 2012; Ryberg, 2019).

A bit of background

The work I discuss was something that personally made me think differently about 'collaboration' and 'participation'. I came across it early in my research career (as a PhD student (2004-2007)), but it has since stayed with me as a reminder to reflect critically on taken-for-granted assumptions (although, as many others, I do not excel at this). I encountered the work as we were preparing for a symposium for the Networked Learning Conference 2008. In this context, symposium means "a meeting or conference for discussion of a topic" rather than "a convivial meeting for drinking, music, and intellectual discussion among the ancient Greeks" (though, as it happens, the conference was held in Greece). In preparing for the symposium, two authors (Debra Ferreday and Vivien Hodgson) shared their ideas around the paper, that came to be titled "The Tyranny of Participation and Collaboration in Networked Learning" (Ferreday & Hodgson, 2008). I was initially baffled about this. How could 'participation' and 'collaboration' be tyrannical? Coming from Aalborg University where collaboration amongst students is a prominent feature this seemed to call into question the very fabric of PBL. Adding to this, the idea also seemed to run counter to the strong focus on collaboration within Networked Learning.

To give a quick introduction to Networked Learning, it is an area of research specifically interested in how digital technologies can support and expand education and learning. The term networked on the one hand suggests technological mediation, but simultaneously stresses networks as connections between people. An early definition of Networked Learning read:

> "[...] learning in which information and communications technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources." (Goodyear et al., 2004, p. 1)

The idea of Networked Learning was formulated as an alternative to prevailing practices within 'online learning' where there was a strong focus on enabling individuals' access to learning resources and assessment, but less attention to collaboration and community as vehicles for learning. Networked Learning is rooted in ideals of participation, dialogue, collaboration, as well as promoting emancipatory and democratic values in education (Networked Learning

Editorial Collective (NLEC), 2021). So how could participation and collaboration be tyrannical?

Tyranny of Participation

The idea of 'tyranny of participation'[1] is explored in two papers by Ferreday and Hodgson. The first being 'The Tyranny of Participation and Collaboration in Networked Learning' (Ferreday & Hodgson, 2008) the second 'Heterotopia in Networked Learning: Beyond the Shadow Side of Participation in Learning Communities' (Ferreday & Hodgson, 2010). The latter being a revised and expanded version of the first (a director's cut one might say). The authors initially state that the idea of collaboration has become entrenched within Networked Learning:

> "The importance assumed for collaboration within NL [Networked Learning] has almost become ubiquitous and is frequently seen as unquestionably desirable. This can result in a view of participation that sees it as an utopian ideal and which does not acknowledge what some authors have referred to as the 'dark side' of critical pedagogy and participation." (Ferreday & Hodgson, 2008, p. 640)

It seems relevant to draw a parallel to PBL research and practice, where the notion of collaboration is also prevalent (Kolmos & Graaff, 2003; Ryberg, 2019; Savery, 2006). Though PBL can be orchestrated in many ways, it often includes collaboration between students. Likewise, the idea of participation is integral to PBL, and students are expected to be actively participating and take ownership of the learning process. This with a basis in democratic and emancipatory ideals from critical pedagogy where students engage in and are envisioned to be empowered through addressing relevant societal problems (this at least is a strong undercurrent in the problem-oriented project pedagogy developed in Roskilde and Aalborg University).

In exemplifying the dark or shadow sides of participation or participative pedagogies, Ferreday and Hodgson (2008, 2010) turn their eyes onto the educational programme MA in Management Learning and Leadership (MAMLL) – a programme built on networked learning principles, participation and collaboration:

> "MAMLL participants work together in a self-managed learning community committed to engaging with process as well as content. Within this learning community you are expected to be responsible for your own learning and also to share responsibility for other people's

> learning. The differing experiences and knowledge of all members of the community are seen as an important asset for the whole community and for the learning that takes place within it. […] You are expected to participate in this learning environment throughout the two years." (Ferreday & Hodgson, 2010, p. 5)

As in many orchestrations of PBL, students in MAMLL were expected to support each other, collaborate, and take responsibility for not only their own learning, but also for others (referred to as 'the spirit of MAMLL'). However, some students were not quite comfortable within this frame, and it was not uncommon that some students were labelled as unsupportive:

