

2024-02-02

A relational approach to knowledge exchange in higher education

Dismore, H

<https://pearl.plymouth.ac.uk/handle/10026.1/22033>

10.1080/03075079.2024.2312404

Studies in Higher Education

Informa UK Limited

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.

A Relational Approach to Knowledge Exchange in Higher Education

Harriet Dismore ^{a*}, Verity Campbell-Barr^b, Rachel Manning^c and Paul Warwick^d

^a Plymouth Institute of Education, University of Plymouth, ^bPlymouth Institute of Education, University of Plymouth, ^cSchool of Education, University of Exeter and ^dPlymouth Institute of Education, University of Plymouth

Abstract

Reference to Knowledge Exchange (KE) in UK Higher Education Institutions (HEIs) has become common place, reflecting the continued changing role of universities within society. Arguably, KE draws together notions of HEIs as purveyors of knowledge, with students helping to create a tripartite relationship with HEIs and the wider community as well as a civic responsibility to contribute to the wider public good. Realising the potential benefits of this inter-relationship required a problematising of the meanings of both knowledge and the notion of an exchange, drawing on the work of Dewey and Bernstein.

Our paper offers an analysis of the different epistemological positions governing understandings of knowledge and how these are influenced by the performativity and neoliberal responsibilisation of modern universities. More specifically, the epistemological position encouraged by the modern university leads to a tension between measurement and evaluation of KE on the one hand and pedagogical practice on the other. Taking into account these tensions, the paper offers an alternative approach to knowledge exchange with suggested principles to underpin a future relational pedagogy for KE.

Key words: knowledge exchange, higher education, relational, pedagogy, knowledge

Word count: 6972

The importance of knowledge exchange and the rise of the civic university

A global shift towards ‘knowledge innovation’ has been a key driver of economic development and advantage, and the world’s economies are transitioning to be more knowledge-based (Allais 2012, Barkhordari et al. 2019, Ball 2021). The Organisation for Economic Co-operation and Development (OECD) has in recent years recognised knowledge as a key driver of productivity and economic growth (OECD 1996), defining knowledge-based economies as economies which are directly based on the production, distribution and use of knowledge and information (OECD 1996; Filipović et al. 2016). This has led to a new focus on the role of information, technology and learning in economic performance.

In response to knowledge economies, universities have been situated as key global knowledge producers; they produce different strands of knowledge with varied applications beyond the academic world. Framing knowledge in a global perspective is challenging as it assumes there is a global understanding as to what constitutes knowledge. Further, Universities operate in different national contexts, with varying political landscapes, that makes the use of global challenging. Importantly, what is a University can vary both within and across national boundaries. We are therefore conscious that our discussion of Knowledge Exchange (KE) is limited by the confines of English written literature, leading to a prevailing dominance of Anglophone conceptions and theories of knowledge that may hinder the relevance of our discussion at a global level. Despite this, we focus on how universities are faced with the challenge of sharing knowledge (of different forms), through ways of teaching and learning that lead to the sharing of knowledge through discovery, integration, application, and education (Hawkins 2006) arguing that this presents a degree of commonality in the objectives of HEIs around the world.

Universities have been implicated in the production of a form of knowledge capitalism, where knowledge has become recognised as an economic asset (Olssen and Peters 2005). As UK HEIs are publicly funded this has led to rising demand for universities to demonstrate ‘real-world’ applications of scholarly knowledge and skills that have a tangible and measurable effect on society (Shore 2008, Moreton 2016). In the case of UK HE, this includes supporting private businesses with skilled workers and academic consultations for profitability (Johnson 2022, 195).

How we measure effect and ‘impact’ on society has been extensively critiqued and debated, including for example how it might conflate the notions of ‘impact’ and ‘benefit’ (e.g. Collini 2012). Others point to the clear relationship between the culture of performativity and need to measure impact with neoliberal governing (Keddie 2016) which, as Ball (2021, 218) argues, is characterised by ‘a privileging of forms of knowledge such that the economy and its associated concepts become the lens through which all aspects of life are understood’.

The performativity of knowledge can be seen in the various evaluative frameworks for teaching (TEF), research (REF) and knowledge exchange (KEF). The high performative culture of HE, now mostly driven by metrics and league tables, has led to claims of disempowerment and reduced productivity among academics, as well as increased managerialism and competition between universities (Kenny 2018). One example of this is how KEF dashboards are presented with scores and metrics for demonstrating community engagement, contribution to local growth, and volume of work undertaken with businesses (Research England 2023).

At the same time, there has been an increase in studies focusing on the civic serving of the ‘common good’ role of universities, where universities are required, as knowledge producers, to make a positive contribution within ever-changing environmental, societal and economic

contexts (Collini 2012; Brink 2018; Tang and Chau 2020). In 2007, the OECD stated that universities should contribute toward local and regional development by engaging with others in their localities, providing opportunities for lifelong learning and contributing to the development of knowledge-intensive jobs. They argued that this will enable graduates to find local employment and remain in their communities (OECD 2007). More recently, universities were asked to consider the social impact they have on their local communities and prioritise their civic roles and engagement (Brink 2018). Universities are responding in different ways to these civic roles (Psarras 2006, Bano and Taylor 2015), with some committing to civic engagement by introducing an element of service to their local communities in their mission and purpose (Watson et al. 2011). Others are assuming new roles in the communities and society within which they operate (Knight 2013, Nakwa and Zawdie 2016, Tang and Chau 2020).

