

Stairway to employment? Internships in higher education

Patrícia Silva^{1,2} · Betina Lopes¹ · Marco Costa^{1,3} ·
Dina Seabra^{1,3} · Ana I. Melo^{1,4} · Elisabeth Brito^{1,5} ·
Gonçalo Paiva Dias^{1,2}

Published online: 31 May 2015

© Springer Science+Business Media Dordrecht 2015

Abstract This article aims to shed light on the current debate regarding the role of internships in higher education in graduates' employability. In specific, it analyses empirical data on a large-scale study of Portuguese first-cycle study programmes, in order to explore indicators of the professional value of internships in the employability of higher education graduates. Results demonstrate that study programmes that include internships tend to significantly enhance graduates' employability, particularly within the universe of polytechnic and public higher education institutions. Besides the instrumental value of internships, the impact of the nature and structure of the internship on the percentage of unemployed graduates are also discussed. Mandatory internships and the inclusion of multiple, shorter internships throughout the degree are negatively associated with unemployment levels. Results indicate work-based learning can be used as a successful strategy to bridge theoretical knowledge and practice and enhance graduate employability. These findings provide important insights for the evaluation and/or the design of internship programmes in higher education.

Keywords Graduate employability · Employment · Higher education · Internships · Portugal · First-cycle degrees

✉ Gonçalo Paiva Dias
gpd@ua.pt

¹ School of Technology and Management of Águeda (ESTGA), University of Aveiro, 28, Rua Comandante Pinho e Freitas, 3750-127 Águeda, Portugal

² Research Unit on Governance Competitiveness and Public Policies (GOVCOPP), University of Aveiro, Aveiro, Portugal

³ Center for Research & Development in Mathematics and Applications (CIDMA), University of Aveiro, Aveiro, Portugal

⁴ Center for Research in Higher Education Policies (CIPES), Matozinhos, Portugal

⁵ Center for Health Technology and Services Research (CINTESIS), University of Aveiro, Aveiro, Portugal

Introduction

An important, albeit relatively unexplored, dimension of graduate employability pertains to the role and relevance of work-based learning experience. In a context of scarcity of financial resources and rise of graduate unemployment, there has been a widespread recognition that higher education institutions (HEIs) should be responsive to labour market needs (Amaral and Carvalho 2003; Teichler 2009) and, particularly, should contribute to the employability of the graduate labour supply (Wilton 2012). This narrative is not only a consequence of pressures from the labour market, but also a reflection of HEIs' increasingly concern towards future enrolments in higher education, due to its impact on both funding and organisational effectiveness, productivity and competitiveness (Jackson 2014).

Within this backdrop, HEIs have invested considerable resources so as to develop and improve students' employability skills. This has been achieved, *inter alia*, through the creation of study programmes with internships or several other forms of cooperative education between higher education and employing institutions (European Commission 2014; Teichler 2009). Despite the public discourse encouraging the use of such strategies, there is a general consensus regarding the absence of empirical studies on the professional value of these strategies (Harvey 2000; Sagen et al. 2000; Wilton 2012). Specifically, research on the extent to which the work-related experiences acquired during internships constitutes an advantage in labour market integration has presented mixed evidences. For instance, using a mixed method approach, Wilton (2012) highlights the divergent conclusions drawn from both his quantitative and qualitative stages of research, with only the latter providing a positive assessment of the benefits of internships.

Moreover, evidence on the practical benefits of internships tends to be based on students' (*vide, inter alia*, Matthew et al. 2012; Callanan and Benzing 2007) or employers' (see, for example, Gault et al. 2010) expectations and perceptions. An assessment of the impact of internships on the graduate unemployment rate,¹ accounting for (un)successful mediating factors, such as the structure and format of internships is virtually non-existent. This article seeks to redress this gap, through the analysis of a large-scale national study of all Portuguese first-cycle degrees (FCDs), to assess the extent to which internships are assets for graduate students entering the labour market.

This article begins by discussing the role of work-based learning in higher education and its relevance for the three most important stakeholders involved. Then, it advances the research hypotheses and discusses the operationalisation of the central variables and outlines the methodology that was carried out. The findings section presents an assessment of both the effectiveness of internships and the different nature and structure of internships in reducing graduate unemployment rates. In the concluding remarks, several recommendations for practitioners in higher education are highlighted. Policy implications as well as limitations of the study and future research directions are also presented.

Internships in higher education: important to whom and why?

HEIs are increasingly more concerned with the professional insertion of graduates in the labour market and with the design of institutional mechanisms to facilitate students' transition from higher education to work, commonly known as work-related or work-based

¹ In this article, the *graduate unemployment rate* reports to the percentage of graduates registered in the Employment and Vocational Training Institute (IEFP) in June 2013.

learning strategies (Little 2000). Internships constitute one of the most relevant means by which the graduate unemployment concern has been addressed.

This section deals with the relevance and instrumental value of work-related experiences for the main stakeholders involved in this process: graduate students, employers and HEIs. It also seeks to present and describe the Portuguese higher education system, as its organisation is regarded as an important variable when dealing with study programmes. Also, this contextualisation is relevant, as it facilitates potential future comparisons with higher education systems from other countries.

Work-related experiences are generally considered to be win–win–win opportunities for students, employers and HEIs (Divine et al. 2008). Internships offer students “an autonomous, multifaceted context of learning” (Valo 2000: 152), which provide a more effective learning environment than traditional classrooms. Students who undertake an internship have the opportunity to develop their problem-solving skills (Teichler 2009), as well as organisational, participative and socio-emotional competences (Alpert et al. 2009; García-Aracil and Velden 2007). By acting and making decisions in realistic situations, students may accelerate their professional growth, as they are expected to assume the posture of young professionals (Weible 2009).

Moreover, internships tend to foster a professional maturation, with interns being offered the opportunity to develop their teamwork ability, communication and interpersonal skills and gain consciousness of the workplace culture (Wilton 2012). Internships are also considered to create opportunities of early networking (Alpert et al. 2009; Hergert 2009; Weible 2009), as being on the inside of an organisation allows interns to integrate the informal network of employers. Moreover, students may have privileged access to job openings and find references for future career moves. Internships may also reduce the “entry shock” between the academic and the professional contexts, which may increase graduates’ self-esteem and, consequently, their pro-activity (Hergert 2009; Paulson and Baker 1999).

