



CREATES

The Pedagogical Value of Co-Creative Education: A Systematic Review of the Evidence for the CREATES Approach

A CREATES WORKING PAPER

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October 2020

The creation of these resources has been funded by the ERASMUS+ grant program of the European Union under grant no. 2016-1-DE01-KA203-003599. Neither the European Commission nor the project's national funding agency DAAD are responsible for the content or liable for any losses or damage resulting from the use of these resources.

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About CREATES

CREATES (Creating Responsive, Engaging, Active and Tailored Education with Students) is an ERASMUS+ Strategic Partnership between educators at Leuphana University Lüneburg, the University of Freiburg, Maastricht University, King's College London, Sciences Po, and Scuola Superiore Sant'Anna di Pisa. The CREATES partners share a belief in the importance of student-centred and co-creative education. The main goal of the partnership is to develop, exchange and promote best practices in undergraduate education, especially related to activating teaching methods and student guidance, to thereby advance student-centred higher education in the European Higher Education Area. The partnership has produced four toolkits containing educational tools and strategies, an academic paper summarising scientific evidence regarding the value of this approach, a position paper explaining the approach and its merits, and a policy paper discussing policies to encourage institutions to adopt it. The partnership has also organised a series of training events for staff and students from the participating institutions, along with several multiplier events for representatives from other universities and the higher education community. All materials can be found on the CREATES website: <http://europe-creates.eu/>

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Introduction

Due to contemporary global issues such as rising costs of higher education, changing student and employer expectations, and declining employment opportunities for university graduates, European universities need to rethink their approach to undergraduate education (OECD, 2019). There is widespread agreement that a ‘traditional’ approach to higher education, one that places students as passive recipients of a teacher’s expert knowledge, is unlikely to help students meet the demands of a rapidly changing twenty-first-century world that values innovation, initiative, creative problem-solving, and effective communication and collaboration skills (Gonzalez Vazquez et al., 2019). EU and national leaders, parents and students are demanding a more innovative approach to higher education teaching and learning (ESU, 2015; European Commission, 2019).

Increasingly sophisticated understandings of how people learn (National Research Council, 2000) and what it takes to become a ‘lifelong learner’ (Lubicz-Nawrocka, 2018) help identify why change is needed. Cognitive psychologists and contemporary educational researchers across numerous highly influential fields including Self-Regulated Learning (Isaacson & Fujita, 2006), Student Approaches to Learning (Heikkilä & Lonka, 2006), Assessment for Learning (Sambell & Graham, 2011), and Entrepreneurship Education (European Commission, 2011) are all aligned with a constructivist epistemology, rather than the more traditional ‘transmission’ epistemology of teaching and learning that continues to be prevalent in European university teaching and learning. A constructivist epistemology views knowledge as actively and socially constructed by ‘agentive,’ learners who bring their own knowledge, perspective, and experience to the learning situation (Adams, 2006). This perspective presumes that a traditional top-down ‘telling,’ no matter how well information may be articulated, is more likely to condition learners to memorise and replicate knowledge, rather than develop deep content knowledge, sophisticated subject-specific skills, conceptual understandings and, crucially, key competencies that graduates need to make the most of their education once they leave university and enter their professional lives (Elkana & Klöpper, 2016).

With these issues in mind, there has increasingly been a call for comprehensively and meaningfully involving European university students in a ‘co-creative’ education. Importantly, a co-creative, inquiry-driven approach to university teaching, learning and curriculum design mirrors what contemporary learning theories suggest is needed for the development of reflective, analytical thinking, a primary aim of a quality university education. Such an approach also empowers students to take ownership of and responsibility for their own learning and is thus understood to lead to the propensity for ‘life-long learning’ needed for personal and professional growth throughout one’s life (Matthews, 2016). This is in direct contrast to more traditional, ‘transmissive’ approaches to teaching and learning.

Such calls for reform are not unique to this decade. The Bologna Process, which began with an agreement by twenty-nine EU governments, started calling for significant reform efforts in 1999. In the past two decades the number of governments committing to the Bologna reforms has risen to 45.

Nor are such calls for reform unique to Europe's higher educational landscape. The influential Kellogg Commission (1997) and Boyer Commission (1998) sought to transform American research universities two decades ago, citing many of the same problems European HE is grappling with today and making many of the same recommendations this paper is proposing. The Kellogg Commission (1997) called for the creation of student-centered learning communities, supportive of all learners, providing accessible resources for meeting student needs, and producing students with strong values and ethics. The Boyer Commission (1998) proposed making research-based learning the standard and promoting collaborative study groups and project teams for the benefit of every student. Liberal Education and America's Promise (LEAP) is a "national public advocacy and campus action initiative," which recently has championed a liberal education, not only for individual learners, but for a "nation dependent on economic creativity and democratic vitality" (AAC&U, n.d.).

Funded by the ERASMUS+ grant program of the European Union in co-operation with DAAD, CREATES is a collaborative reform partnership between six leading European universities (Leuphana University, Lüneberg; University of Freiburg; King's College London; Sciences Po (Paris); Scuola Superiore Sant'Anna, Pisa; Maastricht University) that has responded to calls for a more co-creative HE educational landscape. Our approach targets four aspects of university teaching and learning that have the potential to be highly impactful individually but even more so when enacted simultaneously: active student engagement in all aspects of teaching and learning; a learner-centred approach to faculty advising that emphasises the values and mission of both the university and students themselves; an acknowledgement of the expertise that students bring to their own and others' learning; and the importance of 'self-advising' in the enhancement of learning and performance. Over three years, the steering committee, project manager, and four development teams from the partner institutions met together and collaborated remotely - working co-creatively with colleagues and students ourselves - to prepare a series of training events and conferences, and seven published outputs (this paper being one).

