

Student Attitudes towards Intellectual Property

Report on research by the National Union
of Students for the IP Awareness Network
and the Intellectual Property Office

October 2012

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Foreword from NUS

Welcome to the NUS/IPO/IPAN report, Student Attitudes towards Intellectual Property, which provides an insight into student attitudes to, awareness of, and aspirations for, intellectual property (IP) education. We are pleased to be working with the Intellectual Property Office (IPO) and the Intellectual Property Awareness Network (IPAN) to produce this research.

It is concerning how little is known about the attitudes and experiences of IP education within the UK student body. Intellectual property is a significant issue for many UK students, not only for the successful completion of their academic course, but as importantly, to ensure students understand how ideas are recognised and protected, to prepare them for the growing world of enterprise and innovation beyond graduation.

This pioneering research shows that students believe a knowledge of IP is important and those who have some experience of IP education view it positively and express a desire for more. However, the extent of IP teaching is currently very limited and many students are not even aware of the potential scope of IP education. Even where it does take place, IP education is frequently restricted to plagiarism, is not included in assessment, and makes little use of external experts.

Improvements are clearly needed. This research indicates that students are currently not well-informed about the

procedures for protecting their IP rights. They want IP education to be integrated into their courses, and linked to their future career options. Improving IP education in the UK is a significant challenge, and one which will require the combined efforts of many stakeholders including FE and HE institutions, professional bodies, government bodies, academics, student unions and students themselves.

I hope you find this research thought-provoking and informative. As one of the first pieces of work to investigate this issue, this report is clearly just the beginning of a discussion about how IP education in the **UK should be shaped to meet students' needs and expectations now and in the future.**

Rachel Wenstone
Vice President Higher Education
National Union of Students

Foreword from IPO

The Intellectual Property Office (IPO) is delighted to have worked with the National Union of Students (NUS) and the Intellectual Property Awareness Network (IPAN) in the production of this research. We have long worked with universities and industry to assist them in harnessing the Intellectual Property (IP) derived from the knowledge and expertise of academics and researchers, but our understanding of IP within the student community has been somewhat lacking. Thankfully, this report provides a much needed insight into **students' awareness of IP and their attitudes to IP teaching in UK universities.**

An awareness and understanding of IP developed in education is key to achieving an IP savvy workforce which can use IP to deliver growth for the UK. What this report shows is that despite student appetite for IP knowledge and their desire for career relevant IP teaching to be integrated into the curriculum, few university courses address IP issues. Too often, our graduates leave university with little understanding of how to protect their ideas or maximise their value.

Improving the provision of IP education within our universities will require support and action from a wide range of stakeholders from academia, industry and government. This report will help to focus attention on the challenge and the benefits that will flow from addressing it. The IPO is committed to working in partnership with

all parties to shape curriculum development to ensure that IP teaching is included in a wider range of courses, in more locations across the UK to underpin the economic boost that will flow from maximising the value of UK creativity.

Sean Dennehey
Acting Chief Executive and
Comptroller-General
Intellectual Property Office

Executive summary

This report presents the findings of a quantitative online survey of over 2,000 FE and HE students in the UK. The survey investigated student attitudes to, awareness of, and aspirations for, intellectual property (IP) and sought to understand how the continued student journey affects demand for information about IP.

Overwhelmingly, **students felt that a knowledge of IP is important to both their education and their future career.** There is evidence that **IP teaching earlier in their education motivates greater interest among students at FE/HE level.** Furthermore, once they are exposed to some aspects of IP, students feel more confident about it, and express a desire to know more.

Students feel it was important to know about IP to ensure everyone receives recognition for their work and ideas, but **they do not perceive a strong link between IP and commercial success.**

Despite expressing high levels of confidence in their ability to perform IP-related tasks, many students clearly had a limited understanding of areas such as design rights and copyright.

The extent of IP teaching is generally limited and, where it occurs, it is most

usually integrated throughout HE and FE courses. While briefings before embarking on research projects are fairly common, very few students reported receiving information about IP before a placement. Two-fifths of students who received IP education said it is an assessed part of their course.

Academics, and module tutors in particular, are seen as key sources of information about IP issues. However, just half the students surveyed felt their lecturers to be well-informed about IP issues.

Many students want to see improvements to IP teaching. In particular, **they want the teaching of IP issues to be more closely-related to their course discipline.** They also called for coverage of IP to extend beyond plagiarism. Overall, **only 40% of students consider their current awareness of IP to be enough to support them in their future career.**

As the use of electronic resources has expanded in recent years, plagiarism has become an increasingly important issue within UK educational institutions, demonstrated by the use of resources such as Turnitin¹. This research suggests that, although a focus on plagiarism has helped to raise the profile of IP in academic institutions, to date this has not been capitalised on to promote other aspects of IP teaching. There is a need for better support for both academics and students in learning and teaching about IP.

¹ http://submit.ac.uk/en_gb/home

This project has demonstrated that there are important insights to be gained through work in this under-researched area. There is a need for further studies with the student population to investigate the complex issues raised, as well as research with other stakeholders (eg academics, business community), and longitudinal studies to track changing attitudes and awareness among students.

Introduction

This research was commissioned by the Intellectual Property Office (IPO) and the Education Group of the Intellectual Property Awareness Network (IPAN)². IPO and IPAN are both concerned with raising awareness of intellectual property (IP) and improving IP competence in the UK workforce. Whilst research has been conducted amongst various contributors to the UK economy, little is known about attitudes and experience of IP amongst the UK student body.

This quantitative research investigates student attitudes to, awareness of, and aspirations for, IP in the Higher Education (HE) and Further Education (FE) contexts, and seeks to understand how the continued student journey affects demand, if at all, for information on IP, to include patents, copyright, trade marks, designs and confidentiality. The research draws together existing knowledge to inform a future facing survey with current students in HE and FE to demonstrate the level of delivery of, and demand, if any, for specific curricular inclusion of IP.

There are currently 7 million students in the UK. Methods of studying have evolved with

² The IP Awareness Network (IPAN: www.ipaware.net) includes a broad range of professional, educational and business organisations all interested in improving understanding and awareness of IP in the UK. IPAN channels its activities through its sector workgroups which focus on promoting awareness OF IP for those involved in Finance and Business, Parliament and Education. **IPAN's involvement in the current report** stems from its Education Workgroup.

social and technological changes, as well as changes in pedagogy leading to new course delivery and assessment formats. The ways in which individual students are able to learn has changed accordingly, leading to a rich field of output types each with its own unique implications for IP.

Aims and objectives

The overarching aim of investigating student attitudes towards, awareness of, and aspirations for, IP can be broken down into the following six objectives:

- To understand the inclusion of IP within the curriculum
- To scale the degree to which students personally consider the implications of IP
- To discover in what contexts students are engaged with IP, and how they engage – e.g. which resources are they using, from which bodies?
- To determine the impact of knowledge of IP in schools and FE, and the perceived value of this knowledge during and after university
- To discover what aspirations students have, if any, to learn more about IP
- To capture perceptions for the future value, need and use of IP amongst students.

IP delivery in the HE sector

The current climate regarding IP in the UK HE sector **has been described as “both confused and confusing” (Joint, 2006).**

Within law schools, although IP is a relative newcomer to the range of subjects offered, the majority of HE institutions have at least one academic with a declared interest in IP and the subject now forms part of most law degree programmes in the UK (Booton and Prime, 2002 [unpublished], in Soetendorp, 2006). Although there is growing recognition of the importance of students being aware of protecting, exploiting and enforcing IP rights beyond law schools, non-law academics have not always been enthusiastic about introducing IP into the curriculum (Soetendorp, 2002). In contrast to negative attitudes among many academics, in small scale surveys, students have been found to respond positively to IP as being relevant to their future careers (Soetendorp, 2006).

Some research has been conducted into IP delivery as part of engineering courses. A survey of UK engineering faculties in 2005 found that IP featured on **courses, but ‘not at a high level’**. **It was most frequently** delivered by an external speaker (eg a lawyer), in conjunction with a member of the faculty. IP was a small element of assessed work in about 30% of cases and case studies and lecture notes were the most popular resources used. (Roach & Soetendorp, 2008)

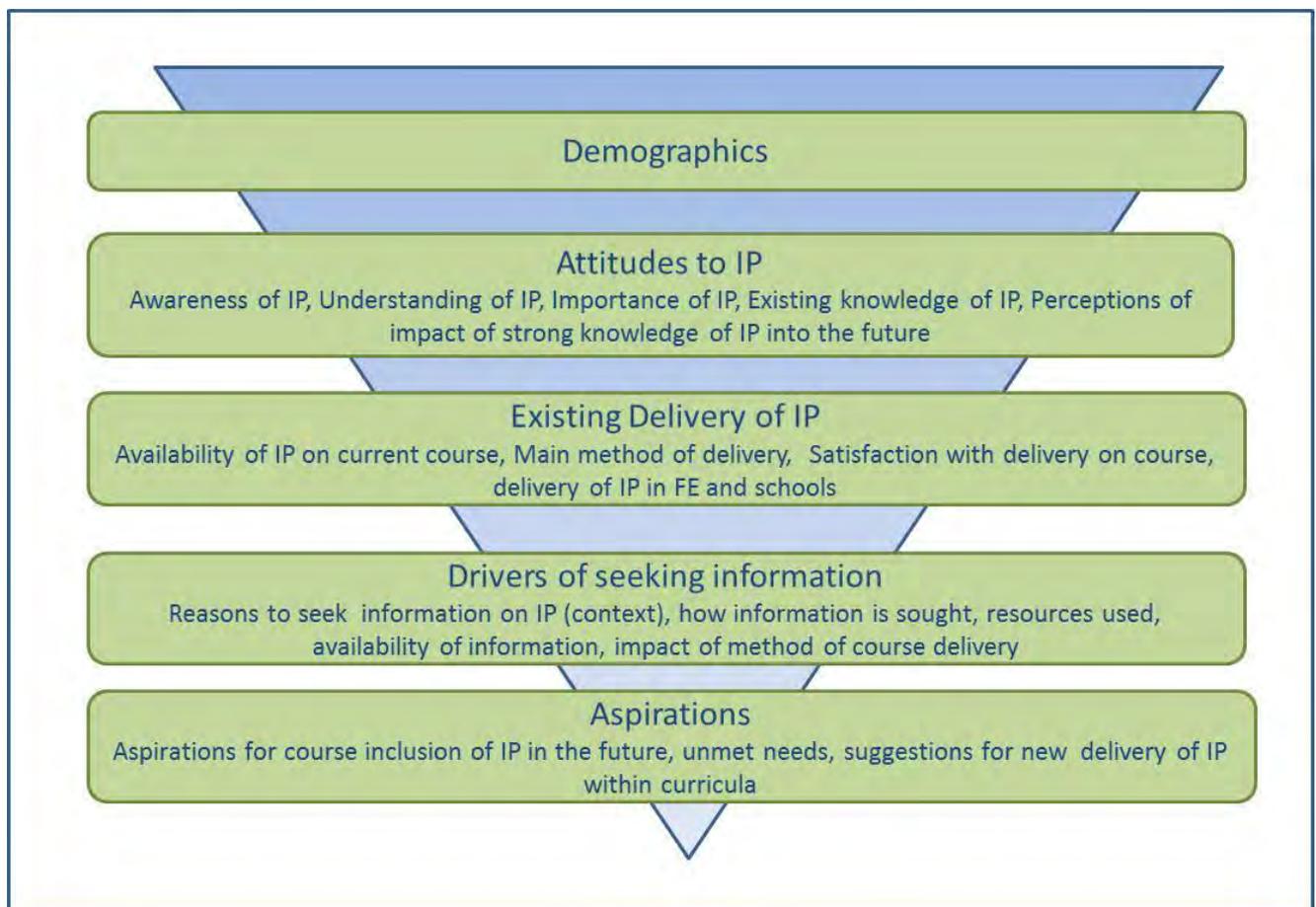
Research design

An online survey was designed to target 50,000 students in HE and FE institutions, to obtain a nationally representative student demographic from across the UK. This survey explored student attitudes to, awareness of, and aspirations for, the delivery of an adequate competence in IP in order to meet their career aims.

The flow diagram below outlines the themes covered by the survey. A copy of the survey is included in Appendix A.

2,146 responses were received. 69% (1,473) of students responding were female and 31% (664) were male. The median

age of respondents was 22. The majority (59% or 1,267) were in the first year of their course and approximately three-quarters were from HE institutions, with the remainder studying in FE. Just over half (56% or 1,196) were studying for a Level 4-6 qualification (undergraduate level). 29% (622) were part-time students and there was a wide distribution between university mission groups and subjects studied. The most common subjects studied were social studies (13%), language literature, linguistics and classics (10%) and business and administration (10%). Further details of the demographics of respondents are provided in Appendix B.



A project steering group consisting of the Intellectual Property Office (IPO), Intellectual Property Awareness Network (IPAN), NUS and NUS Services met regularly throughout the project to steer the research at key points, such as project initiation, survey design and analysis³.

Analysis

Initially, the responses were analysed to provide summary statistics for each question. These are presented using descriptive charts, and percentages and counts. In addition, inferential statistics were calculated, for example, comparing results by year group, discipline, mission group, previous institution type and other relevant factors. The results of this analysis are reported where noteworthy differences were found between the groups. Tests for association between variables were calculated using the chi-squared test for nominal/categorical data. Where evidence of a relationship was found, the significance level is given, and a cautionary note if a high percentage of the cells had an expected value of less than five⁴.

³ Steering group members were Ruth Soetendorp and Graham Barber (IPAN Education Group), Steve Smith (IPAN), Matthew Larreta and David Humphries (IPO), Debbie McVitty (NUS).

⁴ It is generally advised that not more than 20% of cells should have values less than 5.

Knowledge of IP

The section of **the survey explored students'** existing understanding and knowledge of IP.

When asked about their understanding of **the phrase 'intellectual property'**, 1,368 respondents gave answers which showed an understanding of at least some aspects of the term. The remaining 233 (15%) responses did not indicate an understanding of any aspects of IP. It should be noted that, although many students clearly attempted to construct their own definitions, a number answered this question by copying definitions of IP from internet sources.

While some responses focused on broad concepts, such as ownership (25.0%), rights (8.8%) and originality (4.9%), others mentioned more specific terms such as copyright (18.4%), patents (7.5%) and trade marks (5.3%). Naturally, many

responses included more than one aspect of IP.

In addition to the more common responses, it is worth noting the aspects of IP which were only mentioned by a small number of students, for example, design rights (1%), trade secrets (0.3%) and brands (1%).

