Challenge-Based Learning in Higher Education: A Malmö University Position Paper

Cecilia E. Christersson, Malmö University, Sweden
https://orcid.org/0000-0003-3602-9449

Margareta Melin, Malmö University, Sweden
https://orcid.org/0000-0002-1089-6483

Pär Widén, Malmö University, Sweden
https://orcid.org/0000-0002-9906-4156

Nils Ekelund, Malmö University, Sweden
https://orcid.org/0000-0003-2835-097X

Jonas Christensen, Malmö University, Sweden
https://orcid.org/0000-0003-0428-2001

Nina Lundgren, Malmö University, Sweden
https://orcid.org/0000-0002-5798-2418

Patricia Staaf, Malmö University, Sweden
https://orcid.org/0000-0002-1970-2905

ABSTRACT

Higher education institutions (HEIs) have a pivotal role in fulfilling the social dimension of sustainability and contributing to a complex changing society. To meet these challenges, Malmö University has in interdisciplinary groups researched the role of challenge-based learning (CBL) in relation to staff, students, disciplines, and stakeholders. This position paper is based on that work. Malmö University argues that with a CBL approach, HEIs will actively contribute to the building of a sustainable learning society through collaboration in education, research, and innovation. This paper theoretically explores the CBL approach as a collaborative learning exchange within HEIs and society at large. CBL is defined through eight key elements, clustered as entities of three domains: diversity and inclusion, co-creation and collaboration, and change agents and contextual challenges. These are discussed and empirically exemplified with the purpose to support designing, planning, and accomplishing CBL in teaching and learning in HE for a global learning society.

KEYWORDS

Adult Learning, CBL, Challenge-Based Learning, Change Agents, Co-Creation, Diversity, Higher Education, Inclusion, Learning and Teaching, Learning Society, Position Paper, Student Active Learning, Transformation

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*Corresponding Author
INTRODUCTION

With this position paper, Malmö University wants to argue for a comprehensive approach to how higher education institutions (HEIs) can transform adult learning in higher education (HE) together with the society at large and thereby contributing to the development of a global learning society. We will, thus, present an inclusive institutional narrative on our development of Challenge Based Learning (CBL) grounded in learning theories, innovation integrated into research, and educational technologies, all in collaboration with local and global societal partners (Christensen et al., 2021; Leijon et al., 2021).

The design of the position paper starts with an introductory section, where a background to CBL and its importance in HE is given, followed by a theoretical discussion framing the concept of CBL and ending with a definition and a model of CBL in HE, which are based on Malmö University’s theoretical and practical work with CBL. In the section “The Domains of CBL Explained and Exemplified,” each of the model’s three domains is discussed theoretically based on practical examples. The position paper is summarized in the final section, and conclusions are drawn for future work on CBL in HE.

Why Challenge Based Learning is Needed in Higher Education

During the last decades, the role of HEIs has been shifting towards universities wanting a larger role as responsible drivers of societal and educational change. This shift is, for example, illustrated by the commitment to global frameworks such as the Agenda 2030 and the 21st Century Skills (Ananiadou & Claro, 2009) and HEIs role in meeting a fast-changing labour market demanding active, creative employees ready to re-skill and re-learn. Furthermore, as societies worldwide face the challenges of rapid global political, social, economic, health, and technological changes (Gwangwava, 2021; Rosa, 2013), HEIs must act responsibly and proactively to secure a readiness to meet the uncertain, unknown futures (Bornemark, 2018).

The concept of a learning society (Schön, 1973) captures a sense of urgency and points to the need for HEIs to learn and adapt to a complex, fast-paced changing society and continuous education through lifelong learning. Thus, to meet the needs of a society in continuous transformation, HEIs must invent and develop as “learning systems” capable of bringing about their own continuing transformation (Schön, 1973, p. 28). We argue that the concept of CBL is a most relevant example of how education, research, and innovation can play a decisive part and contribute to a multitude of dimensions for sustainable cities and societies.

Against this backdrop, Malmö University, a young and socially involved university, is engaged in the discussions on what role HEIs will play in the knowledge transformation of society. We argue that the social mission of universities requires transparency and extensive collaboration when interlinking education, research, and innovation in society and to provide a roadmap for lifelong learners. Furthermore, Malmö University appreciates students as social change agents and drivers for change to contribute to a global sustainable learning society. Consequently, Malmö University prioritises aligning theories, methods, and practices to provide learning experiences and generate a grounded readiness to act when meeting unknown future challenges (Bornemark, 2020; Christensen et al., 2021; Edwards, 1997).

