The Impact of the Internship Experience on Returning Doctoral Students

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Executive Summary

Until recently, work experience at doctoral level has been limited to placements at the premises of industrial sponsors of predominantly science-based PhDs. More recently, a broader range of internships have been introduced, generating concerns amongst academic staff that these initiatives may damage the quality of the doctoral experience and make students less competitive in the global labour market.

This study examines the impacts of the doctoral internship experience from the perspectives of both academic staff and the doctoral interns themselves. As much of the debate around doctoral internships is based on anecdotal evidence, this report contributes some preliminary evidence on the impacts of doctoral internships and the extent to which they may interrupt or complement the development of the doctoral student.

The results show that academic staff who had first-hand experience of their students undertaking internships felt very positive, whilst those with reservations were the ones that had not experienced the process. This suggests that worries such as loss of motivation or failure to submit the thesis on time are largely unfounded.

Academic supervisors whose students had undertaken internships felt that they returned with greater maturity, improved research skills and worked more efficiently than previously.

The results show that returning doctoral interns had developed a range of professional skills and that the majority of them felt motivated to complete their PhD and move on to the next stage of their career.

Overall, this research suggests that doctoral internships are a broadly positive experience and that some of the concerns expressed by academic staff may not in fact materialise. However, variations in the length of the PhD, issues relating to funding of internships and their status as regards international students are issues that need to be resolved if doctoral students and their supervisors are to make the most of this opportunity.
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Abstract

Doctoral internships are increasing in popularity with several funders strongly encouraging their doctoral students to undertake one. For many this is an extremely positive experience - however there is some concern about that taking time out for such work experience may have a detrimental effect on the timely completion of the thesis and the student's dedication towards their work. Whilst there are convincing arguments on both sides, most of the information is anecdotal. There is a need for more concrete research into the benefits and limitations of doctoral internship schemes so that decisions can be made that are based on sound evidence.

This report describes preliminary research funded by the ASET Research Bursary Scheme. The research was undertaken with both returning PhD interns and academic staff to determine students' attitudes towards their research and their careers, and whether late submissions, leaves of absence or extensions might be more frequent in this group. The perceptions of academic staff give additional insight into the performance of their interning students, and to identify areas of the process that could be improved.

The findings of this research should inform good practice around the doctoral internship process and may pave the way for a larger, nationwide study.

Introduction

Whilst internships and work placements (the terms are frequently used interchangeably) have been a stable part of some undergraduate programmes for many years, they have proliferated in both form and number over the last decade. In the UK, undergraduate students on more vocationally-oriented courses usually undertook sandwich placements that were one academic year in duration, but now we may see undergraduates doing Spring and Summer placements as well as work experience modules as part of their degrees. As the number of graduates increased in the UK, the struggle to ‘stand out from the crowd’ has further elevated the importance of work experience on a student’s CV, with around one third of graduate jobs going to those who have previously worked with the recruiting organisation (The Guardian, 2011). Work experience has expanded at Master’s level too, moving far beyond the likes of PGCE and social work, with subjects as diverse as History, English and Politics offering work experience modules.
The introduction of tuition fees in the UK has, for the vast majority of students, focussed attention on the employability that their courses are likely to deliver alongside the academic aspects of their subject. Tuition fees changed higher education in the UK from an opportunity for intellectual and personal growth to a substantial investment in one’s future - and like all sizeable investments, careful scrutiny of the likely financial returns is advisable. To this ends, employability data are made available in the public domain, appearing in university league tables and forming part of the Key Information Set (KIS) data collected by the Higher Education Funding Council for England on the webpage of every higher education degree in the UK.

During this time frame, the nature of doctoral study was changing too (Park, 2005) and the Wilson report (2012) was published, outlining a set of recommendations around how universities and business should work together. Amongst the many issues covered in the document was the recommendation that doctoral students should undertake a period of work experience beyond their academic research as part of their degrees. This document built on the recommendations of the earlier Roberts report (SET for Success, 2002), which stipulated that doctoral students should each undertake ten days of transferable skills training per year in order to develop skills beyond their research projects and to develop their employability. This raised the question of precisely what transferable skills should these students be developing. As only around 10% of PhD students undertake academic careers, it seemed sensible to equip them for a range of higher level careers, and in consultation with a range of employers, Vitae, at the time a government-funded organisation responsible for the skills development of postgraduate students, created the Researcher Development Framework (Vitae, 2012; Appendix A6) which outlined the various skills areas that a doctoral student should develop during their time as a researcher.

The nature of the PhD makes it a very different beast when it comes to the integration of work experience. Whilst undergraduate and masters programmes have defined teaching schedules and vacation periods into which work experience may be scheduled, the doctoral degree more closely resembles employment, with the workload being determined by the student and their academic supervisor to meet the needs of the research being undertaken.

For researchers working in subjects whose outputs are aligned with industry, the existence of Cooperative Awards in Science and Technology (CASE) has enabled the creation of collaborative research projects that frequently include an industrial placement at the
collaborator's workplace. Other arrangements such as the Biotechnology and Biosciences Research Council (BBSRC)'s Parliamentary Office of Science and Technology (POST) scheme enable its students to apply for prestigious three-month internships based at POST’s London offices, writing briefing notes on scientific and technological subjects for use by ministers in parliament.

BBSRC went on to implement its controversial Professional Internships for PhDs (PIPs) programme. This scheme required doctoral students funded through BBSRC’s doctoral training centres to undertake a three-month internship in an area not directly related to their research, ruling out simple placements in other research groups which up until that point had constituted the majority of work experience obtained by doctoral students. In their study on the introduction of PIPs, Jones and Warnock (2015) reported that researchers in biological sciences undertook work experience in areas as broad as educational outreach, improving efficiency in hospital laboratories and working at a vineyard. The divergence of these experiences from the research topic, plus the mandatory nature of the internships resulted in a great deal of concern among academic staff as to their value, and whether students would struggle to get back into their research programme when the internship had been completed.

Since the introduction of PIPs, other funders have introduced internships in various forms, although none have gone so far as to replicate BBSRC’s requirements. There now exists a range of work experience opportunities for doctoral students, some funded and some not, some incorporating extensions to the doctoral registration period and some not. At the University of Sheffield, there is a desire to address the disparities in the various arrangements in place and to identify the main issues and concerns for students and staff involved with doctoral internships.
Research Methods

Three surveys were created to capture the perceptions of both doctoral students and their supervisors on the value of doctoral internships. The three surveys were:

1. for PhD students who had completed an internship
2. for PhD students currently undertaking an internship
3. for academic staff whether or not they had supervised a student who had undertaken an internship

The surveys were set up using Google Forms and were sent out by email, either through the academic staff or the doctoral student mailing list. We received 91 responses from academic staff, with a 53:47 split between those who had experience of a doctoral student undertaking an internship and those that did not.

At the time of the survey, of the 34 doctoral student respondents 21 had completed an internship and 13 were currently doing so.

Both students and staff were invited to undertake follow-up interviews to enable further exploration of their opinions. These interviews were recorded and analysed for key words and phrases.

The data were analysed to answer the following questions:

1. Are academics with experience of doctoral internships more or less supportive of the concept?
2. Why are academics supportive of doctoral internships?
3. Why do academics have reservations about doctoral internships?
4. What changes did academics observe in their students upon returning from their doctoral internships?
5. How did the experience of the doctoral internship affect how students felt about their PhD?
6. Did the internship experience give students a broader picture of the purpose and value of their research?
7. Did the doctoral internship experience mean that students felt more or less motivated to complete their PhD?

