Degree power: Educational credentialism within three skilled occupations

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Abstract

An ongoing debate is centred around the question of how we can understand the value of university credentials in accessing jobs. We know that occupations are strong determinants of which skills, knowledge and abilities are utilised in work but we do not know enough of how occupational contexts shape what university degrees represent to employers and labour market entrants. Drawing on semi-structured interview data, this article compares and contrasts how Higher Education degrees serve as credentials in accessing three different graduate occupations: laboratory scientists, software engineers and press officers. Rather than functioning as direct signs of work skills and knowledge, signals of trainability or as instruments of social closure, the article shows that higher education credentials serve multiple roles within the three occupations. These occupational-specific forms of credentialism shape the competition for jobs for university graduates. The article argues for a renewed theoretical approach to educational credentialism.

Keywords: Credentialism, Higher Education, graduate labour market, occupations

Introduction

Graduate labour markets all over the world keep transforming due to continuous growth of participation in Higher Education (HE) and extensive occupational change. As new university

graduates move into a wider range of occupations after graduation and labour market rewards are becoming more unequal (Green and Zhu, 2010; Mishel et al., 2012), questions of how university graduates are allocated into the labour market positions are of growing importance to social science researchers. An expanding literature within the sociologies of education and work is seeking to come to grips with how we can understand the transitions between HE and the labour market (Waller et al., 2017). Given the enormous expansion of educational credentials in the last decades, an ongoing debate for policymakers and academics alike is centred around the questions of if, and to what extent, the value of university credentials has fallen, and to what extent a degree guarantees access to 'graduate level' jobs.

By taking a distinct occupational approach, this article compares and contrasts how HE degrees serve as credentials in accessing three different graduate occupations: laboratory scientists, software engineers and press officers within the British context.[i] Previous research that has examined the role of educational credentials in labour market outcomes has eschewed a narrower occupational lens in favour of examining large occupational groupings.[ii] For instance, existing field experiments into the value of credentials in recruitment tend to use relatively wide occupational categories, for justified methodological reasons (e.g. Darolia et al., 2015; Deterding and Pedulla, 2016). But as a result, they therefore lack the ability to associate occupational characteristics with how credentialism takes place. Yet occupations matter in the job-credential nexus. Occupations unite labour market positions in skill, status and educational requirements (Grusky and Weeden, 2001), albeit roughly. And although organisational, sectoral and national dimensions also shape the graduate labour market, an occupational focus into credentialism can open a deeper understanding of the changing influence of HE in the labour market. As Di Stasio (2017:124) suggests, based on her

investigation into credential inflation, distinct types of credentialism may occur within occupational domains, and more research is needed to examine this "occupation-specific credentialism".

This article aims to uncover to what extent and how occupational fields shape the credentialism within the matching process. In exploring this, it distinguishes different uses educational credentials can have within the labour market. Dominant theories regard credentials as either *evidence* or *signal* of relevant skills, knowledge and dispositions (respectively human capital and positional competition theories), or alternatively as an educational marker of group identity to include or exclude others (credentialist theories). The article assesses whether occupational forms of educational credentials are aligned to any of these roles.

Contrasting the predominantly quantitative approach of most contributions in the field, this article draws on in-depth qualitative data, underlining the need to understand how those within an occupation together create an understanding regarding the meaning of educational credentials.[iii] Claims about particular credentials as well as shared beliefs about categorical distinctions between graduates and non-graduates produce and legitimize inequality between groups of workers, and are created through interaction (Ridgeway, 1997). Through an inductive interpretive approach, the study explores how workers and employers understand the role of HE in accessing the labour market and to what extent for them degrees serve as credentials within these occupations.[iv]

This article provides three contributions to understanding the relevance of occupational context for the significance of educational credentials. First, it shows how examining the occupational context is revealing in understanding how university degrees are understood in skilled occupations. Although the study is an exploration of why and how

degrees are valued, I believe this exercise to have theoretical as well as applied implications given the centrality of occupations in employment and stratification research. Second, the paper assesses how useful dominant theoretical perspectives such as human resource theory, signalling and closure theories, are in understanding the occupational dimension of educational credentials. Finally, the paper shows three specific ideal types of credentials that link to the different occupations under investigation.