Malmö University is in the challenging process of re-designing adult learning in HE through CBL, emphasising contributions to a global learning society and to fulfilling the UN sustainable development goals, particularly the connection between (G4) Education for All; (G11) Sustainable Cities and Communities; (G16) Peace, Justice, and Strong Institutions; and, (G17) Peaceful and Sustainable Societies. In this position paper, Malmö University addresses and theorises CBL as collaborative learning exchanges within HEIs and between HEIs and society. We explore the role and the relation between staff, students, and stakeholders, and indeed between different disciplines and cross-disciplinary education, research, and innovation.
Apple framed the concept of CBL in 2008 (Nichols, 2016) as a direct call to a fresh approach to teaching and learning that would meet a new digital generation of school pupils and prepare them for their future, digitized labour market. Educational technology is crucial and inevitable for the development of CBL. Nonetheless, learning methodologies often described as “challenge-based” is not entirely new to HEIs. A recently published systematic review on research in CBL in HE demonstrates that CBL primarily has been applied as instructional teaching and that disciplinary applications have been the principal focus of the HE context (Leijon et al., 2021). Most articles on CBL have maintained a descriptive level with no or limited critical theoretical discussion of CBL. Primarily, the articles have an Engineering or Educational focus and use disciplinary frameworks for instructional purposes. However, few articles emphasise interdisciplinary research and education or societal impact. Furthermore, a limited understanding of CBL as a method is expressed, and there is little discussion of learning and research approaches that would contribute to this growing field of knowledge. This position paper builds on the systematic review results and suggests practices to further develop and improve HE through CBL. These practice suggestions are based on integrating CBL in education, research, and societal innovation practices across departments and institutions, based on theories of knowledge and learning. In the following sections, we will elaborate on this.

Embarking on the Journey Towards a Learning Society

Malmö University emphasises that learning makes us human, and, therefore, it is a foundational component of the essence of who we are. We base our CBL approach on selected learning theories (see Table 1), independent of disciplines and grounded in holistic HE learning.

By engaging people who have traditionally lacked HE access, their previous experience and knowledge are cultivated as valuable learning resources. This engagement sets the arena for inclusive education and the co-creation of knowledge, originating from the values and experiences everyone brings to the learning environment (Freire, 1973; Christensen et al., 2021). Furthermore, in a global and rapidly changing society, the need for philosophical and ethical reflection and action is essential (Bornemark, 2018; Rosa, 2013; Watson, 2018). We can accomplish this reflection by looking at education through the eyes of critical pedagogy (Fleming, 2021; Freire, 1973; hooks, 2003; 2010; Rincon-Gallardo, 2019), which designates HEIs to be open spaces for all students, including vulnerable and under-representative student groups, where they can explore on how to act and assert themselves as agents. Critical pedagogy then becomes an approach to education that addresses the symmetrical relationship between staff, students, and stakeholders and aims to transform oppressive structures.

More than ever, John Dewey’s (1916) interpretation – that if we teach today’s students the way we taught yesterday’s, we rob them of tomorrow – is relevant to how we commit to staging learning in HE. We argue that CBL is a way to prepare and prepare students to face and act upon the societal challenges, e.g., to develop creative and critical thinking and doing by engaging in real-life problems in collaboration with others within or outside HE throughout the education programs. However, integrating research and education into socially innovative and transformative processes is a challenge for the global HE community of today.

The notion of CBL is further supported by Schön’s (1973) notions of The Reflective Practitioner, reflection-on-action, and reflection-in-action (double-loop learning), which elaborates on how professionals cope with change and the challenges of their work together with a practice-based intuition and an overall decision process. This model of reflection and action (see also Schön & Argyris, 1976) is applied in a quality framework for many of Malmö University’s programs supporting how to implement change on both the individual and system levels.