8. What skills did the students develop during their doctoral internships?

Copies of the surveys used are included in Appendices A1-A3.
1. Are academics who have experienced their students undertaking doctoral internships more or less supportive of the idea than those that do not have this experience?

Academic respondents were categorised according to whether or not one of their supervisees had undertaken an internship during their doctoral studies. They were then asked how supportive they were of doctoral internships, by situating themselves on the following scale:

1. I have strong reservations
2. I have some reservations
3. I feel neutral
4. I am supportive
5. I am fully supportive.

Of the 8 respondents that had strong reservations about doctoral internships, 7 had not actually experienced one of their own students undertaking an internship. At the other end
of the scale, of those that described themselves as ‘supportive’ or ‘fully supportive’ 35 of the 59 respondents had experienced the process whilst 24 had not. This may suggest that the concerns that lead to academics holding reservations about the internship process may be based on anecdote rather than on concrete experience.

2. *Why are academics supportive of doctoral internships?*

Academics that had identified as being supportive of doctoral internships identified the reasons behind their support. They were free to ‘vote’ for many options as they wished, and if they selected other, were able to outline their other thoughts.

The two most popular reasons for academics being supportive of doctoral internships were that students develop professional skills (25% of the votes) and that students mature as researchers (22%). They also identified that the internship process brought benefits to the research group and the university (17%) and that students gained particular practical experience (17%). 12% of the votes were from academics who felt that students returned to
their doctoral research with more motivation (for all the free text comments, see appendix A5).

3. Why do academics have reservations about doctoral internships?

Academics that had reservations about doctoral internships were asked to identify the main reasons why they felt this way. As with the previous questions, respondents were able to cast as many ‘votes’ as they wished and to outline other concerns by selecting ‘other’ and entering free text.

The most significant concern was that the process of doing an internship takes too much time away from the research (33% of the votes) and that students might lose focus on their research (31%). Concerns around missing deadlines and demotivation had a smaller proportion of the votes (9% and 4% respectively). There was a range of other concerns too, including how appropriate internships across the range of disciplines may be sourced and managed, and issues relating to the mandatory nature of some internship programmes, such as the BBSRC’s PIPS scheme.
4. **What changes did academics observe in their students upon returning from their doctoral internships?**

Academics whose supervisees had undertaken internships were asked to outline any changes that they observed when their students returned to their doctoral research. As with the previous questions, respondents were able to vote for as many of the options as they agreed with.

The most popular comments were that the students gained valuable academic skills and that they were more professional overall. Respondents also noted felt that their students were more effective, were able to structure their work better and managed their time better. Four respondents felt that their students had lost focus on their research, but none reported that their students were demotivated.

There were a range of other comments given in the free text, and these are included in Appendix A5.
5. **How did the experience of the doctoral internship affect how students felt about their PhD?**

The respondents who had completed a doctoral internship were asked to select words to describe how they felt about their PhD before and after undertaking the internship. Of the 20 respondents that had completed their internships, 18 answered this question. 12 of the respondents chose more positive and/or fewer negative words to describe how they felt after the internship, one chose one more negative word and 5 reported no changes in how they felt about their PhD before and after their internship.

**Students reporting no overall change in how they felt towards their PhD before and after their internship**

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Students reporting an overall positive change in how they felt towards their PhD before and after their internship

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Students reporting an overall negative change in how they felt towards their PhD before and after their internship

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6. Did the internship experience give students a broader picture of the purpose and value of their research?

Of the 20 doctoral students who had completed their internship, seven of them felt that the internship experience had helped them ‘a great deal’ to appreciate how their research sits within the larger economy/society. seven felt that it had been of ‘some help’ four respondents felt neutral, one responded that it had been ‘minimal help’ and one ‘no help at all’
7. *Did the doctoral internship experience mean that students felt more or less motivated to complete their PhD?*

One of the more significant concerns amongst academic staff is that if their student undertakes a doctoral internship, they will return with reduced motivation to complete their PhD. As most funding bodies have strict requirements relating to submission dates, the concern that students might become demotivated and fail to submit their thesis on time is very real. Students who had completed their internship were asked to what extent they felt motivated to complete their PhD and move on to the next step in their careers.
8. What skills did the students develop during their doctoral internships?

Students who had completed their internships were asked to select from a list the skills that they had developed as a direct result of their experience.

The Vitae Researcher Development Framework (Vitae, 2012; Appendix A5) outlines the skills that a doctoral student should develop during their PhD, divided into four domains:
A - Knowledge and intellectual abilities
B - Personal effectiveness
C - Research governance and organisation
D - Engagement, influence and impact

Free-text responses from the students were analysed to determine how many times students specifically mentioned having developed these skills.
The results show that taking part in a doctoral internship enabled skill development across all four of the Researcher Development Framework domains and that students were most aware of their development in Domain B - Personal effectiveness (30 mentions), followed by Domain A - Knowledge and intellectual abilities (16 mentions), Domain C - Research governance and organisation (14 mentions) and Domain D - Engagement, influence and impact (10 mentions).

**Discussion**

*The perceptions of academic staff on doctoral internships*

With a small two exceptions, academic staff were broadly supportive of the concept of doctoral internships. They felt that students undertaking them developed skills that enabled them to mature as researchers, and specifically to develop a range of professional attributes directly relevant to their research. Some staff also identified benefits to the research group or the university.

A significant proportion of the respondents were supportive of the idea with one caveat: that there should be additional time added into the PhD to enable its completion. Whilst this may seem like a sensible and relatively straightforward suggestion, it is in fact a thorny issue.

Currently there are a range of PhD formats. The ‘traditional’ UK model is a three year period of research, with submission of the thesis required one year after that. If there is funding associated with the PhD, it is usually for three years with any additional ‘writing up time’ in the fourth year taken at the student’s expense. However there is considerable variation - some PhDs have longer funding periods, and some internship schemes such as the BBSRC’s Parliamentary Office of Science and Technology Scheme allow the student a funded extension that matches the duration of the internship they have taken. On top of this, some students undertake their PhDs part-time, and others - particularly in Arts and Humanities and Social Sciences may self-fund their research.

All of these variables create a rather uneven playing field both in terms of the length of time which remains to complete the doctoral research and the financial implications of undertaking an internship.
Many of the academic staff respondents who identified as not supportive of the internship process said that this was because the internship may take too much time away from the research. One respondent commented that since PhD programmes in the USA are usually 5 years in length, UK students are already at a competitive disadvantage, and that taking more time out would harm their [academic] careers further. The other principal concern was that students might lose focus on their research on their return, becoming less efficient in their work. Within the limited scope of this project, the latter concern was shown to be largely unfounded, with supervisors reporting that their students returned with greater motivation, working efficiency and maturity.

Academic staff are measured not by the ultimate career success of their students, but by rather shorter term indicators, such as the number and quality of papers published and the proportion of students that submit their theses on time. Too many late submissions may result in the subsequent withdrawal of support from funding bodies such as the UK Research Councils. Therefore, it is entirely understandable that academics should raise concerns about the internship experience interfering with the completion of the thesis; several of the respondents said that they would be fully supportive of the process if additional time was made available.