Divided into two sections, this paper provides the theoretical basis underpinning each of the elements of CREATES. In doing so, we attempt to illustrate why a co-creative approach underpinned by these four elements has the potential to transform European HE in ways that are positive for individual learners, the societies that graduates of our institutions will join as professionals and, ultimately, universities themselves, as universities can only continue to exist if students choose to attend them.

- In the first section, we discuss the **five key competencies** that contemporary graduates of higher education require for personal, professional, and civic success in a rapidly changing twenty-first-century world, with a particular focus on agency, creativity, analytical thinking, 'learning to learn,' and collaboration, and then present the rationale for a 'co-creative' approach to teaching, learning, and curriculum design

in enabling students to develop these competencies, and in upholding the **three foundational ‘pillars’** of the CREATES approach.

- In the second part, the main body of the article, we discuss the four elements of the particular co-creative approach advocated by our research partnership: co-creative approaches to **teaching and learning** at the classroom or module level; **faculty advising; peer mentoring and advising**, and; **‘self-advising’** which we define as reflective practice for personal, academic, and professional development.
- For each practice, we introducing the guiding approach, provide a **literature review** of the evidence underpinning it, and present an **online, open-access toolkit**, in the hope that the practical support they provide will render the CREATES educational approach more accessible to practitioners at institutions, across Europe and beyond, who wish to innovate. In doing so, we acknowledge that the type and level of transformation we are calling for *entails ‘unlearning’ and ‘transformational relearning’ which require ‘nerve’ on the part of universities (Dede, 2010a, p. 4) as well as multiple levels of support for those implementing proposed changes.* We concede that our toolkits cannot, in and of themselves, support and facilitate every conceivable aspect of such comprehensive transformation. Nonetheless, we hope that they will provide a concrete step forward for stakeholders within European HE, and beyond, who are aspiring to the more co-creative approach needed to both remain relevant for today’s HE graduates and the changing world they will ultimately enter as well as continue to fulfil the promise of their missions and values as the world changes around them.

Importantly, the elements of the CREATES approach are not presented as novel. In fact, decades of theoretical and empirical evidence suggest *that good HE practice encourages student-faculty contact, collaboration, and active learning and respects diverse talents and ways of learning (Chickering and Gamson, 1991).* What is novel is the collaborative effort by six leading European universities to 1) integrate four theoretically distinct concepts (co-creative classroom practice, faculty advising, peer advising, self-advising) into one comprehensive ‘co-creative’ approach, 2) provide a theoretical and empirical rationale for doing so, 3) attempt to influence policy at three nested levels (EU, national, and institutional) through a combination of academic and policy papers and, 4) attempt to influence practice at the course/module, curriculum, and institutional level through the development of a range of online toolkits related to each of the aspects of the CREATES approach. This effort represents a grassroots movement (one that, to our knowledge, is unique) that we hope will take hold, create momentum, and inspire similar innovation across European higher education.

1 Why co-creation? Developing key learner competencies

The twenty-first-century has unleashed powerful forces that have impacted society in ways never imagined by the nineteenth-century scholars responsible for the initiation of ‘traditional’ university curricula and methods of teaching. These include rapidly increasing globalisation, greater societal diversity, the influence of market forces on all aspects of society (Duderstadt, 1999), and the widespread emergence of communication and information technologies whereby cognitively routine work is now increasingly done by computer programmes, rather than people (Dede, 2010a; Dede, 2010b). As society changes, the competencies needed for success also change (Duderstadt, 1999).

It is also becoming increasingly clear that a traditional approach will not develop the type of professionals nor citizens needed by contemporary society (Dekker & Korsten, 2020; Longmore et al., 2018). For example, from a business perspective, the primary role of HE is no longer to deliver subject-specific knowledge and skills but to “transform students by enhancing their knowledge, skills, attitudes and abilities while simultaneously empowering them as lifelong critical, reflective learners” (Harvey, 1999, p. 3). To be successful, people must now be able to do what computers cannot be programmed to do, for example demonstrate expert thinking, communicate effectively with people from different cultural backgrounds, recognise and capitalise on opportunities, take initiative, and learn continuously. The development of metacognitive strategies for ‘making meaning out of complexity’ (Dede, 2010b, p. 8) has become increasingly important. From a civil society perspective, clear, independent thinking and responsible behavior will have an impact on the future health of democracy (European Commission, 2017).

With this in mind, many frameworks of twenty-first-century competencies have been generated, analysed, compared and critiqued by researchers from a range of fields (see, for example, Dede, 2010b; Finegold & Notabartolo, 2010; Hyatt & Williams, 2011; Kereluik et al., 2013). While these are not identical, five key competencies are either explicit or inherent in all:

1. agency
2. creativity
3. analytical thinking
4. learning to learn
5. collaboration

These five competencies are also at the heart of a range of contemporary learning theories that help to explain 1) how students interact with each other and their teachers to build on knowledge and understandings they already possess (Kolb, 1984; Kuh et al., 2010), 2) take

ownership of and regulate their own learning (English & Kitsantas, 2013; Isaacson & Fujita, 2006), 3) develop the ‘deep’ approaches that facilitate complex learning (Heikkilä & Lonka, 2006; National Research Council, 2000), and 4) develop increasingly sophisticated understandings of what constitutes high achievement and effective performance (Sambell & Graham, 2011). Thus, it is our position that HE students need to develop the competencies of agency, creativity, analytical thinking, learning to learn and collaboration not only to rise to challenges they will face after they graduate, but also to successfully navigate the challenges they will face during their time at university. Thus, we argue that the development of these competencies should be an explicit aim of every European university at the policy, curriculum, and practice level.

