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Using Internship Design to Shape Sustainable University-Industry Relationships

A Research Agenda?

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1. Introduction

Building on Narayanan *et alia*'s grim assessment of internship research in 2010, Rogers *et al.* reiterate that "*despite their popularity and extensive history, surprisingly little is known about internships*" {forthcoming #28790 p.ii}. Similarly, Perlin's indictment of internship research, relying on other commentators, says that the research capacity in this area is "*dismal*" {2012 #28792}. Recently in the UK, estimates of graduate internships range from anywhere between 15,000 and 250,000 at any one time {Hunt, 2020 #28778 p.466 & 468}. Having to rely on Perlin's figures from 2012, Rogers *et al.* estimate that US companies engaged with up to 2 million graduate interns annually. Separate to graduate internships, the popularity of university internships, as a pedagogic tool to help students transition to the workplace, is without doubt {Garavan, 2001 #28900; Zehr, 2020 #28776; Hunt, 2020 #28778}. But few estimates of university internships exist. Little is known about how internship, links, and workplace offices in universities are managed. Another form of internships, such as government-led industrial retraining internships (including apprenticeships), are supported with accurate figures, but little research considers their broader effectiveness beyond discrete governmental economic goals {Economists, 2016 #28907}.

These, and other dated estimates about the prevalence of internships, are believed to be wholly inaccurate. One reason is that scholars report the absence of "*hidden internships*" in charitable and voluntary sectors from these estimates {Tovey, 2001 #28882; Hunt, 2020 #28778; Rogers, forthcoming #28790}. As the area also suffers from a lack of empirical research {Narayanan, 2010 #436 p.61; Hunt, 2020 #28778; Rogers, forthcoming #28790} on

graduate, university and industrial internships, it is difficult for the interdisciplinary field of internship studies and internship design to mature. As the scholarly literature remains largely descriptive and anecdotal, the limited number of empirical studies means that few testable hypotheses are offered, and the emergence of a dominant theoretical lens is hindered {Narayanan, 2010 #436 p.62}. As a way forward, Narayanan *et al.* highlight that internships involve “*complex relationships among three actors—student, faculty or school, and company*”, but that available empirical research on internships is inadequate as it “*has typically focused on only a small part of the overall process*” {, 2010 #436 p.62}. To address this deficiency, they call for more holistic accounts in single studies that include “*all three relevant actors within one theoretical model*” (p.64) as a means to properly assess the internship experience. Previous literature on fragmented actor topics see internship effectiveness from narrow perspectives. Without considering relationships in a single study it is difficult to ascertain the impact and effectiveness of internship design for broader outcomes. To compound this problem, Narayanan *et al.* highlight the lack of process-based views of internships. They argue that they should be conceptualised “*as a process rather than as an event*” {Narayanan, 2010 #436 pp.64-65}. In proposing a process model for internship effectiveness that includes the respective roles of participants, they note Autio and Laamanen’s {1995 #623} position that we should look at input, output and process indicators of knowledge transfer. By extension they address another glaring gap in internship research – the strategic role of internships in shaping sustainable universities-industry relationships. In the remainder of this paper, I investigate how a process-based view might improve internship effectiveness. I discuss internship design and ask how different elements improve internship effectiveness. Following the lead of Narayanan *et al.*, I present two process-based approaches to research internships. The last part of the paper opens up for debate how internships might be used as a strategic tool to shape effective university-industry relationships and engagements with society.