Currently the only way for a student to build in additional time to accommodate an internship is by taking a 'leave of absence', an arrangement which is usually used for students to take time out for medical or financial reasons. At the University of Sheffield, leaves of absence have been used by PhD students to undertake internships - particularly placements that are not closely related to the research area and/or where the academic supervisor is not fully supportive - although there is broad agreement that this is not really appropriate.

Other concerns given by staff were around the availability of internships that would be appropriate for their subject area. An academic who supervises research into pure mathematics suggested that there may not be any suitable work experience available, rendering the internship process irrelevant to their students. Other similar but less extreme concerns were articulated around the labour market knowledge required for the identification of suitable internships, and the workload associated with organising and overseeing them. These are legitimate concerns which relate to the connectivity between centrally located placements staff in the careers service and academic departments whose students wish to undertake an internship.
The perceptions of PhD students on their doctoral internships

The majority of students respondents reported a positive experience of their internship. The only negative comments related to poor management and an ill-defined project, leading to a bad experience. The remaining projects delivered a positive experience, with 75% of the returning doctoral interns feeling ‘motivated’ or ‘highly motivated’ to complete their PhDs and move on to their next career steps, and the remaining 25% feeling neutral. None of the respondents, including the one who had had a sub-optimal experience felt demotivated. This is a stark contrast to the concerns raised by academic supervisors that their students may return demotivated and may miss their deadlines.

Two thirds of the respondents also felt that their internship experience had enabled them to appreciate where their research sits within the context of the economy or society in which we all live. This contextualisation was one of the aspirations of BBSRC, the UK Research Council who decided to include mandatory internships for its doctoral students that were not directly related to their research (BBSRC, 2012).

Doctoral internships as a skills development tool

As well as providing experience of the workplace beyond academia, doctoral internships seemed to enable the development of skills for successful completion of the academic research and for professional development more broadly.

The importance of broader professional development for PhD students was highlighted by Gareth Roberts in the ‘SET for Success’ report in 2002. His recommendation that doctoral students undertake 10 days’ of transferable skills training each year of their PhD led to a proliferation of training opportunities within Higher Education Institutions, together with the recruitment of specialist staff to provide support. The transferable skills were initially listed in Research Councils Joint Statement of Skills (JSS), which was eventually replaced by Vitae’s Researcher Development Framework - a more comprehensive list of skills described at different levels, from Early Career Researchers to senior professors. A summary version of the RDF is given in Appendix A5.
In terms of the skills developed, an increase in confidence was the most commonly cited outcome, which is likely to contribute to the increased levels of motivation and desire to complete the thesis and move on to the next career stage. Other popular skills cited were adaptability, professionalism and interpersonal skills.

Unlike in the tick-box skills analysis section of the survey, when the free-text responses were analysed, many of the students mentioned the skills identified in the RDF without any prompt. They identified particular improvements in their interpersonal skills and in their knowledge and intellectual abilities. This suggests that doctoral internships could be an efficient way for students to develop the skills that are expected upon completion of their PhD. These work experience opportunities may provide a meaningful alternative to attending training courses, which are sometimes criticised as being too generic to be of any real value. The University of Sheffield has acknowledged this value, and has created an internships module as part of its Doctoral Development Programme whereby students undertaking an internship can claim it as a valuable part of their skills development.

**Limitations of the study**

The study was relatively small in size and intended as a preliminary capture of data that may pave the way for a larger, nationwide study. The obvious limitations of this are that the respondents were relatively small in number and came from two Russell Group universities - the University of Sheffield and the University of York. Opinions garnered from these two institutions may not be representative of the whole range of other universities, particularly those that offer a range of vocationally-oriented doctorates and have done so for a long time.

It is not known whether the respondents to the surveys are representative of their colleagues, which is a limitation associated with any study of this type. It might be that those who chose to respond felt more positive than the average respondent, or equally it might be that those who felt they had something negative to say chose to make their voice heard.
The term ‘internship’ was defined very broadly in this study, and included everything from CASE studentships (PhD projects developed in collaboration with an industrial sponsor, where part of the time is spent working at the sponsor’s premises) and time spent in other academic research groups, to internships where the student undertook work experience that had nothing to do with their research project. This latter type are mandatory for the BBSRC’s PIPs scheme, and frequently draw criticism from academic supervisors for many of the reasons outlined in the discussions above, whilst the former type are usually accepted by academic staff without too many concerns.

Given that doctoral internships are a relatively new phenomenon, the number of PhD students who had completed them was relatively small and so the number of student respondents was relatively low (34). We also included students who were currently doing an internship, but this group were not able to answer all of the questions meaning that in some cases, tentative conclusions are based on the data of approximately 20 students.
Recommendations

From an analysis of the responses to the surveys and from the free-text comments given by doctoral interns and academic staff, we recommend that the following issues are considered by staff involved with implementing doctoral internships.

1. As staff with concerns about the process may dissuade their students from taking up this opportunity, it is important that this issue is addressed. Fora where issues can be discussed with staff and students who have experience in doctoral internships may allay concerns.

2. Clear guidance should be made available for international students, the majority of whom are limited to working 20 hours per week. The ability to work full-time during vacation periods does not apply to doctoral students (who work all year round, fitting vacations around their work commitments), neither are they able to take a Leave of Absence to undertake an internship. One way around this is to create an internship ‘module’ that is one part of the doctoral training requirements, as the University of Sheffield have done.

3. Some doctoral programmes have provision for an internship in terms of finances and submission dates built into them, whilst others do not. A greater parity of experience could be created by developing a university-wide policy on these aspects of doctoral internships.

4. The sourcing and administration of internships involves a considerable workload which should not be underestimated. As most universities have some provision for this within their Careers Services, expertise from those staff should be made available to departments wishing to support their doctoral students to make the most of the opportunity.
Acknowledgements

We are grateful to the ASET Research Bursary scheme for funding this work.

Particular thanks also go to Professor Sarah White, from the University of Bath, Dr. Jörg Wiegratz, from the University of Leeds, Professor John Bailey from Georgetown University, Professor Henry Dietz from the University of Texas at Austin, Dr Lorna Warnock from the University of York and Dr. Jane Hodson from the University of Sheffield for their support.

Finally, we owe a debt of thanks to the PhD students and faculty volunteers who took the time to share their views and experiences.

References


Appendices

A1. Survey sent to doctoral students currently undertaking an internship

About your internship

The word 'internship' is used in this questionnaire to mean any graduate level work experience or placement undertaken during your PhD.

It does not refer to casual and part-time work completed alongside the PhD studies (for example unskilled work such as restaurant/bar work, shop/grocery work).

1. Please tell us about the internship or placement. *

2. At what point are you in your PhD? *
   eg first year, second year

3. Did you take a leave of absence, or are you considering taking a leave of absence because of your internship? *
   Mark only one oval.
   - Yes
   - No
   - Not sure
   - Other:

4. To what extent do you feel that you are benefiting from your internship? *
   Mark only one oval.
   1 2 3 4 5
   not at all very beneficial

27
5. To what extent do you feel that your internship will have a positive effect on your next career steps? *
   Mark only one oval.

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6. To what extent do you feel more motivated to finish PhD and move onto the next step in your career? *
   Mark only one oval.