Educational credentials

While the concept of a credential is sometimes narrowly defined as a non-meritocratic ticket to labour market entry, there is enough conceptual scope to apply a much wider meaning. Brown and Bills (2011) observe that what credentials represent are basically abstractions, "essential" forms that social actors create for varied purposes" (p.134). The authors stress that legitimization to others in respect of what the credential constitutes is key in order for the credential to work. A credential can only function if it is plausible to those who are willing to accept it. Workers or groups of workers may want to utilize credentials to their advantage within the labour market or otherwise improve rewards, conditions or careers advancement. Employers may want to uphold the abstraction to make or legitimize decisions, most prominently in recruitment and selection, structure their labour force or otherwise use credential signifiers for their purposes.[v]

What we mean by educational credentials such as HE degrees will depend on the underlying view of how education is linked to labour market positions of relevant actors, such as workers and employers. In other words, *abstractions* of degrees are contingent on how the role of education within the labour process is understood. Within the literature there are

multiple interpretations of these, but three key groups of theories dominate. These are a) human capital theories, b) positional competition theories (which include signalling/screening and queuing theories), and c) credentialist theories. These have been outlined, compared and evaluated by many and in much detail and clarity by Bills (2003), so I will outline them only briefly.

Human capital theories (Becker, 1962, 1975; Schultz, 1963, 1971) draw on functionalist theories that highlight the need for efficiency in how society matches individuals to locations in society (Davis and Moore, 1945; Merton, 1968; Parsons, 1967). Western economies are thought to be defined by increasingly complex forms of technology and economic organisation (Treiman, 1970). The growing demand for skilled personnel requires an expansion of education as well as greater equality of educational opportunity, so that all available human resources can be utilised as effectively as possible. Through schooling, individuals develop skills and abilities relevant to job performance and as a result become more productive (warranting higher wages). The value of qualifications lies in matching the needs of employers with the skills and knowledge of employees. In other words, selection and allocation on the basis of qualifications is beneficial for the productivity and efficiency of the organisation. Education provides productivity-enhancing skills to individuals and educational credentials warrant the knowledge and skills that employers are looking for.

Positional competition theories which include most prominently signalling theory (Spence, 1973, 1974; Perri, 1994) and screening theory (Stiglitz, 1975) deny that educational credentials are *direct* measures of productive skills and knowledge. Instead, they merely serve as signals for workers to show their potential productivity and likewise as screens for employers to filter potentially productive candidates. Both theories emphasize that employers do not tend to have reliable and sufficient information about applicants' innate

productivity. Hiring is seen as an investment under uncertainty. Applicants can help solve the problem. Employers evaluate job candidates based on a range of easily obtained observable personal characteristics (e.g. educational credentials, job experience, but also ethnicity and sex). Workers can send a signal about their potential productivity level to an employer through their educational credentials. Workers rationally invest in educational credentials to improve their position in the labour market. As a result, the assignment of a job does not necessarily occur through an assessment of absolute markers of skills and knowledge but through relative advantage, of which educational attainment would be a key component. Using the metaphor of a double queue, Thurow (1975) describes the allocation of job seekers to available jobs as a process in which job seekers are ranked (or queued) according to trainability, by using educational credentials as signals and matched with a ranking of available jobs based on perceived training demands. Here, education becomes a positional good and the assignment of jobs relies on educational credentials (among other signals) to distribute positions (Bills, 2016).

Finally, the credentialist literature (e.g. Berg, 1971; Bourdieu and Passeron, 1977; Collins, 1979), unlike human capital and positional competition theories, reject the idea that credentials either directly or indirectly are necessarily based on productivity or trainability concerns. Conflict sociologists such as Weber (1978), Collins (1979) and Parkin (1974) have tried to show that educational credentials are mainly cultural rather than technical, and are used for exclusionary purposes rather than to increase productivity. Through their credentialist theories they argue that education functions as a legitimized means for social inclusion and exclusion. Educational credentials are fundamentally a closure mechanism, differentiating status groups and their relationship to labour market positions. Employers and (groups of) workers can monopolise and close off opportunities to their advantage through

the use of educational credentials. They can use credentials as a way of regulating access to scarce labour market positions through accreditation, certification or licensing, often raising the minimum standards of entry as increasing numbers of potential candidates attain formerly scarce qualifications. They can also use their educational credentials to consolidate and maintain their occupational status, often through symbolic means (Tholen, 2017a). Credentialism is often driven by selection on cultural capital rather than technical proficiency (Rivera, 2011). The increase in educational requirement for jobs is therefore not the result of an increasing demand for skills, but of employers selecting candidates according to their cultural or professional preferences as participation in HE increases in the general workforce.