Internships also offer a set of different advantages to employers. They provide a risk-free method to evaluate possible future employees (Gault et al. 2000; Knemeyer and Murphy 2002), since the evaluation of an intern’s potential is more valuable when based on how graduates perform on the job, rather than on the evaluation of graduates’ resume or on the interviewee’s performance (Gault et al. 2010). Hence, hiring interns reduces recruitment costs (Callanan and Benzing 2007) and training costs (Alpert et al. 2009). Internships also deepen the collaboration between the academic institution and the employer, resulting in potential gains, either in terms of technology transfer or in terms of publicising the employers’ social responsiveness towards enhancing the development of the associated profession, which may lead to public relations benefits (Pianko 1996).

Accepting interns from HEIs is highly demanding for employing institutions, as a considerable amount of time is spent in creating a challenging and significant work for interns, let alone the multiple meetings and hours spent with academic supervisors. These setbacks are potentially overcome by the fact that interns tend to be enthusiastic, which may facilitate knowledge transfer to industries, thus virtually enhancing the companies’ efforts towards improvements in operations and procedures (Alpert et al. 2009; Weible 2009). Additionally, interns from HEIs are inexpensive workers, who can be used to satisfy seasonal needs (Knemeyer and Murphy 2002).

Finally, work-based learning experiences are increasingly important for HEIs. Including internships in study programmes signals an instrumental and vocational orientation which has been increasingly valued by the public community due to the growing unemployment problems shared all over Europe (Toncar and Cudmore 2000). It can, thus, be argued that

internships can create a positive image of the degree and the HEI (Alpert et al. 2009), potentially fostering the attraction of better calibre students (Barr and Mcneilly 2002).

Moreover, the links with the surrounding industrial tissue (as well as governmental institutions) can be converted into an advantage in seeking funding for research or other activities (Gault et al. 2010). In parallel, these linkages may feed the process of (re)designing study programmes. In fact, through internships, HEIs and academics have a privileged access to the expectations of the companies hiring their students with regard to the required skills and the most relevant theoretical and practical domains. These HEIs are presented with unique opportunities to align the skills employers consider important and with what is actually taught in FCD (Gault et al. 2010). Finally, academics are able to effectively counsel students in class and in terms of career opportunities and options (Tovey 2001).

The wide acceptance of internships by graduate students, HEIs and employing organisations leads to several questions regarding the effectiveness of internships in reducing graduate unemployment rates. Despite the fact that the perceived value of work-related experiences embedded in study programmes has been fairly positive, research results tend to be mainly based on expectations and perceptions of students and academics rather than on actual post-graduation employability (Jensen 2009; Matthew et al. 2012). Bowes and Harvey (1999) and Mason et al. (2003) attempt to fill in this gap, by assessing the impact of internships on proportions of graduates (un)employed 6 months after graduation. Although these studies tend to support the overwhelming positive effect of internships, their empirical analysis is focused on a time frame preceding the Bologna reforms. In addition, these are focused on the first 6 months following graduation being, therefore, more limited in assessing the longer-term impact of internships. In the aftermath of the Bologna reforms, research is virtually non-existent. Moreover, Wilton (2012), using a questionnaire survey applied to graduates who completed their FCD in 1999 in 38 HEIs in the UK, concluded that the impact of internships is inconsistent, and asserts that research on other mediating factors is required, arguing that more needs to be understood about the characteristics of internships. This article seeks to address this gap, by exploring the relationships between internships and graduate *employment* or *employability*,² within a time frame after the Bologna reforms.

This research is focused on the Portuguese case. Overall, Portuguese tertiary education can be divided into two subsystems, university and polytechnic education, provided in both public and private institutions.³ Whereas the university system has a strong theoretical basis and is research oriented, polytechnic institutions tend to provide a more practical and professionally oriented training. Polytechnic institutions are a product of the democratisation process, created as a mechanism to foster equity and increase student participation to European levels (Tavares et al. 2008; Tavares 2013). Polytechnic higher education assumed the responsibility for bachelor degrees (*bacharelato*), implying a three-year study programme, in applied areas such as technology; services; and teacher training (Magalhães et al. 2009). Over the following two decades, polytechnics and the private sector rapidly expanded, substantially contributing to the massification of the Portuguese higher education system. In 1997, polytechnics were entitled the possibility to award the “licenciado”

² In this article, we use these two terms interchangeably, as is frequent in the current (public) discourse (Eurostat 2009). We do, however, acknowledge that *employment* and *employability* may have different meanings in theoretical approaches. While the former refers to graduates' establishment in the job market after graduation, the latter focuses on the personal attributes of graduates which enhance their ability and probability of accessing a job (Stiwne and Alves 2010; Teichler 2009).

³ The full list of the overall institutional landscape can be consulted at <http://www.dges.mctes.pt/DGES/pt/Estudantes/Rede/Ensino+Superior/Estabelecimentos/>.

degree, through a two-staged degree (“licenciatura bietápica”),⁴ which, until then, was a prerogative of universities (Magalhães et al. 2009). Within the Bologna process, Portuguese HEIs restructured their study programmes in order to foster border crossing mobility and also successful professional careers of graduates. Besides attributing ECTS for each curricular unit, which allows international degrees comparison, Portuguese universities were forced to design shorter three-year programmes (Teichler 2009). This alignment was supposed to be fully implemented in 2009.⁵

Hypotheses

This section aims to present the research hypotheses and discuss their rationale. As demonstrated above, prior research has generally supported the value of internships (Hergert 2009; Paulson and Baker 1999; Teichler 2009), a strategy that is increasingly popular as a method of recruiting potential applicants (see, inter alia, Barr and Mcneilly 2002; Carless 2007). As internships are taken as an advantage in the recruitment process, it can be postulated that:

H₁ Study programmes that include internships tend to reduce graduate unemployment rates.

The impact of internships will be assessed through a dichotomous variable, coded as 0 when there were no internships and 1 if FCDs included internships. This instrumental dimension of internships is also interrelated to the features of the subsystem of Portuguese tertiary education. Due to their vocational orientation, polytechnic institutions are expected to be more engaged with the labour market, seeming natural to have hands-on experience as part of their study programmes. As such, a second hypothesis posits that:

H₂ Graduate unemployment rates are lower among graduate students of polytechnic institutions.

It is fairly acknowledged that the admission to Portuguese public university programmes is often more demanding and selective than to private institutions (Tavares and Cardoso 2013). Several case studies demonstrated that students graduated by institutions where the selection process for enrolling a specific degree is more demanding have easier access to job, as employers tend to rely on the “filter and screening” (Arrow 1973) processes of HEIs as a short cut for their own recruitment processes. Also, employers rely on the institutional reputation of HEIs (Jackson 2014). It can, thus, be hypothesised that employing institutions can narrow their available pool of talented graduates, by selecting those coming from the most prestigious HEIs where the selection processes are more competitive and demanding. Hence, it can be postulated that:

H₃ Graduate unemployment rates are lower among graduate students of public institutions.