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7. What do you hope to gain from your internship?
Please check all that apply.  
Tick all that apply.

- Effectiveness
- Time keeping
- Professionalism
- Interpersonal skills
- Communication
- Empathy with co-workers/colleagues
- Confidence
- Self-esteem
- Overall new perspective on the world
- Managing stress
- Clarity on career ideas and plans
- Self-motivation
- Enthusiasm for my career and subject
- Initiative
- Ambition
- Adaptability
- Other: ..................................................

8. To what extent has your current internship experience helped you to appreciate how your research sits within the larger economy/society? *
Mark only one oval.

1  2  3  4  5

Not at all  .................................................. I feel confident that my research is making a contribution

9. Please tell us more about any of the above if you wish.

........................................................................................................................................................................

........................................................................................................................................................................

........................................................................................................................................................................
About your PhD

10. How would you describe your attitude towards your PhD before you started your internship/placement? *
Tick all that apply.

- Happy
- Confused
- Confident
- Distracted
- Inspired
- Overwhelmed
- Concerned
- Other:

11. How would you describe your attitude towards your PhD during your internship experience? *
Tick all that apply.

- Happy
- Confused
- Confident
- Distracted
- Inspired
- Overwhelmed
- Concerned
- Other:

12. Thinking about your academic skills, to what extent do you feel they have improved as a result of the internship experience? *
(for example, your research skills, organization skills, your time management skills)
Mark only one oval.

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<td>not improved at all</td>
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</table>
13. **Are you planning on submitting your thesis on time?** *
   *Mark only one oval.*
   - Yes
   - No
   - I haven’t submitted my thesis yet.
   - Does not apply to me.

14. **Have you been able or do you predict you will be able to meet your deadlines and assessments on time?** *
   *Mark only one oval.*
   - Yes
   - No
   - According to the current progression I plan on meeting my deadlines.

15. **Do you feel you are falling behind with your research because of your internship?** *
   *Mark only one oval.*
   - Yes
   - Somewhat
   - No
   - Not at all
   - Not sure
   - Other: ....................................................

16. **Would you like to add anything else relating to your PhD/internship experience?**

   ........................................................................................................
   ........................................................................................................
   ........................................................................................................
   ........................................................................................................
   ........................................................................................................
A2. Survey sent to doctoral students who have completed an internship

About your internship

The word 'Internship' is used in this questionnaire to mean any graduate level work experience or placement undertaken during your PhD.

It does not refer to casual and part-time work completed alongside the PhD studies (for example unskilled work such as restaurant/bar work, shop/grocery work).

1. Please tell us about the internship you have done. *

2. At what point in your PhD did you do your internship? *
   eg first year, second year

3. Did you take a leave of absence, or are you considering taking a leave of absence because of your internship? *
   Mark only one oval.
   ☐ Yes
   ☐ Not sure
   ☐ No
4. To what extent do you feel that you have benefited from doing your internship? *
(for example, your research skills, organisational skills, your time management skills)
Mark only one oval.

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<td>did not benefit at all</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>benefited very much</td>
<td></td>
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5. To what extent do you feel that your internship will have a positive effect on your next career steps? *
Mark only one oval.

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<tr>
<td>no positive effects</td>
<td>O</td>
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<td>O</td>
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<td>extremely positive effects</td>
<td></td>
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6. To what extent do you feel more motivated to finish and move onto the next step in your career? *
Mark only one oval.

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<tr>
<td>not at all</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>very motivated</td>
<td></td>
<td></td>
<td></td>
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</table>
7. What have you gained as a direct result of your internship? *
Tick all that apply.
- Effectiveness
- Time keeping
- Professionalism
- Interpersonal skills
- Communication
- Empathy with co-workers/colleagues
- Confidence
- Self-esteem
- Overall new perspective on the world
- Managing stress
- Clarity on career ideas and plans
- Self-motivation
- Enthusiasm for subject and career
- Initiative
- Ambition
- Adaptability
- Other: _______________________________________________________________________

8. To what extent has your internship experience helped you to appreciate how your research sits within the larger economy/society? *
Mark only one oval.

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| Not at all | | | | | I feel confident that my research is making a contribution.

9. Please tell us more about this, if you wish.

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
About your PhD

10. How would you describe your attitude towards your PhD before your internship/placement experience? *
   Tick all that apply.
   - Happy
   - Confused
   - Confident
   - Distracted
   - Inspired
   - Overwhelmed
   - Concerned
   - Other: ____________________________

11. How would you describe your attitude towards your PhD after your internship experience? *
    Tick all that apply.
    - Happy
    - Confused
    - Confident
    - Distracted
    - Inspired
    - Overwhelmed
    - Concerned
    - Other: ____________________________

12. Thinking about your academic skills, to what extent do you feel they have improved as a result of the internship experience? *
    (for example, your research skills, organisational skills, your time management skills)
    Mark only one oval.

    1 2 3 4 5
    not improved at all  □ □ □ □ □ very improved
13. **Were you able to submit your thesis on time/are you planning to submit on time?**
   *Mark only one oval.*
   - [ ] Yes
   - [ ] No
   - [ ] I haven’t submitted my thesis yet.
   - [ ] Does not apply to me.

14. **Have you been able or do you predict you will be able to meet your deadlines and assessments on time?**
   *Mark only one oval.*
   - [ ] Yes
   - [ ] No
   - [ ] According to the current progression I plan on meeting my deadlines.
   - [ ] Other: __________________________________________

15. **Do you feel you are falling behind with your research because of your internship?**
   *Mark only one oval.*
   - [ ] Yes
   - [ ] Somewhat
   - [ ] No
   - [ ] Not at all
   - [ ] Not sure
   - [ ] Other: __________________________________________

16. **Would you like to add anything else relating to your PhD/internship experience?**

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
A3. Survey sent to academic staff

**Supervisor Poll**

Thank you for volunteering and completing this poll. This survey aims to identify the benefits and drawbacks of PhD students undertaking an internship or work experience during their PhD, from an academic perspective. The work experience can be of a CASE award, the BBSRC’s pips scheme or any other arrangement whereby PhD students have spent time with another organisation.

The information from this poll will potentially contribute to The University of Sheffield policy and national policy.

Thanks for your participation and time.

*Required

1. **Have any of your PhD students completed an internship during their PhD studies?** *
   
   *Mark only one oval.*
   
   - [ ] Yes
   - [ ] No

2. **If so, what type of work experience did your student do?**
   
   *Tick all that apply.*
   
   - [ ] BBSRC/Pips scheme
   - [ ] ESRC internship
   - [ ] CASE award
   - [ ] Internship in industry
   - [ ] Internship at a university
   - [ ] Other: ___________________________________________

3. **In principle, do you support PhD students undertaking an internship during their PhD studies?** *
   
   *Mark only one oval.*
   
   1 2 3 4 5
   
   - [ ] have reservations against
   - [ ] fully supportive
4. Please tell us why *

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. If you were not supportive of students undertaking an internship during their studies, what would need to be changed to improve the scheme?  
   Tick all that apply.
   
   [ ] A class/seminar that prepared my student before and after the internship
   [ ] Part-time internship options
   [ ] Flexible internship options
   [ ] Internship options that are directly related to the student's research
   [ ] Not sure
   [ ] Other: ____________________________________________

6. If you have some reservations around PhD students undertaking work experience during their PhD it is because...
   Tick all that apply.
   
