UNIVERSITY CONTINUING EDUCATION AS AN INNOVATION LAB FOR FUTURE EDUCATION – POTENTIALS AND LIMITATIONS

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ABSTRACT

The future relevance of higher education (HE) is closely related to its impact on society, with innovation being central to answering current and future societal issues. This article positions university continuing education (UCE) at the crossroads of HE and society, operating in an intermediate position between inside and outside of academia. It asks if and how UCE can be both a boundary spanner and drive societal innovation as well as be an innovation lab for the future of HE. Transposing relevant elements of innovation theory to an innovation matrix that includes different layers and degrees of innovation and by employing a case study approach, the study analyses four cases against this innovation matrix. In doing so, the article reveals the broad range of different innovations within the cases. In addition, contrasting the cases offers new theoretical perspectives on innovation in UCE as it reveals two possible directions of innovation – inside/outside the organisation and its dimensions and direct/indirect effects. This article contributes to an understanding of innovation in UCE that has thus far received only limited study.

INTRODUCTION

Within the last few years there has been growing research on the future of higher education (HE) focusing on students' heterogeneity and future skills or creating scenarios about learning pathways for a possible new HE landscape (Ehlers & Kellermann, 2019; Orr *et al*., 2020). This burgeoning area of research is closely linked to the digital transformation of western societies, as well as other more disruptive societal developments. Not least, the current COVID-19 pandemic has shown that things can change overnight, accompanied by accelerated transformations and pressure to innovate. Therefore, the future of HE is also tasked with providing the requisite skills to answer the global challenges of the 21st century (International Commission on the Futures of Education, 2020). As regards the specific role of university continuing education (UCE) within universities, much hope is placed on its importance as an innovation laboratory (Weber, Heidelmann & Klös, 2019). In its intermediate position between inside and outside of academia, or as boundary spanner and operating on the fringes (Dadze-Arthur, Mörth & Cendon, 2020), UCE carries the potential to drive innovation in teaching and learning in HE and make it viable for the future.

Using the aforementioned understanding of UCE, our research paper examines both if and how UCE can act as an innovation lab for future HE. To that end, we base our analysis on

data from the accompanying research of the German wide federal-*Länder* funding initiative "Advancement through Education: Open Universities" (Cendon *et al*., 2020). In this initiative, about one quarter of all German higher education institutions (HEIs) received funding between 2011 and 2020 to develop and implement provisions for lifelong learners, such as job-accompanying study programmes or modules, certificate courses, or study modules with enhanced practical phases (WB, n. d.).

These developments span four thematic fields: target groups, study formats, organisational structures, and cooperation (Hanft, Pellert, Cendon & Wolter, 2015). While much research has been done in these fields across the whole initiative, our approach takes a different route and closely examines the aspect of innovation. Structurally, we first position innovation within HE, then present the initiative as the context of our study. Thirdly, we introduce a theoretically based analytical matrix for innovation and then use this matrix to analyse cases from the four thematic fields with respect to their contribution to innovation. Finally, we use our findings to discuss the results against the role of UCE as a catalyst for future transformation in HE.

1. THE ROLE OF UCE FOR INNOVATION IN HE

The term innovation generally refers to processes of renewal and change in different contexts (Blättel-Mink & Menez, 2015). It is used in various disciplines with different nuances of meaning, its common denominator being that it refers to both the novelty of an idea, method, device, etc. that has not existed before and a change in the sense of an improvement of something that already exists (*ibid*.). The "new" can be *new to the frame of reference* – as an idea that already exists, for example, in the economy and is implemented in HE and thus counts as an innovation in HE – or *new to the world* in the sense of an invention. According to Blättel-Mink & Menez (2015), innovations are social processes as their emergence requires actions from one or more actors, such as turning an idea into an invention or making a management decision that allows for innovation.