Furthermore, CBL is closely connected to a transformative learning theory or transformation theory. How we interpret our experiences, our being in the world, and how we understand ourselves in relation to the complexity of our world is, therefore, framed in assumptions and references of transformative learning (Mezirow, 2000, pp.3-33; Fleming, 2021). According to Dirkx (2006),
transformative learning entails meaning-making practices within adult education, promoting a
democratic vision of society and self-actualisation of individuals. Today, John Dewey’s well-known
quotation, “Education is not preparation for life; education is life itself” (Dewey, 1916, p. 239), is
more apt than ever. In recent decades, HE has mainly focused on the cognitive domain of Bloom’s
taxonomy (Armstrong, 2010). With CBL, we include the affective, psychomotor domains, and non-
cognitive and creative skills (Bamford, 2006; Heckman et al., 2006; Simpson, 1972). We furthermore
include Fink’s taxonomy (2013) for significant learning outcomes, which organises learning in more
than cognitive complexities. We argue that learning requires authenticity, a committed focus on the
here and now, and awareness of feelings and emotions, both within the learners and in the learning
environment.

Nussbaum (1997) advocated that HE’s purpose is to cultivate the entire person to function as a
citizen and in life. Furthermore, Nussbaum emphasises the social dimension of HE by the statement
that “our campuses are producing Citizens, and this means that we must ask what a good citizen of
the present day should be and should know” (Nussbaum, 1997, p. 8). In today’s changing world, it is
also relevant for HE to ask what a good citizen of the future is and what competencies they need to
navigate the future challenges. In doing so, HEIs become civic universities characterised by the ability
to integrate teaching, research, and engagement in society, in such a way that each enhances the other
without diminishing the quality of learning (Goddard, 2009). We developed our contribution to the
idea of a civic university in our approach to CBL, which is fundamental to building a learning society.

Exploring and Evolving Challenge Based Learning

Malmö University has, since its start in 1998, across the five interdisciplinary faculties, in collaboration
with society at large, explored and elaborated different pedagogical and interdisciplinary approaches
(summarised in Table 1). Common features that stand out are: student’s learning is in focus, learning
processes involve close collaboration with a variety of societal partners, and that traditional roles of
lecturers, students, staff, are challenged and negotiated. To address this institutional approach, Malmö
University has integrated research and education into adult learning in HE in a Centre for Teaching
and Learning. The student active learning methods (Table 1) are a common denominator for the
university, advanced by the Centre, and vital for developing the CBL approach at Malmö University.

Among all the approaches mentioned above, the pioneering transformation to Problem Based
Learning (PBL) at the Faculty of Odontology, which took place in 1990 (Rohlin et al., 1998), is
specifically worth highlighting. It is an excellent example of a learning approach becoming a change-
making paradigm for HE. With its point of departure in the notion of “the learning society,” the
Faculty of Odontology emphasised the rapid change of science, technology, and social and health
development, where updated science, education, and human competencies are interwoven to handle
change and the unknown future. In 2019, the Faculty of Odontology undertook a substantial revision
of the pedagogic model (Lundegren et al., 2021) and developed a combination of challenge- and case-
based learning methods. The intention was to enable a more flexible adaption of learning methods
to learning outcomes.

Malmö University has further extended PBL and the broad representation of established student-
centered methodologies (Table 1). However, as PBL is resource-demanding, instrumental, and in a way,
an overly structured approach, Malmö University has appropriated seeing students as active learners
and as partners in the collaborative and transformative learning processes into a more approachable
and flexible general learning approach – CBL (Christersson & Staaf, 2021). Inspired by the paradigm
process at the Faculty of Odontology, Malmö University initiated a long internal process whereby
members of staff from different disciplines met regularly over a nearly decade to workshop, discuss,
develop, and research the CBL approach. They identified the following key elements through the
process, and Malmö University argues that the CBL approach encompasses all these key elements:

- To advance the role of higher education institutions in society;
To take a stand from theories of lifelong learning in addition to theories of knowledge;
To actively integrate interdisciplinary research, education, and innovation in HE;
To acknowledge and build on scholars’ and students’ individual experiences, background, and identity;
To include collaborative and pedagogical methodologies for student-centred learning;
To apply real-world challenges to initiate learning processes;
To include national and international cooperation with a variety of societal partners; and
To promote the impact of change toward a learning society.