If these competencies should be the explicit aim of HE teaching and learning, it is evident that they cannot be achieved through a traditional pedagogic approach and, we argue, will be more effectively realised through approaches founded in a ‘co-creative’ philosophy (Bovill, 2013b). Our working definition of co-creative education draws on an expansive model of staff-student partnership, conceiving of students as active co-producers of their education in both classroom and curriculum, and seeing a broad range of practices –including, as is less commonly done, various forms of academic advising –to have collaborative and co-creative potential (Appleby, 2008; Lubicz-Nawrocka, 2018; Mu & Fosnacht, 2019). We conceive of co-creation as having three main venues or domains within university education: classroom, curriculum, and community. By these we mean: the learning environment in which co-creative learning is produced, whether physically co-present or digital; the learning journey through the programme of study, produced by a series of curricula choices and guided by various forms of advice; and the learning communities, formal and informal, that are formed by and give shape to co-creative collaboration.

It is widely understood that the way people are taught will ultimately shape their behaviour as learners (National Research Council, 2000). ‘Traditional’ curricula view ‘knowledge’ as a truth to be revealed rather than an understanding that is constructed; present ‘communication’ as simple and generally face-to-face; emphasise routine, rather than complex, problem-solving; separate knowledge from skills in unauthentic ways that do not support the development of metacognition and expert decision-making; put minimal emphasis on “group interpretation, negotiation of shared meaning, and co-construction of problem-resolutions” (Dede, 2010a, p. 3). Traditional teaching methods may result in memorisation and replication of information, rather than more desired outcomes, including the key competencies of agency, creativity, analytical thinking, learning to learn and collaboration.

A large body of empirical research helps to explain why traditional teaching methods, even when explicitly focused on the development of key competencies, may fall short in this regard (Barrows, 1996). For example, Mulnix (2010) suggests that many university instructors teach theories related to critical thinking or model critical thinking and expect their students to become critical thinkers on the basis of that alone rather than through practice or experience. She argues that this is no more possible than a golfer trying to improve his game by reading *Golf Digest*, or a tennis player trying to improve her game by watching Wimbledon. At least part of the challenge of developing critical thinkers through the ‘traditional’ approach stems

from the fact that critical thinking relies on metacognitive knowledge (involves knowing what one knows and how one knows it), meta-strategic knowledge (selecting and monitoring strategies), and epistemic awareness (knowing how people, including oneself, can know) (Kuhn, 1999). These are neglected in traditional educational contexts. Likewise, it is also difficult to teach creativity by implementing a traditional approach. One explanation for this is that there is a significant positive relationship between intrinsic motivation and creativity which has implications for teachers as it is important to identify what intrinsically motivates individuals and to structure their activities around these factors (de Jesus et al., 2013).

The tradition of conceptualizing learning as *experiential* is one that stretches back to John Dewey's pedagogy of reflection and David Kolb's learning cycle. Rather than the traditional view that knowledge is learned through absorbing information, this theory of learning posits that experience is transformed into knowledge through "...the sense-making process of active engagement between the inner world of the person and the outer world of the environment" (Beard & Wilson, 2006, p. 19). In their handbook for experiential learning, Beard and Wilson (2006) construct a model for learning conceived as a combination lock made up of 'tumblers' that include elements of the external environment (including learning activities and spaces) and a learner's internal environment (including emotions, types of intelligence and learning changes), with the learner's sensors linking the two. Importantly, experience must be *meaningful* to result in learning.

Experience may underpin all learning but it does not always result in learning. We have to *engage* with the experience and *reflect* on what happened, how it happened, and why. Without this, the experience will tend to merge with the background of all the stimulants that assail our sense everyday. (emphases added, Beard & Wilson, 2006, p. 20)

To learn from experience, students must be engaged in the process and make meaning through reflection on the experience. Thus, one pillar of twenty-first-century HE is that:

1) each individual student is engaged and empowered through active and reflective learning

While traditional modes of teaching focused on the efforts of students working individually, perhaps with little interaction with the teacher (through assessment) and little-to-no interaction with their peers, students of the twenty-first-century will need to work with others in their future personal and professional lives. Furthermore, teamwork, leadership, communication and compromise are valuable experiences and competencies that require social interaction. Scholars and practitioners of dialogic learning highlight how talk and argumentation between students and teachers and among students leads to the development of higher mental processes (Wolfe & Alexander 2008). Moreover, the scholarship on teaching and learning shows that learning is influenced by the social contexts or 'communities of practice' in which it happens (Lave & Wenger, 1991), and that a community-centered approach develops camaraderie, norms and an environment that enhances cognitive development (Bransford et al., 2000, p. 25). Crawford et al. (2015), informed by their multiple case study at the University of Lincoln, identified collaboration as an important pedagogical practice. They include among their specific recommendations that learning spaces should 1) encourage collaboration, even within large lecture halls and 2) foster the sharing of work and

allow for interdisciplinary teaching and learning. Therefore, CREATES formulated its second pillar that:

2) our modes of learning are collaborative and interactive.

Longmore et al (2018) suggest that transformative learning environments emphasise ‘co-creation,’ rather than transmission, of knowledge and understanding and prioritise the development of critically reflective learners who graduate able to ‘quickly and positively contribute to the organisation’s learning capability and innovative capacity’ (p. 17). Co-creation of curricula implies a “shift in the conceptualisation of the teacher-student relationship towards a more reciprocal model where students and staff have a role, a voice, and agency to influence and meaningfully participate in teaching and learning processes” (Bovill, 2013a, pp. 463-464). A co-creative approach promotes pedagogical transparency, develops metacognitive awareness and ‘self-authorship’ in both teachers and students, leads to more active and effective engagement in learning, and enhances learning processes, transforming the learner in the process (Bovill et al., 2011). And so the third CREATES pillar is that:

3) we uphold an ethos of co-creation of and shared responsibility for learning.