Some of the many answers focusing on the notion of ownership of ideas included:

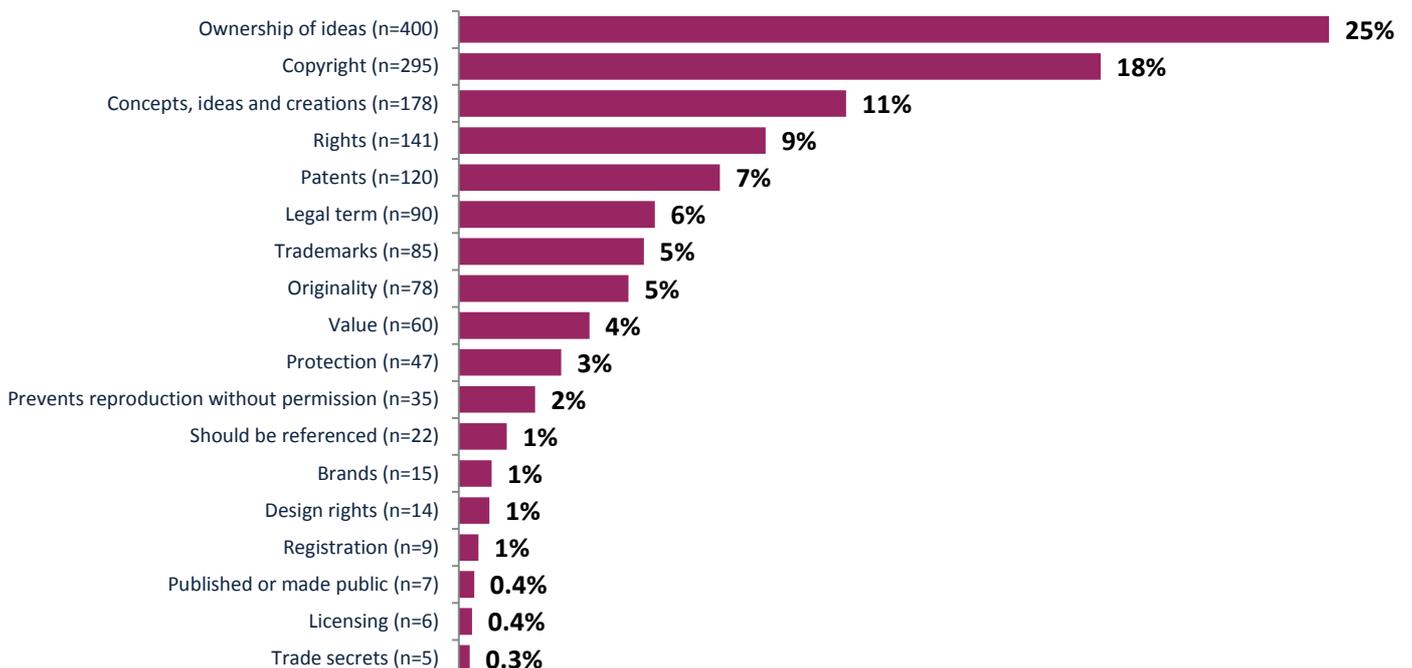
"a non-material 'property', something that you own but doesn't exist in a material form, ideas"

"I believe intellectual property to be the right a person has to ownership to his/her unique ideas".

Other students referred to ideas or creations in general terms, but did not link this to ownership:

"something created in the mind: a design/idea".

What is your understanding of the phrase 'intellectual property', if any? (n=1601)

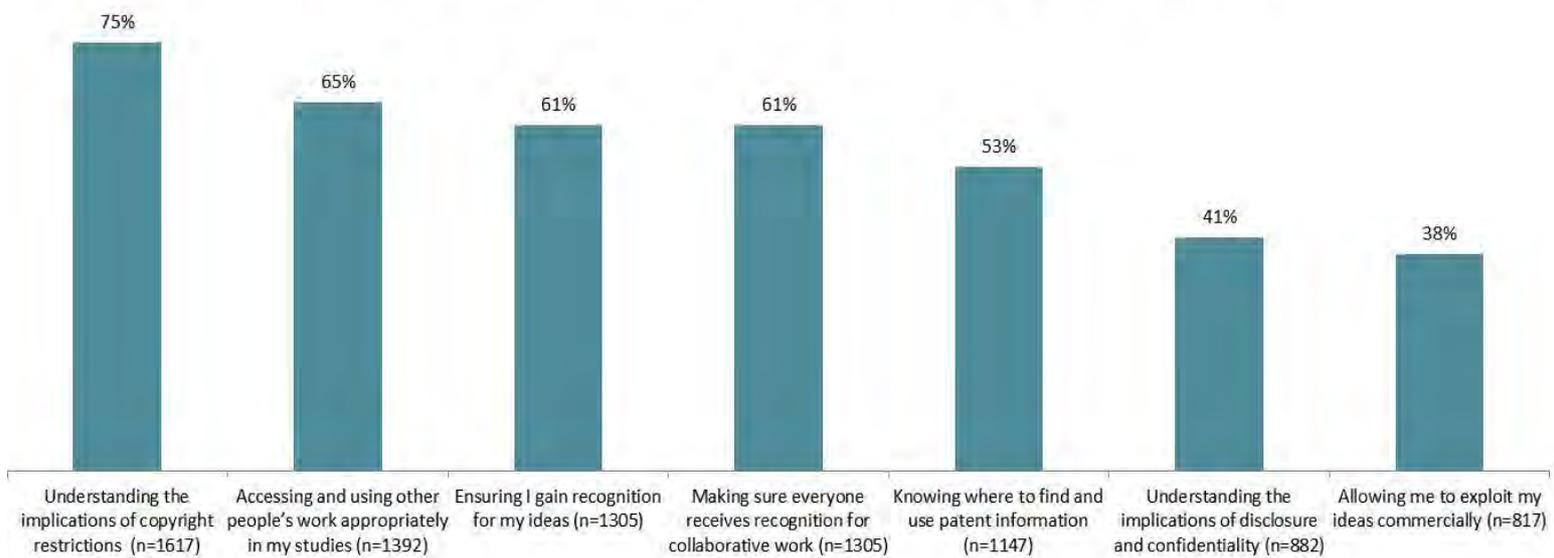


Student attitudes towards intellectual property

Students were given a list of topics and asked to select all those they thought were relevant to IP. The topic recognised as relevant by the greatest number of respondents was 'understanding the implications of copyright restrictions', but even this was only thought to be relevant by 75%.

Notably, understanding the implications of disclosure and exploiting ideas commercially were recognised as relevant by the fewest numbers of students; in each case, less than half the respondents felt these were relevant to IP.

Topics that are considered relevant to intellectual property (n=2146)



The importance of IP topics

Students were given a list of reasons why they may want to know about IP and asked to rate the importance of each.

The most important reasons for knowing about IP were concerned with ensuring that everyone receives recognition for work and ideas; at least 80% believed it is important or very important to know about IP in order to 'access and use other people's work appropriately', 'make sure everyone receives recognition for collaborative work' and to 'ensure I gain recognition for my ideas'.

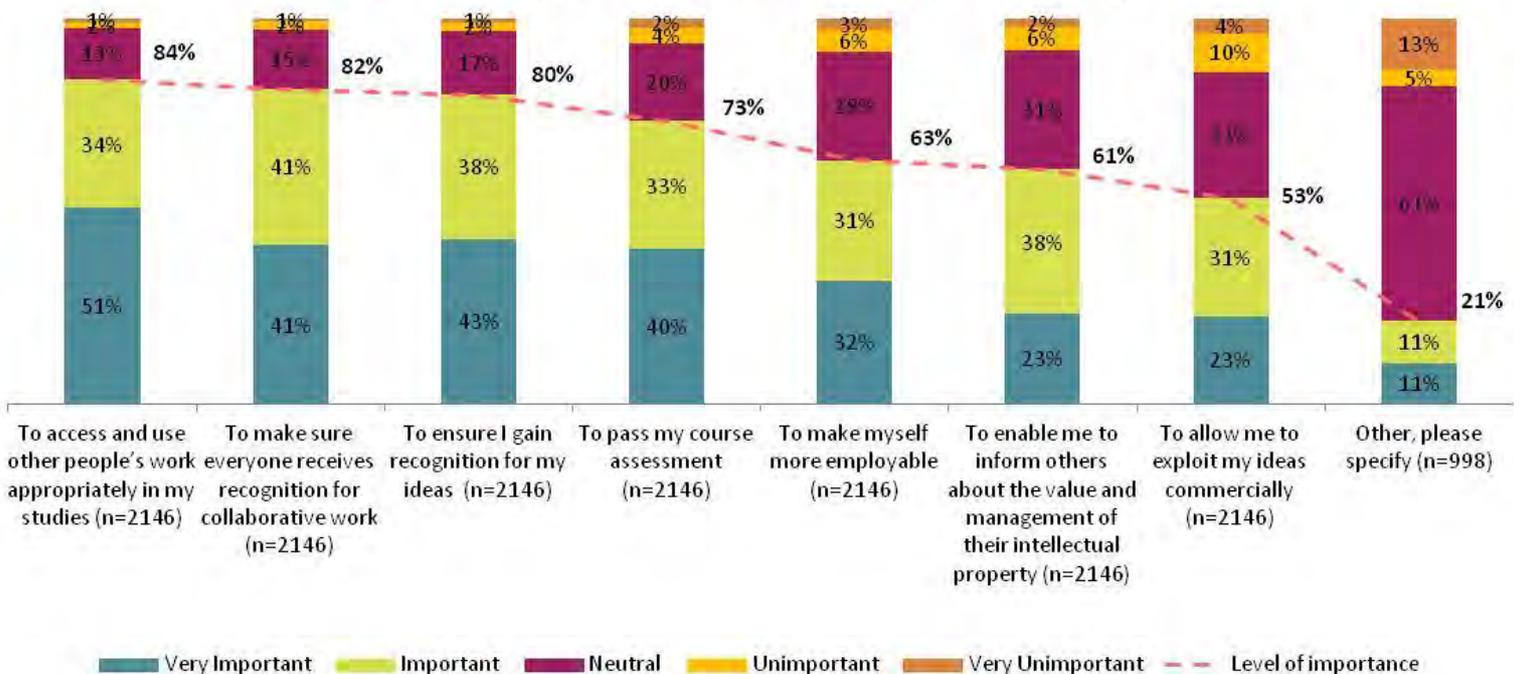
The commercial exploitation of ideas was the reason seen as least important overall

(only 53% rated it important). This is noteworthy considering the current emphasis on innovation, enterprise and growth within the university sector (PACEC, 2012).

Interestingly, it was not only law students who believed IP to be important to 'enable me to inform others about the value and management of IP'; business studies, engineering and technology and law students also felt this important.

There was evidence of a relationship at a very high statistical significance level (0.01) between the importance of knowing about IP 'to make myself more employable' and students' current, and prior, learning about IP. Students who had learned about designs,

Reasons for knowing about intellectual property



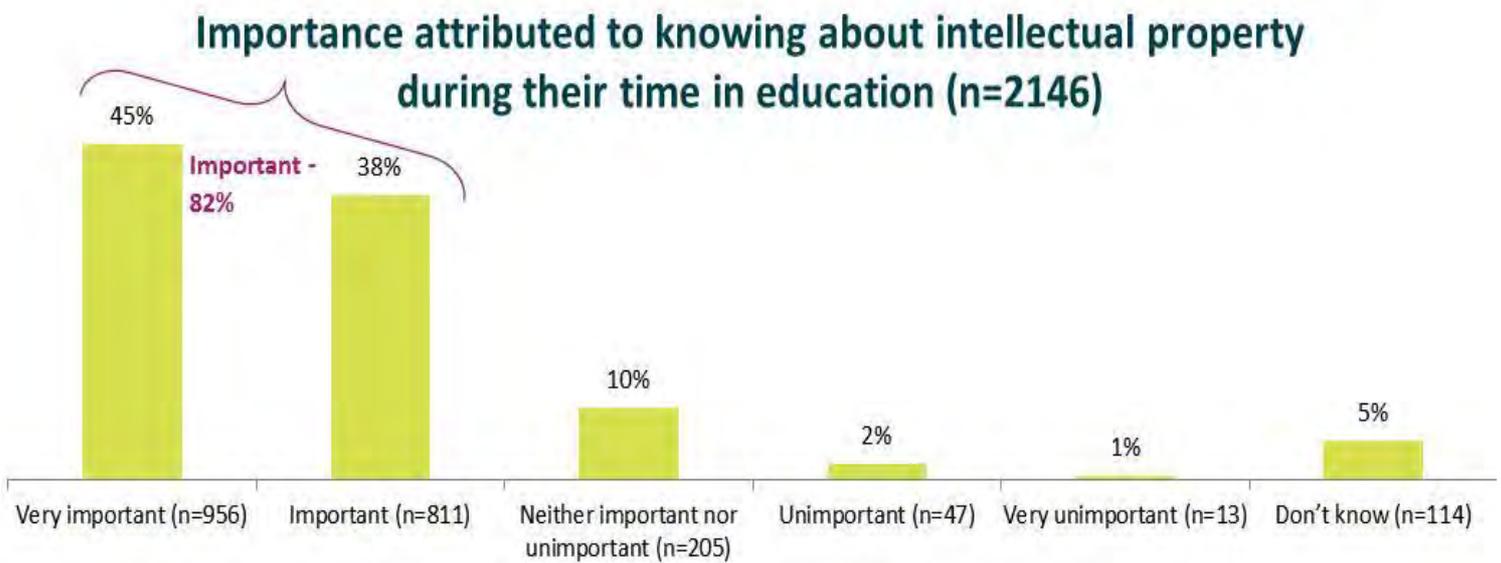
design rights and trade marks were most like to believe this was important. Those who had not learned about IP previously were less likely to feel this was important than those who had studied IP in the past, particularly at A/AS or primary level. Those who had studied IP before were also more likely to believe knowing about IP was important in order to pass their course assessment at the same high statistical significance level (0.01).

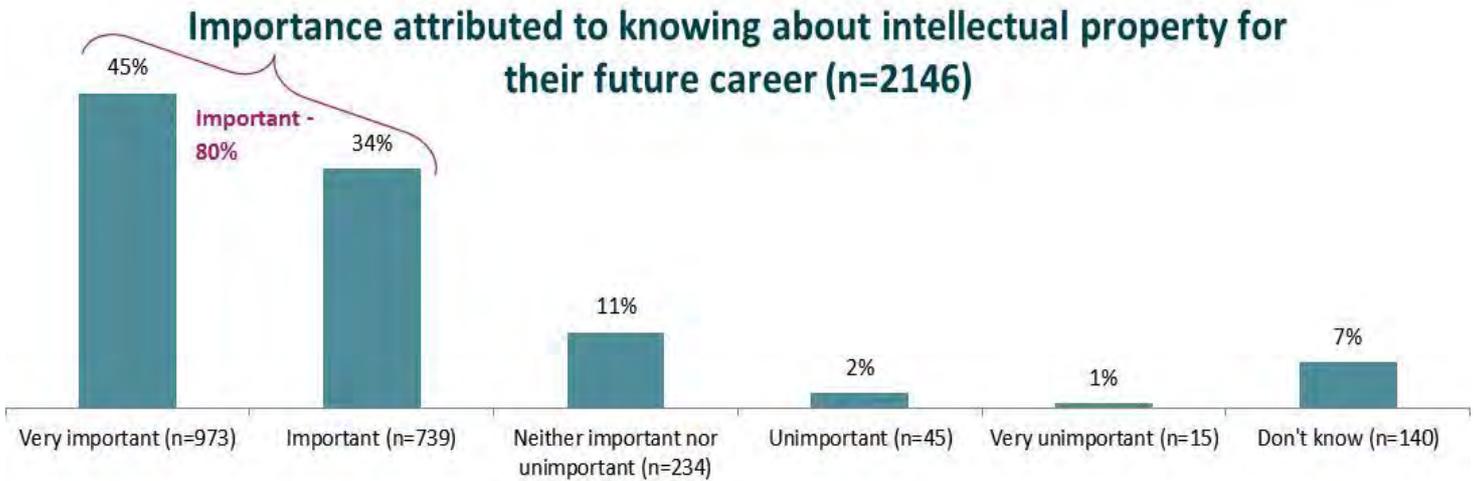
When it came to appreciating the importance of IP knowledge in order to exploit ideas commercially, current and prior learning about IP, and subject studied, appeared to be influential factors. Students who had studied designs, design rights and trade marks on their current course were most likely to see this as important, while those who had been taught about plagiarism, or not studied any aspects of IP, were least likely. Those who had studied IP

prior to their current course were also more likely to see the possibility of commercial exploitation as important, as were those currently studying technologies, engineering and business. For each of these three variables, there was evidence of a relationship at a high statistical significance level (0.01).

Students were also asked about the importance they attributed to learning about IP generally during their time in education. 82% thought it was important or very important. Only 3% thought it was unimportant.

