

39 government funding in the UK HE sector arguably commenced in earnest with the Research
40 Assessment Exercise (RAE) in 1986. Since the inaugural RAE in 1986, there have been a
41 number of RAE's culminating in the most recent manifestation of the Research Excellence
42 Framework (REF) in 2014 and forthcoming REF 2021. For RAE and more recently REF,
43 university research output is judged by expert panels and research impact considered to be of
44 the highest quality is accorded the greatest proportion of government funding. Indeed, the
45 economic rationale for REF is compelling, given that "the value of an impact case study would
46 be significant with a high quality ("four star") impact study being 'worth' nearly four high
47 quality academic papers in money terms, approximately £120,000" (Power, 2015, p.46). The
48 allure of high quality journal papers, demonstrable impact case studies and successful PhD
49 student throughput is omni-present in research-oriented institutions' metrics.

50 Somewhat predictably, and given the neoliberal environment, UK universities have
51 focused on aligning recruitment procedure and practice with this policy in a drive to improve
52 university access to alternative income streams. Whilst considerable efforts are undertaken to
53 attract research active academics, a paradox is apparent insomuch as the largest proportion of
54 an academic institution's income generation is associated with teaching activities (Olive,
55 2017). This situation appears myopic as these appointments arguably take the institution further
56 away from supporting their core business income stream if student satisfaction is linked to
57 industrially experienced staff that better facilitate subject contextualisation. Institutional
58 counterbalance is notionally offered by newly appointed academics (both research and teaching
59 oriented) being required to complete a Post Graduate Certificate in Academic Practice
60 (PGCAP) or Post Graduate Certificate in Teaching (PGCert) (80.5% of the sector according to
61 Gosling (2010)). According to Cui, French and O'Leary (2019) the introduction of the UK
62 Teaching Excellence Framework (TEF) has put an emphasis on ensuring that newly appointed
63 and existing lecturers undertake such qualifications, with the sector seeing these as an integral
64 component of staff development. Despite such a requirement however, the ramifications for
65 recruitment practice is that individuals with industry experience seeking employment
66 opportunities in the HE sector will be overlooked in favour of candidates with PhDs and the
67 potential to secure research funding through grant income or REF assigned block funding based
68 on high quality journal papers (Tennant et al., 2015). It is not our aim to denigrate such
69 qualifications as, having a PhD and a PGCAP or a PGCert can help in understanding non
70 subject specific pedagogy of Teaching and Learning, but neither helps in contextualising
71 learning with real world examples in the way industry experience does (Pilcher et al, 2017;
72 Forster et al, 2018, Murray et al, 2018). It was with a specific goal of addressing the

73 disproportionate bias towards research and away from teaching created by this research-
74 focused policy, that the UK government introduced the Teaching Excellence Framework in
75 2016 (BIS, 2016, cf. Hubble, 2017).

76 The TEF aspired to redress the imbalance between teaching and research, and tip the
77 scales back towards the importance of teaching (Hubble, 2017). Given the corporate neoliberal
78 interpretation of students as consumers (Holligan & Shah, 2017) and the importance of
79 teaching excellence to student (customer) satisfaction (Hayward & Ongaro, 2016), the
80 performance management and measurement of teaching through student feedback gathered in
81 the National Student Survey (Holligan & Shah, 2017) became pivotal to the ideology of the
82 UK government. The TEF accords universities an award of ‘gold’, ‘silver’ or ‘bronze’ based
83 on their ‘teaching’ performance, and this in turn impacts on their revenue potential and the
84 ability to charge different fee levels to students (Bell & Brooks, 2019). At the same time, it
85 aimed to reinforce the importance and prominence of teaching amongst academic staff
86 (Perkins, 2019). In theory and particularly in a context of a vocational subject such as
87 Construction and Engineering, this ‘recalibration’ should have two impacts. Firstly, it should
88 mean more individuals with industry experience offered lecturing posts especially given the
89 importance of such knowledge to teaching (Royal Academy of Engineering, 2014). Secondly,
90 institutions when recruiting should place greater emphasis and weight upon teaching related
91 attributes in their advertisements. For example there could be more of an emphasis on aspects
92 such as the Scholarship of Teaching and Learning (Sotl) – (Boyer, 1990) where the aspiration
93 is for teaching to be considered equal to research and for academics to “think of teaching as
94 scholarly” (Beach, 2016, p.14) practice.

95 In this paper, a large body (200+) of Construction and Engineering (C&E)
96 advertisements for lecturer / assistant professor (hereafter ‘lecturer’), senior lecturer / associate
97 professor (hereafter ‘senior lecturer’) and professorial / full professorial (hereafter professor)
98 roles¹ in UK universities are collated and evaluated. Such roles have expectations for successful
99 applicants to undertake work in three key areas of: research, teaching, and administration. The
100 adverts themselves therefore provide a window on how institutions value and prioritise
101 different areas of academic engagement and their academic staff roles and responsibilities.
102 These advertisements are the focus here of a number of statistical analyses that are undertaken

¹ We note that in the UK there have been recent moves by many HE institutions to adopt US terminology for roles (e.g. associate professor instead of senior lecturer) and thus at this time of transition such titles are used interchangeably or in tandem by institutions. We note this here but for ease of reading we use the former terms of lecturer, senior lecturer and professor subsequently in the paper

103 to explore potential relationships between key academic employment attributes across adverts
104 from before the introduction of the Teaching Excellence Framework (pre-TEF) and after it
105 (post-TEF). These analyses are undertaken to understand how eventual roles relate to the real
106 world requirements of graduates in what is essentially a vocational subject, but also to consider
107 whether the introduction of the Teaching Excellence Framework (TEF) has had any perceptible
108 impact on institutions seeking to recruit more individuals with industry experience, or with
109 teaching related attributes and focus. In essence, to explore whether the rationale for the TEF
110 to rebalance teaching and research has in fact translated into the reality of recruiting individuals
111 to enact it.

112 Detailed analyses disclose that the key theoretical goal of the TEF to “make teaching
113 and research, in universities and colleges, of equal status” (Hubble, 2017, p.4) have not had an
114 impact upon the policy and practice of how Higher Education Institutions (HEI’s) in the UK
115 are recruiting new academic staff members. Findings also challenge the aspiration of TEF in
116 terms of TEF’s practical ability to have achieved any rebalancing towards teaching. The
117 statistical analyses disclose that across both pre-TEF and post-TEF adverts and with specific
118 regard to ‘research’ related attributes, universities show a strikingly homogenous approach to
119 the attributes they specify as essential and desirable. Such homogeneity clearly indicates a lack
120 of any rebalancing. Indeed, most industry practitioners seeking a career in HE would be
121 excluded from the recruitment process at the outset through their lack of a PhD qualification.
122 In stark contrast to the homogeneity in attributes related to research, job adverts show an almost
123 haphazard approach to attributes indicative of ‘teaching’. Notably, this is the case for both pre-
124 TEF and post-TEF adverts. Our findings appear to run counter to a recent UK Department for
125 Education report evaluating the impact of the TEF which noted that “20% of TEF contacts
126 reported an increased emphasis in recruiting staff with appropriate skills as a result of the TEF,
127 while 11% of TEF Contacts reported an increased use of industry experts” (Vivian et al., 2019,
128 p.40). Nevertheless, we note that this report does not define ‘appropriate skills’, and also note
129 that ‘an increased use of industry experts’ may not equate to the actual recruitment of
130 permanent staff with such expertise. Indeed, as our findings show here, this certainly does not
131 appear to be the case in C&E. We note that whilst this paper analyses and discusses data from
132 a UK context, issues related to sponsoring and measuring teaching excellence that the TEF
133 aspires to achieve, echo similar efforts to promote excellence Europe wide (Gunn, 2018), as
134 seen through the explicit links between quality assurance and learning and teaching processes
135 within European Institutions (ESG 2015).