We know that occupations are strong determinants of which skills, knowledge and abilities are utilised in work. Occupational parameters are thus likely to shape how important these are deemed by workers and employers within the recruitment and selection process and how they relate to formal educational credentials.[vi] Status, prestige, power and rewards are also at least partially distributed along occupational lines and thus affect credentialist closure opportunities. Occupation-specific recruitment and selection procedures and foci may also limit (e.g. skills-based) or enable (e.g. cultural fit) the possibility for closure tactics (Wilk and Cappelli, 2003). It is, therefore, rather surprising that occupations are rarely explored more deeply to understand how educational credentials are being used, and to further our knowledge of what is being abstracted when credentials are being used in the labour market. In addition, we can examine how generalizable the theoretical perspectives on credentialism outlined above actually are. To do so, a strong in-depth qualitative occupational approach can be utilised, that can elucidate what formal qualifications are abstractions of within an occupational field. This fills an empirical gap as well as contributes

to theoretical development on credentialism, in assessing the value and applicability of the theoretical perspectives outlined above.

Methodology

The study adopted an occupational case study approach consisting of an in-depth investigation of work, skills, career, recruitment and selection in three occupations that are generally accepted to be graduate occupations. These are: a) laboratory-based (non-PhD) scientists working in pharmaceutical and biotechnology companies; b) software engineers; and c) press officers. These three case study were part of a wider study on graduate work and were originally selected to meet a wider set of requirements including their relation to major changes within the labour market for graduates, such as economic globalisation (scientist), technological change (software engineer) and graduatisation of the labour market (press officer), and. These occupations are not deemed 'representative' of the whole graduate labour market, nor are they intended to be. They are used to investigate how the work that graduates perform is organized, understood and negotiated within their occupational contexts.

The fieldwork took place between January 2013 and May 2015. Over this period a total of 82 interviews were conducted. The majority of these were with graduate workers in the three occupations. In addition, employers (hiring managers), external recruitment consultants, non-graduate workers and HE lecturers from relevant fields were interviewed. Both workers and employers within an occupation help construct an understanding of the value and meaning of educational credentials, so it is important to include both groups. A potential weakness is the low number of employers which may have skewed the findings towards the employees' views and understandings. Table 1 gives an overview of the sample.

Table 1: Sample characteristics

	Scientists	Software Engineers	Press Officers
Workers	19	20	18
Employers	6	4	5
Recruiters	1	2	1
Others	2	2	2
Total	28	28	26

The majority of participants were selected and recruited purposefully from available LinkedIn profiles to allow significant variation in a) sector, b) age, c) gender and d) educational background (Small, 2009; Trost, 1986). Exact demographic UK data for these narrow occupational groups that could help structure the sample is currently missing. Instead of seeking representativeness through randomness, the study created greater heterogeneity along the above dimensions. As a result, pertinent shared patterns that cut across the wide variety of cases emerged. In addition, a small minority were recruited through snowball sampling. Participants were located all over the UK although the majority were in the south of England. There was considerable spread in age and career stages. The gender balance was somewhat reasonably balanced for the press officers (44% males) but skewed towards males in software engineering (67%) and lab-based scientists (85%), reflecting the numerical domination of males within these occupations.

One semi-structured interview with each participant was conducted in a setting chosen by the interviewee, often either at work or in a coffee shop. Interviews lasted from 30 minutes to more than two hours, with the majority lasting more than an hour. The interviews

explored a range of topics such as career development, recruitment and selection and the role of education throughout the occupation. All interviews were transcribed verbatim and anonymized. After a general reading/listening to a group of transcripts, I thematically coded the transcripts using the NVivo software package to identify themes in the data, and then hand-coded the interviews to analyse patterns in the data in more detail. The coding was initially theory-driven. For each occupation I looked for ways of how educational credentials were used, informed by the three dominant theoretical perspectives. Along the way, new forms of categorizing the meaning credentials hold within the occupational contexts became apparent. The data was recoded inclusive of emerging codes from the data, and its analytic lens shifted to finding occupational factors that seem to be related to how educational credentials were used. All the participants have been given pseudonyms.