Within the UK, Goddard and colleagues (2016) highlight that in the early twentieth century HEI's links to local communities weakened with increasing central government support and influence over local government and the nationalisation of higher education. However, since the early 2000s, the responsibility of UK universities to their local surroundings has been emphasised in HE policy (Jorge and Peña 2017) and consequently, more UK universities have been seeking to reinvent themselves as civic institutions. For example, The Higher Education Innovation Fund supported by the UK Research and Innovation Fund has provided key funding and strategic direction for establishing university-wide community partnerships and creating knowledge partnerships with local and regional communities. Building upon this, over eighty UK institutions are signed up to the UK National Co-ordinating Centre for Public Engagement (NCCPE) Manifesto for Public Engagement (NCCPE 2023). The different expectations on universities seem to us to represent significant underlying tensions which we believe play out in KE and to understand this more fully, we need to look at the

concepts underpinning them. As Rentocchini and Rizzo (2023) have recently commented, there is surprisingly little evidence that exists on the relationship between teaching and engagement in KE. To address this, our overall aim with this paper is to offer principles to underpin a pedagogy for KE. Our objectives are firstly to problematise the meaning of knowledge and exchange and secondly to examine the relationship between HEIs, students and the wider community, including the potential tensions inherent in this tripartite relationship. Rather than a systematic review of the literature, the paper is underpinned by a theoretical exploration of the nature of ‘knowledge’ and its ‘exchange’ with a view to both developing a greater understanding of KE in order to consider what this means pedagogically and to generate further discussion amongst those working in HEIs on the nature of KE. As such, the paper’s methodology can be regarded as one of provocation.

Defining Knowledge Exchange

Understanding how knowledge is currently used on a global and local scale does not fully explain how KE is defined nor how this has evolved. For example, the term Knowledge Exchange (KE) has already replaced the less inclusive term Knowledge Transfer (KT). KT was used to identify the set of activities and processes through which universities were said to have traditionally ‘transferred productive knowledge’ *one-way*, as knowledge holders *to* knowledge recipients such as businesses and community organisations (Kelly 2008, Cantú et al. 2009). This carries the implied assumption that knowledge is something that can be packaged up and passed to another, almost like a neatly wrapped gift (Fazey et al. 2012).

However, knowledge flow is increasingly recognised as (at least) a two-way process, where knowledge is co-produced and exchanged between actors in a process designed to result in mutual benefits for each party (Abreu et al. 2009, Hope 2016). For example, KE was

described by Knight and Lightowler (2010) as an ongoing and dynamic two-way process where learning ideas, experiences, and knowledge are shared between universities, businesses, the public and third sector organisations. As such, the role of the university as a ‘transferrer’ of knowledge to society has undergone a shift in recent years.

So whilst KE might be regarded as holding great potential for facilitating social, environmental and economic impacts of research (Candy 2000, Connell 2004, George 2006, Sum and Jessop 2013), this can depend on how knowledge is exchanged, with whom it is exchanged, and ultimately, its purpose (Pullin and Knight 2001, Cash et al. 2003, Fazey et al. 2012). The approach to KE argued for in this paper, is one that recognises it as a dynamic process, a co-production of knowledge and subsequent exchange of knowledge through networks of stakeholders sharing ideas and skills (Tschirhart et al. 2016). This is founded upon a holistic conceptualisation of the very nature of knowledge itself.

The Nature of Knowledge

Theoretically, there are many different approaches to conceptualising knowledge and each brings a different emphasis to the nature of knowledge exchange. ‘Knowledge’ as a ‘thing’ that can be described and objectified originates in the traditional Western view of the dualism of mind and body whereby knowledge is obtained cognitively. While there will be different epistemological traditions that focus on the nature of knowledge and the protocols for establishing truth, as we discuss in this paper, knowledge has since been helpfully framed more broadly to consider social and cultural functions. In this way the nature of knowledge is dependent on its purpose, which we argue is often missing from the debates on KE.

Knowledge in universities is similarly determined by the perceived purpose of Higher Education (HE). A useful way to consider purpose in HE is to draw on the three traditions of

HE put forward by Furlong and Whitty (2017): academic, practical and integrated. In the academic tradition there is a focus on the study of education, where education is a discipline with particular rules, boundaries and hierarchies. In the practical tradition, knowledge is performance orientated and aspires to making a difference. These traditions emphasise measuring KE, responding to the neoliberal context in which there are increasing calls for a ‘validated conceptual framework’ and ‘evaluation method’ to assert its effectiveness (Fazey et al. 2012, Tschirhart et al. 2016, Young and Nguyen 2016). We argue that these will have a limited effect if the different sites of exchange are bounded and personal.