A co-creative approach to university teaching and learning differs from a traditional approach in fundamental ways, underpinned by a view of learners as knowledgeable and critical partners in the learning process. Because this approach recognises and draws upon students’ expertise, relationships between them and their teachers are based on dialogue rather than ‘top-down telling’, and thus such approaches “inherently subvert the traditional power hierarchy between learners and teachers” (Bovill et al., 2011, p. 14). However, co-creation is not about handing complete control to students (Bovill, 2013a). The degree of control shifted to students is contingent upon the expertise and attitudes of both teachers and students as well as other contextual factors (Bovill, 2013a). Thus the nature of ‘co-created curricula’ can range from students merely being consulted about changes to course design or content, to designing the learning environment, or even generating their own learning outcomes or constructing marking criteria (Bovill, 2013b).

Although co-creation, as an approach, has a great deal of potential as an innovative solution to the double-edged sword of employability and effective university-level learning, according to Bovill (2013b), not all students and staff will want to be involved and, in some contexts, co-creation might be difficult to achieve. For example, she argues that although ‘co-creation’ is an increasingly accepted topic of discussion, conflating the term ‘co-creation’ with related terms such as participation and engagement can result in confusion about what is meant by these terms and what these concepts entail. It is important to be explicit about intentions and clear about the details involved and how students’ experiences of co-creation will be evaluated. She also suggests that ‘co-creation’ requires additional expertise and may challenge the beliefs, values, attitudes and assumptions that many academics hold. Furthermore, while such an approach leads to higher levels of engagement and more effective learning, students should not presume they are going to get everything they want. They may need guidance to understand that the “greatest value of higher education includes opportunities to be challenged and to change the way in which they think by taking greater responsibility for

their own learning; and that this is most effectively developed through students becoming more meaningfully involved in learning processes rather than simply being handed pre-packaged forms of knowledge” (Bovill, 2013b, p. 101).

To develop the competencies required for personal and professional success after graduation from HE, universities therefore need to become, fundamentally and inherently, co-creative: more learner-centred, interactive and collaborative, with opportunities for students to co-design relevant, meaningful learning experiences (Kereluik et al., 2013; Dede, 2010a; Duderstadt, 1999; Longmore et al., 2018). Our three pillars, as well as the five competencies they aim to support, mirror the findings of empirical research related to effective learning. The need for purposeful innovation in European higher education is urgent. This is the case not only for individual students and the societies they will graduate into, but for universities themselves to be able to capitalise on - rather than become the victims of - forces such as increasing globalisation, greater societal diversity, rapid technological advancement, the influence of market forces on all aspects of society, and, not least, the new and urgent challenges presented to Higher Education by the Covid-19 pandemic and the constraints and possibilities it presents for educational delivery in 2020 and beyond.

The debate outlined above has featured in calls for reform for decades. Given the rapidly changing HE landscape; it is time for universities to take stock. With this in mind, there is a growing consensus that institutions cannot afford to rest on their laurels by continuing to offer a traditional university education. However, many universities do not yet appear to have taken into account the compatibility between what decades of empirical research has illuminated as the conditions and practices that facilitate effective learning and what workplaces say they require in their university-educated employees. As argued by Duderstadt (1999), a vital question for HE stakeholders is:

not whether higher education will be transformed, but rather how and by whom. If the university is capable of transforming itself to respond to the needs of a culture of learning, then what is currently perceived as the challenge of change may become the opportunity for a renaissance in higher education in the years ahead. (p. 6)

The CREATES co-creative approach to university teaching, learning, and curriculum design is presented herein as a viable solution to the dilemma of simultaneously advancing the values of scholarship prized by universities and of twenty-first-century employability so vital to universities students and society as a whole.

2 Four CREATES practices: co-creative learning; faculty advising; peer advising; self-advising

Now, we will introduce in turn the four areas of co-creative practice explored by our four development teams, introducing their guiding approach, providing a literature review of the evidence underpinning it, and summarising the set of applied practices each toolkit covers, and showing why these practices are crucial venues for developing our five key competencies.

While courses (or modules) and their classrooms are an obvious location for co-creation, CREATES identifies academic advising as another crucial venue in which students take ownership of and make sense of their learning and educational experiences. In the classroom, the CREATES approach focuses on pedagogical approaches that challenge yet support students in active learning, research, and construction of meaning and knowledge. Advising, under which CREATES includes faculty advising, peer advising, and self-advising, can be a realm in which students synthesise the knowledge, competencies, and meaning-making of their higher education experience in order to integrate it with (or interpret it in relation to) their life activities and goals.

Our partners divided leadership and collaboration on four practical toolkits for co-creative higher education. Each development team (DT) designed, created and collected content for their designated toolkit:

1. Toolkit for Co-creative Learning
2. Toolkit for Faculty Advising
3. Toolkit for Peer Advising, and
4. Toolkit for Self-Advising

At least three partners were represented on each DT, facilitating international exchange and collaboration, and varied in size from four to eight members. The inter-institutional DTs allowed members to draw from their experiences, develop new or refined materials for their practice, as well as test out recommendations or techniques introduced by other partners. The DTs benefited from the diversity of cultural and institutional contexts represented, while underscoring the value of (and the project's dedication to) a student-centred, co-creative approach. While much of the development occurred through remote work, DTs met in-person about once or twice per year during the three-year funding period for exchange or training activities. Training activities were open to teachers and advisors (and in some instances, interested students) in the partner institutions (not only those directly involved with CREATES), which provided the opportunity to incorporate additional perspectives into the toolkits as well as disseminating CREATES techniques within the partner institutions.