Lab scientists

The scientists in the study all worked in pharmaceutical and biotechnological private companies. The research labour force is made up of scientists, technicians and managers with various education levels. Scientists tend to have wide educational backgrounds, yet the majority are within the life sciences, in particular chemistry and biology. There was a consensus that university courses in the life sciences aided in the development of relevant work skills. Yet most agreed university education does tend to offer more than an initial preparation:

I would say what I learnt at university I very rarely use now, when you do a degree it's so sort of wide, the range of subjects that you cover, it's really a basic knowledge but I don't really think that it goes into too many specifics, cos you do such a broad range… But it's not like I learnt things at university and then in a job did exactly the same things, it's just a basis really for techniques and for knowledge. [Ella, ex-senior scientist, biotechnology]

So for me the course basically just sort of gave me a taste of what working in a lab might be like. Although when I started working I found it was very different from working in the university lab. [Sheila, lab technician, biotechnology]

The reason for this inability for HE to develop a wider or deeper level of job preparation is that work skills are thought to develop slowly over time. As such, relevant undergraduate degrees such as chemistry and biology offer a rudimentary knowledge base and an introduction to laboratory skills. Regarding the signalling and screening function, the degree as a credential does represent trainability rather than specific suitability within the context of the selection and recruitment process:

'Are you capable of learning new skills, are you capable of thinking outside of the box?' … So it's just are you competent to learn new skills, can you pick things up quickly, you know you are adept at using laboratory equipment. [Theresa, scientist, pharmaceutical, not involved in recruitment decisions]

Qualification level does indicate a degree of dedication and ability as well but we don't look at that in its own right, we would assess all the other skills around that and make our selection on that basis. It so happens that people with good degrees and good qualifications probably have the characteristics we're looking for anyway. [Eric, Chief Operations Officer, biotechnology]

This last quote demonstrates that these signals of trainability and suitability are intertwined with the absolute skill and knowledge a relevant degree is thought to provide.

In accordance with social closure theory as well as queuing theory, the study found considerable evidence that requirements to gain access to the research roles as well as technician roles have increased without an increasing need for HE associated skill or general complexity. One scientist, Dominic, who has been working pharmaceutics for 27 years, explains how doctoral degrees have become the standard for scientists. When I asked him whether this was because of increasing complexity of the work, he replied:

I'm not sure if the roles are any more complex, I think the expectation … it's almost because … when I graduated perhaps there were 15% of graduates went on to PhDs, now 50% of graduates are going to PhDs. It's hard for me to say exactly why that is – the fact is that a lot of people in management positions obviously have been through the same process and are PhD level staff. So they almost take it as read that other people should go through that educational training.

The PhD degree within the biotech and pharmaceutical industries is utilised by workers to close off opportunities to other graduates (Tholen, 2017b), and increasing educational

requirements are not matched with growing complexity or skill intensity. These signs of credential inflation also can be found at the research technician level which historically has been a non-graduate position as expressed by Sheila, who works, despite her relevant postgraduate degree, as a lab technician in a biotech company:

> *I think in the past like for a technician role employers were happy to take somebody with an A level in science or vocational qualifications in that area. But I found that when I was searching they wanted a minimum of Bachelor's degree for laboratory technician work.*

Yet the differentiating effect of educational institution, associated with exclusion through horizontal credentialism, is reasonably muted. In line with human capital theory, employers are more interested in the type of degree and the work experience it provides (specifically time spent in the laboratory context).

Given the significant occupational prestige and a clear relationship with Higher Education and their occupation, for lab scientists, HE credentials create opportunity to comprise abstractions of skills, ability and status. For both employers and workers, the role of HE credential is understood to be considerable but specific. Those with undergraduate degrees can create advantage mainly through having degrees with relevant laboratory experience. There is an overall reasonably strong collective belief in the abstraction the credential represents. Degrees, therefore, indicate a significant role of HE as the work-skill skill developer, albeit short-lived after graduation. Furthermore, the degree is used as a screen for general trainability and suitability. Credential as a mechanism for closure relates mainly to those with doctorate degrees.

The close association with lab-based experience means there is a '*functional credentialism'* in which the abstracted notion of the credential is the ability to perform the technical skills to work competently within the laboratory setting.[vii] Biotech scientist is a quintessential occupation that draws on knowledge and expertise associated with Higher Education, or in words of Elias and Purcell (2013) an 'expert graduate occupation'. For knowledge-intensive occupations such as these, credentialism is expected to warrant productivity-enhancing skills (human capital theory), signals of particular useful characteristics (positional competition) as well as opportunity for closure (credentialist theories).