> "Experience of MAMLL suggests that in most cohorts there are a few students who are regarded as in some way different and/or unsupportive by other members of the group. […] it is not uncommon, towards the end of the programme when participants choose dissertation learning sets, for other participants on the programme to try to avoid these individuals. This minority of students come to be seen over a period of time by the majority as different or unsupportive, largely as a result of low or perceived weak participation in their previous learning sets." (Ferreday & Hodgson, 2010, pp. 5–6)

This citation might also ring familiar to PBL researchers and practitioners. For those who have organised group formation processes in Aalborg University, this might be a painfully well-known scenario. Some students become alienated and excluded from the wider community, due to their participation not being aligned with other's expectations of what constitutes 'good participation'. In this way, ideals of participation become problematic, and while it might be valuable to have an 'esprit de corps' such an ideal can also hold a dark or shadowy side. For example, in Aalborg University international students not well acquainted with project-based group work have been known to struggle in making sense of the demands and/or implicit expectation posed to them by other students or supervisors – sometimes leading to exclusion (Chen et al., 2020). There can be many reasons why a student does not participate in the circumscribed ways; perhaps they are single-parents not able to 'grind' in the late afternoon or evenings, they may have experienced loss in the family, suffer from anxiety, coming from a different educational tradition etc. Such students may not experience the 'esprit de corps' as valuable, healthy, and helpful norms, but rather as a tyranny of participation.

> "Ironically then, this vision of the perfect community can become a means of reinforcing a dominant discourse, albeit one based on ethics of mutuality and participation, which can become rather unreflexive about its own lack of engagement with 'difficult' intercultural or other

> idiosyncratic issues, and which may be avoiding understanding and/or acknowledging other styles of learning or expecting ambivalence and contradictions to be present." (Ferreday & Hodgson, 2010, p. 8)

The purpose of Ferreday & Hodgson highlighting participation as potentially tyrannical and problematising notions of collaboration and community is not do discourage or to dismiss either collaboration or participation as valuable pedagogical approaches. Rather, the intention is to draw attention to the dark or shadow sides of what we might unreflexively accept as 'unquestionably desirable' and caution that we may be guiding students into difficult waters.

Here be dragons

For the readers eagerly awaiting dragons they now enter the scene through the work of Linda Perriton & Michael Reynolds (2014) and the chapter titled: 'Here Be Dragons': Approaching Difficult Group Issues in Networked Learning. They explain the title in a note:

> "The phrase 'Here be dragons' is associated with warnings written, or mythical creatures presented in pictorial form, on mediaeval maps where the cartographer wanted to denote unexplored or dangerous territories. Group dynamics are often experienced as unexplored or dangerous territory." (Perriton & Reynolds, 2014, p. 109)

As Perriton and Reynolds discuss, group dynamics may be uncharted waters for many students. But equally for tutors/supervisors, who also find it difficult to navigate these waters. In Aalborg University this is an issue that often surfaces from the murky waters, when discussing how to supervise students' project work. Supervisors hold different views on how much (or even if) the supervisor should engage with group dynamics (e.g. conflicts). Some supervisors focus mainly on the subject and discipline related matters, whereas others feel they should engage more in the group dynamics. Common for both groups, however, is that they often feel ill-equipped to engage with this. An issue that has and will become more pronounced, as students are becoming more diverse e.g. including more neuro-divergent students and students with other needs. While there may be different opinions among supervisors about their individual responsibilities in relation to social dynamics in groups, I believe, much like Perriton and Reynolds, we do have an institutional responsibility:

> "Our premise is that if we make use of collaborative pedagogies we have a responsibility for contributing some way of making sense of these dynamics and for making this available to the students involved where appropriate and practical to do so." (Perriton & Reynolds, 2014, p. 124)

We need to support students in taming or riding the wild dragons group work can be (whether they are more benevolent dragons of 'taming your dragon' or the fearsome Game of Thrones-type dragons). In the following, I discuss some ways to attend to the dark or shadow sides of PBL.