Around the same figure, 80%, felt that knowing about IP was important for their future career.





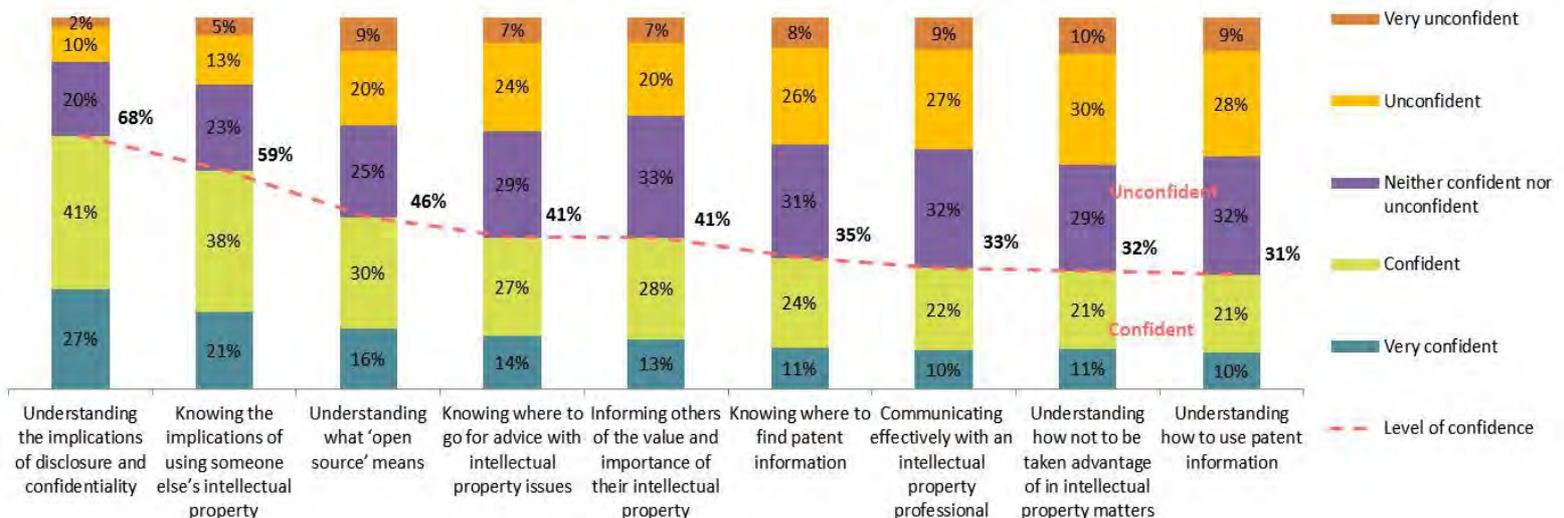
Confidence in performing IP tasks

When asked about their level of confidence in performing various IP-related tasks, overall, students felt most confident in understanding the implications of disclosure and confidentiality (68% confident or very confident) and knowing the implications of using **someone else's intellectual property** (59%). They were generally least confident in understanding how to use patent information (31%), understanding how not

to be taken advantage of in IP matters (32%) and communicating effectively with an IP professional (33%).

There was a relationship, significant at a high level of statistical significance (0.01), between confidence levels and subjects studied. Students who were studying law, technologies, engineering or business were most confident in performing these tasks, while those studying arts or humanities subjects felt least confident.

Confidence in performing each of the following tasks



There was also a relationship, at a high level of statistical significance (0.01) between confidence and prior learning, with students who had learned about IP at primary level or when studying for a vocational qualification, being most confident in performing IP-related tasks, while those who had not studied IP previously were least confident.

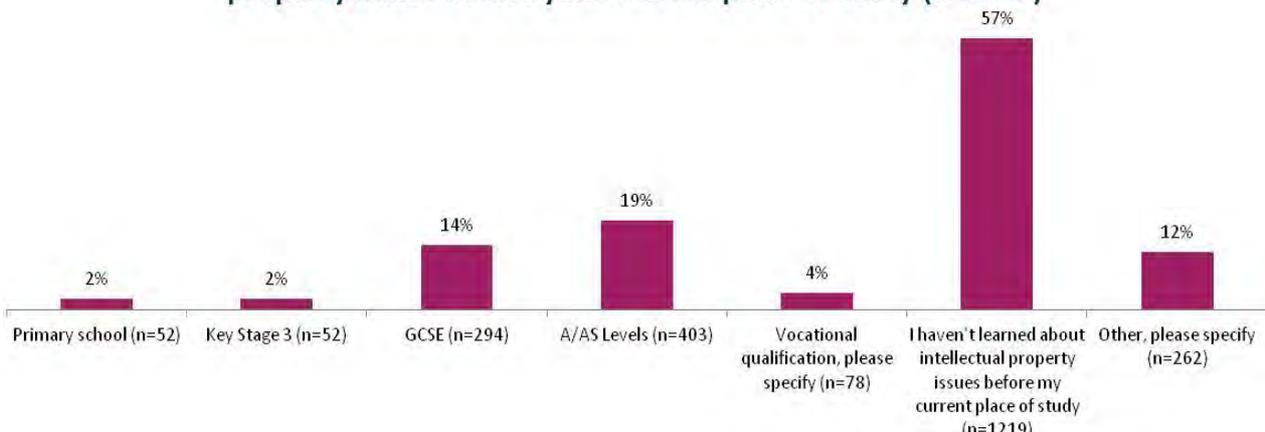
Prior knowledge of IP

More than half (57%) the students responding to the survey said they had never learned about IP issues before their current place of study. Among those who had, most had done so whilst studying for A/AS levels (19%) or GCSEs (14%). In addition to the options given, respondents said they had learned about IP during employment (1%) and through self study (<1%).

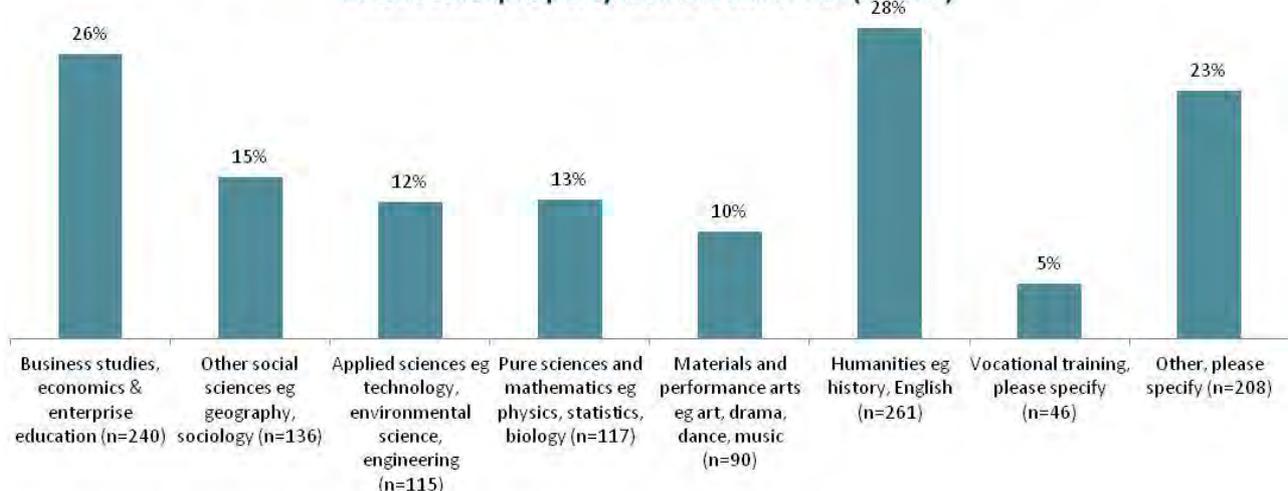
In students' previous institutions, IP issues were most commonly delivered as part of humanities (28%), or business and economics (26%) courses.

Of the 207 students who responded when asked whether they could remember any mention of IP at their previous place of study, most said it had been mentioned informally by lecturers/teachers.

At which level(s) of study, if any, did they learn about intellectual property issues before your current place of study (n=2146)



As part of which subject or course was their prior knowledge about intellectual property issues delivered? (n=925)

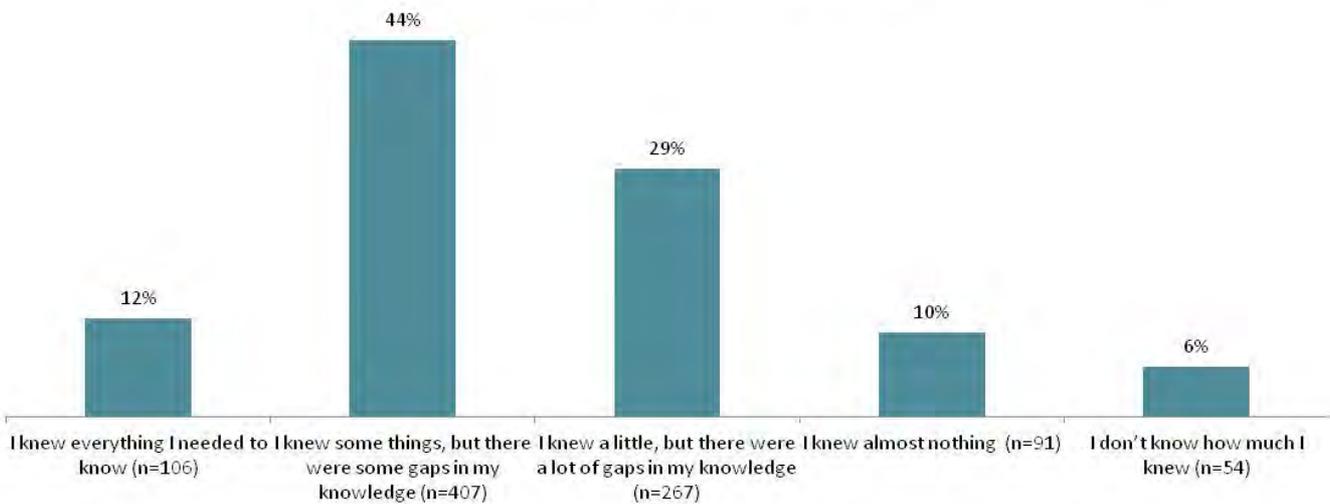


Student attitudes towards intellectual property

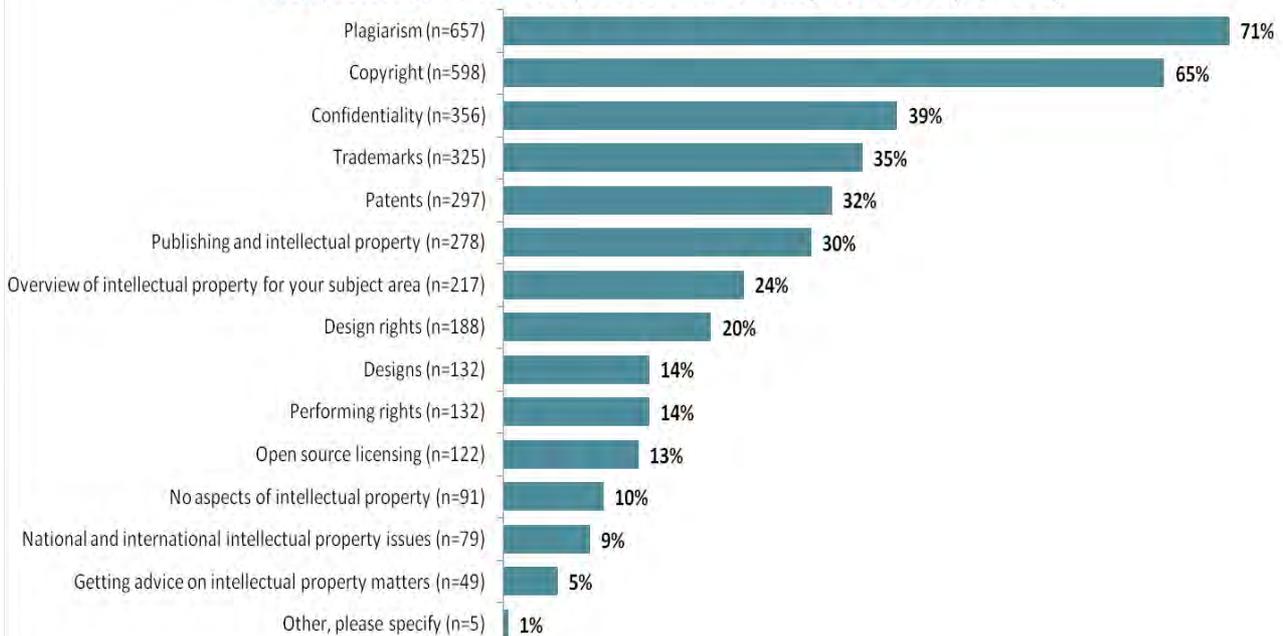
Unsurprisingly, the IP topic the greatest number of students remembered learning about at their previous place of study was plagiarism (71%). This was followed by copyright (65%), with confidentiality (39%), trade marks (35%) and patents (32%) also featuring strongly.

56% of those who had previously learned about IP issues (or 24% of the entire sample) felt they had a reasonable knowledge of IP from their previous place of study, knowing all or some of what they needed for their current course. But 10% of those who had learned about IP previously felt they knew 'almost nothing'.

How well did learning about intellectual property at their previous place of study prepare them for the intellectual property issues they would face at their current place of study? (n=925)



Which, if any, of the following intellectual property topics do they remember learning about at their previous places of study before their current place of study? (n=925)

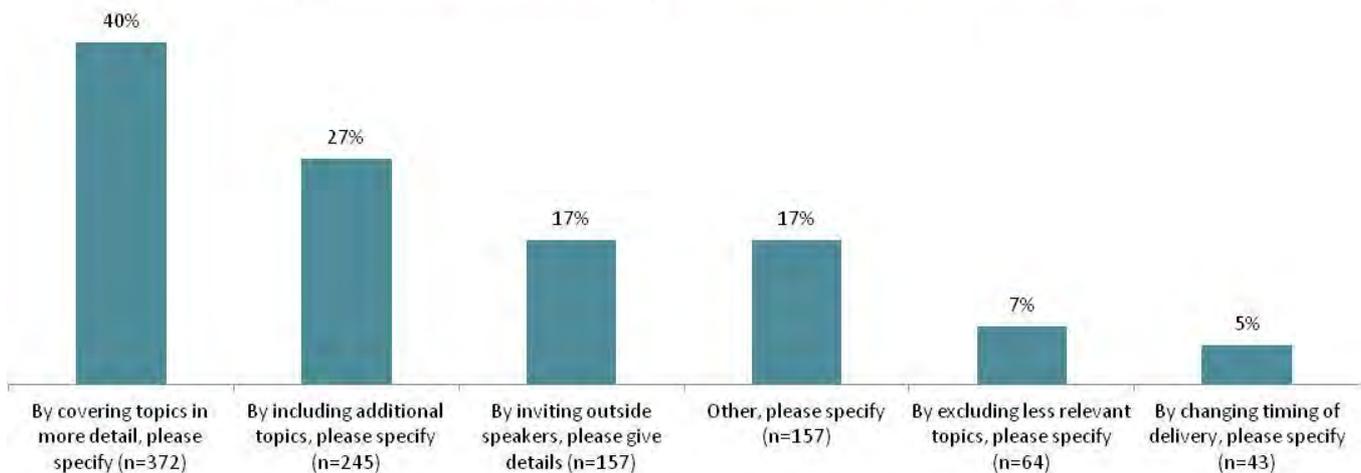


When asked about ways in which the delivery of IP at their previous place of study could have been improved, 40% of students wanted topics to be covered in more detail, and 27% wanted to see additional topics covered. Additional topics which students felt would improve delivery included patents (24 responses) and copyright (19 responses). The main topics students would like to see covered in more detail were copyright (27); referencing and plagiarism (26); and patents (22).