Innovation in HE

The same broad range of meaning also applies to the use of the term innovation within HE. It "can refer simply to some new way of doing things, or a change that improves administrative or scholarly performance, or a transformational experience based on a new way of thinking" (White & Glickman, 2007, p. 97). Innovation in HE is often linked to the third mission of HEIs which includes activities in the areas of continuing education, research and knowledge transfer, as well as social engagement (Henke, Pasternack & Schmid, 2016). This connection is fitting, as this third mission encompasses a broad range of activities for HEIs that serve as an impetus for society: from innovation for (regional) economic development to science and technology transfer to engagement for societal development and interaction with civil society (Berghaeuser & Hoelscher, 2020). HEIs should not simply stop at the development of an idea, but rather apply or transpose it to another context, embracing the power of innovation. This is exactly what Blass and Hayward (2014) point out as crucial for the future of universities in order to ensure their value to society and their position alongside other HE providers. In this sense, research and knowledge production bring innovation "once the knowledge is applied in a new and novel manner to create a new outcome" (*ibid*., p. 1) and, in turn, adds value to the economy and society (*ibid*.). According to Poetzsch-Heffter and Wehn (2018), a main feature of an ideal innovative university is its ability to generate synergies by combining education, research, and innovation. In this sense, innovative universities are characterised by (1) conducting disciplinary and interdisciplinary research in international and cross-institutional cooperation; (2) providing basic and continuing education with curricula that foster innovation skills; (3) being integrated into the regional economic and social environment and being actively involved in innovation processes; and (4) making

productive use of disciplinary differences and tensions between the universities' tasks, knowledge, education, and innovation.

UCE as boundary spanner and driver for innovation

A main task of UCE is that of advancing basic university education and imparting new scientific developments and results to professionals already involved in innovation in different fields (Poetzsch-Heffter & When, 2018). In this sense, UCE can be understood as a context particularly conducive to the continuous expansion and development of societal innovation; it equips professionals with new knowledge and competences they can integrate into their professional practices. In the same vein, UCE is often conceptualized as an entity at the boundary (Wilkesmann, 2010) or as a boundary spanner (Thomann, 2019), working and mediating between the world of work and academia. Although UCE might lack strategic recognition as part of the core task, it stands out for its role as gateway to society and as a testing zone for innovation (Pellert, 2019). It experiments with new forms and formats of teaching and learning, anticipates new developments and approaches that are not (yet) addressed by study programmes, engages with topics that are not (yet) the focus of research agendas, and offers interdisciplinary or even transdisciplinary perspectives that are not (yet) discernible from the point of view of single disciplines (Dadze-Arthur, Mörth & Cendon, 2020). It becomes clear that UCE can be seen as a driving force for innovation in HE, exerting influence both within and outside of HEIs.

2. CONTEXT OF THE STUDY

Recognising the need for continuous workforce development in Germany, the Federal Ministry of Research and Education (BMBF) together with the regional *Länder* governments launched the German wide federal-*Länder* funding initiative "Advancement through Education: Open Universities" (Aufstieg durch Bildung: offene Hochschulen). The aim of the initiative was to upskill the German workforce; to increase the permeability between the vocational and HE sectors; to increase the speed of new knowledge transfer into professional practice, and to strengthen the international competitiveness of the German higher education system. From 2011 to 2020, it provided German HEIs with a fund of 250 million euros in total for projects geared towards initiating innovative, needs-based, and sustainable concepts for establishing and re-building study programmes and modules for professionals (GWK, 2010). The opportunity for funding in a field of HE that has been scarcely addressed was incentive enough to motivate a quarter of all German HEIs to participate in this initiative. Looking at the project outcomes, innovations can be found in four thematic fields: target groups, formats, organisational structures, and cooperation (Hanft *et al*., 2015) that are detailed below.

The projects explicitly addressed new *target groups* beyond traditional learners, i.e. university dropouts; individuals without a first academic degree but with a first vocational qualification or several years of work experience; those returning to the labour market after a career break; those with family commitments; those with a first academic degree, and those seeking to study part-time. With the aid of the initiative, efforts to reach these non-traditional target groups proved successful: while an average of only 2.2% of students without a traditional HE entrance qualification take part in regular undergraduate study programmes, the initiative projects' group had an average of 44% participants (Nickel & Thiele, 2020).

The *teaching and learning formats* considered the specific needs and requirements of the addressed target groups. These included formats that are flexible in time, place and space by using digital means such as blended or distance learning modes, as part-time or short-time programmes. Another aspect of the study formats is a focus on integrating theory and practice, introducing methods such as inquiry-based, problem-based, or work-based learning elements. The part-time delivery format dominates over the full-time variants, and a greater

proportion of the programmes are short-term programmes as opposed to degree programmes (Nickel & Thiele, 2020).

The projects also developed new *organisational structures* by implementing UCE as within-faculty or faculty-spanning centres, as independent subsidiaries, or as supra-institutional organisations. In most projects, central units for UCE have been established at university level followed by decentralised or external structures, and very few universities did not establish a structure at all (Maschwitz, Speck, Schwabe & Amintavakoli, 2020).