136 In this paper, in the context of C&E education, previous initial research showing TEF
137 has had an impact on academic identity (Perkins, 2019) and that professional teaching
138 qualifications impact upon student contentment (Bell & Brooks, 2019) is challenged. What the
139 data analysis reveals is that HEI's appear to be completely heterogeneous in their
140 comprehension of teaching goals. Conversely, continued homogeneity of attributes for
141 research implies that those with industry experience, i.e. those with the professional experience
142 and arguably well placed to deliver C&E education and contribute to teaching excellence, will
143 be unable to demonstrate key HE employability attributes if the current homogenous focus on
144 research remains unchallenged.

145 The paper is organised as follows. First, a brief literature review highlights common
146 debates and recruitment patterns. Second, a research methodology and sources of adverts is
147 outlined prior to presenting and analysing the data. The discussion section discloses strong
148 relationships for research attributes; conversely, for 'teaching' they are almost non-existent,
149 and, significantly, display virtually no differences in pre and post-TEF adverts. Finally, the
150 conclusion offers avenues for further research and comments on the efficacy of the Teaching
151 Excellence Framework.

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153 **2. Common themes in recruitment.**

154 Burgan (2006 p.142) contends that "hiring new faculty—at either the junior or senior level—
155 is one of the most important activities of any educational institution," promising "an influx of
156 new life, new approaches, new ideas." Given HEI's transformation as neoliberal endorsing,
157 performance driven, corporate entities, Grant and Sherrington's (2006, p.1) opening assertion
158 in their book is timely- "Why should anyone want to become an academic?" Indeed, whilst the
159 public perception of universities remains largely 'old-school' whereby institutions focus on
160 teaching, the reality of academic employment is frequently quite different (Erickson et al.,
161 2020). This disconnect between myth and practice manifests in HE recruitment strategy, policy,
162 and job adverts.

163 Despite a paucity of research, some studies have reflected upon specific modes of
164 communication in academic job adverts, and provide a context and useful comparison for our
165 approach to analysing job advertisements in this article. For example, Fairclough's (1993)
166 discourse analysis of three academic job adverts refers to institutions claiming authority over
167 employees, and casting potential job applicants in the employee role. In one advert for Sheffield
168 City Polytechnic (now Sheffield Hallam University) Fairclough highlights how educational
169 management vocabulary and collocations (*teaching excellence, expertise, a dynamic, forward-*

170 *looking environment, progressing research, research and consultancy*) arguably help construct
171 new corporate identities. Such narrative now appears commonplace in job adverts, as reflected
172 in other studies in other parts of the world. For example, Nuttall et al (2013) found Australian
173 university job adverts for teacher educators characterised by human resource management
174 (HRM) language rather than the expectations of specific roles. Also, Pitt and Mewburn (2016)
175 and Lavigne (2016) found similar disjuncts between key criteria and role expectations.

176 Until recently, links between academic achievement and practical experience endured
177 in HE. For many HE programmes including C&E, it was perceived beneficial to maintain and
178 reinforce connections between classroom theory and industry practice (Forster et al, 2017).
179 Consequently, faculty typically displayed an eclectic cohort of staff exemplifying diversity in
180 theoretical achievements, professional engagement and personal specialism(s). This often
181 included industry professionals, attracted by the move into academia (Becher, 1989; Metcalf
182 et al., 2005) and who frequently found industrial experience in C&E, “serves as at least an
183 initial substitute for a doctoral degree” (Becher, 1989, p.134).

184 Since Becher’s (1989) commentary, UK HEI’s have focused recruitment more on
185 ‘research’ than ‘practical experience’. This has established employment pre-conditions that
186 exclude the majority of professionals working in the C&E industry; namely a PhD and a record
187 of accomplishment in research publications and grant awards. Indeed, the person specification
188 for research performance is routinely designated ‘essential’, (Hayward & Ongaro, 2016)
189 whereas professional membership such as the Royal Institution of Chartered Surveyors (RICS),
190 Institution of Civil Engineers (ICE), or professional experience; is routinely judged ‘desirable’.
191 This ‘research’ first policy has championed the advent of the career academic (Pilcher et al,
192 2017; Tennant et al, 2015). To counter industry inexperience within faculty, some have argued
193 academics should undertake industrial placement both prior to, and during their employment
194 (Chan, 2018). This viewpoint resonates closely with the Royal Academy Industrial Fellowships
195 Scheme (2019) that asserts industry relevance in teaching.

196 Against this contextual backdrop, the UK government introduced the TEF, aspiring to
197 rebalance the research – teaching nexus and ensure teaching became equally valued. This is
198 fundamental in C&E where theory and practice are interdependent. Indeed, debates regarding
199 the prominence of ‘teaching’ or ‘research’ are not new. Both the 1963 report into *Higher*
200 *Education* (HMSO, 1963) and the 1964 report examining *University Teaching Methods*
201 (University Grants Committee, 1964), known colloquially as the Robbins and Hale reports
202 respectively, detail concerns regarding a research-teaching divide. Robbins, “urged that
203 teaching should get at least as much emphasis as research” (Calhoun, 2014, p.79). Hale’s report

204 was critical, suggesting promotion too often depended “primarily on the amount of published
205 work an individual has done” (University Grants Committee, 1964, p.135). This is arguably far
206 more pronounced today with extremely high target objective metrics for promotion by research
207 in terms of grant income, publications, citations and H-index scores being set. Moreover, it is
208 arguable that such objective metrics for research oriented staff, promotion contrast greatly with
209 more loosely defined criteria for promotion for teaching fellow status. Here, promotion is often
210 closely intertwined with administration and has very little to do with teaching quality or
211 innovation in Teaching and Learning (cf. Ginsberg, 2011, and something the results in the Data
212 and Analysis section below confirm).

213 Yet, although such concerns of research bias continued to emerge (Halsey and Trow
214 1971), with the advent of the first Research Assessment Exercise (RAE) in 1986 (Jump, 2013),
215 research dominance became institutionalized and legitimized. The RAE, and subsequently the
216 REF, continues to disproportionately dictate HEI strategic decision-making in the UK, and
217 somewhat unsurprisingly recruitment policy and practice has shifted from a traditional
218 professional competence, to a profile that closely aligns with research competence (Cox, 2009).
219 This is manifest worldwide (e.g. Australia (Norton, 2013)) and reflects HEI’s growing global
220 marketplace and an institution’s drive to explore and exploit income streams other than
221 teaching. As Collini (2018) notes, funding research through external income generation has
222 become big business for academics, and is now increasingly written into job adverts as
223 ‘essential’, although compared to Hale’s time (1964) the number of publications and research
224 grant income won has arguably increased greatly.

225 Many academic disciplines face similar issues and challenges; however, for disciplines
226 with a vocational emphasis such as C&E education the balance between the theory and the
227 practical is arguably more acute. Subsequent impact on engineering education, pedagogy and
228 teaching excellence remains inconclusive. Presently, institutions are faced with a host of
229 dilemmas regarding who to recruit: what type of qualities should be sought? Employ career
230 academics or industrialists? Should HEI’s focus on REF, TEF, or indeed University
231 Apprenticeships (e.g. Degree/Graduate Apprenticeships)? It is questions such as these that are
232 reflected upon in this paper. Drawing on an extensive database of recruitment advertisements
233 for HE posts in C&E (200+) over a three year period we explore and discuss what
234 employability criteria institutions prioritise in advertisements and, further, what difference, if
235 any, the TEF has made to the C&E recruitment practices of HE institutions in the UK.

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237 **3. Methodology**

238 Our data consists of C&E advertisements in the UK for lecturer, senior lecturer, and professor.
239 We are not the first to analyse job adverts, others have done so in cookery (Robinson et al.,
240 2010), forestry (Bettinger & Merry, 2018) and civil engineering (Gerek & Efeoglu, 2015).
241 Also, adverts in HE (Fairclough,1993; Nuttall et al, 2013; Lavigne, 2016; Pitt and Mewburn
242 2016) have received attention.