There was disagreement about the ideal timing for IP delivery; some thought IP should feature at the beginning of a course, while others felt it should be covered later on. The most common suggestions for outside speakers were lawyers (8) and professionals (12).

The most common 'other' suggested improvement was to include *something* on IP as coverage was currently so limited.

How, if at all, could the delivery of intellectual property issues in their previous place of study have been improved? (n=925)



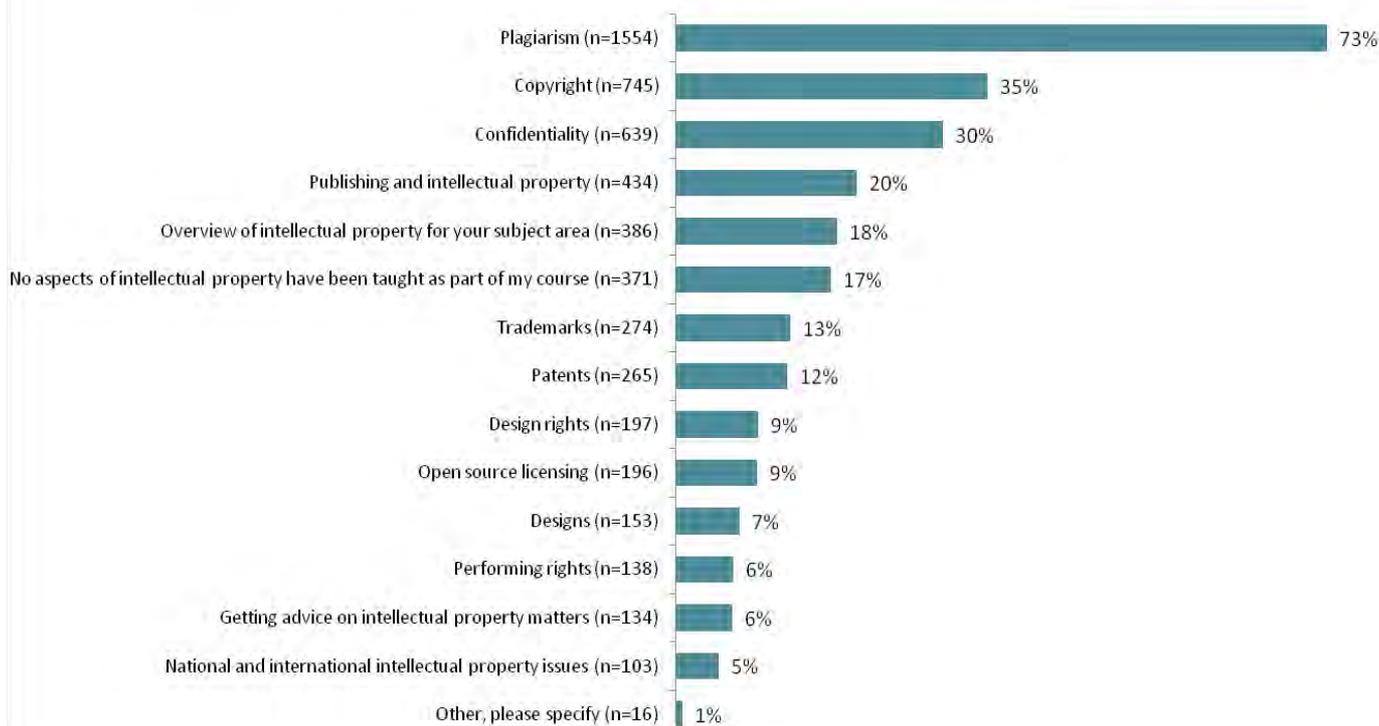
IP within current courses

When students were asked which IP topics had been included as part of their current course, plagiarism was, by far, the most common response (73%). This is, perhaps, not surprising given the emphasis on the prevention of plagiarism within the sector in recent years, for example, all UK HE institutions have plagiarism prevention processes which includes some form of guidance or training for students. This was followed by copyright (35%) and confidentiality (30%). National and international IP issues (5%), getting advice on IP matters (6%) and performing (6%) and design (7%) rights were the topics least likely to be included. This pattern was similar across universities in all mission groups.

As might be expected, there was variation in the topics taught within different subject disciplines.

- Patents and trade marks were most likely to feature in law, business and engineering courses;
- confidentiality was most likely to appear in medicine courses;
- design rights most commonly featured in engineering, creative arts and architecture courses;
- designs were most often part of engineering and creative arts courses;
- performing rights were most common in creative arts, mass media and law courses;
- publishing and IP featured most in history and mass media courses;
- open source licensing was most common in technology and maths & computing courses.

Topics that have been included as part of their course (n=2144)



IP delivery

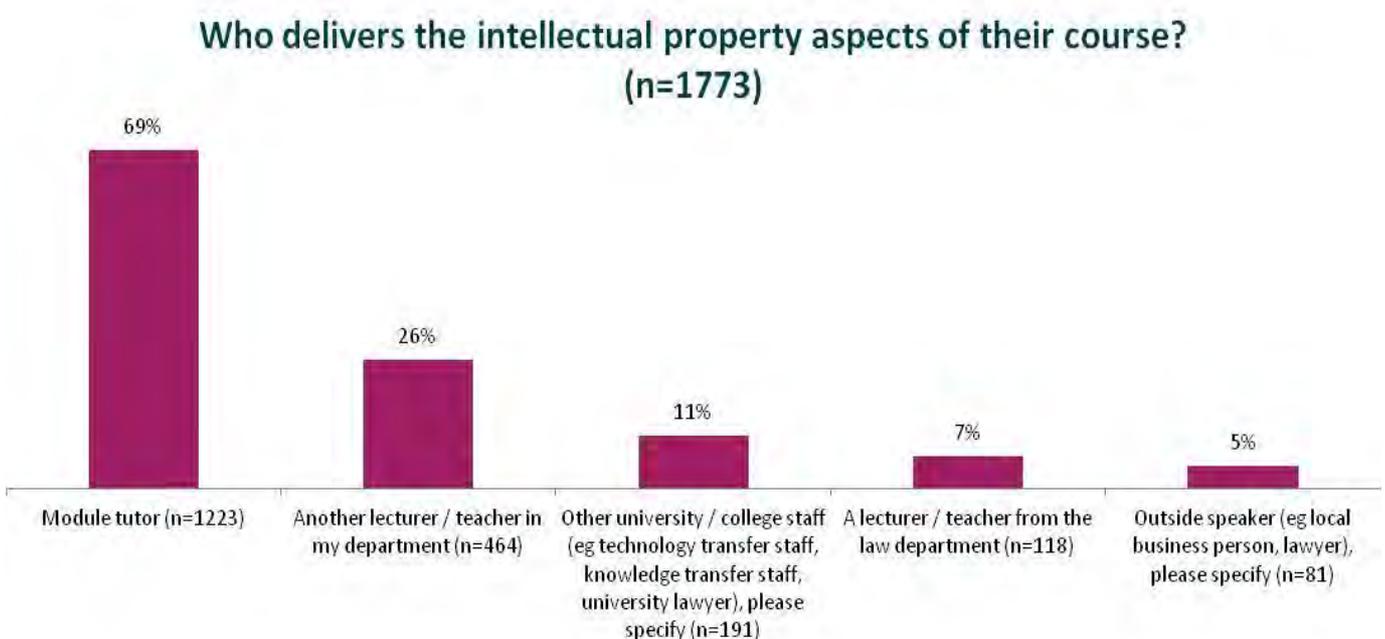
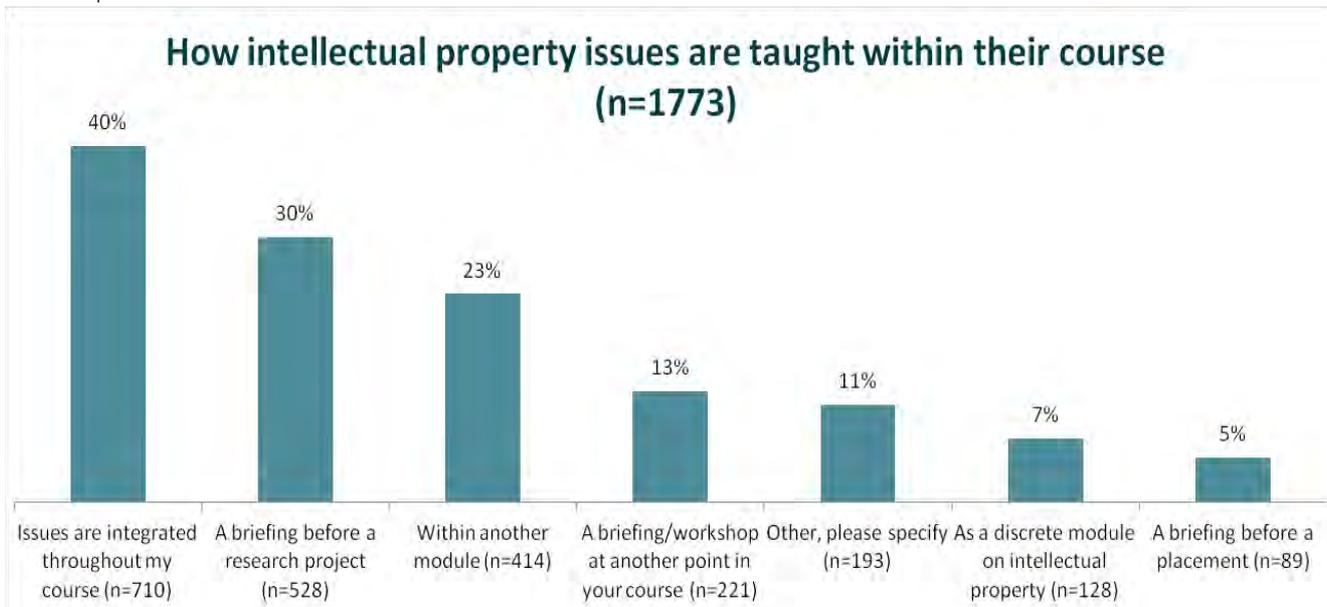
40% of students who received IP education said that IP issues were integrated throughout their course. The other common ways for IP to be taught were in a briefing before a research project (30%), or within another module (23%).

In addition to the options given, a small number of students (65, or 4% of those responding) said they learned about IP by using their course handbook.

Teaching methods varied by discipline, for example, discrete modules were most

common as part of law courses, while briefings were most often a feature of medical courses.

Where courses included some aspects of IP, these were most usually delivered within the **student's** department, by the module tutor (69%) or another lecturer from the department (26%). There was limited involvement from other university departments (eg law) or services (eg knowledge transfer).

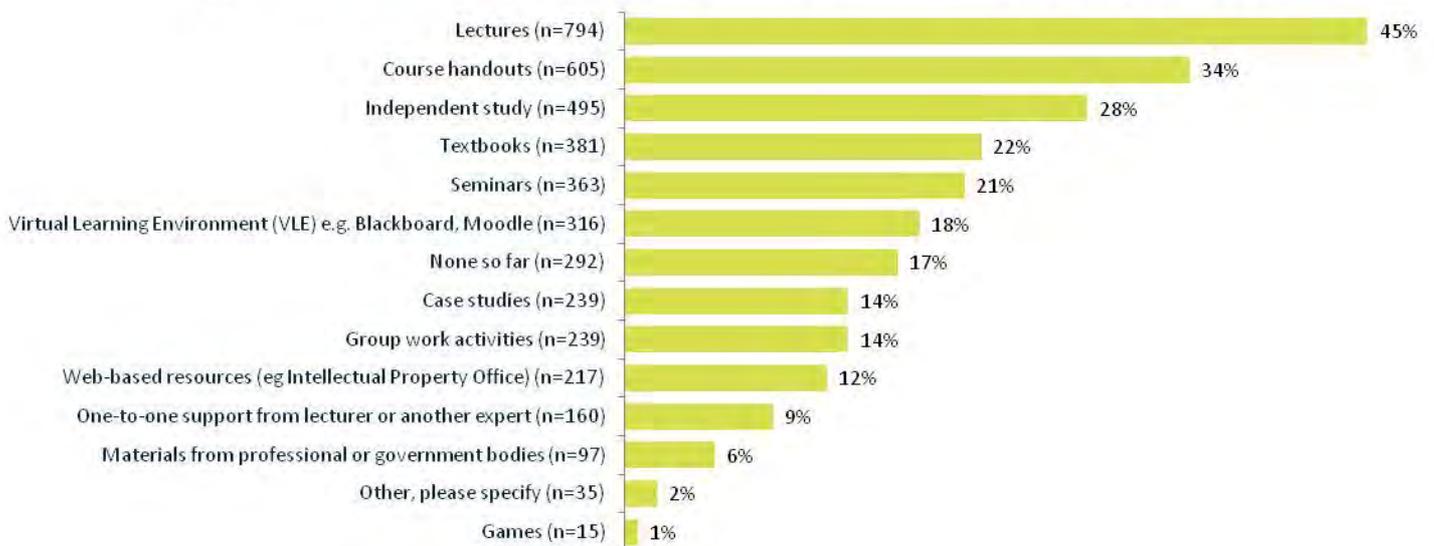


Student attitudes towards intellectual property

Lectures were the most common resource students used to learn about IP (45%), followed by course handouts (34%).

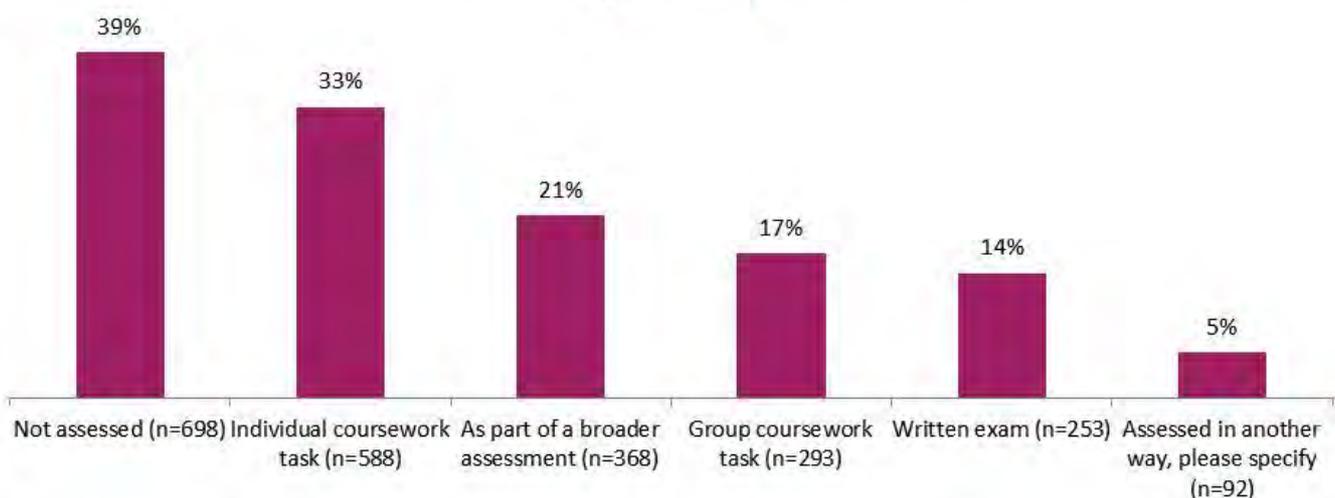
However, there is evidence of some more active learning methods being used as 28% said they learned about IP through independent study and 12% had used web-based resources, such as the IPO website.

Types of resources used to learn about intellectual property (n=1773)



Two-fifths of respondents who had learned about IP said this was not assessed as part of their course. Where IP knowledge was assessed, individual coursework task was the most common method.