Work relating to the knowledge economy reminds us that the evolution of university knowledge traditions has coincided with broader changes in the commodification of knowledge, providing some concepts that can frame a discussion of KE. Foray and Lunvall (1996) proposed four kinds of knowledge; know-what – knowledge about facts, know-why – scientific knowledge of principles, know-how – skills, and know-who – who knows what and how to do what. Equally, Winch (2014) distinguished between know-that and know-how as (broadly) a distinction between facts and their application when considering professional knowledge, pertinent to the context of employability. As we later discuss in relation to the work of Bernstein, some forms of knowledge lend themselves to exchange due to their codification, whereas others risk becoming context, or even person, dependent and therefore more tacit in nature. These conceptualisations of knowledge prompt us to consider knowledge of something beyond the binary of academic and practical knowledge.

Instead, the integrated tradition of knowledge, where we would prefer to locate KE, is less concerned with considering how knowledge is identified, defined and measured, but more focused on knowledge as a social (perhaps even civic) project. More than just a practical application of knowledge, the integrated model offers the potential for a shared exploration of

knowledge that considers it as both academic exploration of knowledge and its practical orientation and knowledge exchange process.

Knowledge as a Process

Knowledge as a process can be traced back to the work of Dewey. As an early founder of pragmatism, Dewey rejected the dualism of mind and body and criticized traditional education for focusing on the objective conditions of education at the expense of internal conditions such as personality and character. As he stated, ‘to possess all the world knowledge and lose one’s own self is as awful a fate in education as in religion’ (Dewey 1902, 84). Dewey projected an idea of knowing as part of experience; personal, fluid and moving, changing from day to day and hour by hour. Through this lens, learning is not acquisition of information but a process through which we acquire a complex and flexible set of predispositions-for-action (Biesta 2014).

For Dewey (1933), reflective thought was key to the difference between experience and knowledge, modifying the qualities of conditions and consequences so that relations can be understood. Yet there are differences in the way that reflective thought can be understood. Kolb’s model of experiential learning explicitly referred to Dewey’s concept of experience and is often strongly associated with it (Miettinen 2000). However, on closer inspection they differ in important ways. The most important for KE is that whereas Dewey’s notion of experience was experiencing the world where knowledge was just a part of that (alongside emotion, aesthetics and ethics), Kolb viewed experience as a foundation for knowledge (Kolb 1984). The consequences for KE are important as it determines not only which experiences *can be* knowledge, but the role of reflective thought for experiences *to become* knowledge. At first sight this individual reflection threatens to ignore the social process of exchange, and, as

Bernstein cautions, this risks knowledge being located in the individual. However, for Dewey reflection does not take place exclusively 'inside' individuals but depends on communication and interaction with others (Alheit and Dausien 2002). This then fits with the idea of KE as a social phenomenon.

Although Dewey recognised the role of communication and language as central to knowing, he explicitly argued that knowledge cannot be passed directly from one to another.

The importance of language in gaining knowledge is doubtless the chief cause of the common notion that knowledge may be passed directly from one to another. It almost seems as if all we have to do to convey an idea into the mind of another is to convey a sound into his ear. Thus imparting knowledge gets assimilated to a purely physical process. (Dewey 1944, 15)

Instead Dewey stated that for knowledge to be truly shared, people involved in a common activity do not merely act, 'in a way agreeing with the actions of others, but, in so acting, the same ideas and emotions are aroused in him that animate the others' (Dewey 1944,14). In a KE context then, this emphasises independent reflective thought to ensure the same level of engagement and knowing among all participants. Thus there is a need to consider social processes of knowledge and the notion of coming to know (Biesta, 2007). Also, where do we position students in this? Students can be both a part of the community (or working towards becoming a part of it) and a part of the HEI, that leads us to consider not only the meaning of KE in HE, but also how this may inform a pedagogy of KE.

Knowledge as Relational

The multi-faceted and complex aspects of the learning process and knowledge, bring the social to the fore. This resonates with Dewey's view that what lies at the very core of

pedagogy, is the social being (Dewey 1938; Úcar 2022). For an exchange to take place, knowledge must be more than an object to be passed around, and something that is experienced within the social. As explained by Sayer (1992, 16)

it is imperative to consider the production of knowledge as a social activity. To develop knowledge, we need raw materials and tools on which we can work. These are linguistic, conceptual and cultural as well as material. In trying to understand the world, we use existing knowledge and skills drawn from whatever cultural resources are available, to work upon other 'raw' materials – knowledge in the form of data, pre-existing argument, information or whatever.

This view aligns with social learning theory and Communities of Practice (CoP) (Lave and Wenger, 1991), whereby the learning of knowledge is a de-centred process found in, and built from, shared practice rather than being transferred in a linear process from 'expert' to 'learner' (Lave and Wenger 1991, Wenger 1998). CoPs as defined by Lave and Wenger (1991) cannot be formed and do not exist as static or stable entities (Roberts 2006), but as fluid and evolving through members' ongoing participation in the shared enterprise. This view of knowledge situates learning and knowing as part of everyday social practice, an experience of meaning, practice, belonging and becoming (Wenger 1998, 5) and negotiated through ongoing relational processes (Davies et al. 2008, Henry and Mackenzie 2012). We argue that this emphasis on the relational process needs to be at the forefront of the work on KE.