The impact of the type of institution and of the higher education binary divide was tested through the inclusion of two dichotomous variables. The latter was coded as 0 if the HEI was public and as 1 if it was private. The former was coded as 0 when dealing with FCD’s from universities and coded as 1 for polytechnic institutions.

⁴ Two-stage degrees were composed of a three plus two-year study programme (Law 115/97, 19th September, Comprehensive Law on the Education System).

⁵ Decree-law 74/2006, 24th of March.

In addition to these hypotheses on the instrumental value of internships, the specific characteristics of internships also need to be taken into consideration. The nature (mandatory vs facultative) and format (thin vs thick sandwich courses) of internships are expected to be significantly related to securing a post-graduation job. Both the nature and format chosen tend to be highly dependent on the common practice in a particular area, and frequently, no explanation is given for why a particular model has been chosen.

Regarding the nature of internships, these can be mandatory or facultative. Internships are facultative when students are given the possibility to: choose between facing a work-related experience; select other curricular units; write a theoretical report; or do a work simulation. This means that, in certain FCDs, students may not face a work-based experience, which tends to reduce the likelihood of finding a job, as it undermines the aforementioned expected positive effects of internships. Also, FCDs with facultative internships tend to signal less commitment of HEIs towards on-the-job learning. Indeed, research has concluded that strong ties between HEIs and industries (enhanced by internships) can be a mechanism for employers to provide inputs into curricular development (Thiel and Hartley 1997).

Mandatory internships, on the other hand, can be regarded as mechanisms for HEIs to learn about the labour market expectations towards graduate skills, allowing them to design study programmes accordingly. On the contrary, facultative internships do not allow this systematic interaction with the labour market, which can have potential effects on graduates' employability. As such, it can be hypothesised that:

H₄ Mandatory internships are negatively associated with graduate unemployment rates.

As to the internships' format, there is an absence of research on the impact of the structure of internships in employability. Internships can be classified into *thin sandwich courses*, when two or more working experiences are considered throughout the FCD or *thick sandwich courses* when FCDs integrate a single internship, frequently longer and at the end of the degree (Harvey et al. 1997). As Ryan et al. (1996) highlight, there are no research studies that demonstrate the superiority of extended single internships. Conversely, the authors argue that “integrating theoretical components with spaced but relatively short block teaching practices may be superior to a single protracted block of teaching practice” (Ryan et al. 1996: 368). It can, thus, be posited that:

H₅ Expanding and diversifying internship opportunities (thin sandwich courses) are negatively associated with graduate unemployment rates.

The impact of internships' characteristics was assessed through two dichotomous variables. The nature of internships was coded as 0 if internships were optional and as 1 if they were mandatory. The internship format was coded as 0 for thick courses and as 1 for thin courses.

In the following section, we describe the empirical data used in this study and the methods used to test the hypotheses.

Methodology

In order to assess the value of internships as a route to early career employment, empirical data were gathered for all Portuguese FCDs, offered in the academic year 2012–2013. Our focus on FCD is justified by the fact that not all universities or polytechnic institutions offer second- and third-cycle graduate programmes. Besides that, Bologna recommendations

repeatedly reaffirm that FCDs should be “relevant to the European labour market as an appropriate level of qualification” (Teichler 2009: 263). To draw meaningful inter- and intra-subject comparisons, all subject areas were included in the analysis. Overall, 1621 study programmes were analysed. Not all of them qualified into this study. We proceed with an explanation of the process used in the selection of the FCD’s.

First, we content-analysed all study programmes approved and published in the Official Gazette from 2006 until 2009.⁶ Thus, we captured study programmes that have already been adapted according to the Bologna rules. Also, the period under analysis allows us to examine study programmes that are already stabilised and, simultaneously, guarantees compatibility with the data on the rates of unemployed graduates. In fact, students who enrolled in these degrees within this time frame have virtually graduated in 2012, considering that the minimum time for completing a FCD is 3 years.

Second, the way the dependent variable was measured also contributed to reduce the number of cases analysed. As this article seeks to explore the extent to which internships are a valuable asset to enhance youth employability, a measure of graduate unemployment was considered as the dependent variable. The dependent variable used in our regression models pertains to the rate of unemployed graduates registered in the Employment and Vocational Training Institute (IEFP) for more than 12 months⁷ (data from 2013). Only those degrees for which there are official data on the number of unemployed graduates registered in IEFP for more than 12 months were included, meaning that from the 1621 study programmes analysed, only 1158 met this criteria.⁸

How were study programmes analysed? Systematic content analysis was used both to identify those FCDs that include internships and to characterise each internship experience regarding its nature and structure.

Not all study programmes include internships. Assessing it through the content analysis of study programmes is not a straightforward exercise. Indeed, there are several different designations used to label work experience in employment institutions,⁹ and often the same

⁶ Data on all FCDs offered in 2012/2013 are available at <http://www.dges.mec.pt/guias/>.

⁷ The systematic and periodic publication of unemployment reports concerning higher education graduates started in 2007 (Law 38/2007 of 16th August). Data are available at <http://www.dgeec.mec.pt/np4/92/>. Other research studies prefer to analyse graduate employability considering only six months after graduation (*vide, inter alia*, Bowes and Harvey 1999; Knouse et al. 1999; Sagen et al. 2000). However, these figures may be deflated, as this tends to be a period when many graduates may not be actively seeking for a career or may be undertaking further qualifications (Almeida 2010: 79).

⁸ This dependent variable allows us to circumvent the caveats associated with measuring graduate unemployment using a smaller time frame after graduation, as such rates may be deflated due to other national government strategies aimed at assisting (under)graduate students in the development of employment skills and in the attainment of work-related experiences. The Portuguese Ministry for Qualification and Employment launched a cooperative education programme, partially funded by the European Social Fund (“Medida Estágios Profissionais”, created by the Ordinance no. 268/97, 18th of April). At the end of the 12-month professional internship, those individuals who do not find a job afterwards are registered in the regional employment centres as “unemployed individuals looking for a job for more than 12 months”. Although no official statistics are available regarding the percentage of graduates that have benefitted from this programme, it is estimated that more than 20 thousand people aged under 25 have participated in these internships (*in* “Programa ‘Estágios Emprego’ prolongado até ao final de 2014”, Público (available at <http://www.publico.pt/economia/noticia/programa-estagios-emprego-prolongado-ate-ao-final-de-2014-1617691>)). Only when graduates return to the official unemployment database, there is a clear image of the impact of curricular internships in youth unemployment.