Primarily these eight elements were identified as keys to CBL in HE and provide a foundation for the Malmö University Model of Challenge Based Learning in Higher Education (Figure 1).
elements were integrated and three domains were developed to support the designing, planning, and accomplishing of CBL in teaching and learning in HE programmes and courses. The domains are Diversity & Inclusion, Co-creation & Collaboration, and Change Agents & Contextual Challenges and are interwoven with learning theories, educational technology, research, and innovation from a global perspective. The Malmö CBL approach is visualised in a model, presented in Figure 1 and discussed below.

THE DOMAINS OF CBL EXPLAINED AND EXEMPLIFIED

In this section, the three domains are described with selected examples provided by each of Malmö University’s five interdisciplinary faculties: The Faculty of Culture and Society, The Faculty of Education and Society, The Faculty of Health and Society, The Faculty of Technology and Society and the Faculty of Odontology.

Diversity and Inclusion

Diversity, inclusion, and widening participation in education have been essential for Malmö University since 1998 and fundamental conditions to enable everyone in society to make their voice heard and exert influence in society. Furthermore, addressing complex societal challenges demands a diversity of perspectives and approaches, which is achieved by integrating various disciplines and actively embracing different backgrounds and experiences of students and staff. Diversity needs, however, to be accompanied by active inclusion to generate a trustful, creative, and inspiring academic environment, which drives diversity as a quality dimension in education, research, and society (Florida, 2002; European Commission, 2014). We argue that diversity and inclusion should underpin all aspects of HEIs, from admission and introduction, curriculum- and learning design, to lecturers’ professional development and research, learning- and research environments, assessment practices, and collaboration with stakeholders.
Malmö University emphasises students’, lecturers’, and stakeholders’ individual identities, backgrounds, and experiences, as essential to ensure quality in HE and research. A more inclusive academia also enables students to prepare for a future position as critical global citizens in a sustainable society (Nussbaum, 1997; hooks, 2010).

Malmö University is intentionally working on strategies to ensure a diverse student population, a richness in the staff body, and an open and supporting global working culture (hooks, 2003). We mean an HEI based on CBL attracts and includes diverse groups of students and staff, stimulates non-hierarchical innovative ways of learning, and facilitates inclusive learning environments with societal stakeholders.

Accordingly, Malmö University has created a diverse interdisciplinary forum for scholars to research CBL to support a deeper and broader understanding of learning processes and the transformation of HE to strengthen a democratic society (Freire, 1973; Rincon-Gallardo, 2019). Furthermore, Malmö University enables and encourages interdisciplinary research groups of scholars representing diverse disciplines and faculties.

Thus, Malmö University promotes an inclusive, diverse interdisciplinary, and collaborative approach through CBL.

Examples of Diversity and Inclusion in Practice: Vertically Integrated Projects and Scenario Based Projects

To illustrate the above, Malmö University wants to share two pertinent examples of Diversity and Inclusion. The Vertically Integrated Projects program (VIP) (Coyle, 2006) in Computer Science, Strategic Business, and Game Development is a research-led model for engaging diverse and inclusive teams of students at Bachelor, Master, and Ph.D. levels. These interdisciplinary teams are involved in collaborative and inclusive learning processes through existing research projects, through long-term, large-scale, and international learning projects. The objective is to create inclusive forums where diverse students, staff, and stakeholders learn from and with each other, e.g., professional challenges and languages. Within these forums, they develop common professional knowledge, practices, and skills and position both students and teachers as lifelong learning subjects. These projects strengthen students’ connections to their future career paths and provides direct academic research experience. The VIP model entails double-loop learning: participating in inclusive and diverse collaborative research projects leads to new research questions and new research collaborations.

The Police Education at Malmö University is working with authentic scenario-based learning. This approach embraces diversity, inclusive and cultural training as a central element, and the police organisation’s authentic scenarios of vulnerability in specific conflict situations. The aim is to enable police students to be ready to meet unknown situations by testing different strategies for managing diverse and intercultural scenarios. Students need to face challenging situations, meet multi-cultural environments, learn many strategies, develop practices, and make quick decisions, thus integrating psychological and socio-emotional effects and consequences. For example, police students drive a police car into “no-go” areas, where they meet threatening citizens (actors) of different cultural and ethnical backgrounds in risky situations. These CBL-driven scenarios are grounded in Biesta’s (2014) notions; socialisation (students are trained to handle a diversity of power and norms inclusively), subjectification (students are trained to sort out their understanding and practices among the collective’s diverse suggestions and ideas), and qualification (for example training to handle culturally difficult situations). Students are challenged to manage power, roles of authority, behavioural norms, and realise strategies in various conflicts of exclusion, explicit power structures, and symbolic and physical violence. Students are further challenged to explore and co-create (between Swedish Police Authority officers, lecturers, and students) strategies and practices of inclusion in these authentic police scenarios in which intercultural, juridical, and ethical dilemmas are embedded. This professional training instigates reflection on action and reflection in action and follows in the footsteps of a double-loop learning process (Schön & Argyris, 1976).
Co-Creation and Collaboration