2. The Characteristics and Effectiveness of Internships

Hunt & Scott (2020) highlight that graduate internships also lack an agreed definition. Rogers *et al.*, citing Taylor { 1988 #28793}, defines college or university internships as a “*structured and career-relevant work experiences obtained by students prior to graduation from an*

academic programme". Noting the variations in the characteristics, types and forms of internships, definitions have tended to focus on describing rather than on teasing out the connections between internship elements. Narayanan *et al.* (2010) outline some descriptive consistencies that provide some coherence. They say that:

"...an internship involves a term-length placement of an enrolled student in an organisation – sometimes with pay, sometimes without pay – with a faculty supervisor, a company supervisor, and some academic credit earned toward the degree. Internship programs are a staple of many business schools as they provide students with an opportunity to apply what they have learned in the class room to the "real world", and work experiences that may prove useful in finding full-time employment after graduation and useful in their success in their initial jobs. The company receives the benefits of temporary assistance and the student's knowledge, and can even use internships as a screening device for future potential employees" (2010 pp.61-62).

Because internships have been approached from specific perspectives, there remains some gaps in this definition. While it includes three actor groups and arguably encompasses graduate internships between employers and graduates, it fails to consider the university concerned with pedagogic teaching, learning and academic quality assurance. With fragmented topics reflecting isolated goals, it is difficult to ascertain overall internship effectiveness. For example, but by no means a comprehensive list, effectiveness is linked to pedagogic issues around learning outcomes: the ability to acquire relevant job skills {Garavan, 2001 #28900}; career development {Callanan, 2004 #1105}; and student satisfaction {Cord, 2010 #619; D'Abate, 2009 #632; Knemeyer, 2002 #631}. Operational internship design issues focus on mentoring to improve the overall internship experience {Liu, 2011 #433; Anson, 1990 #28909}. The lack of preparation and readiness is shown to impact negatively on effectiveness {Zehr, 2020 #28776; Narayanan, 2010 #436}. Behavioural studies looked at student roles and the impact of student ingratiation {Liu, 2013 #731}. Employer outcomes have also been considered {Hurst, 2010 #28676; Knemeyer, 2002 #631}. Moving forward, a broader understanding of internship processes simultaneously including all actors would allow scholars to holistically assess effectiveness and operational internship design (Naryananan *et al.* 2010 p.64).

3. Internship Design to Shape Sustainable University-Industry Relationships

Narayanan *et al.* (2010) uses internship design as a holistic concept to explore how different elements within the black box {Turner, 2012 #636} of internship processes contribute to, or detract from, effectiveness. Another holistic topic – job design - also has the potential to go beyond mere description and anecdotal accounts to offer a theoretical foundation for researching internships. Rogers *et al.*, drawing upon human resource management literature, and focusing on job design and volunteerism, specifically consider the inclusion or exclusion of pay as an element to improve internship design effectiveness {Rogers, forthcoming #28790}. They argue, like others, the merits of including pay as it supports improved job structure, role clarity and satisfaction {Lawton, 2010 #28787; Hunt, 2020 #28778; Gardner, 2011 #28798}. The role of pay in graduate internships is the subject of much debate {, 2014 #28911}, especially in the US and UK, resulting in legal questions being asked regarding the role of interns as trainees or employees in relation to the work they perform {Magaldi, 2013 #28903; Svacina, 2012 #28897}. This has raised the question as to how pay, as an element within the internship process, contributes to effectiveness. These questions are of interest to internship design scholars as well as to internship managers alike.

A second holistic theoretical account introduced Narayanan *et al.* (2010 p.64 & 66), draws upon developments across a number of fields, including organisation studies, communications theory, knowledge management and the application of ideas of engaged scholarship to unpack university-industry relationships. From this line of inquiry two processual accounts for researching internship design and effectiveness are noteworthy.

i. Internships as a university-industry knowledge transfer relationship

The first perspective views internships as a means to transfer knowledge to industry. Agrawal {, 2001 #93}, reviewing the literature on knowledge transfer in university-industry relationships, notes that oftentimes it is assumed that the responsibility for knowledge transfer remains with the university. This is accompanied by limited employer commitment. In extreme cases this lack of commitment can result in limited communications within arm's length relationships (Narayanan et al 2010 p.64). This arm's length form of interaction has been described as transactional {Perkmann, 2007 #1591 p.259} and includes events of