243 Our data collection of C&E advertisements ran from 2015 to 2018. The announcement
244 of TEF towards the end of 2015 represented an opportunity to compile pre and post TEF data
245 sets for analysis. Whilst it is not possible to specify an exact date for a job advert written in
246 consideration of TEF, after careful deliberation it was concluded that August 2016 represented
247 a suitable pre-TEF cut off date. This was approximately eight months after the original green
248 paper publication (BIS, 2016). Consequently and for the purpose of data analysis, job adverts
249 posted after this date were recognized as post-TEF. This provided a data set of circa 200 job
250 adverts split equitably between pre and post TEF.

251 Sources for adverts were primarily ‘jobs.ac.uk’ and Collaborative Network of Building
252 Researchers (CNBR). Over 1000 webpages were viewed and 202 adverts were downloaded.
253 The vast majority related to the wider built environment and civil engineering disciplines
254 (Construction Project Management, Quantity Surveying, Building Surveying, Planning, Real
255 Estate, Architecture, Interior Design, Building Services Engineering, Civil Engineering, and
256 Structural Engineering). The majority of adverts come from University institutions
257 characterised as Post 92. These are former Polytechnic institutions known today as the Post
258 92s as they were given deregulated degree awarding status in 1993 by government act. These
259 institutions largely focus on vocational subjects. This was unintended. The aim of the paper
260 was to analyse job adverts in the HEI sector as they appeared over time as opposed to targeting
261 specific types of institution such as Post 92s. Rather, it is simply the case that historically, it is
262 this category of HEI where Built Environment or Construction Departments typically reside.

263 The procedure for priming the job advertisements for analysis was an initial discussion
264 amongst five of the authors rather than one (Norris, 1997) to decide how this should be
265 approached, followed by three authors then working through the adverts to extract the key
266 information through a process of identifying and extracting the terminology used and the
267 attributes specified. When this stage was complete all authors met again and decided upon the
268 different categories to focus on for the empirical analysis outlined below. In preparing the
269 adverts for analysis we were faced with the possibility of confusion, particularly at the level of
270 ‘job level descriptors’, whereby a ‘teaching only’ type job in the C&E field also stipulated
271 applicants having engaged in ‘pedagogic and practitioner research’ and to make a ‘significant

272 contribution to professional journals’. Such individuals, although not considered ‘research
273 active’ (Stern, 2016) were still required to engage in scholarly activity. In this context, the
274 Higher Education Statistic Agency (HESA 2018) definition of academic jobs is adopted as a
275 guide, although it is only the first two categories that the job advertisements we analysed fell
276 into:

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- 278 • **Teaching only** staff are those whose contracts state they are employed only for teaching.
- 279 • **Teaching and research** staff are those whose contracts state they are employed both for
280 teaching and research.
- 281 • **Research only** staff are those whose contracts state their primary academic function is
282 research, even though they may teach a limited number of hours (up to 6 hours per week
283 or pro-rata for part-time staff).
- 284 • **Neither teaching nor research** staff are those whose contracted academic employment
285 function is neither teaching nor research, e.g. Vice-Chancellor.

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287 Of the 202 adverts examined, only 4 (2%) were for teaching only roles (Teaching Fellow /
288 Senior Teaching Fellow). This is unrepresentative of the recent growth in new teaching only
289 posts within HE in the UK and indeed the sideways transfer (‘research inactive’) of existing
290 teaching & research staff to teaching only contracts before the REF 2021 (Baker, 2019). The
291 other 198 jobs we reviewed fell into the Teaching and Research category. As such, they
292 provided an ideal window to see how teaching and research are being prioritised, and what the
293 role of other elements, such as administration, alongside them may be (see below). To appraise
294 the ‘essential’ and ‘desirable’ criteria, both introductory information and detailed job
295 descriptions were reviewed. Three broad, albeit predictable categories emerged; namely:

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- 297 • **Qualifications and experience:** for example PhD; BSc/BEng/MSc; PGCert; FHEA;
298 Professional Chartership / Membership, professional experience
- 299 • **Research:** for example high quality journal outputs, research funding, REF
300 returnability; PhD supervision.
- 301 • **Learning and Teaching:** for example curriculum design, teaching leadership,
302 programme leadership, teaching strategy.

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304 Empirical analysis consisted of three statistical tests. First, Pearson Correlation test to reveal
 305 correlations between Lecturer vs Senior Lecturer vs Professor adverts (see Table 4) and also
 306 correlations between pre and post TEF adverts (see section 4.4). Second, chi-square
 307 independence tests to identify associations between attributes used in the adverts (see Tables
 308 5, 6 & 7). Third, phi correlation tests to identify the strength of correlations identified between
 309 attributes (see Tables 5 – 7).

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311 **4. Data and Analysis**

312 In this first section, an overview of job attributes as they appeared and were conveyed in the
 313 202 adverts collected is presented in Table 1; research attributes in Table 2 and; teaching
 314 attributes in Table 3. Following this, in the second section, Table 4 identifies correlations
 315 between Lecturer vs Senior Lecturer vs Professor adverts. In the third section, Tables 5, 6 & 7
 316 identify the statistically significant relationships between the attributes appearing in the job
 317 adverts as a whole (Table 5); within research attributes (Table 6) and within teaching attributes
 318 (Table 7). In the fourth section, results are illustrated for pre-TEF vs post-TEF for the attributes
 319 appearing in advertisements as a whole (Table 8); for research attributes (Table 9) and for
 320 teaching attributes (Table 10).

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322 **4.1 Analysis of all advertisements**

323 In Tables 1-3, data is presented in ranking order, from highest to lowest overall percentage
 324 (note: acronyms and sample sizes given at the bottom of Table 1 also apply to Tables 2-3). As
 325 Table 1 shows, the highest-ranking percentage was research outputs being desirable, followed
 326 by a BSc / BEng / MSc qualification being essential, and Professional and Teaching Experience
 327 as essential. Notably, and ranked fifth, was having a PhD being essential, in around 62% of the
 328 adverts. This would arguably rule out a significant number of applicants with industry
 329 experience from applying. It is also notable that for Professorship, Professional Experience was
 330 accorded very low priority compared to Research Outputs and securing Research Funding.

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332 **Table 1.** Percentages of job attributes appearing in academic adverts.

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Ranking	Attribute	Essential vs. Desirable	Lec (%)	SL (%)	Prof (%)	Overall (%)
1	Research Outputs	Desirable	73.9	71.8	83.3	73.8
2	BSc / BEng / MSc	Essential (qualifications)	72.3	78.9	50.0	73.3
3	Professional Experience	Essential (experience)	58.8	78.9	25.0	63.9
4	Teaching Experience	Essential (experience)	56.3	70.4	75.0	62.4
5	PhD	Essential (qualifications)	62.2	57.7	83.3	61.9

6	Securing Research Funding	Desirable	45.4	40.8	58.3	44.6
7	Chartered	Essential (qualifications)	33.6	52.1	33.3	40.1
7	PgCE	Desirable	42.9	42.3	0.0	40.1
8	FHEA	Desirable	40.3	35.2	0.0	36.1
8	Chartered	Desirable	43.7	28.2	8.3	36.1
9	PhD	Desirable	24.4	29.6	8.3	25.2
10	PgCE	Essential (qualifications)	21.0	25.4	33.3	23.3
10	FHEA	Essential (qualifications)	16.8	29.6	50.0	23.3
11	Teaching Experience	Desirable	27.7	15.5	0.0	21.8
12	Professional Experience	Desirable	11.8	1.4	0.0	7.4

334 Lec: Lecturer (sample size = 119); SL: Senior Lecturer (sample size = 71); P: Professor
 335 (sample size = 12); Overall: Lec + SL + Prof (sample size = 202). ‘Chartered’ = member of a
 336 C&E professional body; PgCE = Postgraduate Certificate in Education; FHEA = Fellow of
 337 the Higher Education Academy (the body in the UK responsible for a focus on teaching)
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339 In Table 2 there appears a clear difference in relation to research for Lecturer and Senior
 340 Lecturer, and Professor. The latter contains, perhaps unsurprisingly, a far greater weight
 341 towards funding, PhD supervision, Recognised Research, REF, and International Profile. Over
 342 half the adverts were looking for applicants with research publications and a PhD, again
 343 appearing to ‘rule out’ those with an industry or professional based background applying, as
 344 they have probably rarely been in a position to consider publications.