The projects implemented new forms of *cooperation* with a wide range of partners including other HEIs, professional associations, trade unions, local authorities, welfare institutions, state administrations, associations for regional economic development, and other research institutions (Nickel & Thiele, 2020).

3. AN ANALYTICAL INNOVATION MATRIX

While much research has been done within the initiative regarding different aspects of the projects´ outcomes, this particular contribution examines the projects' outcomes with respect to innovation. By applying a case study approach, the study creates context-dependent knowledge that contributes to a better understanding of the phenomenon, constituting preliminary conceptual building blocks for innovation in HE (Ridder, 2017).

Our case study is based on a total of 18 video statements of 16 projects' contributions to opening up HE that were available via the initiative's website. For each of the initiative's thematic fields of innovation we have identified one case that we think addressed the respective field most comprehensively. We then analysed the four cases against two dimensions of innovation based on Tidd and Bessant's (2020) innovation space.

The first dimension encompasses four *layers of innovation*, looking at *what* can be changed:

(1) *product innovation* is about changes regarding a specific product or service, i.e. improving it, changing a component, adapting or adding a feature, etc. In our context this could be an improved or new study programme.
(2) *process innovation* addresses changes in the processes, i.e. how something is created and/or delivered. Within HE/UCE this encompasses new formats of delivery such as blended learning (in contrast to on-campus teaching) or internal processes such as the process of programme development.
(3) *position innovation* is about positioning the product/service in a new context, i.e. offering it to a new market. In a HE/UCE context this could mean changing the perception of the product and offering it to a new target group (a masters programme is now an actual opportunity for non-academics) or addressing companies as customers.
(4) *paradigm innovation* addresses changes in the basic assumptions that frame everything an organization does and delivers. For our context this would involve what HEIs see as their key functions.

Although innovations usually address more than one of those categories and boundaries can blur, especially between the first two categories, the distinction is helpful in examining an innovation more thoroughly. In order to make use of it, we also put aside any debates about understanding education as product or as process; to this end, we defined study programmes as products/services.

The second dimension addresses the *degree of innovation*. Tidd and Bessant (2020) define it as a range from incremental to radical change, where incremental change stands for improvement of existing products/services and radical change for something new to the world – and with 'new to the organization' in between these two poles. Similarly, Blättel-Mink

and Menez (2015) distinguish between improvement vs. fundamental innovation, where the latter can be a novelty to a system or new to the world. Our matrix breaks it down into the basic differentiation: *improvement* of the existing vs. *novelty* to the respective system. Correspondingly, our matrix of innovation integrates the layers of innovations (product, process, position, paradigm) and the degree of innovation (improvement, novelty) (see figure 1). Using this innovation matrix as basis for analysis allows a differentiated yet comprehensibly complex description of the innovation that occurred in our four cases.