Software engineers

In essence, the task of software engineers is the designing, development, testing, and evaluation of the software. It involves writing the code (program) that creates software that fulfils the users' needs and satisfies the requirements of customers or managers. This means instructing a computer, line by line, how to perform a desired function. Before engineers start coding, they analyse first the needs of the user/client after which they commence to design, construct, test, and maintain computer applications software or systems (or some of these activities). A large part of the role is trying to understand what is needed and communicate with various stakeholders within organisations.

A considerable share of British software engineers working today accessed their occupation without a relevant degree or no degree at all. Many engineers themselves believe that university degrees are not essential to perform the role. Yet engineers believed that there are

several aspects of software engineering and in particular coding, that could, in principle, be developed within a formal education setting. In line with positional competition theories, for engineers and their employers, degrees are understood as a signal of (potential) capability to become a successful software engineer. It shows that the person can grow, learn and develop into a productive worker. Yet despite being able to serve as a screening mechanism to identify potentially capable workers, degrees are only lightly associated with direct work-specific productivity:

> *So possibly the existence of a degree indicates that you can apply yourself and you can at least concentrate on something for two or three years, but not necessarily whether the content of it is relevant. [Paul, senior software engineer, manufacturing]*

> *They [degree holders] tend to be more professional, they tend to be a bit more reliable, the fact that they've been through a degree has shown that they can be structured in a work pattern, that they can sit down and meet deadlines, they can deliver to target. [Robert, HR, IT company]*

From the quotes above we can observe that degrees serve as a predictor of suitability for new graduates rather than predictor of matching skills. This is not to say that the type of degree is irrelevant. Not all degrees are equally accepted. Yet unlike scientists, this specificity reflects general suitability for the role advertised rather than specific skills, knowledge and work experience (confirming screening theories). Ewart, a software engineer in IT for 34 years describes the meaning of degrees as follows:

I mean the fact that you have a degree has shown that you are capable of studying and learning (…) the actual academic qualification I would consider to, in some ways, be secondary, it's the person whose intrinsic ability that I would … I suppose it's almost part of the filtration process.

There is of course variety in how much employers (are seen to) value degrees. Many employers question the validity between academic performance and capability as software engineer. Instead they use degrees as a general threshold of acceptable candidates, indicating a form of closure and in a far lesser extent a signal of trainability due to the screen's lack of specificity:

It's the minimum level you are accepted at. The subject matter is rarely relevant. [Jacob, software engineer, contractor]

They generally don't trust engineers that don't have a degree, at least a Bachelor's degree. [Peter, software engineer, IT company]

You will find maybe ... it's not unusual – a degree is the default if you're to be taken seriously. [Thomas, software consultant]

This, perhaps unsurprisingly, has created a distinct problem for non-graduates to access the occupation. Frank who entered started working as a software engineer after a degree in Artificial intelligence in business systems twelve years ago, like most other engineers as well

employers highlights how opportunities are increasingly closed off to non-graduates due to the growing number of graduate incumbents:

> *Would it be hard to establish a career at the moment, if you were to start now, without a degree?*
>
> *Yeah. I mean I think in terms of trying to get your CV through the door, just getting to the point of the first interview, I think you probably do need to have a degree just because there are going to be so many graduates with degrees. So if you don't then you are just one step down from a graduate degree. [Frank, software engineer, IT company]*

Degrees for software engineers represent a closure mechanism, benefitting graduates whose opportunities have expanded to the cost of non-graduates. They continue to serve a fundamental sorting mechanism for employers to recruit and select, specifically new graduates (and far less for more senior positions):

> *In the first few years a degree is important, but after the few years, then it's all about work experience and what companies you've worked for and what you've done in the companies you've worked for. [Nick, senior software engineer, tech company]*
>
> *I've not been asked about my degree possibly since my first job. [Paul, senior software engineer, manufacturing]*

Moreover, work experience continues to be a far more important pillar of perceived employability. For this reason, the value of degrees for new graduates are not set, static or absolute but relative and contingent to their work experience as explained by Jeffrey, a software engineer in publishing, who graduated 10 years earlier with a degree in software engineering:

> *I think a degree nowadays is ... it's almost as common as GCSEs – so many people are coming out of university with degrees and there's just nothing to separate them, apart from commercial experience. So I think I feel that if I could have had commercial experience over the degree I'd probably have chosen commercial experience….A degree on its own doesn't cut it. If they don't do a placement then it's going to boil down to any experience they can get voluntarily.*

For software engineers, labour market entrants face a distinct type of credentialism in which degrees represent a basic labour entrance. HE has distinct difficulties in proving adequate work skills (Tholen, 2017b) and subsequently skill development during HE courses gets overshadowed by industry or commercial experience which diminishes the credentialist strength of the degree.