2.1 CREATES in the classroom: Co-creative learning

Approach

The co-creative classroom can take many shapes, but they all tend to be authentic (meaning based on research or inquiry), experiential (read active and engaged), and supported through metacognitive and/or collaborative activities.

While the literature on teaching and learning distinguishes between research-based, inquiry-based, and problem-based learning (Healy, 2005; Levy and Petrulis, 2012), the approach to the co-creative classroom takes all these techniques as bringing authentic, real or realistic issues and questions to students and training them to explore, understand, or solve them. With the above approach, students must be engaged in active, experiential learning. In fact, the above techniques probably cannot be effectively implemented without the active engagement of students. Students make sense and meaning from their learning experiences through metacognitive and/or collective activities. Through reflection and/or social interaction, students synthesize and situate what they learned, incorporating the new knowledge into their worldview and the competencies into their repertoire. When learning is based around problems, questions and issues, students have the space to be agentic and can be encouraged to think both creatively and critically. Through experience, interaction, and reflection, students work towards the competencies of 'learning to learn' and productive collaboration with others.

Literature Review

Since the CREATES approach aims to prepare students to be creative, analytical problem solvers, learning techniques that ask real (or realistic) questions about the world especially have potential to foster key competencies. The literature discusses how inquiry-based learning (including research-based and problem-based learning) does just that. According to Levy and Petrulis (2012), all four 'modes' of inquiry-based learning (IBL) result in high impact learning by enhancing motivation, enthusiasm and interest; improving retention; developing skills, increasing students' identity with a particular discipline, and developing students' capacity to participate in different ways of knowledge creation. These modes are:

1. Identifying mode
2. Pursuing mode
3. Producing mode
4. Authoring mode

The last two modes of IBL are similar to research-based learning (RBL). When learning is research-based, students learn as researchers, and the division of roles between teacher and student is minimised. Students thereby develop methodological and content knowledge as well as research skills which serve their further academic career (Healy, 2005).

IBL and RBL have the potential to foster dispositions, intellectual and practical capabilities needed in contemporary society (Healy, 2005; Levy and Petrulis, 2012). From a CREATES perspective, they are essential co-creative instructional practices at the course or module level; they promote active and deep learning, and result in greater levels of independent learning, have the potential to develop epistemic sophistication, improve critical thinking, problem-solving, and judgement regarding knowledge claims; result in more collegial staff-student relationships, and contribute to an emergent sense of intellectual freedom and agency (Levy and Petrulis, 2012).

Problem-based learning (PBL) is an instructional method that originated in medical schools but has had far-flung implementation in education at all levels (Gallagher and Horak, 2011). It differs from traditional teaching in that it is underpinned by an inclusion of ill-structured, unresolved, and authentic problems (Walker and Leary, 2009) and organises content around problem scenarios, rather than particular subjects or topics (Savin-Baden, 2000). Rather than passively engaging students in receiving content, this approach engages students collaboratively in recursive cycles of question formulation, research, application, reasoning, testing hypotheses, evaluating evidence, synthesising information from the various sources, and integrating input from peers and teachers (English and Kitsantas, 2013) (cf. e.g. Barrows, 1996).

From a CREATES perspective, PBL is a ‘co-creative’ instructional method because students work together in teams to analyse and resolve problems as well as independently to make decisions about the information and skills they need and to acquire that information and those skills. The role of the teacher is to develop problem scenarios and serve as a metacognitive facilitator throughout the process (Walker and Leary, 2009), rather than to ‘transmit’ content. When developing problem scenarios, teachers need to ensure depth and complexity of content, deliberately incorporate subject-specific as well as metacognitive skills, and carefully plan the scope and sequence of the PBL curriculum. When problems are well-developed and carefully planned, PBL enhances understanding of discipline-specific concepts, themes and issues as well as an understanding of relationships between disciplines (Gallagher and Horak, 2011). By its very nature, PBL is highly conducive to achieving a small-scale and intensive learning community in which students are engaged and responsive (Barrows, 1996).

As IBL, RBL and PBL all require a high level of student agency and/or collaboration in their learning, intentionally fostering and supporting these competencies should be deliberate and articulated learning objectives in the co-creative classroom. Metacognition is the ability to predict one’s ability to perform certain tasks and assess one’s level of understanding. As the US National Research Council (2000) writes:

Teaching practices congruent with a metacognitive approach to learning include those that focus on sense-making, self-assessment, and reflection on what worked and what needs improving. These practices have been shown to increase the degree to which students transfer their learning to new settings and events” (p. 12).

Metacognition is one of the more abstract forms of knowledge in learning (Anderson et al., 2001), while reflection is a key phase or step in several theories of learning, including

experiential learning (Ash and Clayton, 2009; Kolb, 1984). The co-creative classroom fosters a metacognitive environment among both students and teachers (Tanner, 2012) scaffolding this competency of ‘learning to learn’ by making self-reflection on one’s cognition an explicit and ongoing process throughout courses or programs. And it is not only metacognitive reflection which can help foster life-long learning, collaborative environments can also help support key competencies.

With a lineage that stretches back to John Dewey’s experiential learning (Love, 2012), learning communities (LCs) are a high impact practice in which students take part in small group interactions to pursue shared learning goals (Kuh et al., 2010). While LCs can take many forms from residential to virtual (Lenning and Ebberts, 1999, p. 10), classroom LCs occur at the course or module level and may include various activities from discussion to collaborative assessment to community engagement. Personal connections to their peers and teachers encourage responsibility among students, and link their learning to those of their peers (Visher et al., 2010, p. 77-79). LCs may also encourage students who themselves hold a more traditional understanding of education as ‘transmissive’ and teacher-centred to reframe their understanding towards one of co-construction or co-creation (Ingram et al., 2016). Research shows that personal relationships built in LCs foster communication and collaboration, such as considering multiple perspectives and working towards compromise (Wynn et al., 2019). Beyond ‘group projects’ LCs that actually support and train students in productive interaction have the capacity to foster more effective communicators, team members and leaders.