unidirectional transfer including for example commercialised patents and licences from the university to industry {Perkmann, 2013 #1724}. Here the university is the active sender while employers remain passive receivers. This places more responsibility on the university as sender to actively translate theoretical knowledge into practice for use by the receiver. Here both have distinct objectives and pursue different outcomes. In communications theory, a transactional model of communication views each transaction within a set of bidirectional exchange events between the university and the employer. Here knowledge is being transferred back and forth. In this context some research has viewed students as knowledge carriers, and considers how organisational cultural differences, such as newcomer theory {Zehr, 2020 #28776}, might act as knowledge barriers for student learning opportunities. Despite these potential barriers, research on employers have acknowledged how internships potentially transfer new knowledge, provide access to fresh approaches, to new technical skills and to know-how {Degraeve, 2012 #28795; Rogers, forthcoming #28790; Tovey, 2001 #28882 p.226}. The information-processing view of communications, used as the basis of Narayanan *et al.* (2010 p.64) in their exploratory model of internship effectiveness, arguably contributes to this transactive, unidirectional view of knowledge transfer. In their approach to viewing internships as a process, they focus on the elements of transfer. They focus on input factors as the means to assess the effectiveness of internship outputs without fully unpacking the “black box” or process indicators that connect the two. Arguably this approach continues to focused on events, or at best a series of events of transfer over time {Rogers, 1998 #622}. This information processing view of processes connecting universities and industry has been critiqued as being a functionalist view that fails to unpack the process dynamics within the process itself i.e. the back box.

Concerned with narrowing the theory-practice divide, Van de Ven and others argue that this knowledge transfer view of university-industry relationships is a failed solution {Van De Ven, 2006 #601 p.803; Van De Ven, 2006 #2 p.830}. They claim that “*exhortations for academics to put their theories into practice and for managers to put their practices into theory may be misdirected because they assume that the relationship between knowledge of theory and knowledge of practice entails a literal transfer or translation of one into the other*” {Van De Ven, 2006 #601 p.808}. By replacing what they call the problem of knowledge transfer and problem of knowledge production {Gibbons, 1994 #14; Bartunek, 2011 #453}, they propose

a second approach that is more closely aligned with the principles of a processual analysis {Pettigrew, 1997 #59} to explore internships design within university-industry relationships – an engaged scholarship approach (See Table 1).

ii. Internships as a collaborative engaged university-industry relationship

Contrary to the arm's length description of university-industry relationships at one end of the spectrum, Narayanan *et al.* characterise internships at the other end as embedded relationships involving high levels of commitment and communications (2010 p.66). We follow Narayanan *et alia's* (2010) lead by viewing internships ontologically as a process to aid universities-industry engagement. This paper supplements, or "*animate[s]*" (2010 p.74), their conceptualisation by broadening the processual lens beyond mere transfer. This paper argues that a relational lens in contrast to a transfer lens (Table 1) provides a better solution to address the numerous short-comings previously identified in the literature (Narayanan *et al.* 2010).

A collaborative or relational view assumes that both student and employer display higher levels of preparedness and readiness. This has implications for how the university allocates resources to help students prepare to transition into the workplace. Similarly, it also assumes that employers will and can commit resources to such things as induction training and orientation. For both the university and employer it, albeit idealistically, requires the allocation of resources to establish a mentoring process and/or an on-the-job supervisory process. As noted above, including adequate preparation and mentoring elements within a designed internship have been shown to improve effectiveness {Narayanan, 2010 #436 p.66; Liu, 2011 #433; Zehr, 2020 #28776}. This encourages us to refocus our efforts to improve design by enhancing on-going university-student, and employer-student engagements. However, improving design through the commitment of additional resources for improved communications and learning only provides a partial solution. It also requires us to unpack, the internal dynamics of university-industry relationships. This redirects our focus toward "*the interdependencies and webs of entanglements between different and divergent dimensions of a problem, its boundaries and context*" {Van de Ven, 2007 #209 p.287}. This stands in stark contrast to the simplified sender-receiver view of transfer and translation