Software engineering is increasingly perceived as a quintessential graduate occupation, and in its emerging phase in the 1950s and 1960s the roots of software engineers were firmly established within the field of the applied natural sciences. Purcell and Elias (2004, p.4) regard their roles as 'modern graduate occupations' for which, after a period of educational expansion in the 1960s, undergraduate degree course became the normal route into the occupations. The field has nonetheless experienced an ongoing influx of competent

developers who never experienced any university-based education in programming skills. Non-traditional routes to programming are also gaining popularity (Sijbrandij, 2017). Yet HE credentials still have opportunity to contain abstractions of skills, ability and status. For occupation entrants, HE has become the main route to access the occupation. University degrees increasingly serve as an educational ceiling (Bills, 1992; Di Stasio, 2017). They have 'power' at the early stages of the career and even then, are largely secondary to real programming experience, largely through a suitability signal. Opportunities for closure through HE credentials seem likewise limited to the early career phase. Compared to the scientist HE credentials, degrees convey far less, i.e. there is less consensus on their value and meaning. Credentials work alongside the more highly valued work experience and thus I call it a form of '*ancillary credentialism'.* This type of credentialism is likely common in a growing number of occupations where HE is not the only route of skill development. Also, it may affect fields in which HE struggles to develop the exact skills and knowledge needed within the occupation.

Press officers

Press officers in general create and maintain a favourable public image for the organisation they represent through dealing with the stakeholder such as the media and, in particular, the press. Traditionally, this has happened through designing media releases which shape public perception of their organisation's work and goals. Yet the modern press officer also deals with online social media inquiries and discussion, along with building relations with various journalist and media representatives as well as the public directly. The occupation has experiences enormous growth in recent decades. The formal relationship between the occupation and Higher Education has grown but remains relatively weak. Perhaps for this

reason, among press officers and their employers, a variety of understanding exists of how university education aids graduates in the work process, and how HE serves the occupation or the meaning and value of university degrees in the labour market and beyond. The lack of consensus means that not only degrees are more open to interpretation compared to the other two occupations, they are equally more open to contention. Some participants felt that university education has provided valuable transferable work skills, indicating a specific trust in HE degrees as work preparation for public relations (PR) roles. To others, university education is associated with positive personal characteristics such as intelligence and aptitudes such as ability to learn. These are, however, expressed in rather uncertain and indirect terms and/or secondary to core communicative abilities:

> *I think it is important to have an appreciation for business, and a willingness to keep learning, and that's probably demonstrated more through going to university. I personally would prefer a university candidate if I was recruiting. [Mildred, media manager, utility company]*

> *A.A. Which skills specifically would you say are developed at university?*

> *That's a difficult one. I think probably if it's a good business studies course, you learn, maybe, a work ethic, and time planning, that sort of thing. But the, sort of, basic necessities that we were talking about earlier, people skills and so on, obviously that's something that you've either got or not got. It's very difficult to teach those skills. [Martin, media manager, football club]*

These perceptions indicate that a university education can be quite helpful in order to develop some skills utilised at work. At the same time, there is a strong consensus that there is no need to be a graduate in order to be an effective and talented communication professional such as a press officer:

> *You quite easily could learn all the skills working on the job. [Dorothy, media relations manager, transport]*

The perceived main location of skills development - the workplace - does not make degrees redundant within the PR field. Although some believe that one can still enter the occupation and be successful without a degree, university degrees are becoming the standard as explained by English literature graduate Donna who is press and communication manager at a science organisation and involved in the hiring process:

> *AA: Do you feel you need a university degree to be a successful press officer?*
>
> *No, but difficult with such a high number of graduates applying… I don't come across many applications with non-graduates. It's just kind of standard now in the industry.*

Dylan, a politics graduate who entered PR two years prior and works as a public relations and policy manager at a trade organisation depicts a degree as a base expectation:

From my experience of talking to lots of different people who work in PR, there's so many varying kinds of degrees, and even lots of people who work in PR who don't have degrees, although that's rarer nowadays, just because everybody has a degree, so you kind of have to have one, just to...not even to stand out, but just to be at a level pegging with some people today.