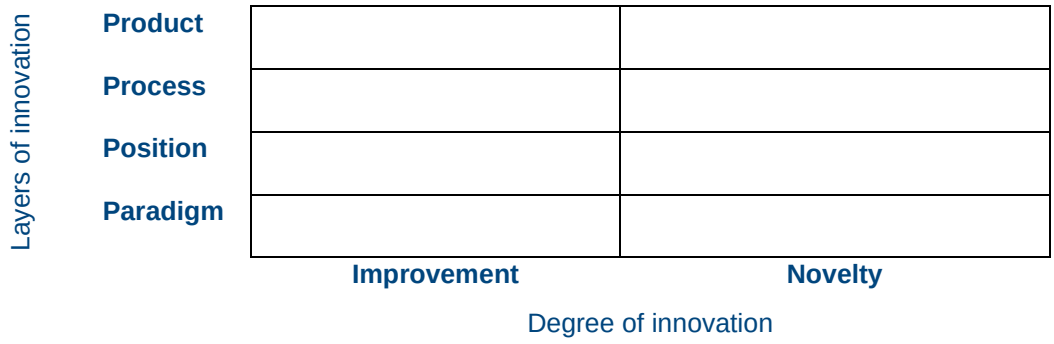

Figure 1: Innovation Matrix

4. FINDINGS FROM THE CASE STUDIES

New target groups

A prominent example for the initiative's thematic field *target groups is* the *OPEN – OPen Education in Nursing*[1] (2011–2017) project at the Baden-Wuerttemberg Cooperative State University (DHBW), a University for Applied Sciences that combines academic studies with on-the-job training,. This particular project focused on addressing a specific group of professionals as new students: nurses. In Germany, nurses have to complete a professional qualification at specific vocational schools with a secondary school certificate as entry qualification, and are for the most part women who often work part-time, mainly due to family commitments. When the project answered the need for qualified nurses on a HE level by developing a new bachelors programme, they had to create a programme that considered the prospective students' time restrictions and their previous exclusion from HE degree programmes. To address the first aspect, the project designed the programme as a part-time offering with flexible modules and a blended-learning format. Furthermore, they integrated a strong track on theory-practice-integration. To address the second challenge, the project capitalised on recent legislative changes and created new admission processes, support services for the admission process, and bridging courses for students without HE entry qualifications. To make it even easier for the target group to enter HE, the project also developed short-time programmes that can be accessed without regular HE entrance qualifications and that can later be counted towards the bachelor programme. The new programme allows for professionally qualified persons to earn a full first HE degree (B.A.) and to even continue from there to a master's degree. At the same time, established concepts and processes of blended learning and for integrating theory with practice were improved and amended.

Looking at our innovation matrix, the new programme for nurses can be seen clearly as a product innovation. Before, DHBW's programmes for nurses were only full-time and focused on management issues or non-degree programmes. The product was not only new to this specific HEI, it was also new to the German health care sector in that it enabled education on

[1] https://www.dhbw-stuttgart.de/forschung-transfer/wirtschaft/projekte/abgeschlossene-projekte/bmbf-projekt-open/

a degree level for a whole group of professionals. This points to innovation in position as the project placed its product in a context that had not yet included degree programmes. On the process layer, innovation as improvement can be found in how the programme is delivered: the connection between academic learning and the students' professional practice as well as the blended learning format. The introduction of admission processes and associated support services can be regarded as a novelty on the process layer.

Finally, there is a detectable shift in the underlying mental model as the university's mission now included persons without regular HE entrance qualifications as real and equivalent students.

Layers of innovation	Improvement	Novelty
Product		new degree programme
Process	theory-practice-integration blended learning	admission procedure
Position		target group
Paradigm		student body

Degree of innovation

Figure 2: Innovation Matrix: project OPEN – OPen Education in Nursing

Teaching and learning formats

Teaching and learning formats as another thematic field of the initiative can be best represented by the project *Studium? Divers!* [2] (2014–2020) at the Ludwigshafen University of Business and Society (LUBS). With the aim of diversifying their student body and attracting students with time restrictions, the project aimed to modify their bachelors and masters programmes to allow the participation of students who work part-time and/or have family commitments. To this end, the project worked on adjusting the timeline and structure of their programmes to allow part-time study and on incorporating e-learning and blended learning elements, including upskilling of lecturers, for example. The project also modularised their existing bachelors and masters programmes and installed regulations for crediting modules across degree programmes so that students can study flexibly over a longer period of time by choosing single modules, even from different programmes. The preparation of these part-time study options included installing regulations and processes as well as lobbying work at the federal ministry of education to adjust the legislative framework to enable part-time studies.

Looking at *Studium? Divers!* through our innovation lens, we can see innovation on a product level as improvement. The project did not install new programmes but adapted their existing ones with regard to flexibility concerning both time and space. This required new processes with regard to how the product is delivered, i.e. offering modules in e-learning and blended learning mode and stretching them over a longer period of time. This was associated with new processes in the form of new regulations for studying part-time and interchanging modules. As regards the innovation layer position, the project addressed potential learners who are working and/or have family commitments as a new target group. The adapted product was positioned in a new context by spreading the news to the students: "you can study 'à la carte' (at least partly)". And finally, a shift with regard to the paradigm becomes obvious as the university changed its underlying mental model from a provider of traditional full-time programmes to a provider of part-time studies – even though essential legal

[2] https://www.hwg-lu.de/service/studium-lehre/offenes-studienmodell

requirements were not yet in place. Furthermore, the university's struggle to advance the implementation of the necessary legal framework indicates an innovation degree that is also *new* in the overall HE context within the federal state.

Layers of innovation	Improvement	Novelty
Product	adjusted programmes	
Process		regulations for studying part-time and for modularisation
Position		target group
Paradigm		the HEI positions itself for part-time study despite lacking legal requirements

Degree of innovation

Figure 3: Innovation Matrix: project Studium? Divers!