   [ ] It takes too much time away from academic demands.
   [ ] Students might be late at submitting to deadlines.
   [ ] Students might be demotivated upon their return.
   [ ] The students might lose focus on their research.
   [ ] Other: ____________________________________________

7. If you are supportive of PhD students undertaking work experience during their PhD it is because....
   Tick all that apply.
   
   [ ] It helps them to mature as researchers.
   [ ] It helps them to develop professional skills.
   [ ] They return to their research with more motivation.
   [ ] It is beneficial for the research group/university
   [ ] Practical work experience is gained.
   [ ] Other: ____________________________________________
If one of your PhD students has undertaken an internship...

Please complete the following questions

8. What is your overall impression of students after their internship?
   Tick all that apply.
   - [ ] The student obtained valuable academic skills.
   - [ ] The student was more effective.
   - [ ] The student was able to structure their work better.
   - [ ] The student managed their time better.
   - [ ] The student was more professional overall.
   - [ ] The student was demotivated.
   - [ ] The student was less focused on their research
   - [ ] Other: __________________________________________

9. Did the student's placement/internship experience contribute to their development of the following?
   Tick all that apply.
   - [ ] Motivation
   - [ ] Self-esteem
   - [ ] Confidence
   - [ ] Ambition
   - [ ] Enthusiasm
   - [ ] Effectiveness
   - [ ] Initiative
   - [ ] Time keeping
   - [ ] Professionalism
   - [ ] Interpersonal skills
   - [ ] Communication skills
   - [ ] Empathy with co-workers/colleagues
   - [ ] Overall new perspective on the world
   - [ ] Adaptability
   - [ ] Other: __________________________________________
10. Were there any advantages for the research group or department following the students' internship experience? If so, what were these advantages?

11. Do you have any suggestions on how to improve the internship transition process once the student returns to their PhD research?

12. If you have any further comments about PhD internships work experience, please tell us.

13. Would you like to be contacted in the future for a 1-1 short interview (15-20) minutes. (coffee's on us)? *

Mark only one oval.

☐ Yes
☐ No, thank you.
☐ Maybe
A4. Free-text responses from doctoral students

Doctoral Students

Please tell us about the internship you have done.

OnCampus Placement - Community Coordinator (xxxUniversity)

I was part of a team that provided consultancy to the xxx xxx Council looking to understand and improve the employability conditions for people with learning disabilities.

I carried out a 3 month internship at the xxxx, on a Plant Health Skills outreach project. The main objective was to design and create an engaging workshop around the outbreak of an invasive beetle, to teach young people about the importance of plant health and inspire the next generation of plant health scientists.

PIP - at xxx, an agricultural and environmental consultancy group. I was based in the crop physiology department which focuses mainly on improving the yield and quality of crops through improved understanding of physiology, plant breeding and agronomy. While there, my main job was to help with a project aiming to update the HGCAs’ nitrogen fertiliser recommendations for winter barley. This involved a large field trial looking at different timings and rates of fertiliser application. My role was to try and understand the physiological mechanisms through which altered nitrogen regimes affect yield. This meant a mixture of field work (collecting data) and desk work (helping analyse the data). When I wasn’t working on this I had the opportunity to help out with other projects and spent time out in the field and in the lab taking measurements and doing disease assessments. As I was there part-time (3 days a week for 5 months) I was able to experience the full cycle of field trials from marking out the field and sowing right through to harvest.

Biochemical labs at xxx Hospital

6 months Research Project with the xxx looking into their ESOL provision

I was part of a team of five PhD students who took part in a three month internship with xxxx. We were asked by the department to explore the issue of underemployment in groups with learning disabilities and/or difficulties. We were also asked to explore the issue of high levels of unemployment generally.
I was seconded to xxxx research for 6 months as part of a Marie Curie project from the European Commission. Xxx research was an excellent place to continue my PhD research and provided world class resources and expertise.

- Office work, public engagement, representing the xxxxx and conceiving and implementing programs through that group, website design."

One year placement at xxx as part of the the xxxresearch attachment programme.

I spent 12 weeks working for xxx in Paris, France, from September-November 2014. I worked at their headquarters, in the research and development team. The company gave free reign to develop my own project within the scope of their activities.

Part-time job for a non-profit organization with the following responsibilities; Allocating and managing space within buildings, managing building activities, planning and overseeing events , planning best utilisation of space and directing and coordinating future development

I worked for Danish company xxx for 3 months testing a prototype oral drug delivery patch (not related to my PhD project).

I went to Newcastle to do a placement with my industrial sponsor. As part of my PhD I am obligated to go at least twice and technically for a total of 6 months.

3 and a half months at xxx University in the USA. I worked on 3D printing of scaffolds for guided bone regeneration. My PhD is in membranes for guided bone regeneration, so a related field.

I only got offered the opportunity to go a few months before I actually went. As part of my PhD I was required to do a 2-3 week placement, I never expected it to become 4 months away!

I was a xxxx funded student and spent a large portion of my PhD in their labs

Teaching and demonstration work, in web design and chemoinformatics.

I undertook a 6 month internship at the xxxx. I worked within the social investment and finance team as a policy advisor.
I have undertaken a 4 month internship with a small company in Alderley Park. I spend my time split between there and the University, developing a possible drug candidate.

Data generated from the internship will be included in my PhD thesis and may lead to papers and IP. It is however not an essential part of my PhD, but a useful collaboration.

Placement in xxx R&D department.

I am spending three months in a Centre that runs CPD (Continued Professional Development) courses for teachers of STEM (Science, Technology, Engineering and Mathematics) at all stages of education. I am working in the Communications department, which gives me an insight into the marketing that takes place in a company such as this. My jobs involve organising the 10 year celebration events of the centre, such as an Open Day, Live Experiment and Formal Lunch for key dignitaries. I am also involved in the preliminary analysis of a Teacher Survey completed by over 1200 teachers from all backgrounds, which will form the basis of a report into how they view their jobs. This has given me great insight and knowledge of teaching science in schools and courses that take place at centres such as these.

I am doing a bit of consultancy for xxx Council regarding employee engagement. They want some help designing strategies to increase the engagement of their employees and want to overhaul an annual workforce survey of theirs.

I’m spending the last year of my PhD at xxx in Oxfordshire

Working on a project to support the National Roma Network, through xxx.

I’m working at a Phase 1 clinical trial in London

Internship at the xxx, 6 months, Geneva

It’s a 3-month internship with a Governmental department and it involves carrying out research and writing reports and briefings on how social science research can support innovation.

I am working for the Careers Service at the University of xxx, doing an 8 week research project.
Other comments about your doctoral internship

I was able to see the wide range of possible applications of my research in fields that are not strictly engineering or scientific.

Although my research was not directly related to my internship, it has made me realise the importance of plant health in a broader, more global, food security context.

The internship area was outside of my research area. However, I gained an insight into how my research could one day be integrated into their work i.e. how their current approach could benefit from a more research driven approach.

Unfortunately I did not feel my placement helped with my PhD research project in any way. I was not given suitable support or guidance and felt my research was not in keeping with the research they were carrying out.

I found an application for my research work in the real world, and gained a much better appreciation of how what I do in my research can be used in the real world to improve our society.

It helped me see what I liked about management jobs and more importantly what I didn’t like. So now when applying for jobs I have a more clear direction of what jobs I am looking for.