Toolkit

<http://europe-creates.eu/toolkit-for-co-creative-learning/>

The Toolkit for Co-creative Learning aims to practically provide information, tips, and examples for teachers designing co-creative classrooms. With a goal of providing the most concrete information, the DT selected seven of the many available techniques:

- Problem-based learning (PBL),
- Research-based learning (RBL),
- (e)Portfolio,
- Metacognitive self-reflection,
- Reading diaries,
- Learning communities, and
- Role play/Simulation.

PBL and RBL follow the literature on IRE and IBL, while (e)portfolio, reading diaries, and metacognitive self-reflection draw on the positive findings of fostering students’ monitoring of their own learning process. Finally, role play/simulation and learning communities aim for

the co-creative classroom through student engagement, activity, interaction, and taking responsibility for their learning and that of their peers. For each of the above techniques, the toolkit takes a “What? Why? How?” approach, providing a short introduction text (What?), identifies the key learning objectives it supports (Why?), and suggests best practices and practical steps for implementation (How?), often utilising sample materials (syllabi, lesson plans, assignment instructions, etc.) and examples from varied disciplines.

2.2 Faculty Advising: “Advising as teaching”

Approach

The co-creative curriculum recognizes that students have diverse values and goals. Their program of study will be somewhat individualized through the choices they make in modules, the connections they make between the topics and activities of their studies, and the integration of their studies with their own lives, both in the context of the university and the broader community. To this end, the CREATES approach to faculty advising has three goals:

1. Helping students integrate studies,
2. Building academic community through advising, and
3. Contextualizing advising within the culture and structure of the university.

Underpinning these goals are an overall approach to advising as a type of teaching and learning. By facilitating the above three goals, faculty advising particularly supports the key competencies of student agency and learning to learn.

Literature Review

If the traditional, teacher-centred view of teaching was ‘transmissive’, the traditional counterpart in academic advising was ‘prescriptive,’ with faculty in the ‘doctor’s’ role of giving advice and the student in the ‘patient’ role of following through on that advice. The problems with this approach are multiple, but include tendencies towards misconceptions, especially around who is responsible for the success of the student --the student for following the advice or the advisor for giving ‘good’ advice (Crookston, 1972). For decades, the literature has been calling for reconceptualizing advising as a kind of teaching and learning (Appleby, 2008; Crookston, 1972; Duller et al., 1997).

He and Hutson (2016), with the aim of assessing the complexity of academic advising, outline five major types of advising:

1. Information (prescriptive)

2. Intervention (used to support at-risk students)
3. Student holistic development (cognitive and non-cognitive development are considered equally important and advising is a shared activity between student and advisor)
4. Focusing on student learning outcomes
5. Strength and asset building

These types are not mutually exclusive, rather He and Hutson suggest that most universities will use a combination of these types. The last two (or even three) types can be conceptualized as ‘advising as teaching’. In a piece entitled “If advising is teaching, what do advisors teach?” Löwenstein (2005) relates aspects of excellent teaching directly to advising activities in order to explicitly link advising with teaching. Some of these include:

- Helping students put each part of the curriculum into perspective
- Helping students see how the transferable skills they develop in different disciplines can be applied more widely
- Helping the student focus on the varying modes of learning they are mastering
- Helping the student synthesise an overview of his or her education and understand its structure or logic (Löwenstein, 2005, pp. 69-70)

Thus, an important part of “advising as teaching” is integration of different parts of a curriculum, including skills, modes of learning, and disciplinary knowledge. Also stressing the importance of interdisciplinarity, integration, and intentionality in academic advising, Egan (2015) agrees with Lowenstein that one task of the adviser is helping students recognise how different courses, modules, and disciplines can complement and inform each other. Yet Egan (2015) also puts special emphasis on supporting students’ “sense of self within the broader curricular context of higher education and the mission of the university” (p. 82). Egan (2015) argues that a top-down/prescriptive approach cannot support these aims, rather the adviser must help students to draw relevant connections between university requirements, a chosen major, and their future plans through engaging in dialogue that lasts throughout the student’s HE ‘career.’ Such dialogue should reflect the university’s mission as well as place the responsibility on the student for articulating his or her own vision for academic success within the context of the educational programme. This approach fosters especially the key competencies of ‘learning to learn’ and student agency.

Indeed, the literature shows that students respond to ‘holistic’ styles of advising that acknowledge and support students as whole people. Mu and Fosnacht (2019), in a study of roughly 25,000 undergraduate students from 156 US universities, found that utilising advising services had a positive impact on students’ self-reported gains and grades, although the impact on self-reported gains was greater than on grades. The authors attribute this to the idea that a holistic approach focuses on students’ overall development, rather than focusing solely on academic growth. Given these findings, they recommend that universities continue to value advising and to critically examine their advising services in light of the needs of students and the overall mission of the university. Similarly, Sheldon et al. (2015) found that

students were more likely to be more satisfied with academic advising when they assessed that their advisors supported their autonomy. While “advisor knowledge” and “advisor availability” also independently predicted satisfaction with advisor quality, “advisor autonomy support” was the strongest predictor. Autonomy support also predicted student performance in terms of both semester GPA and cumulative GPA. Sheldon et al. (2015) also make note that autonomy-supportive interactions take more time.

Toolkit

<http://europe-creates.eu/toolkit-for-faculty-advising/>

The Toolkit for Faculty Advising conceptualises ‘advising as teaching’, and thus as an academic endeavor that supports students in integrating their studies into their lives outside of and beyond university. The toolkit is thus divided into three sections:

- The ‘big picture’ outlining the motivating ideas behind the approach,
- ‘Advising situations’ at university, and
- Tools and practices.