Organisational structures

The project *mint.online* [3] (2011–2017), one of the biggest joint projects in the initiative "Advancement through Education: Open Universities", is outstanding in the field of organisational structures as it created a superstructure, or network, involving eight universities and non-university research institutions. They sought to create a brand that stands for UCE in the STEM fields focusing on the themes of sustainability, energy, and environment. The project looked to attract professionals from different backgrounds and from across Germany who want or need flexible and part-time study opportunities in this field. To that end, the partners developed new programmes and improved existing ones, based on jointly developed quality and evaluation standards. The network also continued to exist beyond the funding period as *Bildungsallianz mint.online* (Education Alliance STEM.online). This strategic alliance continued to build on what had already been done and aimed to present all programmes, including degree programmes, certificate courses, and individual modules as a joint portfolio that allows students to choose and combine programmes and modules from different institutions. For example, students can study a module in the field of environmental sciences at one partner institution and then specialise in the field of wind energy at another partner institution.

On a product level the adaptation of existing programmes can be seen as an improvement and the development of new programmes as a novelty. At first glance, the joint portfolio appears to be nothing new, but rather a re-arranging or assembling of existing programmes, and the innovation can be assumed as an improvement. A closer look qualifies it as novelty if we consider the overall thematic portfolio of programmes as a product in and of itself, even more innovative if we consider that the portfolio stems from HEIs and research institutes and thus is cross-sectoral. The joint development and implementation of regulations and quality standards were new to the single institutions and thus can be seen as a novelty on the process layer. Innovation on the position layer can be seen as new, as the alliance addressed new target groups and positioned its products in a new context. A potential paradigm shift can be seen with regard to the new structure in the form of a novel joint mission that is different from that of each single partner institution. However, no information can be found on the paradigmatic layer within the individual institutions.

[3] https://de.mintonline.de/

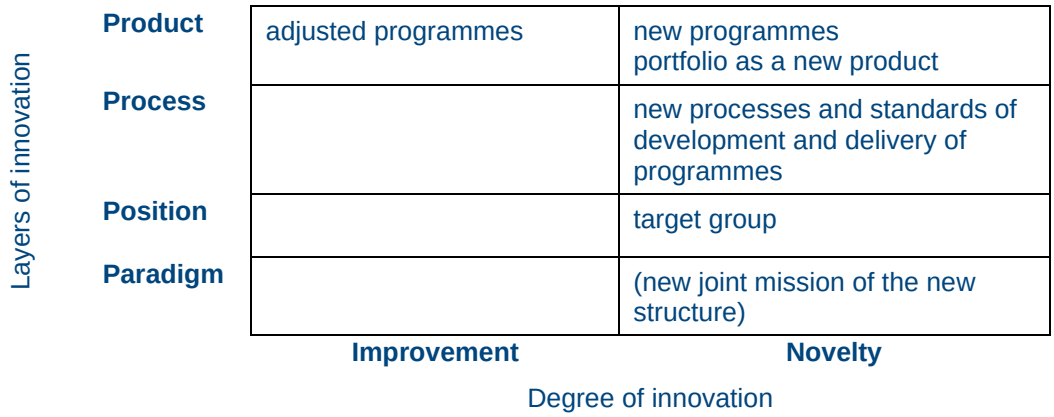

Figure 4 : Innovation Matrix: project mint.online

Cooperation

The project *QUP* [4] (2014–2020) at the University of Potsdam (UP) aimed to develop programmes for professionals from different fields and backgrounds who will be managing demographic change within their organisations. The project planned to develop a new masters programme in demography-oriented sports and health management and to upskill their own faculty by developing a certificate programme for faculty engaged in UCE in order to foster professional competence and heterogeneity orientation, as well as new teaching approaches. A key component of the project was cooperation with *UP Transfer GmbH* (UP Transfer). UP Transfer is a subsidiary company of the university that is responsible for HE knowledge and technology transfer in the Potsdam area by offering, for example, continuing education, consulting, and management services. This cooperation is characterised by a clear division of responsibilities, with the university in charge of defining standards and awarding the degree and UP Transfer in charge of student support, delivery of the programme, management issues such as financing, and continuous programme improvement based on input from regional partners. In essence, the cooperation serves to strengthen UCE at the university. The innovation consists of using the synergies between the university and UP Transfer in order to develop needs-based and targeted programmes and their successful delivery. The university brings its reputation, programmes and qualified lecturers and the subsidiary company offers their experienced management unit for service and advice as well as regional networking.