Heterotopian spaces

In their papers, Ferreday & Hodgson (2008, 2010) discuss the idea of heterotopian learning spaces adopted from Foucault (yes, not only dragons and tyrants, now I am also dragging Foucault into this). Heterotopian spaces are:

> "[…] spaces which can be defined and described by the network of relations within them but remain open-ended ambivalent and contradictory places where disruption and discomfort can be expected." (Ferreday & Hodgson, 2010, p. 4)

They stand in contrast to (utopian) spaces where there is an assumed or aspirational 'esprit de corps', community-feeling, mutuality, equality etc. which as illustrated by Ferreday and Hodgson can turn into a tyranny of participation. The idea of heterotopian spaces sounds quite abstract, but to exemplify the idea, Ferreday & Hodgson refer to a thread one of the MAMLL students initiated in the online discussion forum, basically just stating 'Can we take 5 minutes out of academia for a social thread?'. This garnered multiple responses, and became a space for sharing exhaustion, concerns, casual joking, and the difficulties reconciling family, work and MAMLL-life.

In a similar fashion, I have encountered groups in Aalborg University that practice 'Well-being Wednesday' ('Trivels-Torsdag' in Danish). This is a space carved out during the week to talk about social aspects, group dynamics, and raise issues concerning the collaboration. This can potentially be a space to explore tensions and discomfort in a group, as heterotopian spaces are not necessarily comfortable or easy:

> "Whilst heterotopian spaces might feel safe, participation in such a space is always going to be disturbing and ambiguous – 'they offer no resolution or consolation, but disrupt and test our customary notions of ourselves – they hold no promise … of liberation' (2006: 87). There is no right way to act and behave in such spaces but they offer a space which is not separate from dominant structures and ideology but rather go against the grain and offer lines of flight." (Ferreday & Hodgson, 2010, p. 11)

Thus, heterotopian spaces are places where different voices may emerge, without necessarily tuning into the same melody, which is another point to be raised.

Consensus, Difference, Consent

In an earlier paper Hodgson & Reynolds (2005) explore similar issues through discussing the problematic aspects of 'community', and how this can be associated with consensus and a pressure to conform (what Hodgson later explore as the 'Tyranny of Participation'). Much as participation, community, and collaboration, consensus is often seen as unquestionably desirable; groups need to achieve consensus on their problem formulation, agree how to collaborate, how to manage and resolve conflicts etc. However, consensus often glosses over and buries differences. A group may have achieved 'consensus' that they meet later and work until evening. However, such apparent consensus may conceal that two out of five group members are not very happy with this arrangement, but realise they are outnumbered and choose to conform. In contrast, one could imagine how a stronger focus on exploring differences among the students could result in two of the students meeting earlier and working together, being joined by the three others, who then work until evening (with the two early-birds leaving in the afternoon). While a banal or mundane example, it illustrates that non-reflexive consensus can come with the shadow side of conformity. Many of us have probably experienced situations where a: 'we have now agreed on…' or 'there is consensus in the group that…' gloss over widely differing views lurking below the tranquil surface. One way to work with differences could be to think about consent over consensus, as for instance explored in the notion of 'co-leadership' (medledelse) (Aagard, 2023), and which can be found in other business-oriented sources:

> "Consensus means that everyone agrees on the decision; consent means that people agree to move forward, even if they don't necessarily like the solution. Consent considers people's range of tolerance – will they accept and support a decision, even if it's not their preferred choice? Simply put, people might not love the decision, but they can live with it." (Razzetti, 2020)

In this type of decision-making there is less focus on what one prefers, and instead on a zone of tolerance. For example, a student might prefer that they all meet late and work in the evening, but do not have objections to the solution that some meet earlier, and some work later. Perhaps a shift from focusing on individual's preferences to a zone of tolerance, can enable greater acceptance of 'difference'.

Comfortable Being Uncomfortable – Riding the Dragon of Group Work

As a concluding comment, we need to work very consciously and openly with the dark and shadowy sides of PBL. Both supervisors and students need to be aware that social dynamics of group work are difficult and demanding, and we are entering dangerous water where dragons lurk. Collaborative or participative processes may not be safe, utopian havens, but equally spaces for repression, conformity, and tyranny of participation (though the underlying ideals may indicate otherwise). Rather than assuming a utopian ideal will unfold in group work, it might be advisable to work more consciously with exploring heterotopian spaces that are: *"open-ended ambivalent and contradictory places where disruption and discomfort can be expected"* (Ferreday & Hodgson, 2010, p. 4), and to work with understandings of social dynamics that go beyond consensus and take account of how to work with difference as an inherent value. For both students and supervisors, this entails being comfortable being uncomfortable when riding the dragon of group work.

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[1] The term 'Tyranny of participation' they adopt from the book Participation: The New Tyranny, Cooke and Kotharis (2001)