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346 **Table 2.** Percentages of research attributes appearing in academic adverts.

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Ranking	Attribute	Lec (%)	SL (%)	Prof (%)	Overall (%)
1	Contribute to Research	89.0	90.3	83.3	89.1
2	Research Funding	54.2	51.4	83.3	55.0
3	Journals / Publications / Quality outputs	54.2	50.0	66.7	53.5
4	PhD Supervision	51.7	38.9	83.3	49.0
5	Recognised Research	35.6	43.1	75.0	40.6
6	REF	18.6	11.1	83.3	19.8
7	International Profile	11.0	12.5	75.0	15.3
8	Multi-Disciplinary Research	7.6	11.1	41.7	10.9
9	Culture	1.7	1.4	25.0	3.0
10	Research Strategy	1.7	0.0	8.3	1.5

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350 In Table 3 below, perhaps the most notable factor is that, although the focus is supposedly on
 351 ‘teaching’ attributes, VLEs (Virtual Learning Environments) but in particular ‘Pedagogic
 352 Development’ and ‘Innovative Subject Matter’ rank very low on the list compared to
 353 ‘Administration’, ‘LTAS/Frameworks’ (Learning, Teaching and Assessment Strategy) or
 354 ‘Curriculum’. Although it is only speculative to suggest so, if the UK Government wished to

355 redress the balance towards teaching, and offered students a choice of prioritising
 356 ‘Administration²’ or ‘Innovative Subject Matter’ for qualities in their lecturers, they would be
 357 unlikely to choose the former. Indeed, it could be argued from the data provided in Table 3,
 358 that ‘Lecturer’ and ‘Senior Lecturer’ are considered ‘catch all’ roles for what are
 359 quintessentially ‘glorified administrators’ whose primary activities are increasingly removed
 360 from frontline teaching responsibilities.

361 **Table 3.** Percentages of teaching attributes appearing in academic adverts.
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Ranking	Attribute	Lec (%)	SL (%)	Prof (%)	Overall (%)
1	Administration	78.8	83.3	25.0	77.2
2	LTAS / Frameworks	69.5	77.8	50.0	71.3
3	Curriculum	66.9	70.8	41.7	66.8
4	External Body / Industry Facing	37.3	43.1	66.7	41.1
5	Leadership	20.3	30.6	75.0	27.2
6	VLEs	27.1	23.6	25.0	25.7
7	Pedagogic Development	17.8	16.7	16.7	17.3
8	Innovative Subject Matter	5.9	15.3	16.7	9.9
9	Strategic	4.2	8.3	33.3	7.4

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366 **4.2 Correlations between roles**

367 In Table 4, Pearson correlation coefficients have been calculated between the percentage results
 368 of ‘Lec’ vs. ‘SL’ vs. ‘Prof’ given in Table 1 for (a), Table 2 for (b) and Table 3 for (c). Here,
 369 results show a very high and statistically significant correlation between Lecturer and Senior
 370 Lecturer adverts ($r > 0.8$ and $p < 0.01$), whilst correlations between Lecturer and Professor
 371 adverts, and between Senior Lecturer and Professor adverts, show weaker correlations ($r < 0.7$)
 372 and higher p -values ($p > 0.01$). Correlations are still statistically significant for job (Table 4(a))
 373 and research (Table 4(b)) attributes ($p < 0.05$), but not for teaching attributes ($p > 0.05$). In
 374 other words, whilst teaching and research expectations are comparable for Lecturer and Senior
 375 Lecturer positions, there is a clear difference with Professorial positions, in particular regarding
 376 teaching expectations. For further analysis, see differences in the percentages shown in Tables
 377 2-3. Notable differences for Professor attributes are higher expectations for Research Funding,
 378 Recognised Research, REF (Table 2), Leadership and Strategy (Table 3), but lower
 379 expectations regarding teaching Administration and LTAS/Frameworks (Table 3).

² Here ‘Administration’ is considered under teaching attributes because this is how it appeared in the job attributes, we interpret the term ‘administration’ here to relate to those administrative tasks related to the activity of teaching such as taking student attendance, organising materials on to online platforms, formatting examinations and so on.

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Table 4. Pearson correlation coefficients *r* between attributes of Lecturer vs. Senior Lecturer vs Professor adverts.

	Lec	SL	Prof
Lec	1	0.886**	0.597*
SL	0.886**	1	0.638*
Prof	0.597*	0.638*	1

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(a) Job attributes

	Lec	SL	Prof
Lec	1	0.981**	0.682*
SL	0.981**	1	0.645*
Prof	0.682**	0.645*	1

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(b) Research attributes

	Lec	SL	Prof
Lec	1	0.987**	0.146
SL	0.987**	1	0.227
Prof	0.146	0.227	1

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(c) Teaching attributes

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level.

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4.3 Statistically significant associations within job, research, and teaching attributes

Tables 5, 6 & 7 show the statistically significant associations within job, research and teaching attributes in ranking order (from highest to lowest number of non-independent attributes). These tables present the key ranking data on the left and more detailed statistical data on the right in line with how data is presented for this specific test and also for others for possible comparative or replicative purposes. Chi-square independence test results (χ^2 and *p*) and the phi coefficient (ϕ) are given for each non-independent attribute listed in these tables (italic: *p* < 0.01; non-italic: *p* < 0.05). Table 5 shows a high number of associations between many of these job attributes. The only attributes with a strong association (i.e $\phi > 0.7$, excluding essential vs. desirable of the same attribute) are PgCE with FHEA ($\phi = 0.834$) and PgCEd with FHEAd ($\phi = 0.730$), meaning that, for example, adverts mentioning a PgCE are highly likely to also mention FHEA. Non-independent attributes with lower phi coefficient values (e.g. $\phi < 0.4$) are still associated, but the associations are weaker. Particularly striking is the lack of any statistical association with Teaching Experience, which could be determined as adverts being 'biased' towards research based attributes with a lack of focus on what could arguably be more

415 important from a student perspective, i.e. teaching-related. Indeed, any shift towards TEF and
 416 the ever-increasing focus on National Student Satisfaction Survey (NSS) remains
 417 imperceptible, with associations between the teaching-related deemed inconsequential.
 418 Drawing on the statistical evidence presented, teaching experience is not paramount when
 419 advertising certain ‘academic job roles’.