Malmö University argues for co-creation and collaboration as success factors for solution-oriented learning approaches, which equip students to tackle complex societal challenges. We aim to facilitate co-creative processes in research-integrated education, where praxis and theory are incorporated from interdisciplinary to transdisciplinary research methods and theories of learning. It also promotes a practice-based intervention approach (Löwgren & Reimer, 2014). Malmö University defines transdisciplinary research as a reflexive, integrative, and method-driven scientific principle focusing on societally relevant problems, enabling mutual learning processes among researchers from different disciplines and scientific traditions. Transdisciplinary research should create knowledge useful to both the scientific and societal practices and sustainable development in education (Lang et al., 2012; Warburton, 2003). Malmö University argues that HEIs, scholars, and stakeholders must integrate multiple perspectives to identify and solve future challenges.

In the co-creation of knowledge, teachers, students, and stakeholders work together to develop and sharpen their capacity to analyse, synthesise, evaluate, and develop course content, and use their collective knowledge to construct shared meaning and make sense of what they learn. Co-designed structures involve integrating applied research and education in close collaboration with societal actors, where students act as change agents identifying and proposing improvements. Therefore, collaboration and co-creation of knowledge within the university should occur across borders of faculties and subjects in research and education, for example, in transdisciplinary programs (Brink et al., 2018; Christensen et al., 2021; Svenningsson et al., 2021).

This shift, however, cannot be undertaken solely within a university (hooks, 2003). Therefore, Malmö University invites various societal partners to participate in this emerging learning community, often facilitated through digital technology. Citizens, representatives of civil society and professions, play a crucial role in challenging suggested solutions, theories, and praxis. Inclusive collaboration across borders is a prerequisite for a co-creative knowledge process that is solution-oriented, socially robust, and transferable to both scientific and societal global practices (cf. Gibbons, 1999). This engagement is needed in a complex and fast-changing society (Rosa, 2013). Malmö University embraces long-term collaboration to accomplish participatory research and learning. This community-based learning approach will strengthen students’ capacity to develop ethical awareness and become future critical thinking and acting citizens. Collaborative efforts in knowledge acquisition between staff, students, and stakeholders will increase legitimacy, ownership, and accountability of the challenge and facilitate different solution options (Lang, 2012).

In conclusion, the CBL dimension of Co-creation and Collaboration, enables shared ownership and production of knowledge and a foundation for transforming theory into practice through participatory research and education integrated research projects.

Examples of Co-Creation and Collaboration in Practice:
Meeting Societal Challenges in Partnership

Co-creation and Collaboration are exemplified by three programmes co-designed in close cooperation with societal stakeholders from respective professional fields: Sport Science, Media and Communication Studies, and Dental Education. All three bachelor programmes share the pedagogic idea of students, in collaboration with relevant stakeholders, co-construct new theoretical and practical knowledge in the progression of contemporary and future society, and methods of achieving this learning (Svenningsson et al., 2021). The common “challenge” to all three programmes comprise students starting a real-life project without knowing the result. The students, thus, must be prepared to reconsider and continuously reflect on the uncertainties and the not-known throughout the process of inquiry and creation (Bieta, 2014; Bornemark, 2018; Christensen et al., 2021; Gwangwava, 2021). As a result, students are challenged to enhance their agency of change with competencies of critical and creative thinking and doing (Schön, 1987; Dirkx, 2006; hooks, 2010).
In Sports Science this kind of collaboration project occurs over several weeks in partnership with sports-related organizations. First, the students think and create an understanding of how the course content can be integrated into the operational activities of stakeholder organisations. Then, within the integration, the students use relevant theories to undertake an organisational analysis to increase their understanding of each organisation’s needs. The analysis must integrate both internal and external perspectives and involve analysing a previous development project of the organization. Then, in a close dialogue and collaboration with a selected organisation, students conduct a project relevant to the course theme: sports, events, and tourism. In this project, the student acts as a “hired consultant” that will identify and solve problems for her/his collaborative organisation, thus applying co-created knowledge in practice.