Key to any relational process must be social discourse, to which we turn to the work of Bernstein (1999). He distinguished between vertical and horizontal discourses to explore different knowledge structures and the social conditions of how knowledge is produced, reproduced and validated, similar to the notion of know-what and know-that discussed

earlier. Vertical knowledge is explicit and structured, whereby its structure enables its distribution, providing the possibility for challenge, shared conceptions and validation (Young and Muller 2007). Embedded in the vertical discourse, Bernstein differentiated between hierarchical knowledge structures and ‘segmented knowledge’ (Hordern 2017). Hierarchical knowledge faces inward, creating a degree of coherence with shared methodological and epistemological assumptions. Mathematics offers an example of vertical discourse with a hierarchical structure as the knowledge is regarded as robust, with agreed methodological process with which to validate the knowledge. Segmented or horizontal knowledge structures, where a series of ideas or skills are strongly tied to their contexts of acquisition (Maton 2009), have different disciplinary perspectives, each with different methodological and epistemological traditions, such as sociology and its various sub-disciplines. This segmented or horizontal discourse represents local, context dependent, everyday and common sense knowledge, in essence offering a framework with which to consider knowledge as multiple and varied, while recognising that it is in the context that meaning is ascribed.

Bernstein presented a framework whereby singulars (e.g. physics, chemistry, sociology) are recontextualised in regions (medicine, engineering, creative industries) to meet the demands of the field of practice. If the process were one way, it would be akin to knowledge transfer, but importantly, Bernstein saw regions as facing two ways, whereby knowledge generated in the field is drawn into the recontextualisation process, but could also generate future singulars if shared, tested and deemed to be of value and relevant in some way. In terms of the region, it might be seen that universities hold the singulars and it is the ‘real world’ that represents the fields of practice, but we will argue that such a binary division in the conceptualising of knowledge in KE is not appropriate. In rejecting such a binary it highlights the region as a social and relational space, drawing on multiple forms of knowledge.

Bernstein's theoretical framework has been used by academics to helpfully explore how knowledge might change over time and between different contexts (e.g. Maton 2009). To do this, Bernstein distinguished between hierarchical knowledge structures, a 'coherent, explicit and systematically principled structure, hierarchically organised' (Bernstein 2000, 160) and horizontal knowledge structures, 'a series of specialised languages with specialised modes of interrogation and criteria for the construction and circulation of texts' (Bernstein 2000, 161). Thus, in the case of English literature, the languages would be the specialised languages of criticism; in Philosophy, the various languages of this mode of inquiry; and in Sociology the languages refer, for example, to functionalism, post-structuralism, post-modernism, Marxism etc. (Bernstein 1999, 162). He argued that it is in the process of regionalisation that vertical discourses are built, to bridge the gap between horizontal islands and provide an overarching common language for them.

In this way, Bernstein sets out a social approach to determine what is knowledge, with agreed methods for its sharing and verification. This requires, for Bernstein, a movement between horizontal to vertical knowledge structures to integrate knowledge at lower levels operating at more and more abstract levels (Adkins 2007). However, as Bernstein himself acknowledged, knowledge can risk being dislocated from the knower if it is too abstract and this is something to be constantly monitored (Bernstein 1999).

Conversely, knowledge can become too embedded and limited in relation to the local context, as Bernstein's (1971) work on codes illustrates. A restricted code relates to a specific context where language rests on the shared assumptions about a context leading to a lack of flexibility, range of use and limited in terms and concepts used. In contrast, an elaborate code used in CoP where assumptions are not shared, and language has to make explicit its claims can create a community more open to learning and knowledge creation (Mutch 2003, Roberts 2006). In this way, there is a risk that knowledge becomes embedded in the community as

localized, context specific (horizontal) knowledge. Therefore, KE needs to be broader to facilitate both the sharing and validating of knowledge.

Another issue is that, whilst providing a framework with which to consider the social nature of knowledge, in all instances knowledge remains a ‘thing’ to be passed around, placing the emphasis on it being something that can always be described and articulated. There is an implied cognitive awareness to knowledge that favours the mind and negates the body. We argue that the process of KE is far from linear and not always explicit, requiring further exploration in order to disentangle the process of KE.

Considering this process leads us towards contemplating how one comes to know. As Adkins (2009) explains, the institutional response for recontextualization influences the ‘what’ and ‘how’ of pedagogy. This pedagogy needs to help all parties make knowledge contributions and discoveries that have the potential to be recognized in the field of practice. In order to understand how a relational pedagogical process might work in HE, we need first to return to how KE currently operates.

Knowledge Exchange in Higher Education

We recognise that KE and KT have always occurred in some form within university settings, informally and within applied research where university staff and research engage with others beyond the confines of the academic setting (Fazey et al. 2014). However, its proliferation in university policies, frameworks and performance indicators raises important questions about the purpose and process of KE for all participants. In particular, the measurement and impact and performance of KE so indicative of the neoliberal lens of economy, continues to treat knowledge as an object rather than a process.