Each of the guiding goals of integrating studies, building community, and contextualising advising at your university is kept at the forefront as the toolkit explores key issues or situations that arise in faculty advising --from planning a self-designed curriculum to addressing student mental health.

2.3 Peer Advising: ‘Students helping students’

Approach

Peer learning can be understood as a very broad term that “refers to the use of teaching and learning strategies in which students learn with and from each other without the immediate intervention of a teacher” (Boud et al. 1999, p. 413-414). With opportunities to work together in small groups and carry out the role of both learner and teacher, students develop a number of desired learning outcomes. Further, peer learning may be implemented as peer-advising (also sometimes called peer tutoring, or peer mentoring), which according to the literature affords both the peer advisor and the advisees, various social, individual, and academic benefits (cf. Anderson & Boud, 1996; Topping, 2005).

The CREATES approach to peer advising conceives of the practice as an important part of the co-creative curriculum and co-creative community, as students help and support each other in multiple, overlapping ways, bringing with them their own valuable skills, experiences, and perspectives. Rather than prescribing one approach to peer advising, CREATES

acknowledges that while creating opportunities for students to support each other is critical, any particular peer advising plan will need to be tailored to its students, program, and university --as well as formulated as part of the overall approach to advising with faculty and self-advising.

Literature Review

While traditionally advising was something that happened between faculty and students, many institutions in the US, Europe and elsewhere have incorporated peer advising, learning, or mentoring into the student experience for some time; and its prevalence is growing (Barman and Benson, 1981; Ender & Newton, 2000, p. 2; Koring & Campbell, 2005; Swisher, 2013). Gosser et al. (2001) went so far as to articulate that peer support was “a significant untapped resource that can facilitate learning” (p. 3). Even without a structure, students often tend to find ways to support each other informally with the personal, social, and academic challenges they may face at university (Boud, 2001). While some distinguish between peer advising, peer education (or peer learning), and peer mentoring (Marter, 2016), the CREATES approach to peer advising includes all three of these activities. The approach posits that an organized, institutionally-supported peer advising scheme can benefit students by being more inclusive (Budge, 2006), by training peer advisors (Byrom & Gulliver, 2014) and by reinforcing the educational aims of the university (Hall & Jaugietis, 2011).

Peers can lead to positive learning development (Colvin, 2007) and to the personal and professional development of the student (Chester et al., 2013). In the UK, for example, Collings et al (2014) found that students who were involved in a peer mentoring scheme were 4 times less likely to consider leaving university at 10 weeks into their first semester, were more integrated into university and were less likely to be suffering from poor self-esteem or the residual effects of missing their pre-university friendship groups. Simpson (2014) agrees with Koring and Campbell (2005), that especially in the first semester or year, peer advisors can help navigate the transition to university study. Students in peer mentoring programs have more knowledge of university resources and are more likely to use them, and they report higher levels of motivation and perceived self-efficacy (See Collier, 2015, pp. 11-12). In other words, students may be particularly well positioned to support each other, and providing an institutional framework for that support results in many positive effects.

Furthermore, literature shows that peer advising helps reinforce the educational aims of an institution (Couchman, 2009; Darwin & Palmer, 2009; Hall & Jaugietis, 2011). Of course, this is not an entirely top-down approach. By creating a structure to support peer advising, the university creates opportunities for students to foster the competencies of “learning to learn” and collaborating with others” in a co-creative setting. Rosenthal & Shinebarger (2010) argue that one of the functions of peer advising is to narrow “the gap between student needs and the type of mentoring they receive,” particularly when there is a lack of staff to meet the needs of students (p. 24). On that note, studies have also found evidence of a wealth of positive outcomes for students who serve as peer advisors (Ownby, 2003). Peer leaders in the US report increases in personal growth, factual knowledge, and soft skills (Young & Keup,

2018). They are also more likely to stay involved and connected to a university after they graduate (Shook & Keup, 2012).

Toolkit

<http://europe-creates.eu/toolkit-for-peer-advising/>

The Toolkit for Peer Advising defines the practice broadly as “an educational process in which trained peers support other students in improving their collegiate learning experience,” or even more simply, peer advising is “students helping students” (Diambra & Cole-Zakrezewski, 2002, p. 56). Thus, peer advising can include academic, organisational, and social topics which students face during their studies. With the aim to support the practical implementation of a peer advising plan, the toolkit divides its suggestions and examples into four categories of ‘key decisions’:

- Content of the topics covered (from social to academic to everything in between),
- Aspects of the peer advisees’ experience,
- Aspects of the peer advisors’ experience,
- And planning the framework of the peer advising programme.

In addition to sample materials such training workshop plans, suggested semester schedules of peer advising meetings, and job listings for peer advisors, the toolkit contains a series of worksheets for assessing and/or planning current and future peer advising programmes.

2.4 Self-advising: ‘Informed choices and productive reflection’

Approach

In a co-creative curriculum and co-creative community, students will face many choices from the courses they take, to the questions they will investigate, to the goals and roles they want to pursue in their studies, career, and communities. Facilitating good decision-making means providing students with the tools and resources that will help them get the information they need, the space to make sense of what they have experienced and the chance to consider various possibilities. While the term “self-advising” may be new to many, the spirit behind this CREATES approach is to set up an infrastructure and environment in which diverse, individual students’ reflections and plans are scaffolded and supported throughout their university studies.