420

421 **Table 5.** Statistically significant associations between job attributes.*

Attribute	Number of non-independent attributes	Non-independent attributes
PhD	7	RO ($\chi^2(1) = 15.1, p = 0.000, \phi = 0.273$), BM ($\chi^2(1) = 17.0, p = 0.000, \phi = -0.290$), PE ($\chi^2(1) = 10.7, p = 0.001, \phi = -0.230$), SRF ($\chi^2(1) = 10.9, p = 0.001, \phi = 0.232$), PhDd ($\chi^2(1) = 84.5, p = 0.000, \phi = -0.647$), TEd ($\chi^2(1) = 4.8, p = 0.029, \phi = -0.154$), PEd ($\chi^2(1) = 6.8, p = 0.009, \phi = 0.183$)
BM	7	PE ($\chi^2(1) = 14.4, p = 0.000, \phi = 0.267$), PhD ($\chi^2(1) = 17.0, p = 0.000, \phi = -0.290$), PgCE ($\chi^2(1) = 10.4, p = 0.001, \phi = 0.227$), FHEA ($\chi^2(1) = 6.1, p = 0.014, \phi = 0.174$), PhDd ($\chi^2(1) = 12.4, p = 0.000, \phi = 0.248$), PgCEd ($\chi^2(1) = 4.7, p = 0.031, \phi = 0.152$), TEd ($\chi^2(1) = 6.8, p = 0.009, \phi = 0.183$)
PgCEd	6	BM ($\chi^2(1) = 4.7, p = 0.031, \phi = 0.152$), PE ($\chi^2(1) = 13.4, p = 0.000, \phi = 0.258$), PgCE ($\chi^2(1) = 22.1, p = 0.000, \phi = -0.331$), FHEA ($\chi^2(1) = 22.1, p = 0.000, \phi = -0.331$), CHd ($\chi^2(1) = 4.0, p = 0.044, \phi = 0.141$), FHEAd ($\chi^2(1) = 108, p = 0.000, \phi = 0.730$)
PE	5	BM ($\chi^2(1) = 14.4, p = 0.000, \phi = 0.267$), PhD ($\chi^2(1) = 10.7, p = 0.001, \phi = -0.230$), PgCEd ($\chi^2(1) = 13.4, p = 0.000, \phi = 0.258$), FHEAd ($\chi^2(1) = 6.5, p = 0.011, \phi = 0.180$), PEd ($\chi^2(1) = 28.6, p = 0.000, \phi = -0.376$)
FHEAd	5	PE ($\chi^2(1) = 6.5, p = 0.011, \phi = 0.180$), PgCE ($\chi^2(1) = 17.3, p = 0.000, \phi = -0.292$), FHEA ($\chi^2(1) = 27.0, p = 0.000, \phi = -0.365$), CHd ($\chi^2(1) = 5.4, p = 0.020, \phi = 0.163$), PgCEd ($\chi^2(1) = 108, p = 0.000, \phi = 0.730$)
TEd	5	RO ($\chi^2(1) = 6.3, p = 0.012, \phi = -0.176$), BM ($\chi^2(1) = 6.8, p = 0.009, \phi = 0.183$), TE ($\chi^2(1) = 62.4, p = 0.000, \phi = -0.556$), PhD ($\chi^2(1) = 4.8, p = 0.029, \phi = -0.154$), SRF ($\chi^2(1) = 5.1, p = 0.024, \phi = -0.159$)
PgCE	4	BM ($\chi^2(1) = 10.4, p = 0.001, \phi = 0.227$), FHEA ($\chi^2(1) = 140.4, p = 0.000, \phi = 0.834$), PgCEd ($\chi^2(1) = 22.1, p = 0.000, \phi = -0.331$), FHEAd ($\chi^2(1) = 17.3, p = 0.000, \phi = -0.292$)
FHEA	4	BM ($\chi^2(1) = 6.1, p = 0.014, \phi = 0.174$), PgCE ($\chi^2(1) = 140.4, p = 0.000, \phi = 0.834$), PgCEd ($\chi^2(1) = 22.1, p = 0.000, \phi = -0.331$), FHEAd ($\chi^2(1) = 27.0, p = 0.000, \phi = -0.365$)
PEd	4	PE ($\chi^2(1) = 28.6, p = 0.000, \phi = -0.376$), PhD ($\chi^2(1) = 6.8, p = 0.009, \phi = 0.183$), CH ($\chi^2(1) = 4.8, p = 0.028, \phi = -0.155$), PhDd ($\chi^2(1) = 5.5, p = 0.019, \phi = -0.165$)
SRF	3	RO ($\chi^2(1) = 16.5, p = 0.000, \phi = 0.286$), PhD ($\chi^2(1) = 10.9, p = 0.001, \phi = 0.232$), TEd ($\chi^2(1) = 5.1, p = 0.024, \phi = -0.159$)
PhDd	3	BM ($\chi^2(1) = 12.4, p = 0.000, \phi = 0.248$), PhD ($\chi^2(1) = 84.5, p = 0.000, \phi = -0.647$), PEd ($\chi^2(1) = 5.5, p = 0.019, \phi = -0.165$)
CHd	3	CH ($\chi^2(1) = 52.6, p = 0.000, \phi = -0.510$), PgCEd ($\chi^2(1) = 4.0, p = 0.044, \phi = 0.141$), FHEAd ($\chi^2(1) = 5.4, p = 0.020, \phi = 0.163$)
RO	2	PhD ($\chi^2(1) = 15.1, p = 0.000, \phi = 0.273$), SRF ($\chi^2(1) = 16.5, p = 0.000, \phi = 0.286$)
CH	2	CHd ($\chi^2(1) = 52.6, p = 0.000, \phi = -0.510$), PEd ($\chi^2(1) = 4.8, p = 0.028, \phi = -0.155$)
TE	1	TEd ($\chi^2(1) = 62.4, p = 0.000, \phi = -0.556$)

422 * BM: BSc/BEng/MSc (essential); CH: Chartered (essential); CHd: Chartered (desirable);
 423 FHEA: FHEA (essential); FHEAd: FHEA (desirable); PE: Professional Experience
 424 (essential); PEd: Professional Experience (desirable); PgCE: PgCE (essential); PgCEd:
 425 (desirable); PhD: PhD (essential); PhDd: PhD (desirable); RO: Research Outputs; SRF:

426 Securing Research Funding (desirable); TE: Teaching Experience (essential); TEed: Teaching
 427 Experience (desirable).

428

429 Table 6 for research attributes below shows, similarly as with job attributes, there are a high
 430 number of associations (although none are strong, as $\phi < 0.5$ for all attributes). This is perhaps
 431 to be expected, as research publications tend to follow successful completion of a PhD, and a
 432 successful PhD may result in research funding being applied for and being awarded, and
 433 publications 3* to 4* standard for the UK REF exercise resulting in submission to the REF. As
 434 with previous results, this data appears to exclude the industrial based practitioner from
 435 applying, who it could be argued possesses little or none of these research attributes.

436

437 **Table 6.** Statistically significant associations between research based attributes.*