It is hard for those graduates within the occupation to use their degrees to signal their employability or to hoard opportunity or close off opportunity to others. There seems to be very few signs that university degrees can serve as a strong credential to create advantage, closure or distinction towards other graduate competitors:

I got a 2:1 in the end. I was one mark off a first, but do I think it made any difference if I got a 2:1 or a first? No, I don't think it does make any difference at all. I think once you've got a degree you've got a degree, especially in my line of work. I mean if you got a 2:2, I would have been disappointed, but again I don't think it would make that much of a difference. [Ellen, press officer, trade organisation]

So actually almost the presentation of the CV and how that comes across is as important for me as what actual qualifications they might have. Yeah, you're looking for a basic rounded education … It's the extra add-ons which are really important I think if everybody's got the same qualifications. [Janet, public relations manager, car manufacturer]

The lack of potential to close off opportunities to others may be caused by the generally low evaluation level HE education receives from employers. The central social and communication skills needed to be successful are seen to be developed mainly outside formal education:

> *Education, do you know what? Education is really low on my priority because some of the best people that I've worked with haven't got degrees. [Dawn, head of press, theatre company]*

Press officers do not benefit from high occupational prestige nor from an established relationship with HE. They see the role of education in their occupation in even more uncertain terms than software engineers and scientists. HE is not deemed to be a major force in work-skill development. Similarly, education does not support legitimacy of any prestige based on formal knowledge. Prevalent expectations that link high skill occupation with advanced qualification prevent occupations such as press officer to use qualification to its advantage. There are very few educational credentials that can signify worth within the competition for jobs. Although university degrees are often a requirement to access the occupation, there is little consensus on what degrees signal to employers. We can call this *'peripheral credentialism'* as the weak HE credentials place degrees as a relatively minor force within the allocation between graduates and jobs. Also, in graduate occupations that draw on interpersonal and creative skills, which Elias and Purcell (2013) name 'Communicators', credentialist claims could be more difficult to be accepted.

The weak link between education and work-related skills could mean in occupations such as press officer that other non-meritocratic criteria matter as a replacement for credentials (such as extra-curricular activities and exclusive networks).Peripheral credentialism is likely common in a growing number of occupations where degrees are used

to reduce the number of applicants by setting the degree as a requirement or where degrees have over time become ubiquitous. The natural tension between the prerequisite requirement of HE degrees to access the occupation seemingly supports a mainstream credentialist interpretation yet its indiscriminate approach to institutional varieties show no signs of class-based discrimination. Likewise, the degree requirement could be interpreted as screen for general trainability or productivity yet no such association seem to be attached to it by employers or workers.

Concluding discussion

The findings show that within the three occupations, the role of HE credentials demonstrate each of the three abstractions outlined earlier. None of them represent one abstraction exclusively; all three are present, albeit to various degrees. It therefore seems erroneous to classify HE credentials within the UK context as examples of any of the three. More fundamentally, the focus on occupations shows that it is not the 'function' or role of credentials that decide how degrees are used but how occupational circumstances and characteristics make particular meanings come to the fore. Although few would insist that one theory explains all uses of credentials, the general nature of these theories do not allow for a more detailed understanding of how educational credentials are used and understood within the labour market. Human capital theories and signalling theory are general economic theories that are used to explain why employers and workers may value educational credentials. The study shows that degrees are not understood as independent indicators of

value but only make sense within a particular occupational context. Of course, closure theory does explicitly link the meaning of credentials to occupational context and stresses that different occupations hold different opportunities for closure (e.g. traditional professions). Yet the theory does not allow much room for genuine concerns and strategies that both workers and employers have about technical work skills utilisation and development. As analytical tools to examine the social phenomenon of educational credentialism, perhaps the three theoretical perspectives are not intended to be anything other than partial and contingent. Yet new theoretical tools are needed to deal with the complexity that comes with more fine-grained occupational analysis, and this will involve exploiting ways of bridging or combining these rather large abstract theoretical frameworks. Here, it supplements the literature which has offered various other conditions that shape educational credentialism, such as the educational system and labour market characteristics in particular national configurations of school-to-work linkages (van der Werfhorst, 2011). [viii] Anglo-Saxon countries such as the US, Canada and Ireland are likely to resemble the UK context. Due to these countries less-developed vocational education systems, education is more likely to function as a positional good and thus signalling and closure forms of credentialism may be more relevant across all occupations compared to other countries (Bol and van der Werfhorst, 2011). Wheelahan and Moodie (2017, 19) contend that external labour markets, as opposed occupational and internal labour markets, characterize liberal market economies such as the UK. As entry to and progression in the labour market is through competitive markets rather than established route, flexibility and insecurity defines how graduates approach the labour market. This leads graduates to 'second-guess' the labour market to get ahead. The lack of reliance on formal qualification for occupational access may increase the prevalence of

ancillary and peripheral types of credentialism. Table two summarizes to what extent HE credentials fulfil the three usages of educational credentials.