How intellectual property knowledge issues are assessed (n=1773)



Improvements to IP delivery

More than half of the students who had been taught about IP as part of their course (53%) wanted IP issues to be more closely linked to the subject they were studying.

Additional comments indicated that students feel there is very limited coverage of IP on current courses, so any additional teaching would be welcome:

"Hardly anything is taught about intellectual property and so it could be useful to go into more detail."

"Intellectual property should be a topic in its own right as most students have no idea that they have rights in regards to the work they produce and the ideas they put forward."

"We just covered plagiarism, so everything else!"

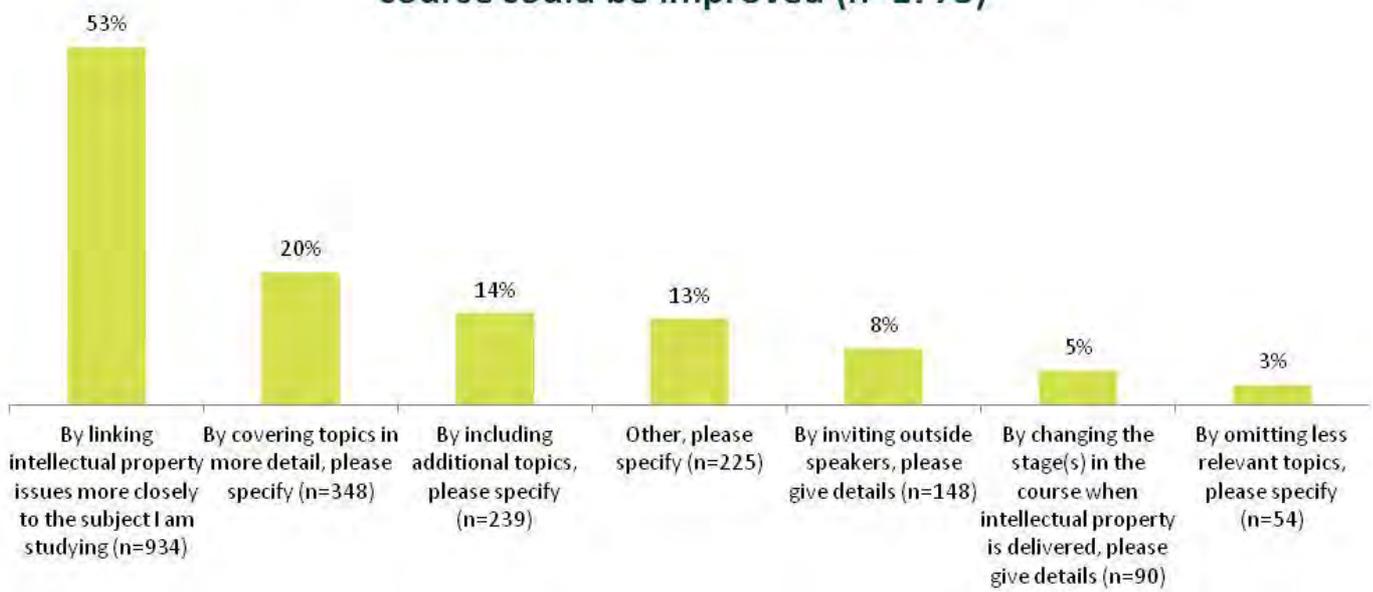
"Most of the information about intellectual property has been very brief and just giving a quick overview more detail would be better".

Overwhelmingly, students who responded to this question wanted information about IP issues to be delivered during the early stages of their course:

"Delivering information about issues regarding intellectual property, such as plagiarism, from the very beginning of the course. This would be important in future coursework and essays"

"We should learn about intellectual property issues within the first year of the course, rather than just before the final year project."

How the delivery of intellectual property issues on their course could be improved (n=1773)

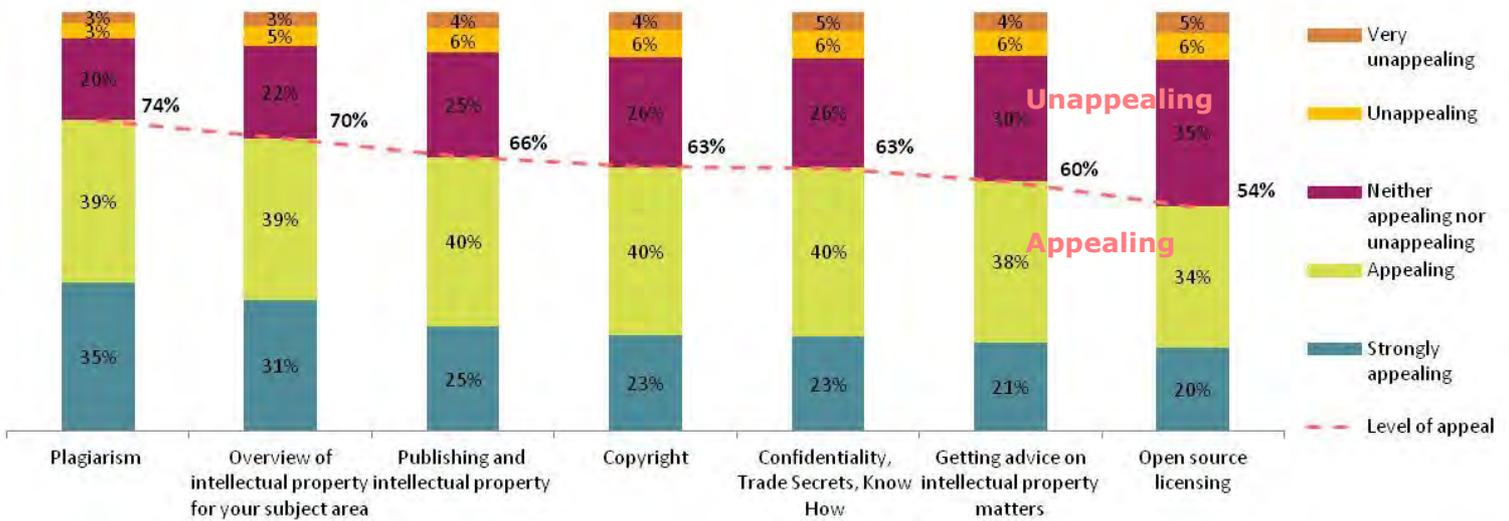


Student attitudes towards intellectual property

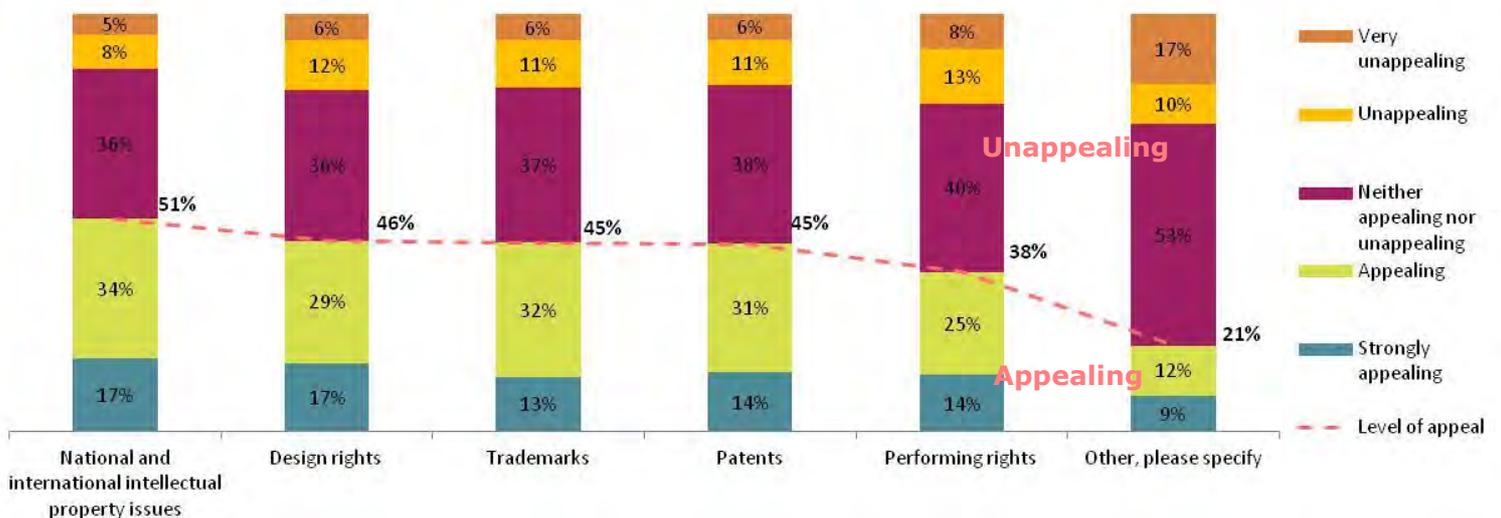
Students were asked which topics they felt were appealing to be included as part of their course. The topics with the widest appeal were those which would be immediately relevant to the majority of students, such as a general overview of IP, and topics concerned with academic writing and publishing, including plagiarism.

The least appealing were more detailed topics, or those which might only be immediately relevant to a minority of students (eg performing rights). However, it is noteworthy that even these less popular options were deemed *unappealing* by less than one-fifth of students responding.

Which topics are appealing to be included as part of their course



Which topics are appealing to be included as part of their course

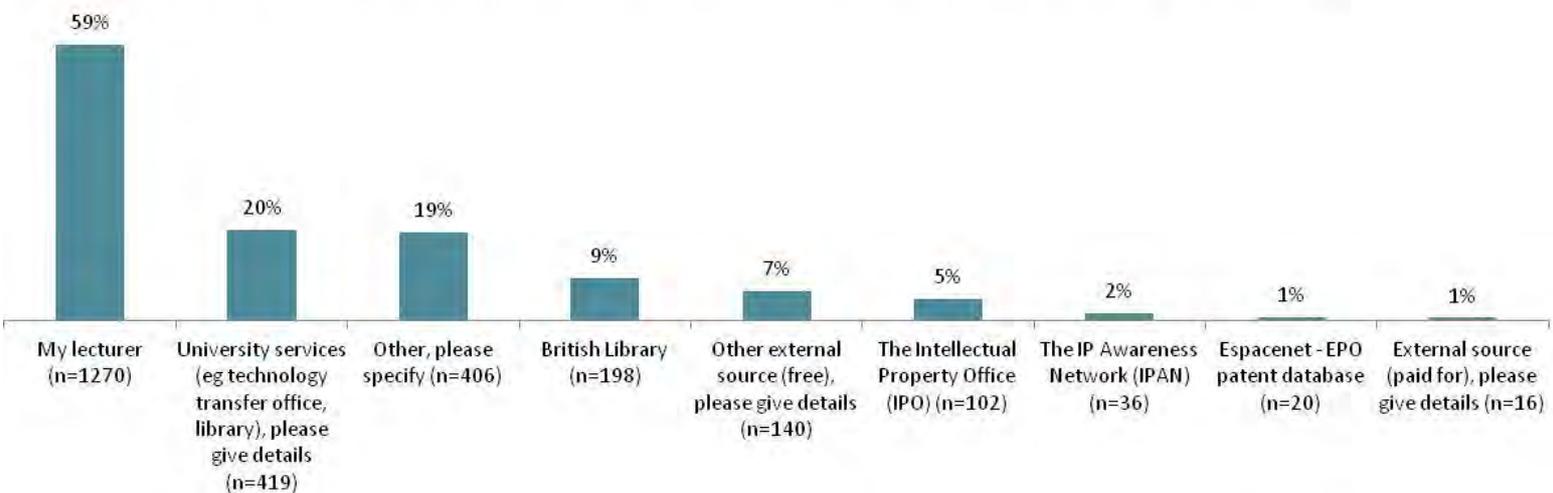


Support with IP issues

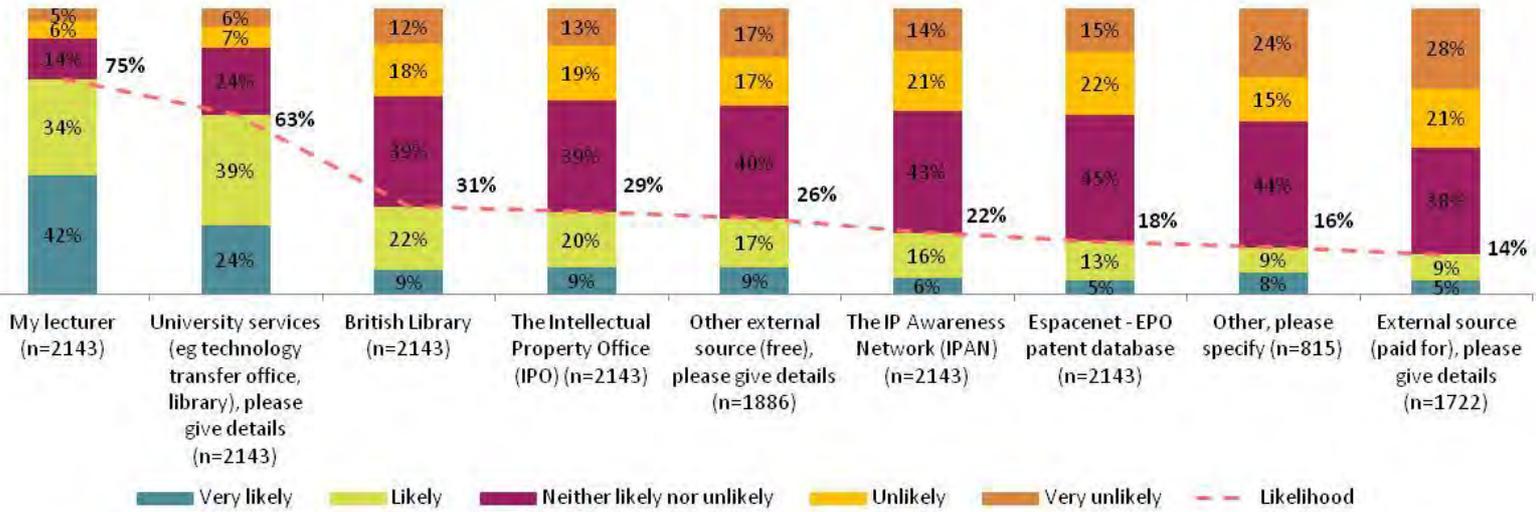
Almost all students were able to identify some resources they had used for help with IP issues. Institutional resources were the most frequently used, particularly course lecturers (59%), but also other university services such as knowledge transfer offices (20%). There was limited use of external resources, but of these, the most commonly used was the British Library (9%). In addition to the options provided, 4% of students said they used the internet, and others mentioned family, friends and other acquaintances.

The order of resources was broadly the same when students were asked which resources they were likely to use if they needed help with IP issues in the future. Again, lecturers were the resource most likely to be used (75%) but almost two-thirds of respondents (63%) were likely to use other university services, and just under a third said they were likely to use key external resources, the British Library (31%) or IPO (29%).