On a product level, the programmes are a novelty as they address a new thematic field: demographic change and tailored thematic offers, such as change management and learning organisations. For this, different regional business, science and societal partners were involved, and joint qualification programmes were developed. Furthermore, new strategies for the quality improvement of UCE have been developed in order to establish good practices of teaching and learning in HE, which provides innovation with regard to processes. The university positions itself in a new way as the programmes focus on new target groups: professionals who will manage demographic change within their organisations. The cooperation between the university and UP Transfer can be understood as innovation on the paradigm level, as the university makes use of cooperative synergies in order to strengthen the quality, positioning, and visibility of UCE. This, again, involves innovative and new processes that define and differentiate the competencies and tasks between the university and UP Transfer.

[4] https://www.up-transfer.de

Layers of innovation		Improvement	novelty
	Product		new thematic field joint programmes
	Process		new strategies for quality development and collaboration
	Position		new target groups cooperation between institutions
	Paradigm		cooperative synergies and outsourcing

Degree of innovation

Figure 5: Innovation Matrix: project QUP

5. UCE AS A DRIVER FOR FUTURE TRANSFORMATION?

Even though our findings are limited with regard to applicability, they show how innovation can take place in a closed and demarcated setting. This is because, according to a case study approach, the significance lies in the epistemological conviction that a particular case can also represent other cases, and thus the findings contribute to a better understanding of the phenomenon. Looking at the analysis across the cases, several relevant topics emerge in support of the potential role of UCE as driver for innovation.

The first of these topics is “direction of innovation”. Two main directions of innovation can be identified: (1) innovation that impacts the organisation itself and (2) innovation that takes effect outside the institution. This can be illustrated by contrasting the projects *mint.online* and *Studium? Divers!*. The *mint.online* project creates something new that materialized outside the individual organisations, with its own distinct structure, a new portfolio, a new target group, and a specific joint mission that is situated between different organisations. The degree of innovation with respect to paradigm cannot be identified within the single organisations, and the single institutions remain possibly unaffected by this innovation. In contrast, the innovation in *Studium? Divers!* takes effect within the institution – in new regulations that impact not only a specific group of learners or a specific UCE subsystem but influence all areas of the university; hence, innovation is diffusing within the institution changing its mission. A similar feature can be found in the *OPEN* project, where professionals from a specific field are targeted as new students, effecting organisational change in its conception of “students” and enhancing the university’s mission. The outside impact also comes into view when the innovations of the *Studium? Divers!* and *OPEN* projects affect legislative regulations regarding part-time study. In requiring a shift in legal regulations as a precondition for their innovation, they helped change study conditions for non-traditional students within their federated state.

A further aspect of direction emerges when looking at *QUP*. Outsourcing the UCE programme to the university’s subsidiary education provider suggests that – aside from the paradigm innovation that the university handed over control for core tasks – there are not any effects on the university. However, considering the upskilling of faculty involved in the UCE programme, these individuals bring new ideas back to other non-UCE programmes and disseminate them to non-UCE faculty. This could be seen as an indirect effect on the organisation by creating new opportunities for the visibility of UCE within the university.

With regard to UCE’s potential contributions to and limitations in answering future challenges of HE, let us review the layers of the innovation matrix. The analysis shows that innovation on a product level is obvious. Yet, the effect for the organisation remains limited if it is happening in an isolated space and cannot induce a paradigmatic transformation of the

university. In contrast, innovation of processes has great potential to initiate transformation if/when it also impacts general organisational processes. Moreover, when it comes to positioning, addressing new target groups can have a strong organisational impact if this shift affects multiple, not just single programmes. This increased participation and fostering of permeability comprise what we refer to as an adapted self-conception. This innovation on the paradigm layer is key to transforming a university's culture and future approaches.

6. CONCLUSION

This paper presented four cases of innovation in UCE from four different innovation fields that emerged within the initiative "Advancement through Education: Open Universities". The cases were analysed by applying an innovation matrix that differentiates improvements from novelty within the layers of product, process, position, and paradigm. This revealed how innovation can take shape on different levels and their interconnections. By using the matrix for cross-case analysis, we were able to identify two directions of impact of those innovations: inside and outside the organization and two dimensions: direct and indirect effects. These results could be regarded as contributing to a more systematic approach towards the potentials of innovation in HE. However, with regard to UCE as an innovation lab for future higher education, more large-scale, in-depth research is still needed to investigate aspects of innovation in connection with future skills.

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