Helped to see how my area fitted into the overall picture.

I benefited immensely from spending time at xxx from gaining in confidence to giving me a career idea I had never thought about til securing a job in that area, I feel like the internship has helped me to gain a lot of skills and some insight into working in industry. It has also helped me develop my future career goals and renewed my enthusiasm for science.

I feel that undertaking a placement such as this allows PhD students to take a break from the ‘PhD research bubble’ and can realise that there are many career options open to people with a scientific background away from academia.

It is very difficult applying rigorous research principles to practice and base everything in research. It may not really be possible.

Number of experts working in fusion neutronics at the university of Sheffield = 0
Number of experts working in fusion neutronics at xxx= 10

It has allowed me to see the final cog in the wheel of drug research that is hidden from the academic world and given me a chance to work in an office environment and see if I like it. Doing an internship is very motivating and can open new opportunities, both in terms of future research and career.

I am excited about my internship and I look forward to the research findings.

I feel like students should be allowed a leave of absence or a standard extension without fees to undertake an internship. I have found taking on the internship for work experience purposes has caused me to be paying greater monthly continuation fees once my funding runs out. The process of getting the funding and sorting out the leave of absence/extension etc. was also complicated and time consuming.

Very useful, even if it's just for some time out from PhD to gather thoughts/prioritise next experiments when I return. Although the placement itself has been very useful, helping me form ideas about my career/next step.

At this stage in my PhD research, it's nice to have a break and do 3 months of something completely different.

I was at a good point for taking an internship as I finished one study and couldn't progress with my other study until I received data, hence there was a limited amount I could do on my PhD during this period.

I had to wait till the final year of my PhD to move to xxx because there were many courses, deadlines, assessments etc located at Sheffield during the first three.

over the three years the relative benefit of being located at each institution has switched.

Because the internship was planned into my PhD by the BBRSC from the start it allowed me to plan a good time to have a break from my PhD

I would like to know more about these opportunities, I think every PhD student should try this at least once.
Retrospectively it was a great experience and I learnt a lot from the internship. While completing the internship, I was worried about the time spent away from the lab which took away from the experience a little. However I think this also helped motivate me to get a lot done in the lab when I returned.

It was nice to leave the academic sphere for a little bit and interact with the public and private sector a lot more.

Because of moving abroad I lost at least 1 month to various logistics, which would make a difference at this stage of my PhD. However the progression I made during my time at xxx was huge and crucial for the position I am at now in my research and was greater than if I had not done it.

My internship was only a few hours a week but it was a relief to have to problem-solve and tackle issues unrelated to my thesis. It gave me a much larger scope, I feel confident taking non-academic work now.

Even though I wasn’t able to achieve what I should have during my placement (due to lack of supervision and facilities) it made me really appreciate what I had when I was in Sheffield and therefore when I returned I gained a huge amount of motivation and contentment with my project. Overall, I’m pleased I went on the placement as I believed it built my character as I had to overcome a lot. However I would NOT recommend/encourage another student to follow the same path to xxx as I did. I believe a placement should be a true collaboration where both supervisors have an equal interest and contribution to the project.

Of all the impacts on my PhD experience, the internship was the most positive. I was unfocussed and on track to run out of time with almost no data or findings. Since the internship I have an excellent project with much scope to lead to a high quality PhD with strong future career options. I would not go back and work for the company I worked for in xxx but this is solely due to the current political landscape related to nuclear energy in France and the impact this has had on the company. I would very happily however work for the new consultancy company set up by the industrial supervisor from xxx

If you don’t ask, you don’t get...this was not a formal work experience scheme but I decided to see if it was possible and it was great!
Definitely recommend this sort of thing, because 3 months is a long time to go away from your research, but everyone has a week to spare right?!

Doing a short-term work experience means you can try multiple things which is good if you have multiple interests. I have also worked as a journalist for a while during my PhD.

Whilst I was working on my placement project, my supervisor didn’t want me to stop working on my PhD project so I often felt overwhelmed. It would have been much more constructive to have a clear cut 3 months out to focus on my internship. It would also have been easier to begin working on my PhD again if I was given a clear cut end date for the internship. However, I ended up working on the two projects at the same time because I was needed more on a part-time basis for the internship.

It was a brilliant opportunity, but I lost about 5 months from my PhD time as I had never planned for a 4 month placement as I didn’t know I would be doing one. It also cost me more time back in Sheffield as I did more work on the scaffolds we produced at xxx. I had a brilliant time though, I met some amazing people and had some yummy BBQs!

I submitted my thesis after my 3 year period but I think a 6 month writing up period would have been beneficial
A5. Free-text responses from academic staff

Academic staff

*Please tell us why you are or are not supportive of doctoral placements*

Learn about respective professional field, working in non-academic settings, see real world issues (to complement desk based study), get intellectual inspiration, motivation

**Internships can provide valuable opportunities and experience relevant to both the PhD and a future career. I have some slight reservations about the extent to which an internship would be manageable without taking a leave of absence.**

If it's entirely irrelevant to their chosen career path, it seems more of a fad than a genuine policy. Students should be able to elect to do one and I would strenuously oppose anything being made mandatory.

In pure mathematics, it’s most unlikely that research done in an internship would relate to the PhD topic, which tends to be extremely specialised and to have no immediate commercial implication. I can see, however, that in other subjects, it could be extremely beneficial. (I have had a student with a CASE award, with xxx as partner, but they waived their rights to have the student work with them during or after the thesis as the thesis topic wasn’t related to their interests.) I don’t think that there is anything that could improve things within pure mathematics; it’s just the nature of research in the subject.

Because academic staff are already stretched in terms of their duties without having to oversee this too.

I have had two students who’ve both worked as an RA during part of their PhD studies. One benefited considerably, but the other wasn’t allowed any time to do his PhD work by his employer (another University!). Consequently, I think it depends very much on the employer and the student, and there is no one-size-fits-all rule for this kind of situation.

Although I think it could be very positive for the student, time for PhD studies is already limited, and academic standards are threatened by reducing the amount of time spent on the
thesis. I would be fully supportive if there was extra time for this e.g. a 5 year graduate programme.

**The possibility to experience a different working environment and the chance to establish or solidifying new and old collaborations**

Can be very valuable experiences but must be set up carefully so the time is well-spent and efforts made to ensure it doesn’t contribute to late submission. QA of supervision at internship host must be undertaken.

**Useful experience – esp. so if they do not want to go into academia. Also starts the process of thinking about impact work.**

From observations/conversations with both students and hosts internships seem very valuable in terms of giving students insights into the real world of organisations which they wouldn’t get in any other way. For those whose normally require these insights they are enormously valuable. The reservations are the obvious ones – distraction from the core business of getting the PhD completed.

**Internships will expand their view of the impact of their work and provide a wider range of experimental and environment experiences.**

Challenges will be to identify potential partners to offer the internships.

**Good employment experience**

I would be very supportive of an appropriate internship, but think these are hard to come by in Arts & Humanities.

**Depending on the role it can be a useful support for a candidate’s experience of the research process which can feed into their studies, help enhance post-doc career prospects and assist with financial support, reducing stress in relation to financial pressures. On the negative side, it can potentially interfere with time available to devote to PhD studies**

Good experience – does need a 4->5 year PhD
It widens their perception of work environment. It contributes to providing context and grounds the student’s project.