KE is influenced by different contextual factors such as experiential and cultural backgrounds that shape the interpretation of information (Marzocchi et al. 2023, Reid et al. 2011, Fazey et al. 2012). This has led to practical barriers to KE, such as a lack of capacity for knowledge users to access and apply knowledge to real world settings and poor communication between knowledge producers and potential users of the knowledge (Singh et al. 2014, Cvitanovic et al. 2015). For example, Thune and colleagues (2023) in their study of experiences of exchange found co-production of engagement limited due to the closed, restricted space inhabited by specific expert networks. This has also been found to prevent integration of different ideas and views (Tress et al. 2005) as well as profound transdisciplinary insights for all (Fazey et al. 2012).

The drive to meet the needs of the economy should not be at the expense of the tripartite relationship, which includes the wider community and students. This means placing a greater emphasis on increasing participatory, mutually beneficial KE activities for universities and other stakeholders (La Peyre et al 2001, Mauser et al. 2013). We argue that only by doing this can we hope to encourage civic universities to address future issues and provide space for innovation and creativity. Indeed, not doing so risks wasting time and resources, as well as damaging relations with partners (Fazey et al. 2014).

It is surprising that little evidence exists on the relationship between teaching and engagement in KE (Rentocchini and Rizzo 2023), especially when students are both a part of the community (or working towards becoming a part of it) and a part of the HEI. This is particularly important given the potential power (im)balances that exist in such tripartite relationships and the potential need to flatten hierarchies to help address this (Fazey et al. 2014). We argue that designing the appropriate pedagogy can help address issues of bias and power relations within the community of exchange.

The economic underpinnings of the knowledge economy drive a model whereby knowledge is a commodified and ‘private good’ and there is an expectation of measurable economic benefit from civic responsibility, as seen in the KEF (Research England, 2023). However, this is at odds with any belief in civic as a public open-ended ‘common good’ (Brink, 2018). We argue these perspectives cast a very different light on the process and pedagogy of KE.

Knowledge Exchange Relational Pedagogies

Many dominant pedagogical approaches to KE have neglected the relational processes of generating knowledge and its situated and contextual nature (Fazey et al. 2014, Fransman et al. 2021). The relational pedagogical approach to KE we argue for acknowledges knowledge as a process and serves the integrated tradition of universities described by Furlong and Whitty (2017) and the civic university. We believe that this approach must have four clear pedagogic principles to direct and frame KE in HE.

The first is an awareness of the different epistemological understandings of knowledge. As Ward et al (2012) highlight, a lack of description and understanding of how KE unfolds in settings external to HEIs can lead to a lack of understanding about the complex environments in which knowledge evolves.

Our second principle is to recognize the potential of knowledge as a matter of transformation for all parties in a way that is in dialogue with the broader societal notions of justice, values, ethics, and power (Giroux 2010). As Bates (2012) argues, KE pedagogies should place an emphasis on creating effective networks through which information, experience, knowledge, cultural, economic, and social capital can flow. We need to look beyond organisational processes and interrogate the complex social networks and structures of power in which such social knowledge is formed and embedded (Golubchikov 2015).

Our third principle is for any evaluation or measurement (and language associated with it) to reflect the epistemological stance; to measure what we value rather than value what is measured (Biesta, 2020). We have argued in this paper for a pedagogy that is a relational one and so any measurement needs to consider the relationships to knowledge and coming to know, as well as the relationships between stakeholders.

Our fourth principle is to recognize the power of language. To facilitate the sharing of knowledge so that it is mutually beneficial, there needs to be an overarching common language. Bernstein (1971, 1999) shows us that a careful balance needs to be achieved between using vertical knowledge structures to achieve a common language (but not too abstract) and restricted codes resting on shared assumptions (but not too limited and localized). Attention must also be paid to how language is used, its part in power dynamics and the risk of dislocating knowledge from the knower.

The framing of KE within the context of the civic university, as set out in the introduction of this paper, forces a focus on the social dynamic of knowledge and the exchange. In considering it in a pedagogical sense and reflecting the integrated knowledge tradition (Furlong and Whitty, 2017), there is a need to recognise the wider socio-political context of the knowledge and the drive for its exchange. Embedding ongoing reflection of this wider context will help to recognise its importance during the KE process. By adopting these principles, KE pedagogy can bring together knowledge as a process, knowledge as social and knowledge as relational, whereby students become a part of participatory, civic communities.

Conclusion

This paper demonstrates how different epistemological positions shape our understanding of knowledge and what this means for KE. In particular, it shows how the dominant influence of

performativity and neoliberal responsabilisation together with its discourse of targets and indicators, is at odds with a more holistic conceptualisation of knowledge making. Debates on the nature of knowledge and epistemological hierarchies are, and will, continue to be perpetual, and we recognise the ironic limitations of our reliance on words in discussing this within this paper. However, we conclude with three challenges for instigators of KE that we believe will lead to a relational approach, more likely to contribute to the wider public good.