⁹ Designations of supervised learning experiences in working context are diverse. Literature review on this topic revealed that the most common designations are *internship* (Callanan and Benzing 2007); *practicum* (Ryan et al. 1996); *traineeship*; *apprenticeship*; *work placement* (Wilton 2012); *vocational training* (Kessels and Kwakman, 2007); *sandwich courses* (Santiago 2009); or *cooperative education* (Teichler 2009).

label is used even when we are not dealing with a curricular unit designed to promote work-related experiences in employment institutions outside the academic context.¹⁰ A study programme is considered to include an internship if it includes one or more curricular unit(s) with designations that are typically associated with learning at-the-job experiences. Whenever in doubt, the information available in the official study programmes published in the Official Gazette was cross-checked with the information available on the institutional web page or with the information provided by the degree coordinator or the institutional administrative services of the study programmes under analysis. This strategy also increases the internal validity of the coding process.

Internships were also characterised according to their nature and format. First, internships were classified as mandatory or facultative. Internships were considered facultative if students are given the opportunity to write a report instead of facing a work-related experience in employment institutions or if students are allowed to choose a curricular unit devoted to work-related learning experiences among a set of theoretical or practical curricular courses. Second, internships were characterised according to their format. We have separated the study programmes that include one extended single internship, usually located at the end of the degree (*thick sandwich courses*), from the degrees that include multiple, frequently shorter internships, usually distributed throughout the three-year period of the FCDs (*thin sandwich courses*) (Ryan et al. 1996). The process of content analysis of the nature and format of internships was based on the characteristics that are physically present and countable in FCDs study plans, less dependent on coders' interpretations and, therefore, increasing the reliability of measures.

The database also includes information on the type of institution (public/private) and on the higher education binary divide (polytechnic institutions/universities) where each FCD was functioning. This information was collected according to the Directorate General responsible for Higher Education.¹¹ Moreover, the database includes a measurement of the overall unemployment rates of specific HEIs. By including this variable, it is possible to control the social prestige and reputation of certain institutions, which can arguably be translated into a greater approval of the academic degree by the job market (Tavares and Cardoso 2013: 304). Similarly, it includes the overall rate of graduate unemployment in specific subject areas,¹² as it is also acknowledged that there are significant differences between areas.

This systematic content analysis of FCD's allows us to examine the patterns evident in the data through a quantitative approach, both through descriptive and inferential statistics. In the following section, we present these results.

Results and discussion

We begin this section by describing the data used in this research. As mentioned, 1,158 study programmes were analysed. Table 1 depicts the distribution of these FCDs by the type of institution.

As demonstrated in Table 2, from a total of 1,158 FCDs analysed, 556 include internships, being the vast majority of these provided in polytechnic institutions.

¹⁰ Scientific internships (in research projects, for example), which are typically developed in academic contexts, were not included.

¹¹ Available at <http://www.dges.mec.pt/guias/>.

¹² This rate was estimated per field of education, according to the second level of the classification of the International Standard Classification of Education (UNESCO).

Table 1 First-cycle degrees according to the Portuguese higher education binary divide

	Public institutions	Private institutions	Total
Universities	317	218	535
Polytechnic institutions	445	178	623
Total	762	396	1158

There is considerable variation in what concerns the internships' characteristics, as demonstrated in Table 3.

As illustrated in Table 3, the majority of the FCDs analysed includes mandatory internships, with its facultative counterpart being relatively more common in universities. This, to some extent, is the reflection of the theoretical approach adopted in these institutions. Universities also tend to prefer thick sandwich courses, which integrate a single continuous block of work-related experience. These can be commonly found in business, administration and law (35.8 %); services (15.6 %); and engineering, manufacturing and construction (10.6 %).

Polytechnic institutions tend to present a more balanced approach, with a clear tendency for the inclusion of thin sandwich courses. These involve a series of frequently shorter work-related experiences, usually designed to develop or enhance professional competencies along the study programme. This pattern can be found in nursing and health-related FCDs (66 %). Thin sandwich courses are also common among educational FCDs (12.3 %) and are also available (although less common) in FCDs related to services (11 %) and business, administration and law (6 %).

A descriptive analysis of the dependent variable used in this study is also required. Table 4 depicts the graduate unemployment rates,¹³ according to the Portuguese higher education binary divide.

As shown in Table 4, polytechnic institutions tend to present unemployment rates significantly higher than universities. If we take into account only those study programmes that include internships, the average rate of unemployment is 4.49 in universities and 4.36 in polytechnic institutions, suggesting that the effect of internships might be most noticeable in the latter institutions. Likewise, graduate unemployment rates among students from private universities are consistently higher than the rates among graduate students from public HEIs, even when study programmes that include internships are isolated, as demonstrated in Table 5.

Because of the complexity of the interactions under research, regression models were estimated to assess the impact of each variable on unemployment rates.¹⁴ All variables considered in regression models are described in Table 6.

¹³ Official data are subjected to the usual caveats. These official figures do not account for the fact that many graduates may not be employed in an occupation for which they have been trained for. Also, it is questionable to assume that those not registered in the employment centre are employed. This has to be looked at with care, since there might be other reasons for not being registered at the employment centres, namely the prosecution of studies. In fact, many Portuguese students may opt to continue their studies, as full-time students, enrolling directly in a second-cycle study programme (Stiwne and Alves 2010). A similar pattern can be found in many other European countries (Bowes and Harvey 1999).

¹⁴ See, for example, the National Statistics Institute's (INE) Labour Force Survey of 2014 (available http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=210767546&PUBLICACOESStema=55574&PUBLICACOESmodo=2).