Within Media and Communication Studies’ second year, they interweave three core theoretical modules with a media project, in which students work in project groups collaborating with a stakeholder. First, students conduct a contextual assessment of a chosen media organisation and an interview study about media production methods. Thereafter, they analyse texts (e.g., websites) of the same organization and conduct ethnographic work with the organisation’s audiences. These 'sub-studies' feed into an integrated media project where students use the analysis to co-produce an arts- and practice-based concept. The effort aims to strengthen the organisation (e.g., a new visual profile or public relations strategies) although firmly based on students’ critical and creative perspectives rather than the conventional “business-as-usual.” Students, thus, become co-creative change agents in collaboration.

The third example of Co-creation and Collaboration is an authentic challenge for the students at the Faculty of Odontology. Students are challenged throughout their entire education in active learning environments and through case-based teaching and learning. Students are encouraged to self-directed, active, and collaborative learning in a clinical contextual environment in their clinical training. The dental students work collaboratively and co-creatively with a clinical challenge during the last part of the dental program. The students work in pairs to examine and treat a child patient referred for orthodontic treatment to the faculty clinic from the private or public sector. The students are then challenged to integrate and apply previous research knowledge and practice from examining and treating adult patients to a new clinical context. Following the first clinical examination, various learning activities take place, where the students acquire relevant knowledge and skills to make a shared decision on how to investigate further, diagnose and make alternative treatment plans for their patients. Interprofessional collaboration involves a dental technician, dental assistants, the parents/guardians of the patients, and the referring dentist is part of learning during the treatment period. At a final seminar, the students present, reflect on, and discuss their patients’ treatment outcomes with dentists and researchers, further enhancing the co-creative learning process.

Change Agents and Contextual Challenges

In the CBL-concept of Malmö University, education and research are integrated as co-creative academic processes involving society for knowledge acquisition and lifelong learning. In order for students to acquire a readiness to handle the unknown, contribute to a sustainable society, and become change agents, HEIs must enable the development of students’ capacities to identify, initiate, inquire, and lead processes of societal change. Because of this, Malmö University considers students as partners, co-producers of knowledge, lifelong learners, change agents, and active global citizens. We emphasise that students act as mediators of transdisciplinary knowledge in co-design processes together with researchers, citizens, and societal actors. Thus, students will, hopefully, contribute to an awareness in the private, public, and civic sectors and among policymakers for social improvement in society.

At Malmö University, students’ curiosity, creativity, and desire for learning are central to how we address and facilitate learning (Watson, 2018). We strive to stimulate students’ engagement and involvement through participatory learning processes. Students are encouraged to connect what they already know to what we expect them to learn, and critically construct and co-construct new
knowledge in new contexts from the analysis and synthesis of their learning processes. Malmö University aims to make students aware of ever-shifting knowledge horizons (Deleuze & Guattari, 2015; Bornemark, 2020).

Malmö University staff continuously aims to challenge students to connect and integrate previous knowledge in new and real-life situations, promoting a sustainable learning society. We accomplish this through working with and elaborating relevant real-life contextual challenges in interdisciplinary learning environments (Dahlbeck & Widén, 2019). Through Student Challenge Hubs, we introduce meeting places for teachers, students, and stakeholders, as a way for HEIs to take an active role in the community and support students’ learning and development of a readiness to act as change agents. In creating this kind of action-oriented and varied learning environment, students should be stimulated towards reflection, critical and creative thinking, and doing to prepare them for an exploratory-orientation towards lifelong learning (hooks, 2009). This transformation is central to the CBL approach.

At Malmö University, we anticipate that this approach spurs active engagement and development of new learning methods and practices, to enhance the effectiveness of imparting skills and relating academic knowledge to real-life challenges (Anthony et al., 1998; Hansman, 2001; Rose, 2009).