Resource used for help with intellectual property issues (n=2144)



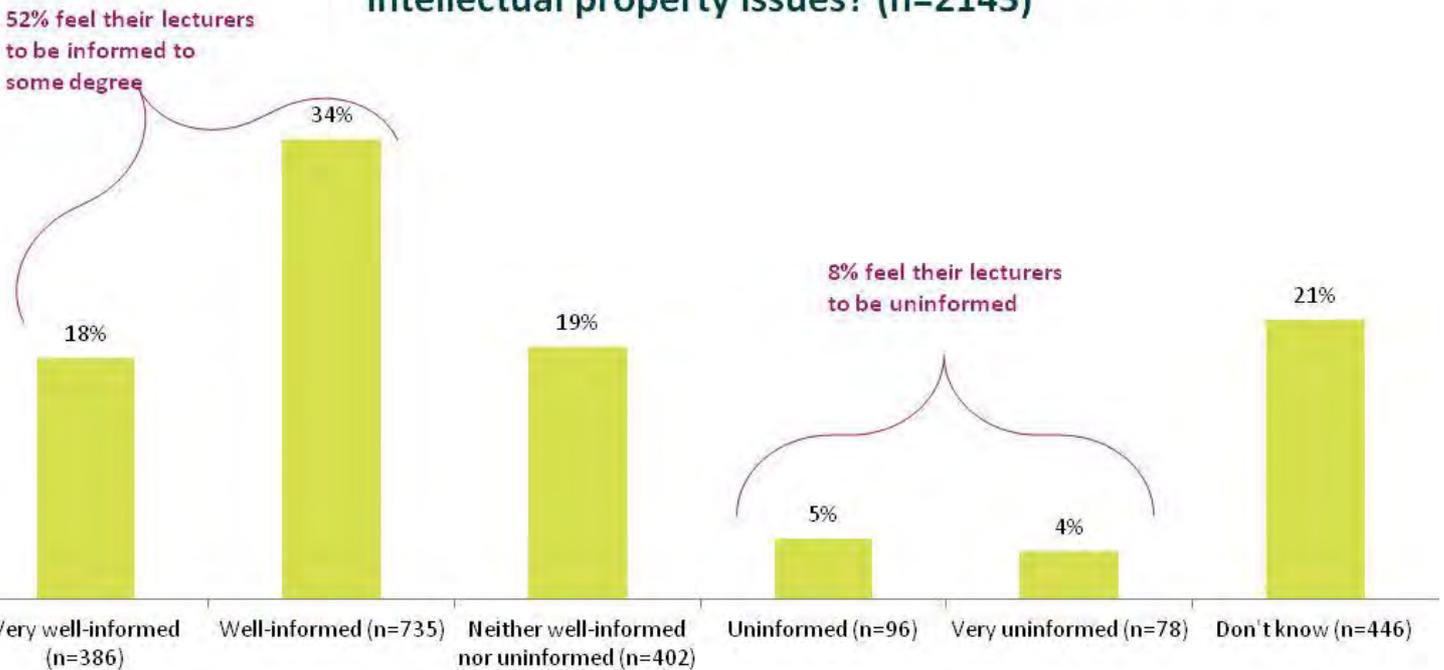
Likelihood of using resources if in need of help with intellectual property issues in the future?



Given students' reliance on lecturers for help with IP issues, it is worrying that only half (52%) felt their lectures were well-

informed about IP, with just 18% believing their lecturers to be very well-informed.

How well-informed do you consider your lecturers to be about intellectual property issues? (n=2143)

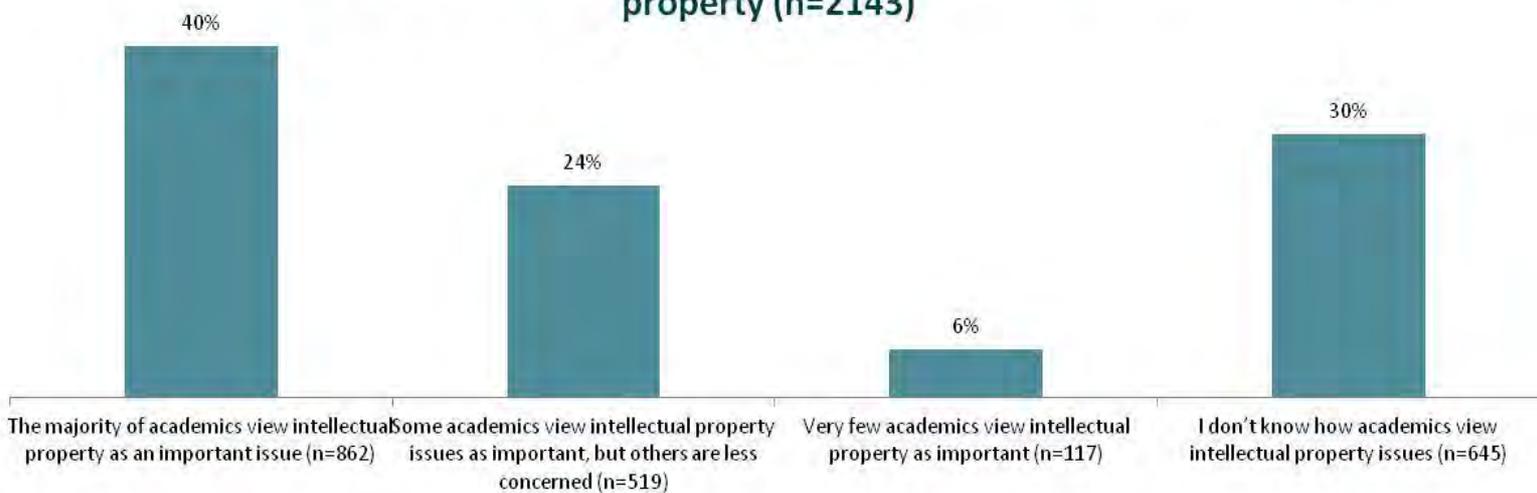


Those studying law, engineering and technologies were most likely to say their lecturers were well-informed, while those studying medicine were least likely to believe their lectures were well-informed⁵.

Overall, two-fifths of respondents felt that most lecturers in their department viewed IP as an important issue. However, almost a third (30%), said they did not know how their lecturers viewed IP.

Those who had been taught about IP by their module tutor or another member of the department were more likely to believe that the majority of academics view IP as important⁶.

Impression of how academics within their department view intellectual property (n=2143)



⁵ This relationship was statistically significant at the 0.05 level, but due to the low number of respondents for some subjects, more than 20% of the cells had an expected value of less than 5, so this should be treated with caution.

⁶ There is evidence of a relationship between delivery of IP and impressions of academics in their department, significant at the 0.01 level.

Scenarios

Survey respondents were presented with a series of IP scenarios they might typically face as a student. The scenarios had been developed with the Steering Group to evaluate student understanding of practical aspects of IP. They were asked how they might react in each of the situations presented.

Scenario 1: Imagine you have created a new invention and want to tell other people about it. Which of the following would you be most likely to do?

In this situation, just over two-thirds (67% or 1,431) said they would make sure their patent was approved before publishing. Just over one-quarter (26% or 556) said they would file a patent claim before publishing, while just 7% (138) said they would publish and then file a patent claim. This indicates that many students are aware of the necessity to protect the patent but they are not aware of IPO procedures to do so.

Scenario 2: Imagine you have written words and music for a song, which you want to sell to a record company. Which of the following would you be most likely to do?

In this situation, more than half of students (51% or 1,082) said they would record the song on a CD and send it to a record company. 30% (625) said they would record the song, mail it to themselves and

keep it in a safe place and 19% (411) would record it and post it on YouTube. While some students may have been confused by the wording of this question, the responses suggest that a relatively small proportion of students are aware of the most appropriate action in this situation.

Scenario 3: Imagine you are a fashion student who designs new and original amazing hats. Which of the following would you be most likely to do?

In this scenario, 70% (1,480) said they would register the design with the Intellectual Property Office (IPO). 22% (469) would take photographs of the hat and put them on their website. Although registering the design at the IPO was a correct answer, it would involve payment of a fee. Only 8% (171) were aware that it was possible to do nothing and rely on unregistered design right which could then be asserted if they found the hat being copied.

Scenario 4: Imagine you are a product design student who is expected to find a company to sponsor your final year innovative design project. Which of the following would you be most likely to do?

Students were aware they should exercise caution in this situation. Responses were divided between those who would write to several companies asking for a meeting to discuss their design in confidence (47% or 995), and those who would write to several companies asking whether they would be interested in sponsoring their project (45%

or 958). Fortunately, just 8% (174) said they would write to several companies sending full details of their design.

Scenario 5: You have developed a web based catering service that students are interested in using. What name will be a good trade mark? Which of the following would you be most likely to choose?

In this case, more than half (57% or 1,231) rightly said they would choose something distinctive. 36% (758) said they would opt for something descriptive of their product, but just 7% (144) would choose something similar to a well-known mark.

Overall, the responses to the scenarios **suggest that students' depth of practical understanding is limited.** Whilst they have some awareness of the most sensible options in relation to some IP issues, they lack detailed knowledge

IP and future careers

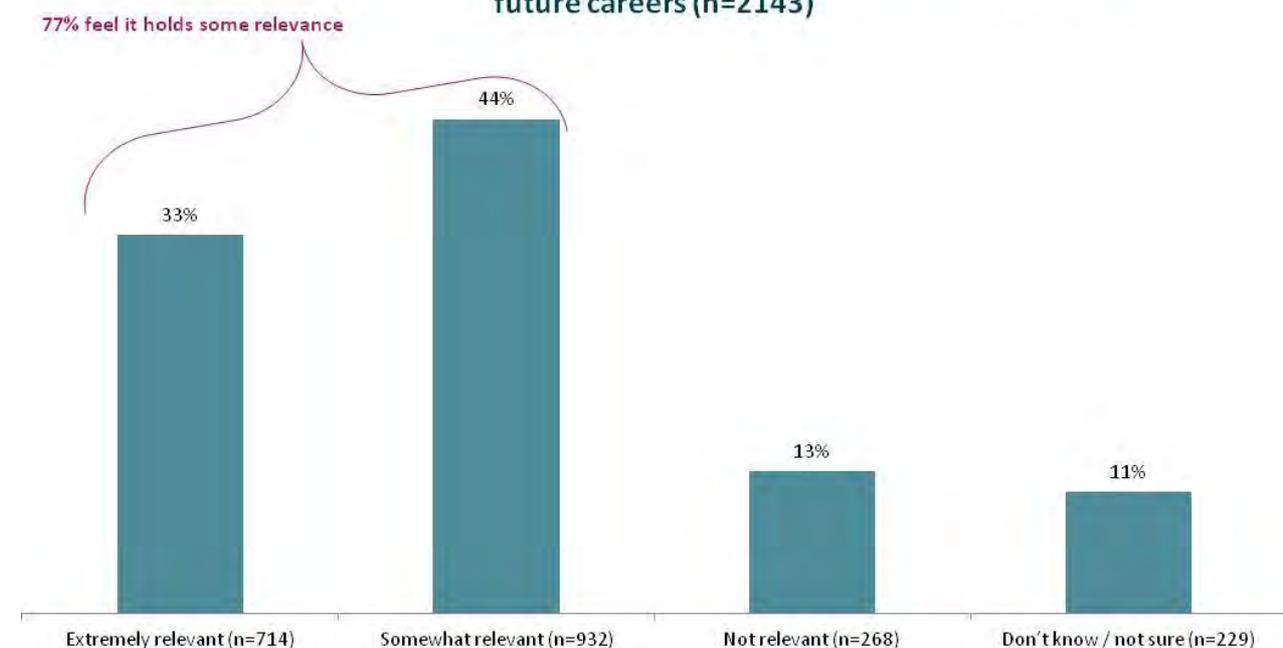
More than three-quarters of students (77%) believed an awareness of IP to be relevant for them in their future career, and just 13% did **not** feel it was relevant. There is evidence of a relationship, statistically significant at a high level (0.01), between how relevant students consider an awareness of IP to be for their future career and the subject they are studying. Mass communication, law, technologies and engineering students were most likely to feel an awareness of IP was relevant to their future careers, while those studying education were most likely to say it was not relevant.

Only 40% of students said they considered their awareness and understanding of IP to be enough to support them in their future career, and 33% actively disagreed with

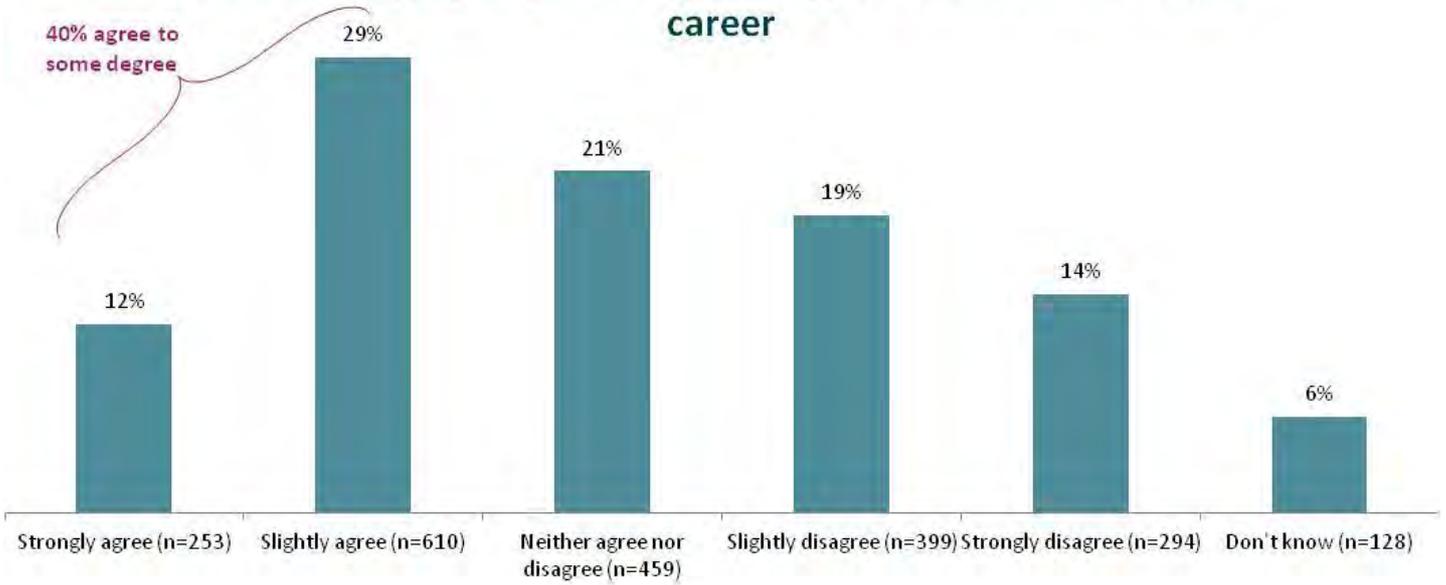
the statement, saying they did not believe their awareness and understanding of IP to be sufficient.

Again, there was evidence of a statistically significant difference at a high level (0.01) for those studying different subjects, with technologies, engineering and business students most confident that their awareness of understanding of IP was sufficient, and creative arts, mass communication and medical students feeling less confident overall. There was also a statistically significant relationship (0.01) between awareness and understanding of IP to support their future **career and IP issues taught on students' current course**. Those who had received no IP teaching were least confident they were prepared for their future career, while getting advice on IP matters and national and international IP issues were topics which seemed to make students feel more confident.

How relevant an awareness of intellectual property is considered for future careers (n=2143)



Do they consider their current awareness and understanding of intellectual property is enough to support them in their future career



Conclusions

This quantitative survey of over 2,000 FE and HE students in the UK provides a number of important insights into current student attitudes towards, and awareness of, IP and highlights valuable lessons for academics, institutional support services (eg knowledge transfer offices) and professional organisations in the sector. It also raises a number of complex issues which are worthy of further research.

Overwhelmingly, students believe a knowledge of IP is important, not only to their education (83%), but to their future career (79%). However, despite recent emphasis on the contribution of the HE sector to economic growth (PACEC, 2012) **students do not appear to see a link between IP and commercial success.**

Although the extent of IP teaching is limited at present, once exposed to IP, students feel more confident about it, and express a desire to know more. Of those who had received IP education prior to their current course, 40% wanted topics to be covered in more details and 27% wanted additional topics to be covered. Students want IP issues to be included from the early stages of their course.