Attribute	Number of non-independent attributes	Non-independent attributes
REF	8	RF ($\chi^2(1) = 12.6, p = 0.000, \phi = 0.250$), JPQ ($\chi^2(1) = 3.9, p = 0.047, \phi = 0.140$), PhDS ($\chi^2(1) = 5.1, p = 0.024, \phi = 0.159$), RR ($\chi^2(1) = 12.3, p = 0.000, \phi = 0.247$), IP ($\chi^2(1) = 11.3, p = 0.001, \phi = 0.236$), MDR ($\chi^2(1) = 10.2, p = 0.001, \phi = 0.225$), CLT ($\chi^2(1) = 8.5, p = 0.003, \phi = 0.206$), RS ($\chi^2(1) = 4.2, p = 0.040, \phi = 0.144$)
RR	7	CR ($\chi^2(1) = 5.1, p = 0.023, \phi = 0.16$), RF ($\chi^2(1) = 21.1, p = 0.000, \phi = 0.323$), JPQ ($\chi^2(1) = 24.3, p = 0.000, \phi = 0.347$), PhDS ($\chi^2(1) = 5.0, p = 0.025, \phi = 0.158$), REF ($\chi^2(1) = 12.3, p = 0.000, \phi = 0.247$), IP ($\chi^2(1) = 14.0, p = 0.000, \phi = 0.263$), CLT ($\chi^2(1) = 4.7, p = 0.030, \phi = 0.152$)
RF	6	CR ($\chi^2(1) = 7.6, p = 0.006, \phi = 0.194$), JPQ ($\chi^2(1) = 25.0, p = 0.000, \phi = 0.352$), PhDS ($\chi^2(1) = 12.7, p = 0.000, \phi = 0.251$), RR ($\chi^2(1) = 21.1, p = 0.000, \phi = 0.323$), REF ($\chi^2(1) = 12.6, p = 0.000, \phi = 0.250$), MDR ($\chi^2(1) = 7.2, p = 0.007, \phi = 0.189$)
PhDS	6	RF ($\chi^2(1) = 12.7, p = 0.000, \phi = 0.251$), JPQ ($\chi^2(1) = 11.6, p = 0.001, \phi = 0.240$), RR ($\chi^2(1) = 5.0, p = 0.025, \phi = 0.158$), REF ($\chi^2(1) = 5.1, p = 0.024, \phi = 0.159$), IP ($\chi^2(1) = 7.06, p = 0.008, \phi = 0.187$), MDR ($\chi^2(1) = 5.6, p = 0.018, \phi = 0.166$)
CR	5	RF ($\chi^2(1) = 7.6, p = 0.006, \phi = 0.194$), JPQ ($\chi^2(1) = 9.4, p = 0.02, \phi = 0.215$), RR ($\chi^2(1) = 5.1, p = 0.023, \phi = 0.16$), CLT ($\chi^2(1) = 19.8, p = 0.000, \phi = -0.313$), RS ($\chi^2(1) = 9.8, p = 0.002, \phi = -0.220$)
JPQ	5	RF ($\chi^2(1) = 25.0, p = 0.000, \phi = 0.352$), PhDS ($\chi^2(1) = 11.6, p = 0.001, \phi = 0.240$), RR ($\chi^2(1) = 24.3, p = 0.000, \phi = 0.347$), REF ($\chi^2(1) = 3.9, p = 0.047, \phi = 0.140$), MDR ($\chi^2(1) = 10.7, p = 0.001, \phi = 0.231$)
CLT	5	CR ($\chi^2(1) = 19.8, p = 0.000, \phi = -0.313$), RR ($\chi^2(1) = 4.7, p = 0.030, \phi = 0.152$), REF ($\chi^2(1) = 8.5, p = 0.003, \phi = 0.206$), IP ($\chi^2(1) = 5.7, p = 0.017, \phi = 0.168$), RS ($\chi^2(1) = 42.9, p = 0.000, \phi = 0.461$)
IP	4	PhDS ($\chi^2(1) = 7.1, p = 0.008, \phi = 0.187$), RR ($\chi^2(1) = 14.0, p = 0.000, \phi = 0.263$), REF ($\chi^2(1) = 11.3, p = 0.001, \phi = 0.236$), CLT ($\chi^2(1) = 5.7, p = 0.017, \phi = 0.168$)
MDR	4	RF ($\chi^2(1) = 7.2, p = 0.007, \phi = 0.189$), JPQ ($\chi^2(1) = 10.7, p = 0.001, \phi = 0.231$), PhDS ($\chi^2(1) = 5.6, p = 0.018, \phi = 0.166$), REF ($\chi^2(1) = 10.2, p = 0.001, \phi = 0.225$)
RS	3	CR ($\chi^2(1) = 9.8, p = 0.002, \phi = -0.220$), REF ($\chi^2(1) = 4.2, p = 0.040, \phi = 0.144$), CLT ($\chi^2(1) = 42.9, p = 0.000, \phi = 0.461$)

438 * CLT: Culture; CR: Contribute to Research; IP: International Profile; JPQ: Journals /
 439 Publications / Quality outputs; MDR: Multi-Disciplinary Research; PhDS: PhD Supervision;
 440 REF: Research Excellence Framework; RF: Research Funding; RR: Recognised Research;
 441 RS: Research Strategy.

442

443 Notably, and in contrast to the many associations shown in Tables 5 and 6, in Table 7 there are
444 very few associations between teaching related attributes, and these are all weak ($\phi < 0.3$).

445

446 **Table 7.** Statistically significant associations between teaching attributes*.

Attribute	Number of non-independent attributes	Non-independent attributes
CUR	2	AD ($\chi^2(1) = 14.7, p = 0.000, \phi = 0.269$), EI ($\chi^2(1) = 14.3, p = 0.000, \phi = -0.267$)
AD	1	CUR ($\chi^2(1) = 14.7, p = 0.000, \phi = 0.269$)
EI	1	CUR ($\chi^2(1) = 14.3, p = 0.000, \phi = -0.267$)
LD	1	ST ($\chi^2(1) = 5.6, p = 0.018, \phi = 0.166$)
ST	1	LD ($\chi^2(1) = 5.6, p = 0.018, \phi = 0.166$)
LF	0	-
VLEs	0	-
PD	0	-
ISM	0	-

447 * AD: Administration; CUR: Curriculum; EI: External Body / Industry Facing; ISM:
448 Innovative Subject Matter; LD: Leadership; LF: LTAS / Frameworks; VLEs; PD: Pedagogic
449 Development; ST: Strategic.

450

451 If Tables 5, 6 & 7 are considered collectively, the key finding is that there are several
452 relationships between job attributes, and between research attributes, but very few relationships
453 between teaching attributes. These statistical results indicate that research attributes are well
454 defined and inter-related, whilst teaching attributes tend to be independent and variable across
455 the job adverts. The REF is an over-arching attribute that ‘connects’ many of the other research
456 based attributes (see Table 6), whilst there is no over-arching attribute in teaching adverts. Most
457 teaching attributes, it could be argued, are ‘stand-alone’, i.e. independent. The striking example
458 is ‘Teaching Experience’ at the bottom of Table 5.

459

460 **4.4 Analysis of pre-TEF and post-TEF advertisements**

461 In Tables 8-10, data is presented in ranking order, from highest to lowest overall percentage.
462 The sample size of adverts analysed was 96 pre-TEF (Lec = 52, SL = 39, Prof = 5) and 106
463 post-TEF (Lec = 68, SL = 31, Prof = 7). A comparison of pre-TEF vs. post-TEF results for
464 Tables 8-10 shows little variation in attributes’ rankings. A Pearson correlation test shows a
465 strong and statistically significant correlation of job attributes pre-TEF vs. post-TEF ($r = 0.899$,

466 $p = 0.000$). Thus, there is very little change between pre and post-TEF job adverts, and therefore
 467 the priority remains with research; not teaching.

468

469 **Table 8.** Percentages of job attributes appearing in academic adverts, pre-TEF and post –
 470 TEF.

471

Ranking		Attribute	Essential vs. Desirable	Overall (%)	
Pre-TEF	Post-TEF			Pre-TEF	Post-TEF
1	2	BSc / BEng / MSc	Essential (qualifications)	83.3	64.2
2	1	Research Outputs	Desirable	65.6	81.1
3	3	Professional Experience	Essential (experience)	64.6	63.2
4	5	Teaching Experience	Essential (experience)	63.5	61.3
5	4	PhD	Essential (qualifications)	61.5	62.3
6	7	PgCE	Desirable	42.7	37.7
7	7	Chartered	Essential (qualifications)	39.6	40.6
7	10	Chartered	Desirable	39.6	33.0
8	9	FHEA	Desirable	36.5	35.8
9	6	Securing Research Funding	Desirable	33.3	54.7
10	12	PhD	Desirable	22.9	27.4
11	13	FHEA	Essential (qualifications)	20.8	25.5
12	14	Teaching Experience	Desirable	21.9	21.7
13	11	PgCE	Essential (qualifications)	17.7	28.3
14	15	Professional Experience	Desirable	9.4	5.7

472

473

474 Similarly, there is a strong and statistically significant correlation of research attributes pre-
 475 TEF vs. post-TEF ($r = 0.980$, $p = 0.000$). Here again, the correlation is even higher, showing
 476 hardly any difference between research attributes in the job adverts pre and post TEF.

477

478

479 **Table 9.** Percentages of research attributes appearing in academic adverts, pre-TEF and post–
 480 TEF.

481

Ranking		Attribute	Overall (%)	
Pre-TEF	Post-TEF		Pre-TEF	Post-TEF
1	1	Contribute to Research	87.5	90.6
2	3	Research Funding	60.4	50.0
3	2	Journals / Publications / Quality outputs	56.3	50.9
4	4	PhD Supervision	50.0	48.1
5	5	Recognised Research	36.5	44.3
6	6	REF	20.8	18.9
7	7	International Profile	15.6	15.1
8	7	Multi-Disciplinary Research	6.3	15.1
9	8	Culture	4.2	1.9

482

483

484 The correlation of teaching attributes pre-TEF vs. post-TEF is also strong and statistically
 485 significant ($r = 0.928$, $p = 0.000$). Here again there is strikingly little difference between the
 486 adverts pre and post-TEF.