Table 2 First-cycle degrees with internships, according to the Portuguese higher education binary divide

	Public institutions	Private institutions	Total
Universities	73	76	149
Polytechnic institutions	261	146	407
Total	334	222	556

Table 3 Cross-tabulation of internships' characteristics (%)

	Thick sandwich courses	Thin sandwich courses	Total
Universities			
Mandatory	48.3	20.8	69.1
Facultative	28.2	2.7	30.9
Total	76.5	23.5	100
Polytechnic institutions			
Mandatory	31.4	46.7	78.1
Facultative	19.4	2.5	21.9
Total	50.9	49.1	100

Table 4 Graduate unemployment rates from universities and polytechnics (%), June 2013

Differences are statistically significant at the level p 0.001 (Mann–Whitney U test); in parentheses, the standard deviation

	All study programmes Mean	Study programmes with internships Mean
Universities	3.55 (4.24)	4.49 (5.72)
Polytechnic institutions	4.42 (4.11)	4.36 (4.14)

Table 5 Unemployment rates among graduates from public and private HEIs (%), June 2013

In parentheses, the standard deviation

	All study programmes Mean	Study programmes with internships Mean
Public HEIs	3.85 (3.79)	4.05 (3.80)
Private HEIs	4.43 (4.86)	4.90 (5.57)

In order to dismiss multicollinearity problems, the bivariate correlations between scale variables were computed and as presented in Table 7. As depicted, the bivariate correlations between independent variables are significant at the usual significant levels of 1 or 5 %. However, these correlations are weak since they are less than .4. Thus, multicollinearity problems are not expected.

These correlation coefficients do not allow us to infer causal relationships or to control for the simultaneous effect of other variables. They do, however, suggest the existence of a significant relationship between the unemployment rate of graduate students (URGS) and

Table 6 Variables used in the regression models

Code/variable	Description	Units
URGS—unemployment rate of graduate students	Unemployment rate per FCD of graduates looking for a job for more than 12 months	log ₁₀
DI—degrees with internships	0: no internship; 1: includes at least one internship	0/1
HES—higher education system	0: university; 1: polytechnic institutions	0/1
TI—type of institution	0: public; 1: private	0/1
TIU—total % of institutional unemployment	–	log ₁₀
TSAU—total % of scientific area unemployment	–	log ₁₀
NI—nature of internships	0: optional; 1: mandatory	0/1
IF—internship format	0: thick courses; 1: thin courses	0/1

Table 7 Pearson’s bivariate correlations between variables for regression models

Code/variable	URGS	DI	HES	TI	TIU	TSAU	NI	IF
URGS	1	.077*	.103**	.101**	.337**	.186**	–.025	–.169**
DI	.077*	1	.374**	.116**	.238**	.326**	.c	.c
HES	.103**	.374**	1	–.128**	.191**	.224**	.093*	.230**
TI	.101**	.116**	–.128**	1	–.077**	.086**	.162**	.135**
TIU	.337**	.238**	.191**	–.077**	1	.315**	.147**	.048
TSAU	.186**	.326**	.224**	.086**	.315**	1	.350**	.373**
NI	–.025	.c	.093*	.162**	.147**	.350**	1	.366**
IF	–.169**	.c	.230**	.135**	.048	.373**	.366**	1

Significance levels: ** *p* 0.01; * *p* 0.05; .c—cannot be computed because at least one of the variables is constant

the independent variables considered in the regression models. As expected, TIU and TSAU are positively associated with URGS. Also, thin sandwich courses tend to be associated with lower URGS, while both private and polytechnic institutions are associated with higher URGS. The remaining analysis explores the extent to which these independent variables account for the variability of the rate of unemployed graduates.

In order to test the hypotheses presented in the previous section, several regression models were devised. The first model, presented in Table 8, intends to determine whether internships are positively and significantly related to securing a post-graduation job. As aforementioned, the regression models consider as dependent variable the unemployment rate of graduate students looking for a job for more than 12 months. It should be noticed that this variable exhibited a skewed distribution. In order to satisfy the assumptions of normality,¹⁵ the variable was transformed using decimal logarithms.

¹⁵ All regression models presented in this article have been verified to ensure that there are no violations of the rules of the regression models. Statistical tests and graphical representations were performed to see whether the regression model assumptions of the residuals independence and variances homoscedasticity are checked. The multicollinearity was not a concern since that all VIF values are well below 5 (*degrees with*

The results of the model generated adjusted R^2 values of 13.9 %. The goodness of fit of the model is modest (a similar pattern was found in the remaining models presented in this article), which is likely to reflect the inability of the model to fully explain graduate unemployment rates. Undoubtedly, there are other variables outside the scope of this paper that influence such unemployment rates. Nevertheless, the significance of the variables included in the model provides some important insights on the impact of internships on the dependent variable considered.

In fact, the results presented in Table 6 are striking. When combined into a multivariate model, the variable on the existence of internships is consistent with the expectation that graduates with work-related experiences are more likely to find a job, therefore confirming H_1 . Holding all other variables constant, it can be estimated that the inclusion of internships in FCDs can reduce unemployment rates in 15 %.¹⁶

The apparent positive outcome of internships on graduates' unemployment rates can be interpreted a consequence of its signalling effect (Spence 1973). The inclusion of internship experiences on the resume may constitute a competitive edge, enhancing students' probability of being selected for a job vacancy. Indeed, the gain of valuable work experience during internships enables the introduction of the category "work experience" in the curriculum vitae, which is referenced as one of the most valued recruitment criteria (Hursta and Good 2010; Tomlinson 2008). Assuming that the employer does not know the candidates, the mentioning of an internship in the candidate's resume may be perceived as an indicator of reduced uncertainty on the productivity of the candidate.

As estimated above, there is a statistically significant difference between the average percentage rates of unemployed graduates from universities and polytechnic institutions. The regression model reinforces the tendency suggested in the descriptive analysis, with polytechnic institutions being associated with higher graduate unemployment rates. This is, however, the variable with the lowest coefficient and with the least significant contribution to the model. Therefore, the model does not corroborate H_2 . It remains untested, though, the extent to which internships are being included in polytechnic institutions' FCDs as a means to solve structural problems, which is, to some extent, the main purpose of the regression model presented in Table 7.

Congruent with H_3 , the type of institution positively and significantly affects unemployment rates, with private institutions being more associated with higher unemployment rates. Tavares and Cardoso (2013) analysed students' mechanisms to choose a HEI. These authors state that private institutions tend to be the least preferred by students since there tends to be a negative social stigma towards these institutions, which devalues students' efforts. This negative connotation can be possibly extended to employment institutions that seem to prefer graduates from public universities.

As expected, control variables also positively influence graduates' employability, a conclusion that holds true even when we analyse the employability of graduate students from universities of polytechnics separately, as depicted in Table 9.¹⁷

Footnote 15 continued

internships = 1.36; higher education system = 1.24; type of institution = 1.08; % of institutional unemployment = 1.20; % of scientific area unemployment = 1.23).

¹⁶ This estimation takes into account the unstandardized coefficient of $-.070$.

¹⁷ The regression model was broken down further to investigate whether these broad trends were maintained if we excluded medicine and nursing degrees. The direction of regression estimates and their significance remained largely similar to those presented.