Literature Review

A crucial element of a co-creative curriculum is that students have the freedom to make choices (Bovill, 2013b). From an ‘advising as teaching’ or ‘advising as learning’ approach, Egan (2015) writes that key objectives are equipping students with the propensities to think critically about their education, to set goals and plan how to achieve them, and to reflect, solve problems, and self-advocate. Yet a challenge for students can be sifting through the amount of information from various sources. Especially with obstacles such as limited resources, large advisee-to-advisor ratios, and constraints on time, Egan (2015) recommends the use of tools that can support advisors in helping their advisees to be more invested in their own decision-making. Such tools will also aid in the ability of advisors to monitor students’ decisions in detail, and may potentially transform disengaged students into engaged students who are able and inclined to take responsibility of their own education and making informed and intentional choices in relation to their education. Bailey et al. (2015) purport reforming university advising and program structures based on a ‘guided pathways’ model. They position this against a ‘cafeteria model’ in which students must choose for themselves from a buffet of unconnected courses and support services without guidance. Their guided pathways model supports student decision-making through academic program plans, learning objectives that are aligned across courses, and monitoring of students’ progress. A key idea in the CREATES approach to self-advising is an interpretation of guided pathways that provides students with personalized recommendations and suggestions for choices they face.

In order for students to develop the competencies of agency, learning to learn, and creativity, they should be encouraged to make sense of their learning and even consider how it may be transferred to other areas of their lives. To this end, scholars of teaching and learning and academic advising have been calling for more opportunities for student reflection for students to make meaning of and find purpose in their learning (Sopper, 2015). Ambrose et al. (2010) explain that many students fail to perform effectively in university, not because of their ability, but because of unsophisticated metacognitive awareness and processes. They argue that many instructors do not teach students how to approach their learning more effectively because this falls outside of the disciplinary content. Additionally, teachers tend to overestimate the level of metacognition their students possess, and underestimate the instruction needed for students to develop in this area. While the authors are approaching the topic from the course or module-level, the aim to encourage ‘self-regulated’ learners is relevant to students’ overall success as students and lifelong learners. Moon’s (2001) review of the literature explains how reflection has been linked to deep and sophisticated representations of learning. Moon (2001) explains also how reflection is also considered as providing the ‘right conditions’ for learning. For example, it slows down the learning process and makes it more meaningful and enables students to take greater ownership of their learning. “Structured reflection” may be encouraged with reflective tools such as e-portfolios (Parkes and Kajder, 2010; Stefani et al., 2007; Zubizarreta, 2004). In their essay exploring how to create a ‘vital campus,’ Eaton and O’Brien (2004) write,

Engaging learners in activities that encourage them to document and assess their own learning is essential since it gives both the learner and the educator insights into how well the learner is learning and how well the learning experiences are contributing to the student’s process and progress toward the learning goals. (p. 1)

Toolkit

<http://europe-creates.eu/toolkit-for-self-advising/>

The Toolkit for Self-Advising considers student reflection and planning as an integral part of student-centred education, and lays out two general practices that institutions can support students in that endeavor:

- Guided pathways and
- Structured reflections.

In addition to defining and justifying them, for each of the above categories, the toolkit provides practical examples for implementation such as the use of (e)portfolio for reflection or database recommender systems for course suggestions as one form of ‘guided pathways’. Most importantly, self-advising is always meant to be a complement to other forms of advising support with faculty and peers.

Conclusion

This paper has drawn together a range of educational practices, with their underpinning evidence from the academic literature, that together - we argue - will enable students to develop the five key competencies - agency; creativity; analytical thinking; learning to learn;

collaborating with others - that a twenty-first-century education must deliver. It provides the theoretical framework and evidential support for our comprehensive 'co-creative' approach across the distinct but related practices of teaching and learning, faculty advising, peer advising, and self advising. In presenting our toolkits, and the evidence that supports their design, we hope to support colleagues and students seeking to implement co-creative approaches in their own practices across Higher Education in Europe, and to inspire others to consider doing so.

Careful readers of our toolkits will note variations, inconsistencies, and even contradictions within them. Throughout this practice-based project, our own approach to 'strategic partnership' was itself genuinely co-creative. Our development teams - constituted entirely of current educational practitioners - worked collaboratively and with almost complete agency and independence, with only light 'steering' from the committee. Our approaches, interests, and perspectives were shaped by not only our varied national, institutional, and disciplinary contexts and backgrounds, but, profoundly, by our everyday activity as teachers, learning designers, and academic advisers, working towards common goals in very different environments. We learnt most at the points where we disagreed, or when we failed initially to understand each other's perspectives. Ideas emerged organically from our classrooms, offices, and inboxes, and returned there to be tested and refined. As a result, although founded on our shared pillars, the toolkits vary in focus and framing - some became deeply immersed in the philosophies of their approach, while others were highly practically oriented. We highlight these features unashamedly as the authentic products of a long-running collaboration between practitioners. The overall result has been a widespread interweaving of our approaches throughout the six institutions, from individual learning activities to whole-institution strategies (for example, the King's College London 2017-2022 Education Strategy has a strategic goal to 'embrace students as co-creators of the educational experience'), and, we hope, beyond them, through the sharing of our toolkits.

When the project began, in 2017, we could not have anticipated that its final year, 2020, would see such a profound challenge to the delivery of Higher Education as that currently presented by Covid-19. For an approach founded in collaboration and community - imagined primarily at the outset as being physically co-present - the chilling effects of social distancing could appear disastrous to achieving our goals. But the current situation in many ways reinforces and enables our aims. Teaching has never had to be as 'responsive' as in recent months and the roles of pedagogy centres, educational research, and best-practice-sharing initiatives have never been as valuable or perceived to be so by academic teachers. Just as some opportunities to collaborate and build community have currently become difficult or impossible, digital modes have presented new possibilities for connection and

practitioners have rapidly adopted radically new practices. And the value of committing to approaches that build communities of learners, deeply engage and empower them, and prepare them for an uncertain and changing world, has never been so clear.

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