Examples of Change Agents and Contextual Challenges in Practice: A Global Challenge and Applied Criminology

Malmö University has chosen two apt examples of Change Agents & Contextual Challenges. Within the module, The Law and Practice of United Nations (UN), an enactment of UN negotiations is organised and structured around the practice of a role-play. The module attracts a diversity of students with various international, educational, and cultural backgrounds, which is the point of departure for the module. Students’ pre-understandings and cultural competencies are emphasised, discussed, and shared to identify student’s previous knowledge and experiences, which is then used in the enactment of the UN negotiation. Lecturers set up a scenario based on real UN-negotiation situations. Students represent different states and will get involved in different staged debates corresponding to the UN system and legal framework and handling conflicting interests. Students develop rhetoric and negotiation skills through the process and, more importantly, the need to draw from their own cultural experiences in a new challenging context. The aim is that students become cultural negotiators and play a crucial role in their learning and study process. Students also develop capacities and transferable skills through different activities, such as collaborations, discussions, and negotiations. The contextual challenges for the students are governed by the formal realities of the UN being an international organisation dedicated to global issues of the Sustainable Development Goals.

Within the Criminology programme, students are innovative in working with authentic challenges staged by the Malmö police force. Criminology research is integrated into practice as a part of students’ professional training. Based on this, students, researchers, and the Malmö police force work in co-creative processes to approach and solve authentic cases. Students design studies, collect empirical data, analyse the results under the supervision of Criminology researchers, and involve the Malmö police force. The Police Force facilitates understanding the profession and students’ roles as change agents in their future professional field. The study results are presented publicly, compiled, and published in written reports. What makes this learning design salient is that students’ knowledge and work contribute to the everyday work of the Malmö police force and to Criminology researchers, who re-design work strategies and practices based on students’ work.

CONCLUDING ARGUMENTS AND CHALLENGES

In this position paper, we at Malmö University theorise, conceptualise, and exemplify learning in HE, research, and innovation, through the approach of CBL. Our CBL approach is thoroughly anchored in theories of lifelong inclusive learning, as essential ingredients for HEIs’ commitment and contribution to societal transformation. We argue that the role of HEIs is also to advance adult
lifelong learning towards a sustainable global learning society (Nylander et al., 2018). However, to make this successful, we realise the importance of integrating theories of change into adult learning concepts in HE (Kezar, 2014). HEIs need to meet, problematise, and critically act on global political, economic, and technological changes (Rosa, 2013) to collaborate towards a more philosophical and ethical sustainable learning society (Bornemark, 2018). In this position paper, we have given practical examples of how our CBL-model is used in all the university’s five faculties, even though not all courses or programs are CBL-based. Furthermore, incorporating CBL is not easily achieved due to difficulties in designing innovative inter- or trans-disciplinary ways of working in courses and programs. We could also deem innovative teaching methods stressful to some lecturers, prolonging the change process.

In 2013 Malmö University first introduced CBL in its internal policy document Strategic engagement for education, research, and cooperation 2013,2 and thus embarked on a journey towards a cultural shift within the university. Although a cultural shift may sound like an unduly statement, the university has purposefully worked towards an innovative interdisciplinary approach, integrating education, research, and innovation, connecting all faculties, staff, students, and stakeholders, to advance adult learning throughout the entire university. As a result, Malmö University is now building vertical and horizontal structures for change (Christensen et al., 2021).

Based on our experiences, we argue HE will contribute to the sustainable development of a global learning society by adopting the CBL-domains (Figure 1). The social mission of HEIs is pivotal, underpinning the CBL-domain Diversity & Inclusion, particularly in developing innovative and collaborative learning and research methods for social innovation. HEIs’ role is also important in meeting a fast-changing technology and labour market demanding active, creative citizens ready to re-skill and re-learn. This role presupposes a need for the CBL-domain Collaboration & Co-Creation, through which students, staff, and societal stakeholders are enabled to tackle complex societal challenges through inter- or transdisciplinary perspectives on learning, where praxis and theory are interwoven. Through adopting the CBL-domain Change Agents & Contextual Challenges, HEIs can contribute to societal transformations. Students, staff, and stakeholders alike are thereby scholarly change agents, continuously working together with a readiness to co-create the not yet known future.

Working through the approach of CBL is indeed challenging, as it provokes and transforms the roles and the relationships between institutions, students, staff, and stakeholders. Such transformative processes require open-minded and inclusive co-creation of knowledge in bridging research and education in collaboration, and institutional and individual courage to allow and support the prototyping of creative innovative designs for teaching and learning in building a sustainable learning society.