Table 8 Determinants of graduate unemployment rates: regression estimates

Variables	Standardised coefficients	Confidence intervals (95 %)
Degrees with internships (0: no internship; 1: includes at least one internship)	−.103**	[−.312; −.015]
Higher education system (0: university; 1: polytechnic institutions)	.071*	[.001; .097]
Type of institution (0: public; 1: private)	.144***	[.060; .155]
Total % of institutional unemployment (<i>logged</i>)	.339***	[.427; .637]
Total % of scientific area unemployment (<i>logged</i>)	.086**	[.039; .333]
<i>R</i>	.380	
Adjusted <i>R</i> ²	.139	
<i>N</i>	1158	
<i>S</i>	.326	

Significance levels: *** p 0.001; ** p 0.01; * p 0.05; confidence intervals (95 %) for each unstandardised coefficient

These results demonstrate that internships provide significant benefits to students in terms of employability, particularly among graduates from polytechnic institutions. This arguably reflects the fact that these institutions tend to be more aligned with labour market demands, given their vocational orientation. This also explains the fact that the variable on the unemployment *per* scientific area is not significant in the second model. Again, holding all other variables constant, it can be estimated that including internships in the study programmes of polytechnic institutions can reduce the graduate unemployment rate in 27 %.¹⁸ Private institutions are consistently associated with higher unemployment rates, particularly if we consider the “universities” universe.

As mentioned above, the internships in this study vary in format. The regression model presented in Table 10 attempts to sort out which factors play the strongest role in creating a valuable internship experience so that they may function as routes to early career employment. As internships seem to be mostly valued among graduate students from polytechnic institutions, the model merely considers the regression estimates for these cases. Thus, we are considering as a dependent variable the unemployment rate of polytechnic graduates looking for a job for more than 12 months (*logged*). The independent variables included in the model are the nature and format of internships, and whether internships are provided by private or public HEIs. These were coded as dummy variables, as stated in the model. Control variables on institutional and subject area unemployment rates are also included.

The nature of internships significantly impacts on graduate unemployment rates. Their mandatory nature seems to be capable of reducing unemployment rates in 28 %, ¹⁹ as postulated in H₄. This tends to require an institutionalised and (sometimes) long-standing collaboration between the academic institution and the employer, which can be extended beyond internships. This collaboration also seems to entail absorbing graduates, enhancing the win–win situation for both stakeholders.

¹⁸ Considering the regression unstandardized coefficient of −.139.

¹⁹ This estimation is valid if all other variables are held constant, considering the unstandardized coefficient of −.141.

Table 9 Determinants of graduate unemployment rates: regression estimates (standardised coefficients)

Variables	Universities	Confidence intervals (95 %)	Polytechnic institutions	Confidence intervals (95 %)
Degrees with internships (0: no internship; 1: includes at least one internship)	n.s.	–	–.192***	[– .206; –.072]
Type of institution (0: public; 1: private)	.187***	[.068; .200]	.107*	[.016; .152]
Total % of institutional unemployment (<i>logged</i>)	.331***	[.379; .677]	.339***	[.398; .694]
Total % of scientific area unemployment (<i>logged</i>)	.107*	[.022; 480]	n.s.	–
<i>R</i>	.429		.349	
Adjusted <i>R</i> ²	.175		.115	
<i>N</i>	535		623	
<i>S</i>	.322		.325	

All VIF values are well below 5. For the model on universities: *degrees with internships* = 1.07; *type of institution* = 1.02; *% of institutional unemployment* = 1.06; *% of scientific area unemployment* = 1.09. For the model on polytechnic institutions: *degrees with internships* = 1.27; *type of institution* = 1.10; *% of institutional unemployment* = 1.24; *% of scientific area unemployment* = 1.24

Significance levels: *** *p* 0.001; ** *p* 0.01; * *p* 0.05; n.s. not statistically significant; confidence intervals (95 %) for each unstandardised coefficient

Table 10 Structure of internships and polytechnic institutions' graduate unemployment rates: regression estimates (standardised coefficients)

Variables	Polytechnic institutions	Confidence intervals (95 %)
Nature of internships (0: optional; 1: mandatory)	–.163**	[– .237; –.044]
Internship format (0: thick courses; 1: thin courses)	–.287***	[– .282; –.122]
Type of institution (0: public; 1: private)	.175***	[.054; .208]
Total % of institutional unemployment (<i>logged</i>)	.283***	[.315; .208]
Total % of scientific area unemployment (<i>logged</i>)	.229***	[.252; .763]
<i>R</i>	.435	
Adjusted <i>R</i> ²	.177	
<i>N</i>	407	
<i>S</i>	.318	

VIF values are well below 5. Nature of internships = 1.27; internship format = 1.34 *type of institution* = 1.09; *% of institutional unemployment* = 1.11; *% of scientific area unemployment* = 1.35

Significance levels: *** *p* 0.001; ** *p* 0.01; * *p* 0.05

As demonstrated, thin sandwich courses tend to outperform thick sandwich courses, thus, confirming H₅. It can be estimated that expanding and diversifying the opportunities available for students to experience work-related activities can reduce graduate unemployment rates in 37 %, if all other variables remain constant.²⁰ This may be a reflection of

²⁰ This estimation takes into account the unstandardized coefficient of –.202.

the capacity of thin sandwich programmes to allow graduate students to progressively develop competencies by participating in a range of practical experiences. Additionally, students are given the opportunity to increase their contacts with the main employers interested in the competences acquired during the degree. Also, such diversity may allow students to surpass the major caveats associated with a single internship, namely the lack of success in integrating theory and practice, and the fact that a unique internship can lead students to focus on a narrower range of technical skills at the expense of a wider understanding of systems and organisations (Ryan et al. 1996). Results also tend to reinforce Trede and McEven's (2015) conclusion that early placement experiences (since the onset of FCDs) include a richer pedagogical repertoire and more balanced approach between academic learning and hands-on practice, contributing to the employability of undergraduates. It can, thus, be estimated that performing different functions and roles in diverse workplaces, and already at an early stage, can constitute an advantage in terms of early labour market integration.

The fact should not be disregarded that preparing, implementing, monitoring and evaluating multiple internships throughout the degree are highly demanding and time-consuming tasks for both HEIs and academics, which may account for the fact that they are relatively less common, as aforementioned. However, these programmes have proven to be highly successful—being one of the most important variables in the model. Students can consistently apply theory in the internship and gradually acknowledge the relevance of other curricular units in their everyday work. With meaningful guidance and supervision, both arenas can be articulated, better preparing students. Academics can also gradually apprehend what are the main skills required by employees, being able to adjust the degrees' study programmes accordingly.