Table 2: role of credentials within the three occupations

	laboratory scientists	**software engineers**	**press officers**
credentials represent	initial work preparation	work experience	various
providers of skills, knowledge and other (technical) competencies	medium/high	medium/low	medium/low
signal of skills and characteristics	medium	medium	low
opportunity for closure	medium/high	medium	low
type of credentialism	*functional*	*ancillary*	*peripheral*

The concepts of functional, ancillary and peripheral credentialism create an improved understanding of why and how qualifications are valued *for particular types of graduate jobs*. They are distinct from human capital theory, signalling theory and closure theory in that is able to accept that within different types of work, employers and workers ultimately will have different needs and different opportunities to use educational credentials. Of course, this does not render these general perspectives obsolete but it does offer additional heuristic devices to describe how those within an occupation compete within the internal occupational labour market.

There lies plenty of opportunity for sociologists of education to reduce the reliance on economic theories such as human capital theory and mainstream signalling and screening theories, and to explore how credentials are socially constructed by workers, employers and others involved. Credentials invariably show discrepancies in meaning and consequence

between workers, employers and other stakeholders. They remain continuously contested and re-interpreted by all relevant actors and groups. Rather than seeing educational credentials as passive, stable and consensual markers of labour market value, a more contextual, dynamic and anti-essential view would be beneficial. Admittedly, credentialist theories highlights the conflictual nature of the construction of meaning of credentials. Yet, its rather strict assumptions on the role of credential play within the labour market does not allow for wider grounded empirical explanations for the type of skills workers use and where these are developed.

There are limitations to what the data on which this article draws can say about how credentials work in the labour market. It does not allow for finer detailed analysis of horizontal characteristics of educational credentials such as grades, types of degrees and other types of specialisation and pathways (Gerber and Cheung, 2008), nor does it allow to say anything conclusive about the role of organisational characteristics on occupational credentialism. Further research can produce more insights into this. Due to space limitations, this article did not outline any of the contextual information regarding the labour process such as skill use and working conditions, recruitment and selection processes or business cycle More work is also required to be undertaken on the meaning and usage of educational credentials over time, beyond the initial access into the occupation. This all would add to the broader question that this article aimed to answer: how educational credentials are allocating access to jobs. Highlighting the role of occupations has provided an opportunity to allow alternative forms of credentials to be created and more precise ways to understand how the value of HE qualifications are understood within the labour market. This can challenge Higher Education policies that rely on a direct and simple relationship between what it taught in HE and how it contributes to graduates' labour market opportunities. Subsequently, highlighting

occupational heterogeneity in the role that Higher Education has within work can further clarify the limits of Higher Education as a site of skill development (Tholen, 2018).

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Notes

[i] There are different ways to define a 'graduate occupation', yet they are often seen as those jobs that require a minimum of three years of university education to perform the role.

[ii] Exceptions here are for instance studies that examined the elite occupations (e.g. Rivera, 2011).

[iii] There are insightful qualitative studies on the role of qualifications in the recruitment and selection process (e.g. Bills, 1992; Kulkurna et al., 2012), yet these have not adopted a strong occupational lens.

[iv] It is important to note that educational credentials such as degrees play a role throughout workers' careers, yet the focus of this article is limited to initial access to the occupation post-graduation.

[v] Other stakeholders such as those involved in Higher Education, educational policy, students and their families etc. do also deal with and co-construct these abstractions in their own way and for their own purposes.

[vi] The literature on Occupational Internal Labour Markets (OILMs) (e.g. Smith, 1983) has outlined some of the rules within occupational job competition within occupations but these have rarely paid much attention to credentialism.

[vii] This form of credentialism is opposed to forms of 'instrumental credentialism', in which individuals see no intrinsic value in the content of education but value the qualifications that are gained for employability purposes (Fevre et al., 1999)

[viii] It is important to note that education credentials are not necessarily a dominant force within the labour market as sometimes is thought, but merely only one of many forces that influence the recruitment and selection process (Bills, 1988).