The first challenge is to regard KE not as an individual pursuit and knowledge not as an object to be passed between individuals. The second challenge is to recognize the importance of sharing knowledge without it being confined to individual communities where it is recycled rather than critically challenged and extended. The social exchange needs to facilitate knowledge-making through a broad relational web where communication and translation of knowledge involve ongoing relational processes. As part of this, instigators need to design effective KE pedagogies that emphasise social networks, whereby information, experience, knowledge, as well as cultural, economic and social capital, can flow and be interrogated. The final challenge is to ensure any evaluation and measurement reflects the epistemological stance by bringing together the individual and social, demonstrating KE as a relational and participative process. Moreover, these knowledge exchange pedagogies need to align with the project design, relational process, outcomes and evaluation to deal with uncertainty (Fazey et al. 2012).

Acknowledgements

We are grateful to Dr Nick Pratt for his support with this paper and also to the Engaging Students in Knowledge Exchange Team at the University of Plymouth for their inspiring work.

References

- Abreu, M., Grinevich, V., Hughes, A. and Kitson, M. (2009). Knowledge exchange between academics and the business, public and third sectors. UK-Innovation Research Centre [online] <https://www.cbr.cam.ac.uk/wp-content/uploads/2020/08/specialreport-knowledgeexchangeacademics.pdf>. Accessed 15/03/23.
- Adkins, B. (2009) PhD pedagogy and the changing knowledge landscapes of universities, *Higher Education Research & Development*, 28:2, 165-177.
- Alheit, P. & Dausien, B. (2002) The ‘double face’ of lifelong learning: Two analytical perspectives on a ‘silent revolution’, *Studies in the Education of Adults*, 34 (1): 3-22.
- Allais, S. (2012). Economics imperialism, education policy and educational theory. *Journal of Education Policy* 27(2): 253-274.
- Ball, S. J. (2021). *The Education Debate*. (4th edition) Bristol: Policy Press.
- Bano, S. and J. Taylor (2015). Universities and the knowledge-based economy: perceptions from a developing country. *Higher Education Research & Development* 34 (2): 242-255.
- Bates, D. (2012) Making Politics Matter: political education in a ‘knowledge-exchange’ context, *European Political Science* 11: 164-174.
- Barkhordari, S., Fattahi, M. and Ali Azimi, N. (2019). The Impact of Knowledge-Based Economy on Growth Performance: Evidence from MENA Countries. *Journal of the Knowledge Economy* 10 (3): 1168-1182.
- Bernstein, B. (1971) *Class, Codes and Control: theoretical studies towards a sociology of language*, London: Routledge & Kegan Paul.

Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education* 20 (2): 157-173.

Bernstein, B. (2000). *Pedagogy, symbolic control and identity*. Lanham Boulder, New York and Oxford: Rowan & Littlefield.

Biesta, G. (2020). *Educational Research: unorthodox introduction*. London: Bloomsbury Academic.

Biesta, G. (2014). Pragmatising the curriculum: bringing knowledge back into the curriculum conversation, but via pragmatism, *Curriculum Journal*, 25 (1): 29-49.

Biesta, G. (2007). Why “what works” won’t work: evidence-based practice and the democratic deficit in educational research. *Educational Theory* 57: 1-22.

Brink, C. (2018) *The Soul of the University*, Bristol: Bristol University Press.

Candy, P. C. (2000). Knowledge navigators and lifelong learners: Producing graduates for the information society. *Higher Education Research & Development* 19(3): 261-277.

Cantú, L. Z., Criado, J.R. and Criado, A.R. (2009). Generation and transfer of knowledge in IT-related SMEs. *Journal of knowledge management* 13 (5): 243-256.

Cash, D. W., Clark, W. and Alcock, F. (2003). Knowledge systems for sustainable development. *Proceedings of the national academy of sciences* 100 (14): 8086-8091.

Collini, S. (2012) *What are Universities for?* London: Penguin.

Connell, H. (2004). *University Research Management: meeting the Institutional Challenge*. Paris: Organization for Economic Co-operation and Development.

Cvitanovic, C., Hobday, A. and Marshall, N. (2015). Overcoming barriers to knowledge exchange for adaptive resource management; the perspectives of Australian marine scientists. *Marine policy* 52: 38-44.

Davies, H., Nutley, S., & Walter, I. (2008). Why 'knowledge transfer' is misconceived for applied social research. *Journal of Health Services Research and Policy*, 13(3): 188–190.

Dewey, J. (1902) *Child and the Curriculum*. Chicago, University of Chicago Press.

Dewey, J. (1933). *How we think*. Buffalo, NY: Prometheus Books. (Original work published 1910).

Dewey, J. (1944). *Democracy and education*. New York: Free Press. (Original work published 1916)

Dewey, J. (1938) 1997. *Experience and Education*. 1st Touchstone ed. New York: Simon & Schuster.

Fazey, J., Evely, A., Reed, M., Stringer, L., Kruijssen, J., White, P., Newsham, A., Jin, L., Cortazzi, M., Phillipson, J., Blackstock, K., Entwistle, N., Sheate, W., Armstrong, F., Blackmore, C., Fazey, J., Ingram, J., Gregson, J., Lowe, P., Morton, S., Trevitt, C. (2012). Knowledge exchange: a review and research agenda for environmental management. *Environmental Conservation* 40(1): 19-36.