Irrespective of the nature and format of internships, private institutions are mostly associated with higher unemployment rates. As Teixeira and Amaral (2001) argued more than a decade ago, private education institutions tend to be less responsive to economic needs than their public counterpart, which is reflected in the excessive supply of graduates in the most popular disciplines, frequently associated with lower employment expectations. As demonstrated, this pattern seems to have endured, as shown by the most recent data on graduate unemployment in the Portuguese case.²¹

Overall, the model is able to explain almost 18 % of the impact of internships on graduates' employability. Regardless of the fact that there are other variables related to the structure and assessment of internships, which could not be included in this model, this is a striking estimation supporting the inclusion of internships in FCDs.

Concluding remarks

HEIs are increasingly concerned with the professional insertion of graduates and with the design of institutional mechanisms to facilitate students' transition from higher education to work. As one of the strategies employed by HEIs pertains to the creation of study programmes with internships, this article seeks to unravel the complex dynamic of internships and how HEIs can maximise the internship experience in order to boost its employment effect.

²¹ "Site com taxas de desemprego e abandono dos cursos vai ajudar instituições a melhorar", in Público, 10.06.2014 (available at <http://www.publico.pt/sociedade/noticia/site-com-taxas-de-desemprego-e-abandono-dos-cursos-vai-ajudar-instituicoes-a-melhorar-1659751>).

The empirical analysis presented in this article was based on a large-scale national study of all Portuguese FCDs and sustains the theoretical assumption that internships can be considered as a vehicle for linking academic knowledge and practice and enhancing student employability upon graduation. In this sense, results allow us to put forth two global recommendations for educators involved in curriculum design and in policy-making.

First, and considering the positive impact of internship experiences on graduate employment, HEIs should invest in the integration of internship into FCD, particularly polytechnic institutions, where the inclusion of internships can significantly reduce graduate unemployment rates. This suggestion is particularly significant when taking into consideration the Bologna recommendations, which state that FCDs should be professionally relevant (Teichler 2009).

Second, and drawing on the differentiated impact of internships' nature and structure on graduates' employment, HEIs should prioritise thin sandwich courses and mandatory internships over thick sandwich courses and facultative internships, since the former are associated with lower graduate unemployment rates. It is not (only) the internship learning experience per se that makes the difference considering graduates' employment, but (also) the way those internship experiences are organised along study programmes. Few FCDs offer early internship experience, since "employability concerns" tend only to emerge at the end of the study programme (Trede and McEven 2015). This large-scale investigation revealed that degrees where internship experiences are embedded throughout the FCD have concrete positive effects on graduate employability.

Despite the recommendation to offer several internships along the study programme, the authors of this study acknowledge that expanding and undertaking several internships through the FCDs might not be an easy task. It certainly implies more administrative and coordination burdens for HEIs, since involving more students and undertaking several internships within a study cycle multiply the number of student allocations to employing institutions. Also, employing institutions might argue that shorter internships might be less rewarding and more time-consuming, which may reduce their commitment towards internships and HEIs.

Besides providing new and meaningful information for strategic policy-making in HEIs, research results might also be valuable for students seeking higher education studies. In fact, Tavares and Cardoso (2013) concluded that available information on different programmes tended to be highly disregarded by students when selecting study programmes, despite acknowledging the difficulty inherent to the job market. Acknowledging the impact of a study programme on graduate employability can help students make informed decisions, arguably enhancing their possibilities to find their first job.

Overall, the present study demonstrated that work-based experiences can be considered as important routes to early career employment. Admittedly, however, this article presents only a small piece of the global picture. Therefore, different directions for further research can be pointed out. First, the validity of results would benefit from a tripartite perspective of internships: students, HEI and employers. Existing evidence is diverse and controversial, particularly in what concerns employers' perspective regarding the "signalling" effect of internships when graduates are applying for a job vacancy. Semi-structured interviews conducted to employers based on existing and rich conceptual frameworks (Cai 2012, 2013) would be valuable not only to assess how internships are perceived by employers, but also to gauge the employer's view on what HEIs should offer to promote graduate employability. These perspectives could be cross-checked with the perspectives of the main stakeholders involved in the development and implementation of internships (degree

coordinators, supervisors) and of former trainees. Such attempt would provide useful insights on the specific characteristics of internships that would foster their success.

An important avenue of research is also related to a re-analysis of the dependent variable used. In fact, a long-term and accurate track of students' trajectories after graduation is required. That would allow a comparison of the effect of internships in the short run (6 months after graduation) and in the long run (12 months after graduation). At the same time, it would enable the isolation the effect of FCDs internships and other government measures to enhance employment.

Regardless of the aforementioned pitfalls, the results presented in this article suggest that HEIs should embrace the challenges associated with internships and cooperative education programmes, in order to help their students to develop their personal stairway to employment.

Acknowledgments Research reported in this article was financed by the project “Impact of internships on graduates’ employability”, funded through the National Strategic Reference Framework (QREN) and co-financed by the European Social Fund (ESF).

References

- Almeida, A. J. (2010). Formação, mercado de trabalho e profissões: balanço de uma experiência na área das ciências empresariais. In A. P. Marques & M. G. Alves (Eds.), *Inserção profissional de graduados em Portugal: (re)configurações teóricas e empíricas* (pp. 73–99). V. N. de Famalicão: Húmus.
- Alpert, F., Heaney, J.-G., & Kuhn, K.-A. L. (2009). Internships in marketing: Goals, structures and assessment—Student, company and academic perspectives. *Australasian Marketing Journal*, 17(1), 36–45.
- Amaral, A., & Carvalho, T. (2003). Autonomy and change in Portuguese Higher Education. In A. Barblan (Ed.), *Academic freedom and university institutional responsibility in Portugal* (pp. 35–46). Italy: Bononia University Press.
- Arrow, K. J. (1973). Higher education as a filter. *Journal of Public Economics*, 2(3), 193–216.
- Barr, T. F., & Mcneilly, K. M. (2002). The value of students’ classroom experiences from the eyes of the recruiter: Information, implications, and recommendations for marketing educators. *Journal of Marketing Education*, 24(2), 168–173.
- Bowes, L., & Harvey, L. (1999). *The impact of sandwich education on the activities of graduates six months post-graduation*. Birmingham: Centre for Research into Quality.
- Cai, Y. (2012). *Understanding employers’ perceptions of international graduates*. Tampere: Tampere University Press.
- Cai, Y. (2013). Graduate employability: A conceptual framework for understanding employers perceptions. *Higher Education*, 65(4), 457–469.
- Callanan, G., & Benzing, C. (2007). Assessing the role of internship in the career-oriented employment of graduating college students. *Education Training*, 46(2), 82–89.
- Carless, S. (2007). Graduate recruitment and selection in Australia. *International Journal of Selection and Assessment*, 15(2), 153–166.
- Commission, European. (2014). *Modernisation of Higher Education in Europe: acesso, retention and employability*. Luxembourg: Office of the European Union.
- Divine, R., Miller, R., & Linrud, J. (2008). Key philosophical decisions to consider when designing an internship program. *Journal of Management and Marketing Research*, 2(1), 1–8.
- Eurostat. (2009). *The Bologna Process in Higher Education in Europe—Key indicators of the social dimension and mobility*. Luxembourg: Office for Official Publications of the European Communities.
- García-Aracil, A., & Velden, R. (2007). Competencies for young European higher education graduates: Labor market mismatches and their payoffs. *Higher Education*, 55(2), 219–239.
- Gault, J., Leach, E., & Duey, M. (2010). Effects of business internships on job marketability: The employers’ perspective. *Education Training*, 52(1), 76–88.
- Gault, J., Redington, J., & Schlager, T. (2000). Undergraduate business internships and career success: Are they related? *Journal of Marketing Education*, 22(1), 45–53.