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REFERENCES


**ENDNOTES**

1. The change reform of the undergraduate dental curriculum drew inspiration from the medical education at McMaster University in Canada, Maastricht University in the Netherlands, and the Health Institute at Linköping University in Sweden.

2. *Strategiska satsningar för utbildning, forskning och samverkan 2013* translated as “strategic engagement for education, research and cooperation 2013.”

Cecilia Christersson is Pro Vice-Chancellor (Vice Rector) for Global Engagement and Challenge-Based Learning at Malmö University. Between 2010 and 2016 she was the Deputy Vice-Chancellor of Malmö University holding the portfolio of education, quality and internationalisation. She is a DDS, have a PhD in Odontology, license in prosthetic dentistry and is an associate professor in dental material science at Malmö University. Her interest is leadership and organization to enhance and promote global engagement, quality culture and learning & teaching development in higher education. Since 2014, Cecilia is leading a cross-disciplinary scholar team to advance the concept of Challenge-Based Learning at Malmö University. She is dedicated in building international partnerships for transformative learning and research in collaboration with local and global societal stake holders.

Margareta Melin, a senior lecturer/associate professor in Media and Communication studies, conducts research in Sociology of Journalism as well as Media Didactics, and teaching and learning in higher education.

Pär Widén works as a Senior Lecturer in Pedagogy, Malmö University. Previously, he worked as a visiting scholar at Teachers College, Columbia University. His research focuses on emerging educational narratives in contemporary and historical contexts and techniques of grading, testing and large scale assessments, embedded in power apparatuses of society, state, teachers and students. His research also covers education, leadership and management professions and discourses around educational leadership and teachers from historical and philosophical perspectives. Central to his research are educational philosophical inquiries, learning methods and questions of creativity, inquiry, and challenges to learning about what we know and what is unknown. Both his research and teaching are influenced by the historical analysis, contemporary investigative methods and thoughts of Michel Foucault and Gilles Deleuze. Dr. Widén is currently engaged in research projects covering K-6 pupil’s learning in contexts of archeological and urban sites, following the emergence and flow of their learning processes. He mainly teaches in the teacher training program in educational science courses and on research methodology and theory.

Nils Ekelund is Professor in Plant Physiology since 2002. Nils did his PhD 1988 and became 1995 Associate Professor in Plant Physiology at Lund University. From the 1 of August 2012 is Nils Professor in Plant Physiology at Malmö University and he was head of the Department of Natural Science, Mathematics, Society at Malmö University between 2012 and 2018. Nils has research experience in the field of aquatic ecosystems where he has been studying the effects of ultraviolet radiation, low temperature, salinity and other environmental effects on both phytoplankton and macroalgae. The research during the last years has been focused on ecosystem services and spatial expansion in peri-urban zones of small rural towns in South Africa.

Jonas Christensen is an Associate Professor/Senior Lecturer in Social Work, Education Support Professionals Organization in the Faculty of Health and Society, Malmö University, Sweden. He did his PhD in Education in 2010 at the Lund University. He is part-time affiliated Professor in Learning, Teaching and Social Work at the University of Applied Sciences, Hawk, Germany. Jonas has research experiences in several transnational collaborative research projects, as a Coordinator and researcher. His research orientation in Social Sciences/Educational Science Education Support Professionals, focusing on; interdisciplinarity, profession, challenge-based and organizational learning, internationalization in higher education, transnational learning and collaboration, social welfare and ageing.

Nina Lundgren is a senior lecturer in Oral Diagnostics at the Faculty of Odontology as a DDS and PhD in Odontology. Since 2020 Nina is the program director for the Program in Dentistry at Malmö University. She conducts research in Oral Health, Oral Health Related Quality of Life, and Teaching and Learning in Higher Education.

Patricia Staaf, Licentiate of arts. She is the director for the Centre for Teaching and Learning and a lecturer in Swedish as a Second Language. She is a chair for the Swedish Network for Widening Participation to Higher Education. Her special areas of interest include: Challenged based learning in Higher Education, Scholarship of Teaching and Learning (SoTL), Virtual Learning Environment, Widening Participation, Inclusive Teaching, Academic Writing, First Year Experience.