I am supportive as I believe it benefits the student and us indirectly by linking more closely with industry. I have students who have worked with industry through less formal means than an internship, and I believe that having as much flexibility (e.g. in timing, duration, what is done, etc.) as possible in the scheme is essential if it is to be applied more widely. It must also be of relevance to the research project.

Students have been offered some time with industry in a couple of CASE awards I’m running. Their reaction has been totally negative – objections include having their research direction manipulated in ways they don’t want, and having to live away from home/partner. The first of these is probably a reaction to the attitude of the industry partner involved. I think they also see that it could be valuable work experience, and valuable input to their PhD studies, but they don’t want to do it.

They are more receptive to spending a few targeted days on specific industry contact and fact finding (maybe several short visits), not periods of weeks/months.

I’m supportive of internships, but I don’t want to force a student into something they are quite clear they don’t want to do. At PhD level the students need to be making these decisions for themselves.

In my experience, students struggle to complete their work in the required timeframe. Introducing more distractions makes this worse.

I support the idea of an internship, but it would need to be in addition to, rather than instead of, research time.

It can help them recognise their transferable skills and give them more confidence to explore careers outside of academia.

Whether students are planning an academic or industrial career or even a complete change of direction beyond their PhD, the value of seeing their project from a
non-academic perspective, of developing an applied approach and gaining additional professional and interpersonal skills should not be underestimated.

Insight into practice, development of transferable skills

Good, practical experience. Likely to make them better researchers when they return. Improves employability for them. Some hesitation about negative consequences around a break in their study, but these are outweighed by the positives.

I have a student currently doing one, so will have a better idea after he returns.

I think it’s an excellent opportunity, but with potential issues for the student’s PhD work. In my subject area, it can be quite difficult to get back up to speed after a break.

Wider experience of another workplace provides students with an excellent opportunity to understand employment and environments beyond the academic arena.

On the one hand it offers valuable experience, but on the other also detracts from completing the full amount of research required for a project. It needs to be properly administered

I work in pure mathematics. I don’t see how an internship can be relevant?

PhDs are short enough anyway, no diversions required

The three year PhD format is too short and students are hard pushed to complete an appropriate volume of research for a good thesis with publications in this time frame. They already spend too much time outside of their direct thesis studies with additional, formal, requirements of the doctoral programme. Internships are good if the work relates directly to the project. Extending the period of study to +3 years would make the internship option more viable in general.

Many of our students are already in a job (mid-career professionals) so an internship would not be relevant

To give them a break from the PhD, clear their heads if nothing else.
Broadens their experience, adds to employability.

Internships help students focus on the relevance and implications of their research for practice and policy. They gain skills in communication and lots of other transferable skills. It gives them access to data that would not otherwise be available.

PhD students are under enormous pressure to complete their theses within relatively short timespans. Anything which serves to detract from being able to submit within the imposed deadlines can only be detrimental, especially if students are also forced to take on paid work to support their studies.

I believe that experience with charities/industry gives students an invaluable insight into real community issues that their research is aimed at helping. It also helps boost their communication skills and gets them to think about the wider context of their writing.

All PhD students in my experience need to spend time in employment – for financial reasons. The problem with this is that they lose a certain amount of time on a regular basis that could be committed to their work. On the other hand, the paid work may complement their research and even stimulate ideas about it (assuming that the paid work has some relevance to that research). The problem with an internship is that it does not generate income, while having the same advantages and disadvantages as paid work.

I run a work placement module for MA students and I see how much students get out of it – it professionalises them, helps them to think about putting their skills into practice outside their immediate studies, and often gives them new insights into their research. I think all the same things apply to PhD students (except maybe more so).

I should add that although none of my PhD students have formally done an internship, I have supervised 2 students who have effectively done work of this type (one because she is co-supervised with the xx and also got funding to work on a separate project for 6 weeks in xx, and another because he was self-funded and worked on a number of projects throughout his studies). I think these experiences were helpful to their personal development and enriched their research, and I believe that a good internship would work in the same way.
It broadens their horizons, and expands their knowledge base, and allows them to experience another environment. It might not suit all students, and I would have reservations where the student is performing poorly. In these cases, an internship might distract the student from their project, and delay thesis submission.

My main reservation is how these are valued within the institution. As with a range of other initiatives, if internships favour some students and their work or methods over others – such as those who might use more traditional or non-work-based approaches to research – then internships could lead to a devotion of resources, attention, and support to those PhD researchers who are ‘in-line’ with the initiative. Similar disconnects have emerged, for instance, between those students who are co-supervised across a DTC or RCUK funded and those whose funding or PhD supervision are outside of these more favourable routes (from a funding and prominence perspective). That said, internships are a great opportunity for some areas of research and as one of many viable paths, should be considered as long as equity and balance across the PhD cohort is maintained.

Pro: Good to get experience of practical work.

Anti: Can be a diversion from getting PhD done.

Extremely valuable CV experience, career insights and more grounded/realistic awareness of the next stage after the PhD and what that requires

Unique experience to learn different approaches and techniques

Depends on how appropriate they are and how good the host institution is at looking after them

They get a different perspective on research and real-world problems to work on which leads to high-impact results.

Making such internships mandatory would be really bad. For some students, time spent at a company could be enormously positive, for example, but for others it would be a waste of time. Any “one size fits all” approach would be a very negative thing. I
support the idea of students doing relevant internships where there is a clear benefit to the student.

One of the most valuable things any PhD student can do

**Adds value (in terms of impact) to the PhD degree, as well as the research outcomes**

Excellent experience for the student and expands the network and connections for the academic

**Good for student to gain wider experience. Good for supervisor and University in building links and reputation with external organisations. Raises possibility of future spin off work or impact of PhD output.**

**CASE awards – required and usually beneficial to the student and the project. I am therefore fully supportive of these. Other internships – my one experience has been bad – the student gained little and it detracted further from an already problematic PhD.**

A negative is that an internship places additional pressure on completion dates, and in many cases there may be difficulty in finding suitable placements / securing funding; positives include all the advantages of (hopefully relevant / related) work experience, and raising awareness of alternative career paths for those with a PhD and related research skills.

**Good experience if the student wants to work in the industry, in some cases useful for research too**

It gives them skills and training to conduct research.

**Engages student with the application of their research so they start thinking about knowledge transfer and uptake before they graduate**

Learn new skills immersed usually in a multi-disciplinary capacity which means they learn how to communicate about their work, and also a respect for other disciplinary views and perspectives, start building a diverse network which will stand the test of time, used in future for all manner of things, e.g., reviewing, proposals, etc.
Good experience for student but costs time from PhD and inevitably is a net financial cost

Many PhD students do not end up in academic careers. Often they are poorly informed about other options. Internships are a good way to get external experience and, if they do and up as academics, it is no bad thing to have seen something outside University life.

Increases their experience/overview, learn other techniques, build contact for themselves (job prospects) and for the academic.

Depends on scope of internship: should add value to the research project, not provide time off from the research project

So they can earn cash!

I applied for an Industry Academia Partnership Programme grant to send my PhD students into industry abroad to give them experience with specialist sector consultancy companies in an international context. I am certain that this will improve their employability. It also deepens my relationships with international partners in doing so, and also the solidity of international partnerships of the University of

As engineers, we need to work with industry. If the students get to engage early with them, they better understand the drivers. Also, many PhD's end up working in industry.