Fazey, I., Bunse, L., Msika, J., Pinke, M., Prredy, K., Evely, A., Lambert, E., Hastings, E., Morris, S. and Reed, M. (2014). Evaluating knowledge exchange in interdisciplinary and multi-stakeholder research. *Global Environmental Change* 25: 204-220.

Filipović, M., Nikolic, M. and Llic, V. (2016). Developing a Knowledge-Based Economy as a Factor to Raise The Competitiveness of The Serbian Economy. *Economic Themes* 53(2): 185-210.

Foray, D. and Lundvall, B. (1996) *The Knowledge-based Economy: from the Economics of Knowledge to the Learning Economy*, excerpts from *OECD Employment and Growth in the Knowledge-based Economy*, Paris: OECD.

Fransman, J., Hall, B., Hayman, R., Narayanan, P., Newman, K. and Tandon, R. (2021) Beyond partnerships: embracing complexity to understand and improve research collaboration for global development, *Canadian Journal of Development*, 42 (3): 326-346.

Furlong, J. and Whitty, G. (2017). Knowledge Traditions in the Study of Education. *Knowledge and the Study of Education: an international exploration*. G. Whitty and J. Furlong. Oxford, Symposium Books: 13-60.

George, E. S. (2006). Positioning higher education for the knowledge based economy. *Higher education* 52(4): 589-610.

Giroux, H. (2010) Rethinking Education as the Practice of Freedom: Paulo Freire and the promise of critical pedagogy, *Policy Futures in Education* 8 (6): 715-721.

Goddard, J., Hazelkorn, E., Kempton, L. and Vallance, P. (2016) *The Civic University: the policy and leadership challenges*, Edward Elgar Publishing: Cheltenham.

Golubchikov, O. (2015). Negotiating critical geographies through a “feel-trip”: Experiential, affective and critical learning in engaged fieldwork. *Journal of Geography in Higher Education*, 39 (1): 143–157.

Hawkins, D. E. (2006). Transferring tourism knowledge: The role of higher education institutions. *Journal of Quality Assurance in Hospitality & Tourism* 7(1-2): 13-27.

Henry, A. and Mackenzie, S. (2012) Brokering communities of practice: a model of knowledge exchange and academic-practitioner collaboration developed in the context of community policing, *Policy Practice and Research* 13 (4): 315-328.

Hope, A. (2016). Creating sustainable cities through knowledge exchange: A case study of knowledge transfer partnerships. *International Journal of Sustainability in Higher Education* 17 (6): 796-811.

Hordern, J. (2017). Bernstein's Sociology of Knowledge and Education(al) Studies. *Knowledge and the Study of Education: an international exploration*. J. Furlong and G. Whitty, 191-210. Oxford, Symposium Books.

Johnson, M. (2022) The knowledge exchange framework: understanding parameters and the capacity for transformative engagement. *Studies in Higher Education*, 47(1): 194-211.

Jorge, L. and Peña, A. (2017) Analysing the literature on university social responsibility: A review of selected higher education journals. *Higher Education Quarterly*, 71: 302 - 319.

Keddie, A. (2016) Children of the market: performativity, neoliberal responsabilisation and the construction of student identities, *Oxford Review of Education*, 42:1, 108-122.

Kelly, U. (2008). *Exploring the evidence base: an overview of the literature on the economic impact of knowledge transfer* [online]

<https://ewds.strath.ac.uk/Portals/8/KT%20discussion%20paper.pdf>. Accessed 16/03/23.

Kenny, J. (2018) Re-empowering academics in a corporate culture: an exploration of workload and performativity in a university, *Higher Education* 75: 365-380.

Knight, J. (2013). The changing landscape of higher education internationalisation – for better or worse? *Perspectives: Policy and Practice in Higher Education* 17(3): 84-90.

Knight, C. and Lightowler, C. (2010) Reflections of ‘knowledge exchange professionals’ in the social sciences: emerging opportunities and challenges for university-based knowledge brokers, *The Policy Press*, 6 (4): 543-556.

Kolb, D. (1984) *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall, Englewood Cliffs, NJ.

La Peyre, M. K., Reams, M., Mendelsohn, I. (2001). Linking actions to outcomes in wetland management: an overview of US state wetland management. *Wetlands* 21 (1): 66-74.

Lave, J. and Wenger, E. (1991) *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.

Maton, K. (2009) Cumulative and segmented learning: exploring the role of curriculum structures in knowledge-building, *British Journal of Sociology of Education*, 30 (1): 43-57.

Marzocchi, C., Kitagawa, F., Rossi, F. and Uyarra, E. (2023) Reconceptualising knowledge exchange and higher education institutions: broadening our understanding of motivations, channels, and stakeholders, *Studies in Higher Education*, 48 (5): 673-682.

Mausser, W., Klepper, G., Rice, M., Schmalzbauer, B., Hackmann, H., Leemans, R. and Moore, H. (2013). Transdisciplinary global change research: the co-creation of knowledge for sustainability. *Current opinion in environmental sustainability* 5(3-4): 420-431.