487

488 Taken together, the results of Tables 8, 9 & 10 indicate the focus and direction of adverts has
 489 not changed post TEF. This is demonstrated by the very high correlation coefficients ($r \geq 0.9$)
 490 found for job attributes, research attributes and teaching attributes pre-TEF vs. post-TEF, and
 491 the very high level of statistical significance of the results ($p = 0.000$).

492

493 **Table 10.** Percentages of teaching attributes appearing in academic adverts, pre-TEF and
 494 post-TEF.

495

Ranking		Attribute	Overall (%)	
Pre-TEF	Post-TEF		Pre-TEF	Post-TEF
1	2	Administration	82.3	72.6
2	3	Curriculum	74.0	60.4
3	1	LTAS / Frameworks	62.5	79.2
4	4	External Body / Industry Facing	40.6	41.5
5	6	VLEs	28.1	23.6
6	7	Pedagogic Development	22.9	12.3
7	5	Leadership	19.8	34.0
8	8	Innovative Subject Matter	10.4	9.4
9	10	Strategic	7.3	7.5

496

497

498 5. Discussion

499 Research findings disclose numerous discussion points; however, two investigative highlights
 500 dominate. First, research attributes across all job advertisements demonstrate a statistically
 501 significant association and an unmistakable homogeneity. In stark contrast, teaching attributes
 502 across all job advertisements disclose virtually no significant associations. Second, job
 503 advertisements demonstrate imperceptible changes post-TEF when compared with pre-TEF.
 504 The results would imply those responsible for writing advertisements exhibit a clear
 505 understanding of the phraseology to adopt in connection with key research attributes.
 506 Conversely, in relation to teaching attributes there is a striking heterogeneity. This could
 507 suggest that either teaching phraseology has yet to become institutionalized, or alternatively
 508 there remains limited understanding of what employability attributes would constitute a

509 homogeneous set of performance criteria for teaching excellence in C&E education. Indeed,
510 the heterogeneity exhibited in C&E adverts in relation to teaching criteria may translate more
511 generally across academic disciplines (O’Leary, Cui & French, 2019). Given the striking
512 similarity for adverts pre-TEF and post-TEF, it is probability the latter. The lack of a coherent
513 employability framework for teaching is all the more surprising given the availability of generic
514 (Cashmore, Cane & Cane, 2013; HEA, 2013, McHanwell & Robson, 2018) and engineering
515 specific guidance (Graham 2016; 2018) that could be adopted to assist those responsible for
516 formulating job adverts.

517 The disconnect between the job adverts, teaching excellence and desired attributes is
518 reinforced, with teaching ‘administration’ ranking highest. This compares to ‘innovative
519 subject matter’ positioned near the bottom. Yet to aspire for excellence in teaching, it may be
520 anticipated the significance of ‘administration’ and ‘innovative teaching matter’ attributes
521 would be reversed, and that there would a greater role for Sotl and professional and industry
522 experience to encourage a linking of theory and practice in the classroom. Indeed, as
523 stakeholders in HE, students are known to value real word examples (Collins & Davies, 2009;
524 Tennant et al, 2015; Forster et al, 2017; Pilcher et al, 2017); inspirational teaching
525 methods (Sue & Wood, 2012): and that staff have received training in how to teach and possess
526 professional / industry expertise (Buckley, Soilemetzidis & Hillman, 2015). Whilst the
527 majority of HE academic staff are expected to complete a Postgraduate Certificate in Education
528 (Gosling, 2010; Cui, French & O’Leary, 2019), such training cannot give them key professional
529 / industry experience. This demonstrates the increasing importance of teaching ‘administration’
530 over ‘teaching’ itself. The drift towards organizational efficacy at the expense of teaching
531 proficiency is indicative of the general increase in the power of administration and
532 administrative roles (Ginsberg, 2011) and by extension HE governance in the UK (Erickson et
533 al., 2020).

534 The lack of any substantive adjustment pre-TEF and post TEF could indicate many
535 factors. Perhaps TEF has not yet influenced job advertisements during the timeframe of our
536 sampling. This would be extraordinary given the knowledge and discussion of TEF in the
537 public domain. Indeed institutions had already undergone TEF metrics and performance audits
538 (Gold, Silver, and Bronze) by the time many of the adverts were sampled and recent
539 Department of Education research (Vivian et al., 2019) claim evidence it has impacted upon
540 recruitment. Yet, the results here show that the TEF has simply failed to redress university
541 employment bias. History suggests research bias was customary in UK HEI’s (Robbins, 1963)
542 well before the RAE, REF and TEF. However, Macfarlane’s (2015, np) overview of early

543 volumes of *Studies in Higher Education* from the mid 1970's revealed that "many articles
544 focused on undergraduate teaching - the language of this time was all about "university
545 teachers'" (his emphasis). The introduction of RAE in 1986 could be viewed as a catalyst for
546 a progressive shift in HEI culture. This has been enacted through an ontological and
547 epistemological "signalling" in job adverts as to what would be considered a stereotypical role
548 identity for academics, being that of teaching-research-administration. The prioritisation of
549 funding towards research would automatically relegate teaching and afford preference to
550 research and administration. Despite the rhetoric of "parity of esteem with research" emanating
551 from HEI's, teaching continues to lack both institutional power and professional prestige. This
552 in turn begins to question the whole aim or idea of what higher education is and who and what
553 is it for? Is higher education's role one of following government policy to focus almost solely
554 on research now to the detriment of teaching? Critically, has this changed the nature and focus
555 of higher education institutions from a previous technical and professional focus (particularly
556 in the case of the former polytechnic post-92 institutions) to a focus on income generation
557 through seeking research grants and publications? Reference to Elton's (2009, p137) analysis
558 of Wilhelm von Humboldt's memorandum for the new University of Berlin in the early 1800's
559 provides some insight to such questions: "it was Humboldt who realized that a university that
560 had no other objectives than to serve the short-term objectives of the state would fail both the
561 state and as a university."

562 Indeed, in addition to the two research highlights outlined, one key job criterion merits
563 further scrutiny in this context. The widespread practice of classifying a PhD as 'essential' and
564 'professional experience' as desirable endorses the research first narrative. The likelihood of
565 an industry applicant holding a PhD and demonstrating professional experience could be
566 considered atypical. Whilst adroitly framed, the demand for a PhD (also noted in the USA by
567 Schuster & Finkelstein, 2006) deliberately champions Career Academics whilst simultaneously
568 disadvantaging applicants who may satisfy other key attributes requested within the job
569 adverts. Indeed an allied point is the significant bias towards Professorial appointments having
570 research credentials whilst not requiring teaching attributes. The lack of importance given to
571 key teaching attributes at a senior academic level would appear consistent with entry-level
572 academic staff. This finding is similar to Nuttall et-al (2013, p.336) who found that job adverts
573 for teacher educators in Australia, "did not specify the skills of a 'gifted teacher' but sought
574 instead 'quality researchers'." In short, research attributes dominate corporate decision-making
575 and continue to dictate the HEI recruitment policy and procedure, and may be changing the
576 very nature and ethos of what higher education is about.

577 Furthermore, although the focus here has been on key research and teaching attributes
578 identified in job adverts, it is also worth highlighting key employment criteria that receive scant
579 prominence. Despite the rhetoric of academic industry partnerships, very little onus is placed
580 on professional accreditation or teaching qualifications. Indeed, the picture these
581 advertisements present is of a growing cohort of faculty staff academically qualified and best
582 placed to secure research income, but who possess limited industrial experience of the sector
583 or professional context for which their students are destined. Again, the impact and reach of
584 TEF appears negligible.