interactions highlighted in Van de Ven's problem of knowledge transfer critique mentioned above. By including multiple participant perspectives, it accepts the potential conflict between universities and employers and places it at the centre of inquiry. Differences in internship objectives and goals across student, employers and universities are therefore something to be bridged rather than solved. Attempts to work to align goals across multiple participants, argued as the solution for internship effectiveness (Narayanan *et al.* 2010) becomes only a partial solution. A collaborative or relational view of university-industry relationships {Bartunek, 2007 #617; Bartunek, 2014 #28765} requires effort to bridge the divide across multiple goals in a process of joint development {Starkey, 2001 #604} and working through on-going arbitrage {Van de Ven, 2007 #209}. A relational view opens up internship design research to more fully unpack the complex nature of actor goals and objectives. It allows for us to shift away from seeing university versus employer goals as something oppositional i.e. as dualisms, in favour of seeing the complex set of actor goals as two sides of the one coin and worthy of being bridged i.e. as dualities {Farjoun, 2010 #414}. Here internship effectiveness is achieved not by solving goal alignment alone but by bridging conflicting goals through an on-going process of arbitrage. This approach encourages us to look beyond inputs and outputs alone (Narayanan *et al.* 2010 p.74) in favour of unpacking deeper insights into the black box {Turner, 2012 #636; Feldman, 2016 #28813} of internship processes, the dynamics at play within connections or entanglements and aspects of continuous change. This line of thinking is fruitful as it potentially builds a more holistic picture of a typical internship. This also encourages us to engage in a pluralistic strategy regarding perspective and methods. By moving beyond partial and fragmented perspectives an agenda for the interdisciplinary field of internship studies, including internship design can emerge (Table 1).

4. Future Directions: Internship Studies and the University-Industry Context

The directions for future research can be summarised across four areas: university-industry relationships; the prevalence of internships; the need for a holistic process-based view of internships, and finally the collaborative lens.

How university internships shape sustainable university-industry engagements or connections with society has surprisingly been overlooked in scholarly work. Some early literature tangentially refers to their role in building university-industry connections (Tovey 2001, Hughes *et al.*). Cooperative and/or workplace learning literature also suggest their benefits, albeit from a pedagogic perspective {Zehr, 2020 #28776}. The potential for using internships to improve community engagement or to widen participation, while acknowledged {Hughes, 2011 #711}, has otherwise been overlooked. Few papers consider internships holistically as a process to build sustainable university relationships with industry and/or society. As a future direction, more research is required to support university decision makers interested in improving the role of the university as the primary source for knowledge production in society {Bartunek, 2011 #453; Gibbons, 1994 #14}. For example, universities attempting to build tighter inter-organisational networks e.g. European Universities Initiative, or to implement the United Nations (UN) Sustainable Development Goals (SDGs), could optimise internship design to achieve these policy objectives. A relational view of internship design could contribute to diversity, to the spatial distribution of research, and to more flexible learning paths and the capabilities of the university to achieve sustainability goals. As a relational tool, resourced internships can contribute to university capacity-building at the strategic level. Heretofore this line of thinking remains underdeveloped.

Secondly, to be able to explore the potential of internship types, more research is needed on their prevalence and popularity. With limited tracking of industrial, university and graduate internships, to highlight just a few types considered in this paper, internship scholars have limited insight into the transitioning process of students into the world of gainful employment. By surveying their use, we can gain more useful insights into their common design features and processual characteristics. Comparisons between internships at non-profits compared to for-profits etc. would help to understand the prevalence of “*hidden internships*” in the volunteering and charity sectors (Hunt & Peters 2020). Improving how we “see” internships will potentially yield a theoretical foundation for their study.