Miettinen, R. (2000) The concept of experiential learning and John Dewey's theory of reflective thought and action, *International Journal of Lifelong Education*, 19 (1): 54-72.

Moreton, S. (2016). Rethinking 'knowledge exchange': new approaches to collaborative work in the arts and humanities. *International Journal of Cultural Policy* 22 (1): 100-115.

Mutch, A. (2003) Communities of Practice and Habitus: A Critique, *Organisation Studies* 24 (3): 383-401.

Nakwa, K. and G. Zawdie (2016). The 'third mission' and 'triple helix mission' of universities as evolutionary processes in the development of the network of knowledge

production: Reflections on SME experiences in Thailand. *Science and Public Policy* 43(5): 622-629.

National Coordinating Centre for Public Engagement (NCCPE) (2023) Manifesto for Public Engagement <https://www.publicengagement.ac.uk/support-engagement/strategy-and-planning/manifesto-public-engagement>. Accessed 15/03/23)

Olssen, M. and Peters, M. (2005) Neoliberalism, higher education and the knowledge economy: from the free market to knowledge capitalism, *Journal of Education Policy* 20 (3): 313-345.

Organisation for Economic Co-operation and Development (OECD) (1996) *The Knowledge-based Economy*, OECD: Paris.

Organisation for Economic Co-operation and Development (OECD) (2007), *Higher Education and Regions: Globally Competitive, Locally Engaged*, Paris: OECD Publishing.

Psarras, J. (2006). Education and training in the knowledge-based economy. *Vine* 36 (1): 85-96.

Pullin, A. S. and T. M. Knight (2001). Effectiveness in conservation practice: pointers from medicine and public health. *Conservation biology* 15 (1): 50-54.

Reid, K. A., Williams, K. and Paine, M. (2011). Hybrid knowledge: Place, practice, and knowing in a volunteer ecological restoration project. *Ecology and Society* 16(3): 19.

Rentocchini, F. and Rizzo, U. (2023) The impact of teaching on third mission activities of higher education institutions: evidence from the UK. *Studies in Higher Education* 48 (5): 747-757.

Research England (2023) Knowledge Exchange Framework [online] <https://kef.ac.uk/>. Accessed 29/06/23.

Roberts, J. (2006) Limits to Communities of Practice, *Journal of Management Studies* 43 (3): 0022-2380.

Sayer, A. (1992) *Method in Social Science*. London: Routledge.

Shore, C. (2008). Audit culture and illiberal governance: Universities and the politics of accountability. *Anthropological theory* 8(3): 278-298.

Singh, G. G., Tam, J., Sisk, T., Klain, S., Mach, M., Martone, R. and Chan, K. (2014). A more social science: barriers and incentives for scientists engaging in policy. *Frontiers in Ecology and the Environment* 12(3): 161-166.

Sum, N.-L. and B. Jessop (2013). Competitiveness, the knowledge-based economy and higher education. *Journal of the Knowledge Economy* 4(1): 24-44.

Tang, H.H. H. and Chau, C.F.W. (2020). Knowledge exchange in a global city: a typology of universities and institutional analysis. *European Journal of Higher Education* 10 (1): 93-112.

Thune, T., Reymert, I., Gulbrandsen, M. and Simensen, E. (2023) Populating the science-policy co-production space: academic and policymaker perspectives on knowledge exchange. *Studies in Higher Education* 48(5): 733-746.

Tress, G., Tress, B. and Fry, G. (2005). Clarifying Integrative Research Concepts in Landscape Ecology. *Landscape Ecology* 20 (4): 479-493.

Tschirhart, C., J. Mistry, A. Berardi, E. Bignante, M. Simpson, L. Haynes, R. Benjamin, G. Albert, R. Xavier, B. Robertson, O. Davis, C. Verwer, G. De Ville, and Jafferally, D. (2016). Learning from one another: evaluating the impact of horizontal knowledge exchange for environmental management and governance. *Ecology and Society* 21 (2): 41.

Úcar, X. (2022) Theoretical and practical knowledge in social pedagogy: levels and agents of the pedagogical knowledge production, *Oxford Review of Education* 48 (6): 767-785.

Watson, D., Hollister, R., Stroud, S., Babcock, E. (2011) *The Engaged University: international perspectives on civic engagement*. London: Routledge.

Ward, V., Smith, S., House, A. and Hamer, S. (2012) Exploring knowledge exchange: a useful framework for practice and policy, *Social Science & Medicine* 74: 297-304.

Winch, C. (2014) Know-how and Knowledge in the Professional Curriculum, in Young, M. and Muller, J. (eds) *Knowledge, Expertise and the Professions*. London: Routledge, pp 47-60.

Wenger, E. (1998) *Communities of practice: learning, meaning and identity*. Cambridge: Cambridge University Press.

Young, M. and J. Muller (2007). Truth and truthfulness in the sociology of educational knowledge. *Theory and Research in Education* 5 (2): 173-201.

Young, N. and Nguyen, V. (2016). How do potential knowledge users evaluate new claims about a contested resource? Problems of power and politics in knowledge exchange and mobilization. *Journal of Environmental Management* 184: 380-388.