585 Whilst our sample consists of mainly traditional academic posts requiring candidates to
586 engage in teaching and research, there has been a growth of new teaching only appointments
587 within UK HEI's. This has been accompanied by an increase in existing academics being
588 transferred off the REF, with a sideways redeployment to teaching only contracts (Baker,
589 2019). The reorganisation and subsequent categorization of academic staff as either teaching
590 fellow (research active) and lecturer (research active) is driven by economic motives (power,
591 2015) and the desire of enhancing an HEI's submission to REF 2021. Indeed, some HEI's have
592 redefined the research inactive/active description further by classifying academic/lecturing
593 staff with 10% or less research activity on their annual activity plans as not having significant
594 responsibility for research (SRR). Consequently, lecturing staff not meeting the overly
595 prescriptive criteria (>10%) for SRR as opposed to a research performance based criteria and
596 output are therefore not eligible for submission to the REF 2021. This is of importance to our
597 findings as it demonstrates the institutional power of research gatekeepers and helps clarify
598 why the role of teaching in HEI's remains so impoverished within the job adverts reviewed.

599 Whilst teaching fellow career pathways display rhetorical parity (vis-à-vis
600 opportunities for Professorial Teaching Fellows) with peers employed on teaching and research
601 contracts there appears to be a paradoxical outcome. Despite a growth in the number of
602 academics securing professional accreditation with the Higher Education Academy vis-à-vis
603 the HEA Fellowship (Advance HE, 2018) and a longstanding annual National Teaching
604 Fellowship Scheme to recognise and award best practice (Advance HE, 2019) there remains
605 little evidence to suggest that HEI's have prioritised teaching and learning in the recruitment
606 process (nor, as noted above, in relation to criteria for promotion for research and teaching
607 routes). As this study discloses, there was scant evidence of requirements for candidates to
608 demonstrate knowledge or ambition to engage in Scholarship of Teaching and Learning (Sotl).
609 Furthermore, whilst the European University Association (Dakovic & Loukkaola, 2017)
610 recommend HEI's provide funding for academics to professionalise their teaching through

611 Action Research / Pedagogical Research, serious barriers exist for subsequent dissemination of
612 findings in publications.

613 Firstly, in the UK the REF has distorted the value of the Scholarship of Teaching and
614 Learning (Sotl) through considering those academics employed on teaching only contracts to
615 be ‘research inactive’ and thus, being engaged in non-disciplinary research is stigmatised.
616 Secondly, challenging this position through seeking inclusion in a REF submission is beset by
617 institutional gatekeepers (Cotton, Miller, & Kneale, 2017; Tierney, 2019) who may ignore HE
618 pedagogy research from colleagues outside an education department and focus on, e.g. primary
619 or secondary education research (Kneale, Cotton & Miller, 2016). A further irony has come to
620 the fore in preparation for REF 2021, for the first time the impact of research on teaching and
621 learning practice will be accepted as evidence of “impact”: “Impacts on students, teaching or
622 other activities both within and/or beyond the submitting HEI are included” (REF, 2019. p.68).

623 Whether this development can quell the research - teaching nexus doubters (Kinchin &
624 Hay, 2007) remains unknown. Suffice to say, the inclusion of impacts on students in the
625 forthcoming REF is tantamount to a continuing focus on ‘what students learn’ to an exclusion
626 of considering ‘how students learn’. This approach continues to undermine and diminishes the
627 kudos of academics who seek to engage in the Scholarship of Teaching and Learning (Sotl)
628 and derive an occupational identity, esteem and pride through their work. Critically, it means
629 that the drive and identity of higher education is one that rewards and extols the virtues of
630 research but not of teaching or of professional and industry experience. If this is not surprising
631 given historical government policy prioritisation of research, the introduction of the TEF,
632 despite its rhetoric to recalibrate the focus towards teaching has not yet translated into reality.

633

634 **6. Conclusion**

635 This paper has presented and analysed data from a large sample of job adverts including
636 ‘Lecturer’, ‘Senior Lecturer’ and ‘Professor’ roles in C&E (Construction & Engineering) for
637 periods both prior to the recent introduction of the Teaching Excellence Framework to the UK
638 Higher Education System (pre-TEF) and for after its introduction (post-TEF). This was done
639 in order to identify if there has been any change in response to what is a key government policy
640 initiative for HEI’s in the UK. The correlations between the key attributes in these adverts were
641 examined for (1) overall roles, (2) for ‘research’, and (3) for ‘teaching’. Furthermore,
642 correlations also captured job adverts for both pre-TEF and post TEF periods. As such this
643 research contributes to the existing body of research into job advertisements and their role in

644 presenting policy in HEIs, and, specifically does so in the field of C&E and in the context of
645 the introduction of the TEF.

646 Analysis demonstrates two key findings. Firstly, whilst HEI's display homogeneity in
647 relation to the phraseology for 'research' attributes and disclose positive correlations across
648 key research attributes, the contrast in relation to 'teaching' is stark. Indeed, the correlation for
649 teaching attributes is so indeterminate as to imply a haphazard approach to the vocabulary and
650 collocations used by HEI's in their recruitment. The lack of a consistent and coherent approach
651 to key teaching attributes is compounded by the identification of 'administration' as the key
652 teaching priority. Compared to key attributes such as 'innovative teaching material' or industry
653 experience, this would suggest that academics who prioritise teaching are regarded primarily
654 as administrators rather than educators. This is idiosyncratic and as Lewis (2007 p.101) has
655 argued- "teaching should be a serious component of the faculty hiring criteria, not simply a
656 peripheral item."

657 Secondly and significantly, there appears to be hardly any difference in attribute
658 priorities pre- and post-TEF. Future research could consider whether similar patterns are
659 replicated in other subject areas and drill down further to see if any correlations appear in
660 relation to job advertisements and the specific type of institution studied (e.g. Post-92 or
661 Russell Group type institutions such as the University of Oxford or the University of
662 Cambridge). In addition, although the adverts analysed here are for institutions that employ
663 and recruit globally, and in many cases have campuses worldwide, they are UK based
664 institutions. In addition, studying whether such patterns are reflected in education systems
665 elsewhere would add to the rich picture presented.

666 The central message from the findings is the continued institutionalized culture of
667 research policy and recruitment practice in UK HEI's. This is at odds with the
668 recommendations of Dearing (1997) and subsequent efforts to professionalise the role of
669 teaching in UK universities vis-à-vis a plethora of initiatives from the Higher Education
670 Academy (HEA) and the establishment of a UK Professional Standards Framework (UKPSF).

671 Not only are institutions continuing to recruit for C&E with a clearly identifiable focus
672 on research, but this policy comes at the expense of a consistent, coherent and clear
673 commitment to achieving teaching excellence (cf. Gretton & Raine, 2017) or the importance
674 of industry experience. Not only this, but institutions appear to have a clear understanding of,
675 and a compelling ability to emulate, government policy on research, as demonstrated by the
676 positive correlations between key attributes advertised for in relation to 'research'. Conversely,
677 however, institutions appear to have almost no understanding of what to advertise in relation

678 to teaching. The default position is to recruit new academics who can demonstrate potential
679 eligibility for submission to REF 2021. This may be because institutions have little
680 understanding of what teaching is, as shown in both the extremely low to almost zero
681 correlations between the key attributes used to advertise for ‘teaching’, and also perhaps
682 reinforced by the high priority accorded to ‘administration’ in these teaching attributes,
683 something which resonates with approaches to promotion also (cf. Ginsberg, 2011).

684 Arguably, this underlying lack of understanding may actually be because the message
685 given out by the UK government with regard to teaching, and to TEF, remains confused and
686 vague. This is despite close to a billion pounds allocated to support the enhancement of teaching
687 quality in the UK since 1998 (Kernohan, 2014). Perhaps the identification of what constitutes
688 excellence in teaching remains far more elusive than what constitutes excellence in research.
689 This is suggested by ongoing debates about TEF and teaching, by the similarity of adverts pre-
690 TEF and post-TEF, and also by the fact that institutions have managed to understand and
691 emulate what is wanted in relation to ‘research’. Is it therefore possible that institutions are
692 being measured by that which eludes measurement, and, perhaps more worryingly, is
693 something that it is not appropriate to measure in terms of performance metrics?

694

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