If set up and managed correctly, the benefits in particular to the student are immense, and they also benefit the University, the academic supervisors, and the industrial partner. The benefits are too numerous to list in full but include:

- Fresh perspective of an external partner can help shape the PhD in a positive way.

- The student is exposed to a different environment where other important factors can be considered e.g. intellectual property, business confidentiality, etc. and the student inevitably learns from this experience.

- A positive experience deepens the relationship and trust between academics and the industrial partner.

This is not a one-size-fits-all issue. My students (STFC funded) typically spend 1 year of their PhD working at an international laboratory and spend all of it operating within
a collaboration of several hundred to a few thousand people. This is a very different experience from that of a PhD student working more or less alone, and arguably serves many of the same goals as an internship (I've put "yes" because one of my students spent 3 months working at xxx University as a guest of one of our collaborating groups, and I'm assuming this counts; it's not clear that time at an international lab does). In view of this, I am not at all supportive of the idea that an ""internship"" might become compulsory for PhD students – which is what I suspect this exercise is leading towards – though if it came to that I would try to ensure that LTA at an international lab counts as an ""internship"" for this purpose. One must also bear in mind that the UK PhD is already among the shortest in the world, and our students are very inexperienced in research when competing with just-graduated PhD students from Europe and the US. Including an internship which does not form an integral part of the student's PhD programme would exacerbate this problem. Many of our students do subsequently pursue careers which do not depend directly on their research work, but this surely does not imply that it would be a good idea to make Sheffield PhD students completely uncompetitive for academic career paths.

Therefore, while it is valuable for our PhD students to have the opportunity to undertake an internship, it is, in my view, not at all a good idea to require them to do so. It is something that would be attractive to many PhD students in the later stages of their PhD, when they have perhaps already decided that their future career direction lies outside academia. It would probably not be attractive to many potential PhD students – generally, prospective PhD students are planning careers in research, even if they subsequently decide otherwise – and any such requirement would risk impacting the attractiveness of Sheffield as a place to do a PhD, especially for the best and brightest research prospects.

I am fully supportive of CASE studentships but not of the BBSRC/PIPs scheme. The latter scheme which stipulates that students must spend 3 months studying something outside of science (which can be taken at any point during the PhD) has proved disruptive for some of my students. If students had the choice to spend 3 months doing something scientific if this is what they wanted to do it would be more useful to their career.

Excellent experience and training for the student without compromising the project if the internship is taken in an industrial environment where the same or closely related research to that done in the academic setting can be carried out.
Access to equipment or other facilities that are different from the academic environment can aid the research.

Work placements make me nervous in the sense that they risk normalising the “otherness” of academia, suggesting that it is almost not a “real” job. I understand the need for grad students to have some experience of non-academic environments, but I am less comfortable with this being spun explicitly as an “experience of the world of work”, because HEIs are work places too, with real people doing real jobs for real money, and many students would benefit enormously from understanding that a PhD has a lot in common with a job.

Raises awareness of operating in industry

While the experience was fantastically broadening, the repeated embedding in different organisations (as part of Marie Curie) led to my student being distracted from completing interim reports on time. He was always interested in the other new thing, rather than getting on with what he had already done.

I think that exposure to, and delivery upon, real-world expectations and deadlines is an important skill for any student to develop and makes them more effective at delivering their thesis and research. They also learn different types of personal and research skills, which again make them more marketable in the research community.

Internships have to be appropriate (i.e. a proper period of work strongly related to the place where the internship is held), and the student should wish to participate rather than the current obligatory arrangement.

Support varies enormously according to the student, their thesis, their career ambitions, and how the internship relates to studentships and time limit regulations, as well as the character of the internship. But in principle, where appropriate to the student, internships can be excellent ways of diversifying students’ experiences, enabling improved communication with different audiences, means of refining career ambitions, etc.

Internships are training students for what they do if they fail as researchers. I would prefer schemes that optimize success rather than mitigate failure i.e. placements in top labs to pick up new skills and perspectives- YES – but relate to project rather than explicitly banned as at present.
Exposure to a real work environment, networking opportunities for student and supervisor, opportunities to apply theory to practice and policy, opportunities to publish and to experience a professional work environment first hand.

It’s useful for their development and employability.

It really depends on the student, if the work experience is motivating and important in terms of experience and gaining skills and understanding it can be excellent and inspire the student. If however they are flagging themselves and the work experience is simply delaying the student embracing their PhDs and getting on with their studies then I’d find it problematic. It is very personal, it depends on where the student is at emotionally, and intellectually, and sometimes practically.

It gives them a valuable different perspective from that of their research group and offers the opportunity for training in complementary techniques etc

My experience is with 1-3 month stays in other research groups, usually overseas. My experience has been very positive and I strongly advise my students to do this. This gives the students an opportunity to contrast the way of working and functioning of a different lab. This can be a real eye opener as they enrich their careers with contrasting or reinforcing experiences of ways of working sometimes in their own field or sometimes in a different field. It also gives the two research groups involved opportunities for initiating new collaborations in a very practical and low-cost manner. I believe the University benefits a lot as this is usually the way to generate more scientific publications as well as new grants, particularly EU grants. It is, however, a type of initiative that has access to poor funding and it would be great if the University could put in place some mechanism to help research groups. One possibility is to have a model of funding that is proportional to the income or number of PhD students that a group has attracted plus perhaps some separate funding for pump priming early career academics or recently arrived academics who did not yet had the chance to build such portfolio.

My experience with internships in industry are less appreciative in my own area. There are fields where industry is less easy to host students or the academic value for students will be less clear.

PhD student published a paper based on the research done during the internship, and then secured a job there after their PhD was finished.
1. It can give them access to important data. 2. It can build networks. 3. It is good for the CV. 4. It is good for personal and professional skills improvement.

**Good real-world experience, access to data, networking opportunities**

While I do not have problems with it in principle, there is a lack of coherence in regulations between funding bodies, university regulations, etc. I am aware of multiple cases where these caused significant problems for students involved, and would need to be addressed.

I think internships can be wonderful opportunities for PGR students to develop skills and networks – with the proviso that they should not put timely completion at risk.

Completion dates seem to be inflexible and do not take into account how much 'non-PhD' work a student might have to do during their (normally) 4 years registration.

It is increasingly important for research to be relevant to society and industry and this provides an important mechanism to bridge the gap between industry and academia and to foster productive collaborations and potential impact. It is important that research students have opportunities, if possible, to gain experience of industry working and addressing industry-relevant problems.

There are inevitable concerns about adequate PhD progress with the distractions of an internship. However, as long as the time spent on the internship is accounted for by providing the student with additional submission time I think that internships can be a valuable experience of the students. Clearly, the more closely matched to the internship to the PhD programme the better.

**Provides an opportunity for the student to consider alternative career options.**

If it is the right internship, then it can make good contacts, and give them a meaningful opportunity to apply their research experience.

**An internship should primarily benefit the students’ academic work in my opinion. It should not just be a remote activity that enhances job chances outside academia; although I can understand that from a student’s point.**
If a student would want to do an internship I would not be against it, but it would need to have a clear purpose, not bringing the student too far away from their writing…it would also depend on the type of internship, and how closely aligned it is with their research.