Less than half the students surveyed had learned about IP issues at school or college prior to their current course. But the survey also found evidence that **IP teaching earlier in their education motivates**

greater interest among students at FE/HE level.

Academics, and module tutors in particular, **are seen as key sources of information about IP issues;** 59% of respondents said they would approach their lecturer for help with IP issues. However, **students are not convinced that academics are well-informed about IP issues;** only 52% believed their lecturers were well-informed about IP issues.

Students wanted the **relevance of IP for their studies and future career to be more clearly set out and integrated into their course;** more than half wanted the teaching of IP issued to be more closely-related to their course. Currently, **very few students report receiving information about IP at key times,** for example, just 4% said they received information before a placement.

The inconsistency of IP teaching is indicated by the fact that most students possess an unrealistic understanding of their current level of IP knowledge. Despite expressing high levels of confidence in performing IP tasks and an awareness of the need to protect their IP rights, **few students showed an understanding of the basic practicalities involved** in dealing with the scenarios posed. Similarly, it is clear from their responses that **students have very limited awareness of the appropriate procedures.**

Areas for development

Based on this survey of students, a number of recommendations can be made for areas for future development in IP delivery in FE and HE institutions.

The focus on plagiarism within academic institutions is amply demonstrated by students' responses about IP topics currently, and previously, taught. This narrow focus has clearly helped to raise the profile of IP, but to date **has not been capitalised on to promote other aspects of IP teaching of practical application to students.**

As a result, students do not perceive a strong link between IP and commercial success (and failure). Where appropriate, **IP, and its practical applications could be linked more closely to commercial aspects of courses.**

Although students are most likely to approach their lecturers for help with IP issues, only half believed academics to be well-informed about this topic. This indicates a need for:

- i. improving awareness among academic staff of all aspects of IP and its significance for students' future careers**
- ii. better support for academics in delivering IP**
- iii. information for students on alternative resources for more specialist queries.**

Where courses do have an IP component, assessment is currently limited. There is, therefore, a need for **further guidance about appropriate assessment of IP** (other than plagiarism) as part of FE/HE courses.

This survey has also demonstrated that there is currently limited awareness and usage of Knowledge Transfer Offices (or similar institutional departments) among students. There is, therefore, an opportunity to **raise awareness and promote more effective use of Knowledge Transfer Offices and other services** in the context of IP education.

Areas for further research

While the research presented in this report is an important contribution to the poorly-understood issue of student attitudes towards, and understanding of IP, further work is needed to build on this and create a reliable research base in this field, including different methodologies, work with a variety of stakeholders and ongoing longitudinal studies. Some options for future research are outlined below:

1. A qualitative study with students to investigate some of the complex issues raised in greater depth, for example:
 - The impact of teaching at primary and secondary level on knowledge and attitudes towards IP at FE/HE level

- Key IP information sources and when and how these are used
- The ways in which students anticipate using IP in their career
- Reasoning processes leading to (and knowledge supporting) IP decisions.

2. Research to map the extent and scope of current IP teaching within UK FE and HE institutions.

3. Research with academics to identify appropriate methods of support for the delivery of IP education.

4. A longitudinal study to track any changes in student attitudes towards, and awareness and understanding of, IP over time.

5. Case study, or comparative study, research to assess the impact of industry campaigns on student attitudes and awareness of IP.

6. Research among employers or employer organisations to establish employer expectations of, and input into, IP skills among graduates.

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Soetendorp, R. (2006) Intellectual property for engineers: a curriculum development project (Learning in Law Annual Conference 2006). Available at <http://www.ukcle.ac.uk/learning-in-law-annual-conference/2006papers/soetendorp/> [Accessed 24 July 2012].

APPENDIX A

SURVEY

QUESTIONS

- 1. Which of the following best describes how you think about yourself?**

Select One Only

Female

Male

In another way (please describe)

- 2. What was your age on the 1st November 2011?**

Please enter your age in years

- 3. Which university / college are you studying at?**

- 4. Which year of your current course are you in?**

Select One Only

Year one

Year two

Year three

Year four

Year five or after

- 5. What is your level of study?**

Select One Only

Entry-level (e.g. Skills for Life or ESOL)

Foundation/Level 1

GCSEs/ NVQ 2/ other equivalent Level 2 qualification

A/ AS-levels/ NVQ 3/ BTEC National/

Access course/equivalent Level 3 qualification

Apprenticeship

(Intermediate/Advanced/Higher)

BA/ BSc/ BEd/ Foundation Degree/

HNC/ HND/ other equivalent Level 4 qualification

MA/ MRes/ MSc/ MEd/ MPhil/ MBA/

PGCE/ other postgraduate qualification

PHD/D Phil/professional doctorate other

doctoral degree

Other qualification

- 6. Are you classed as a part-time or full-time student by your institution?**

Select One Only

Full-time

Part-time

- 7. Which subject(s) are you studying?**

Select all which apply

Architecture, building and planning

Biological sciences

Business and administrative studies

Creative arts and design

Education

Engineering

Language, literature, linguistics,

classics and related subjects

Historical and philosophical studies

Law

Mass communications and documentation

Mathematical and computer sciences

Medicine and dentistry

Physical sciences

Social studies

Subjects allied to medicine

Technologies

Veterinary science, agriculture and related subjects

Combination of subjects

Other (please specify)

- 8. For the purposes of your tuition fees and funding, which of these statements best describes you?**

Select One Only

I am a UK citizen studying in the UK

I am an EU citizen studying in the UK

I am a non-EU citizen studying in the UK

UK

- 9. Thinking about your education before your current place of study, which of the following best describes the last place that you studied?**
- Select one only**

State-owned school with integrated sixth form college

State-owned school with no integrated sixth form college

State-owned separate sixth form college

Privately owned school with integrated sixth form

Privately owned school with no integrated sixth form college

Privately owned separate sixth form college

College of Further Education

College of Vocational Excellence

Higher education institute

Other, please specify

Your views and knowledge of intellectual property

Thank you for these details about yourself, we'd now like to find out about your opinions and existing knowledge of intellectual property. We'll start off by asking you about intellectual property in general, which can include for example patents, copyright, trade marks, and design rights, before we ask your opinions on some specific scenarios.

We are simply interested in your own thoughts and ideas - we don't expect you to be an expert! We'll give you some examples of how this might relate to your course and future career towards the end of the survey.

10 What is your understanding of the phrase 'intellectual property', if any?

- Please enter your response into the box provided below

11 Which, if any, of the following topics do you think are relevant to intellectual property?

•

Please select all which apply

Assessing and using other people's work appropriately in my studies

Ensuring I gain recognition for my ideas

Knowing where to find and use patent information

Understanding the implications of copyright restrictions

Understanding the implications of health and safety regulations

Making sure everyone receives recognition for collaborative work

Understanding the implications of disclosure and confidentiality

Allowing me to exploit my ideas commercially

Working effectively in a team

13. How confident, if at all, do you feel in performing each of the following tasks: Please select one response for each task

Options: Very confident, Confident, Neither confident nor unconfident, Unconfident, Very unconfident

Understanding the implications of disclosure and confidentiality

Knowing where to go for advice with intellectual property issues

Knowing where to find patent information

Understanding how to use patent information

Communicating effectively with an intellectual property professional

Understanding how not to be taken advantage of in intellectual property matters

Understanding what 'open source' means

Knowing the implications of using someone else's intellectual property

Informing others of the value and importance of their intellectual property

For the purposes of the remainder of this survey, we'd like you to think about intellectual property as the term used to describe creative outputs that can be legally protected arising from intellectual endeavours (including results arising from research) such as scientific, engineering, technological, literary design and artistic work.

14 How important, if at all, is it to know about intellectual property during your time in education?

- Select One Only

Very important

Important

Neither important nor unimportant

Unimportant

Very unimportant

Don't know

15. How important, if at all, is it to know about intellectual property for your future career?

- Select One Only

Very important

Important

Neither important nor unimportant

Unimportant

Very unimportant

Don't know

Existing knowledge of intellectual property

In this section, we want to find out about what you learnt about intellectual property before starting at your current place of study.

16 At which level(s) of study, if any, did you learn about intellectual property issues before your current place of study?

Select all which apply

Primary school

Key Stage 3

GCSE

A/AS Levels

Vocational qualification, please specify

I haven't learned about intellectual property issues before my current place of study

Other, please specify

17. As part of which subject or course was this delivered?

Select all which apply

Business studies, economics & enterprise education

Other social sciences eg geography, sociology

Applied sciences eg technology, environmental science, engineering

Pure sciences and mathematics eg physics, statistics, biology

Materials and performance arts eg art, drama, dance, music

Humanities eg history, English

Vocational training, please specify

Other, please specify

18. Can you remember the titles of any intellectual property courses run at your previous place of study?

Please enter your response into the box provided below, or type 'none' if not known

19 Can you remember any other mention of intellectual property at your previous place of study that was not a course? E.g. talk by visiting expert about intellectual property?

Please enter your response into the box provided below, or type 'none' if not known

20 Which, if any, of the following intellectual property topics do you remember learning about at your previous places of study BEFORE your current place of study?

Select all which apply

Overview of intellectual property for your subject area

Patents

Trade marks

Copyright

Confidentiality

Design rights

Performing rights

Publishing and intellectual property

National and international intellectual property issues

Getting advice on intellectual property matters

Plagiarism

Designs

Open source licensing

Other, please specify

No aspects of intellectual property

21 How well did this prepare you for the intellectual property issues you would face at your current place of study?

Select one only

I knew everything I needed to know

I knew some things, but there were some gaps in my knowledge

I knew a little, but there were a lot of gaps in my knowledge

I knew almost nothing

I don't know how much I knew

22 How, if at all, could the delivery of intellectual property issues in your previous place of study have been improved?

Select all which apply

By including additional topics, please specify

By covering topics in more detail, please specify

By excluding less relevant topics, please specify

By changing timing of delivery, please specify

By inviting outside speakers, please give details

Other, please specify

Intellectual property as part of your course

We'd now like to ask you specifically about how intellectual property is taught as part of your current course.

23 Which, if any, of the following topics have been included as part of your course to date?

Select all which apply

Overview of intellectual property for your subject area

Patents

Trade marks

Copyright

Confidentiality

Design rights

Performing rights

Publishing and intellectual property

Getting advice on intellectual property matters

National and international intellectual property issues

Plagiarism

Designs

Open source licensing

Other, please specify

No aspects of intellectual property have been taught as part of my course

24 How, if at all, are intellectual property issues taught within your course?

Select all which apply

- *As a discrete module on intellectual property*
- *Within another module*
- *Issues are integrated throughout my course*
- *A briefing before a research project*
- *A briefing before a placement*
- *A briefing/workshop at another point in your course*
- *Other, please specify*

25 Who, if anyone, delivers the intellectual property aspects of your course?

Select all which apply

- *Module tutor*

- *Another lecturer / teacher in my department*
- *A lecturer / teacher from the law department*
- *Other university / college staff (eg technology transfer staff, knowledge transfer staff, university lawyer), please specify*
- *Outside speaker (eg local business person, lawyer), please specify*

26 What types of resources have you used to learn about intellectual property, if any?

Select all which apply

Lectures

Seminars

Independent study

One-to-one support from lecturer or another expert

Group work activities

Case studies

Virtual Learning Environment (VLE) e.g.

Blackboard, Moodle

Web-based resources (eg Intellectual Property Office)

Materials from professional or government bodies

Course handouts

Textbooks

Games

None so far

Other, please specify

27 How, if at all, are intellectual property issues assessed as part of your course?

Select all which apply

- *Written exam*
- *Individual coursework task*
- *Group coursework task*
- *As part of a broader assessment*
- *Assessed in another way, please specify*
- *Not assessed*

28 How, if at all, could the delivery of intellectual property issues on your course be improved?

Select all which apply

- By including additional topics, please specify
- By covering topics in more detail, please specify
- By omitting less relevant topics, please specify
- By changing the stage(s) in the course when intellectual property is delivered, please give details
- By linking intellectual property issues more closely to the subject I am studying
- By inviting outside speakers, please give details
- Other, please specify

29. Which, if any, of the following topics would you like to be included as part of your course?

Select one response for each topic
(Options: Strongly appealing, Appealing, Neither appealing nor unappealing, Unappealing, Very unappealing)

- Overview of intellectual property for your subject area
- Patents
- Trade marks
- Copyright
- Confidentiality, Trade Secrets, Know How
- Design rights
- Performing rights
- Publishing and intellectual property
- Getting advice on intellectual property matters
- National and international intellectual property issues
- Plagiarism
- Open source licensing
- Other, please specify

30 Which of the following, if any, have you used for help with intellectual property issues?

Select all which apply

- My lecturer
- University services (eg technology transfer office, library), please give details
- The Intellectual Property Office (IPO)
- The IP Awareness Network (IPAN)
- Espacenet - EPO patent database
- British Library
- Other external source (free), please give details
- External source (paid for), please give details
- Other, please specify

31. How likely are you to use each of the following if you want help with intellectual property issues in the future? Select one response for each information source

Options: Very likely, Likely, Neither likely nor unlikely, Unlikely, Very unlikely

- My lecturer
- University services (eg technology transfer office, library), please give details
- The Intellectual Property Office (IPO)
- The IP Awareness Network (IPAN)
- Espacenet - EPO patent database
- British Library
- Other external source (free), please give details
- External source (paid for), please give details
- Other, please specify

32 In general, how well-informed do you consider your lecturers to be about intellectual property issues?

Select one response only

- Very well-informed
- Well-informed
- Neither well-informed nor uninformed
- Uninformed
- Very uninformed
- Don't know

33 Which of the following statements best reflects your impression of academics in your department?

Select one only

- The majority of academics view intellectual property as an important issue

- *Some academics view intellectual property issues as important, but others are less concerned*
- *Very few academics view intellectual property as important*
- *I don't know how academics view intellectual property issues*

Scenarios!

Finally, think how you might react if faced with each of the following scenarios.

- 34** Imagine you have created a new invention and want to tell other people about it. Which of the following would you be most likely to do?
Select one response only

- *Publish about the invention and then file a patent claim*
- *Make sure you file a patent claim before publishing*
- *Make sure your patent is approved before you publish*

- 35** Imagine you have written words and music for a song, which you want to sell to a record company
Which of the following would you be most likely to do?
Select one response only

- *Record yourself singing the song and post it on YouTube*
- *Record the song and put the CD in an envelope which you mail to yourself and then keep unopened in a safe place*
- *Record the song and send a CD to the record company*

- 36** Imagine you are a fashion student who designs new and original amazing hats
Which of the following would you be most likely to do?

Select one response only

- *Register the design of each hat at the Intellectual Property Office*
- *Do nothing and rely on unregistered design right if you find the hat's being copied*

- *Take photos of the hats and put them on your website*

- 37** Imagine you are a product design student who is expected to find a company to sponsor your final year innovative design project
Which of the following would you be most likely to do?

Select one response only

- *You write to several companies sending full details of your innovative product*
- *You write to several companies asking for a meeting to discuss your innovative design in confidence*
- *You write to several companies asking whether they would be interested in sponsoring your innovative design project*

- 38** You have developed a web based catering service that students are interested in using.
What name will be a good trade mark?
Which of the following would you be most likely to choose?