Thirdly, process based-research would contribute to seeing this phenomenon holistically. With fragmented, anecdotal and descriptive accounts we might be able to see the connections among the different elements and parts in a wider context. As few holistic accounts can be found we know little about their effectiveness within an overall internship

design. In the university-industry context these accounts would allow scholars to look beyond internships as a mere pedagogic tool for the transfer of knowledge, and to consider them as a wider strategic tool to foster collaboratively engaged relationships. This has the potential to facilitate an appropriate theoretical foundation for internship

studies {Narayanan, 2010 #436; Rogers, forthcoming #28790}. Finally, using a collaborative lens that focuses on the social interaction of internship actors we can unpack the ostensive, performative, as well as material aspects of the internship (Feldman & Pentland 2003). While Narayanan *et al.* (2010)

Table 1: Internship Design: Process Based Approaches to University-Industry Relationships		
	A Transfer Lens	A Relational Lens
Commitment	<p><i>University commitment</i></p> <ul style="list-style-type: none"> • active interaction - responsibility of the university with limited employer commitment (Agrawal 2000) <p><i>Employer commitment (lower levels)</i></p> <ul style="list-style-type: none"> • limited relationship building • limited resource allocation • limited communication • passive interaction <p><i>Student commitment</i></p> <ul style="list-style-type: none"> • passive interaction 	<p><i>University commitment</i></p> <ul style="list-style-type: none"> • active collaboration rather than discrete transfer. <p><i>Employer commitment (higher levels)</i></p> <ul style="list-style-type: none"> • higher levels of relationship building • higher levels of resource allocation • higher levels of communication • active & proactive interactions <p><i>Student commitment</i></p> <ul style="list-style-type: none"> • active & proactive interaction
Communications	<p><i>Sender – Receiver Model</i></p> <ul style="list-style-type: none"> • seen as an input-process-output model of communication. • sender is active, receiver is passive. <p><i>Transactive Communications Model</i></p> <ul style="list-style-type: none"> • University-industry relationships often seen as transactive (Perkmann <i>et al.</i> 2007). <p><i>Translation</i></p>	<p><i>Social Interactionist Approaches</i></p> <ul style="list-style-type: none"> • engagement • engaged scholarship using a pluralistic approach • strategy of arbitrage

	<ul style="list-style-type: none"> • Transfer focuses on the literal translation of theory into practice (Van de Ven 2006a p.808) 	
Resource Allocation	<ul style="list-style-type: none"> • parties commit lower levels of resources • parties display lower levels of preparedness & readiness contributing to internship design. 	<ul style="list-style-type: none"> • parties commit higher levels of resources • parties display higher levels of preparedness & readiness re internship design. • University and employers commit resources to preparedness classes, induction training & orientation programmes. • University and employers implement mentoring and supervisory processes.
Key Assumptions about Process	<p><i>Process is a transfer relationship</i></p> <ul style="list-style-type: none"> • Focuses on the information processing systems of inputs to arrive at desired outputs without unpacking the black box – systems thinking. • Privileges an element of the process - event or series of events of knowledge transfer. • <u>Simplified</u> sender-receiver view of communications (as transfer) • Attempts <u>to solve</u> potential conflicts between objectives and goals through goal alignment. • Objectives of the internship process is often dominated by academic goals & objectives. Work is conducted to align managers and students to these objectives and goals. • Dualisms 	<p><i>Process is a collaborative relationship</i></p> <ul style="list-style-type: none"> • Focuses on unpacking the process elements within the black box and including them within an analysis about the web of entanglements. • Privileges the process as a whole • Divergent opinions from multiple actors • <u>Complex</u> transfer relations between student, staff and employers assumed • Looks at the process while accepting the importance of the event within it. • Attempts <u>to bridge</u> potential conflicts between the accepted differences in objectives and goals. • Objectives of the internship process are accepted as being distributed, complex and multifaceted. Work is conducted to understand difference through a process of arbitrage. • Dualities

have noted the importance of internship artifacts, little research explores their impact on internship design. Whereas elements such as pay, preparedness and mentoring have all been identified as beneficial elements, further research is required to see their impact on internship design aims at bridging the theory-practice divide and improving the impact of higher education in society.

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