- Harvey, L. (2000). New realities: The relationship between higher education and employment. *Tertiary Education and Management*, 6(1), 3–17.
- Harvey, L., Moon, S., & Geall, V. (1997). *Graduates' work: Organisational change and students' attributes no title*. Birmingham: Centre for Research into Quality and Association of Graduate Recruiters.
- Hergert, M. (2009). Student perceptions of the value of internships. *Business Education*, 2(8), 9–14.
- Hursta, J. L., & Good, L. K. (2010). A 20-year evolution of internships: Implications for retail interns, employers and educators. *The International Review of Retail, Distribution and Consumer Research*, 20(1), 75–86.
- Jackson, D. (2014). Factors influencing job attainment in recent Bachelor graduates: Evidence from Australia. *Higher Education*, 68(1), 135–153.
- Jensen, A. K. (2009). *Why work experience matters! Real Prospects 2009 graduates' experiences of placements, internships and work experience*. Manchester: Higher Education Career Services Unit.
- Kessels, J., & Kwakman, K. (2007). Interface: Establishing knowledge networks between higher vocational education and businesses. *Higher Education*, 54(5), 689–703.
- Knemeyer, A. M., & Murphy, P. R. (2002). Logistics internships: Employer and student perspectives. *Journal of Physical Distribution and Logistics Management*, 32(2), 135–152.
- Knouse, S. B., Tanner, J., & Harris, E. W. (1999). The relation of college internships, college performance, and subsequent job opportunity. *Journal of Employment Counselling*, 36(1), 35–43.
- Little, B. (2000). Undergraduates' work based learning and skills development. *Tertiary Education & Management*, 6(2), 119–135.
- Magalhães, A., Amaral, A., & Tavares, O. (2009). Equity, access and institutional competition. *Tertiary Education and Management*, 15(1), 35–48.
- Mason, G., Williams, G., Cranmer, S., & Guile, D. (2003). *How much does higher education enhance the employability of graduates ?*. Bristol: Institute of Education for HEFCE.
- Matthew, S., Taylor, R., & Ellis, R. (2012). Relationships between students' experiences of learning in an undergraduate internship programme and new graduates' experiences of professional practice. *Higher Education*, 64(4), 529–542.
- Paulson, S., & Baker, H. (1999). An experiential approach to facilitate anticipatory socialization. *The International Journal of Organizational Analysis*, 7(4), 365–378.
- Pianko, D. (1996). Power internships. *Management Review*, 85(12), 31–33.
- Ryan, G., Toohey, S., & Hughes, C. (1996). The purpose, value and structure of the practicum in higher education: A literature review. *Higher Education*, 31(3), 355–377.
- Sagen, H. B., Dallam, J., & Laverty, J. R. (2000). Effects of career preparation experiences on the initial employment success of college graduates. *Research in Higher Education*, 41(6), 753–767.
- Santiago, A. (2009). Impact of sandwich course design on first job experience. *The Asia-Pacific Education Researcher*, 18(2), 205–217.
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374.
- Stiwne, E., & Alves, M. (2010). Higher education and employability of graduates: Will Bologna make a difference? *European Educational Research Journal*, 9(1), 32–44.
- Tavares, O. (2013). Routes towards Portuguese higher education: Students' preferred or feasible choices? *Educational Research*, 55(1), 99–110.
- Tavares, O., & Cardoso, S. (2013). Enrolment choices in Portuguese higher education: Do students behave as rational consumers? *Higher Education*, 66(3), 297–309.
- Tavares, D., Tavares, O., Justino, E., & Amaral, A. (2008). Students' preferences and needs in Portuguese higher education. *European Journal of Education*, 43(1), 107–122.
- Teichler, U. (2009). *Higher education and the world of work: Conceptual frameworks, comparative perspectives and empirical findings*. The Netherlands: Sense.
- Teixeira, P., & Amaral, A. (2001). Private higher education and diversity: An exploratory survey. *Higher Education Quarterly*, 55(4), 359–395.
- Thiel, G. R., & Hartley, N. T. (1997). Cooperative education: A natural synergy between business and academia. *SAM Advanced Management Journal*, 62(3), 19–24.
- Tomlinson, M. (2008). The degree is not enough: Students' perceptions of the role of higher education credentials for graduate work and employability. *British Journal of Sociology of Education*, 29(1), 49–61.
- Toncar, M. F., & Cudmore, B. V. (2000). The overseas internship experience. *Journal of Marketing Education*, 22(1), 54–63.
- Tovey, J. (2001). Building connections between industry and university: Implementing an internship program at a regional university. *Technical Communication Quarterly*, 10(2), 22–25.
- Trede, F., & McEven, C. (2015). Early workplace learning experience: What are the pedagogical possibilities beyond retention and employability. *Higher Education*, 69(1), 19–32.

- Valo, M. (2000). Experiencing work as a communications professional: Students' reflections on their off-campus work practice. *Higher Education*, 39(2), 151–179.
- Weible, R. (2009). Are universities reaping the available benefits internship programs offer? *Journal of Education for Business*, 85(2), 59–63.
- Wilton, N. (2012). The impact of work placements on skills development and career outcomes for business and management graduates. *Studies in Higher Education*, 37(5), 603–620.