Select one response only

- *Something descriptive e.g. StudentFood*
- *Something similar to a known mark e.g. McStudent*
- *Something distinctive e.g. Yumtime*

Final thoughts

- 39** Please tell us how relevant you think an awareness of intellectual property will be for you in your future career

Select one response only

- Extremely relevant*
 - Somewhat relevant*
 - Not relevant*
 - Don't know / not sure*
-

40 Finally, to what extent, if at all, do you agree with the following statement:

My current awareness and understanding of intellectual property is enough to support me in my future career

Select one response only

- *Strongly agree*
- *Slightly agree*
- *Neither agree nor disagree*
- *Slightly disagree*
- *Strongly disagree*
- *Don't know*

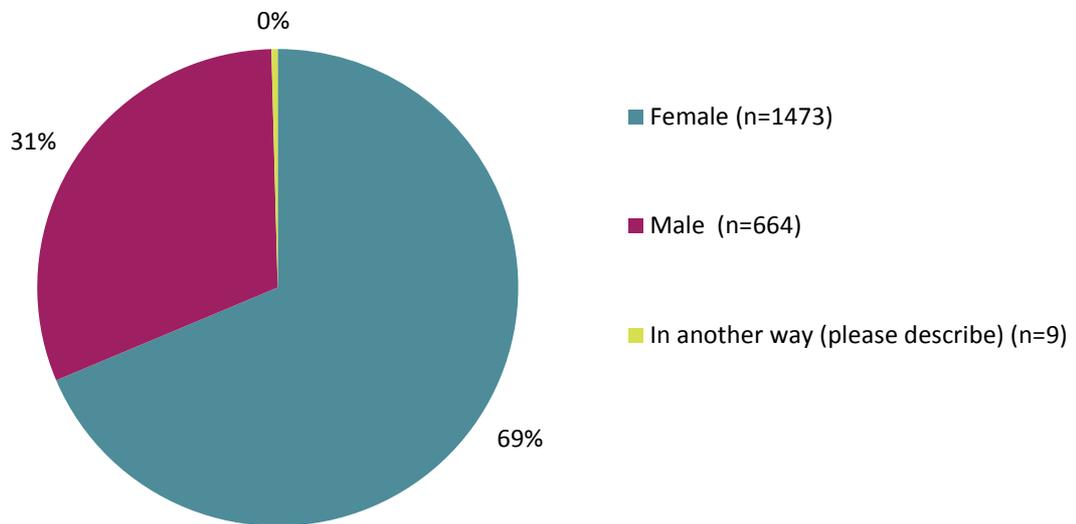
APPENDIX B

SURVEY

DEMOGRAPHICS

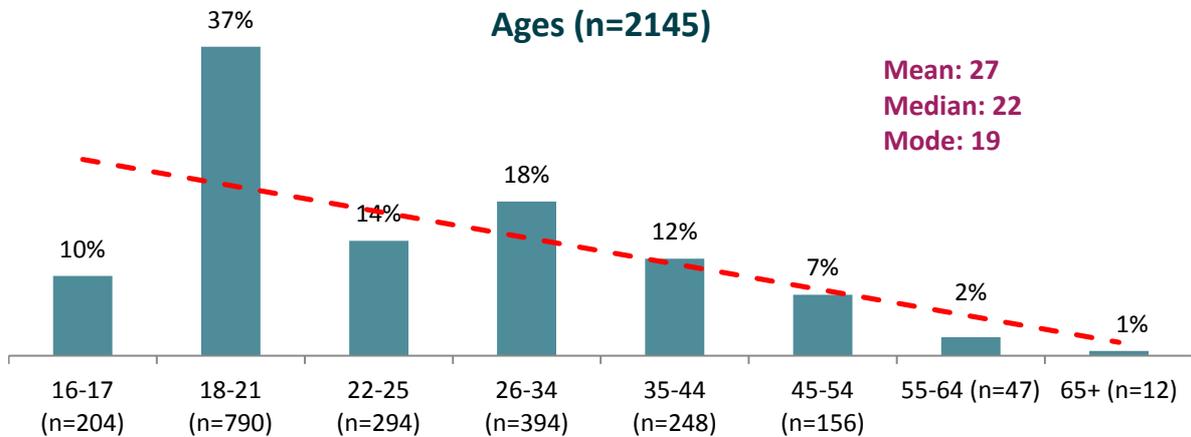
Q1 Which of the following best describes how you think about yourself

Gender (n=2146)



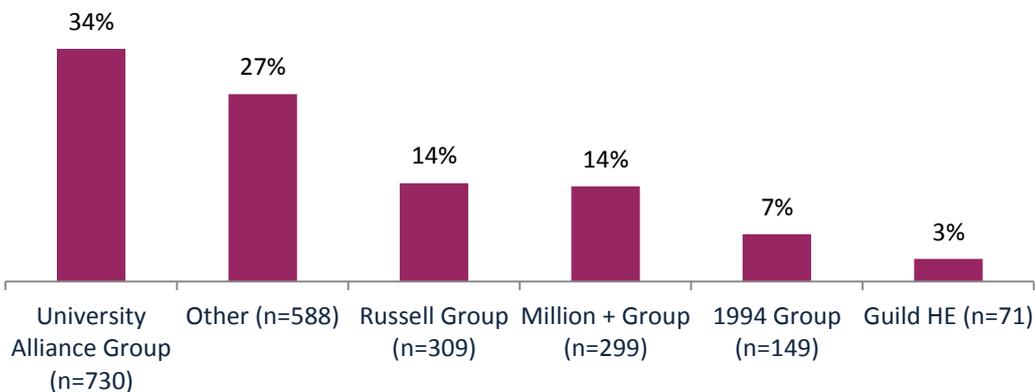
Q2 What was your age on the 1st November 2011

Ages (n=2145)



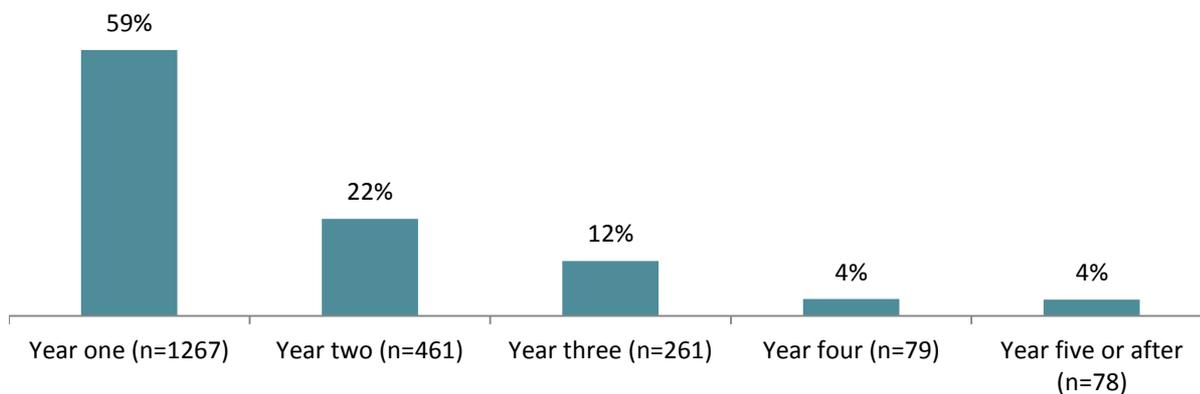
Q3 Which university / college are you studying at? (Responses group by university mission group)

University mission groups (n=2146)



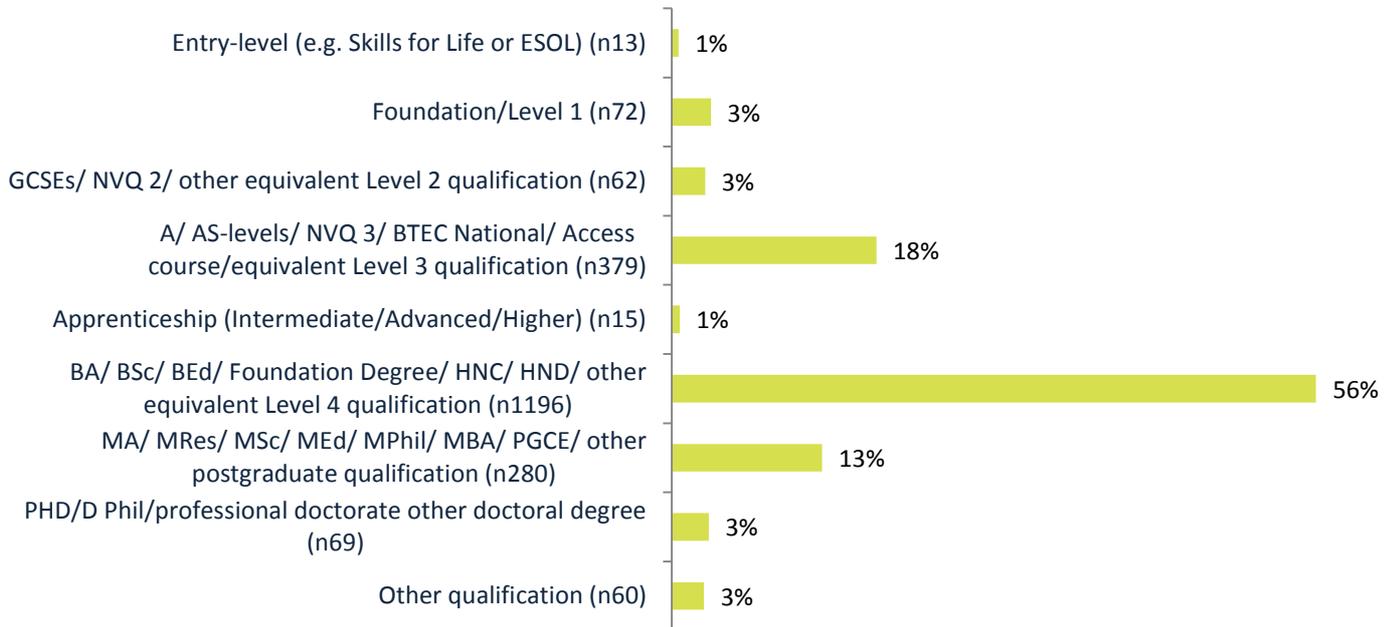
Q4 Which year of your current course are you in?

Year groups (n=2146)



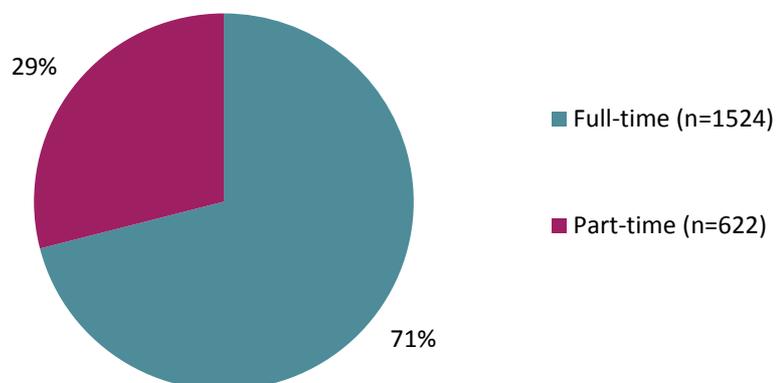
Q5 What is your level of study?

Level of study (n=2146)



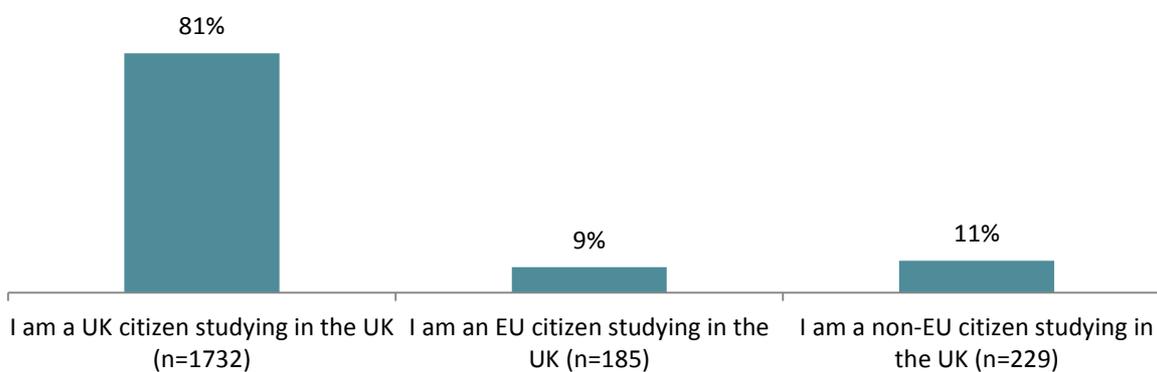
Q6 Are you classed as a part-time or full-time student by your institution?

Full-time or part-time? (n=2146)



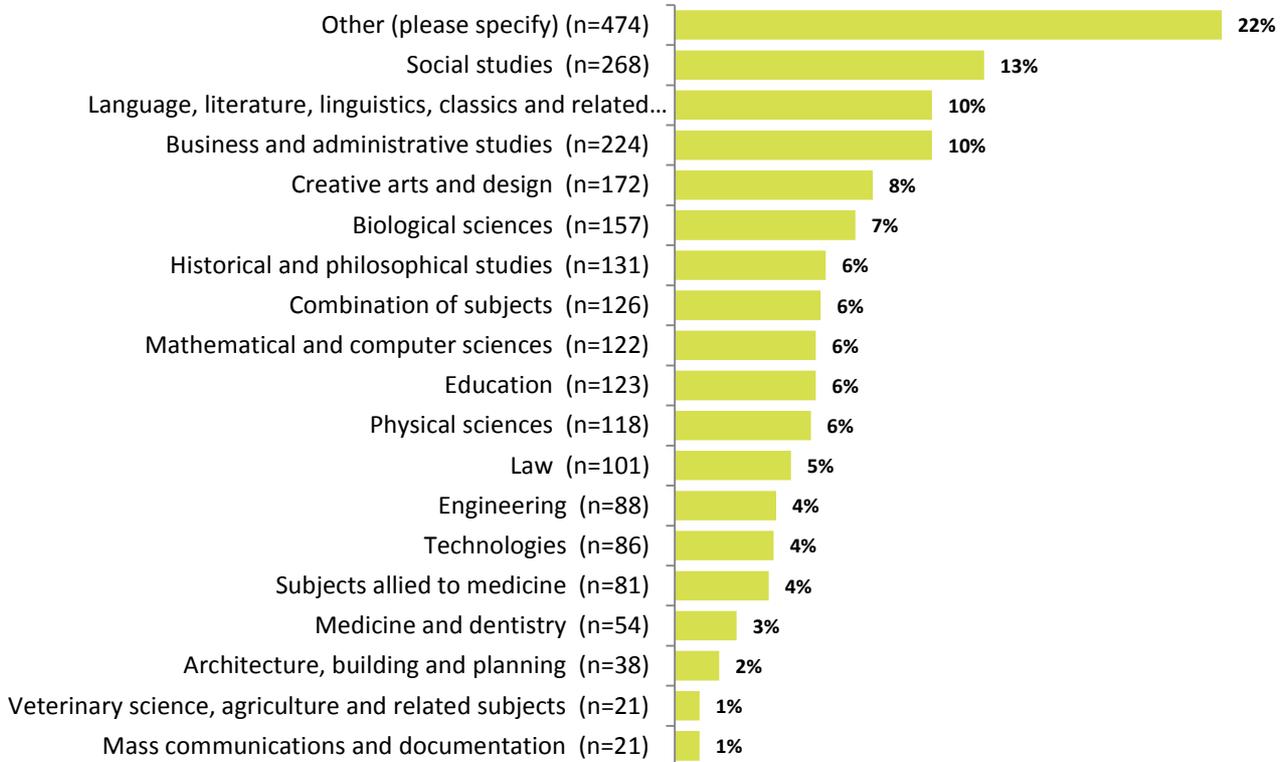
Q8 For the purposes of your tuition fees and funding, which of these statements best describes you?

Citizenship (n=2146)



Q7 Which subject(s) are you studying?

Subjects (n=2146)



Q9 Thinking about your education before your current place of study, which of the following best describes the last place that you studied?

Education before current place of study (n=2146)

