Northumbria Research Link

Citation: Dodd, Laura (2018) Analysing information behaviour of aspiring undergraduates: how prospective students are using micro-blogging platforms to meet information needs. Doctoral thesis, Northumbria University.

This version was downloaded from Northumbria Research Link: http://nrl.northumbria.ac.uk/id/eprint/38075/

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: http://nrl.northumbria.ac.uk/policies.html

Northumbria University NEWCASTLE

CUSTOMER SERVICE EXCELLENCE CSE UniversityLibrary

ANALYSING INFORMATION BEHAVIOUR OF ASPIRING UNDERGRADUATES: HOW PROSPECTIVE STUDENTS ARE USING MICRO-BLOGGING PLATFORMS TO MEET INFORMATION NEEDS

L A DODD

PhD

2018

ANALYSING INFORMATION BEHAVIOUR OF ASPIRING UNDERGRADUATES: HOW PROSPECTIVE STUDENTS ARE USING MICRO-BLOGGING PLATFORMS TO MEET INFORMATION NEEDS

LAURA ANNE DODD

A thesis submitted in partial fulfillment of the requirements of the University of Northumbria at Newcastle for the degree of Doctor of Philosophy

Research undertaken in the Faculty of Engineering and Environment

March 2018

Abstract

Every year more than half a million aspiring undergraduates apply to undertake an undergraduate degree in the UK (UCAS, 2017). Despite concerns however about how these prospective students are receiving information (Andrew, 2106; The Gatsby Charitable Foundation, 2014), and the speculation of an information gap (Moogan et al., 1999): relatively little is known about the information behaviour of aspiring undergraduates (Punj and Staelin, 1978; Moogan et al.,1999). Notable changes in recent years (e.g. the increase in university fees) also mean that it cannot be assumed that older data that does exist remains accurate.

This research adopted a novel methodology and captured 494,180 tweets that represented a 16-month long journey that aspiring undergraduates take, from initial decision-making processes and applications through to the end of their first semester at University. Terms and tokens taken from literature and word frequency created datasets that were sampled and analysed using content and discourse analysis in order to consider how the information needs of aspiring undergraduates were, or weren't, being met. The methodology has been successful in achieving a wider understanding of the aspiring undergraduate context and journey. Findings expand on existing knowledge and uncover some new behavioural characteristics in this context. Whilst the research outlines limitations in the knowledge, skills and capabilities of aspiring undergraduates and hurdles (e.g. for certain demographics), it also identifies successes and some exemplary practices (i.e. from UCAS, the Universities and Colleges Admissions Service). This research updates and reframes how aspiring undergraduates are understood, and sheds light on how they think and understand the world. University is a significant personal and financial investment for students and this intelligence can be used by those supporting aspiring undergraduates to increase the efficiency of support, which could, for example, potentially help reduce the number of students ending up in wrong courses or universities or even prematurely 'dropping out' of university.

Contents

1. INTRODUCTION ………… 11
1.1 CONTEXT ………… 13
1.1.1 Context: the educational environment ………… 13
1.1.2 Information behaviour overview ………… 15
1.1.3 Social media overview ………… 17
1.2 AIMS AND OBJECTIVES ………… 19
1.2.1 Aims ………… 19
1.2.2 Objectives ………… 19
1.2.3 Research questions ………… 19
1.3 INITIAL CASE FOR A NOVEL METHODOLOGY ………… 22
1.4 SCOPE ………… 23
1.5 THESIS STRUCTURE ………… 24
1.6 CONTRIBUTIONS TO KNOWLEDGE ………… 25
2. LITERATURE REVIEW ………… 27
2.1 INTRODUCTION ………… 27
2.2 INFORMATION BEHAVIOUR ………… 28
2.2.1 Introduction ………… 28
2.2.2 What is 'information behaviour'? ………… 29
2.2.3 Relevant concepts and theories ………… 29
2.3 SOCIAL MEDIA ………… 35
2.3.1 Introduction ………… 35
2.3.2 History and context ………… 35
2.3.3 Choice of media: Twitter ………… 37
2.3.4 Relevant concepts and theories ………… 41
2.4 EDUCATION ………… 44
2.4.1 Introduction ………… 44
2.4.2 Overview of the application process for UK based universities …… 45
2.4.3 Information and support: current context ………… 46
2.4.4 Information and support historically ………… 47
2.4.4.1 Current provision ………… 48
2.4.5 Barriers to successful progression into Higher Education ………… 51
2.5 LITERATURE REVIEW: A SUMMARY ………… 56
3. NEEDS ASSESSMENT ………… 58
3.1 INTRODUCTION ………… 58
3.1.1 Understanding 'information needs' ………… 58
3.2 CHARCTERISTICS OF INFORMATION NEED ………… 61
3.2.1 Subject ………… 61
3.2.2 Nature ………… 66
3.2.3 Viewpoint ………… 69
3.2.4 Quantity and quality/authority ………… 73
3.2.5 Speed of delivery ………… 74
3.2.6 Processing/packaging ………… 75
3.3 OBSTABLES TO ASPIRING UNDERGRADUATES MEETING THEIR INFOMRATION NEEDS ………… 76
3.3.1 Training ………… 76
3.3.2 Time ………… 77
3.3.3 Resources ………… 79
3.3.4 Access ………… 84
3.3.5 Information overload ………… 85
3.4 SUMMARY ………… 86
4. METHODOLOGY ………… 88
4.1 INTRODUCTION ………… 88
4.2 RESEARCH QUESTIONS ………… 88

4.3 SUITABILITY OF THE APPROACH RELEVANT TO THE RESEARCH AIM/OBJECTIVES …… 93
4.3.1 Overview of the research process …… 94
4.4 APPROACHES FOR ANALYSING DATASETS …… 96
4.4.1 Content analysis …… 96
4.4.2 Discourse analysis …… 97
4.5 QUALITATIVE PHILOSOPHY …… 98
4.5.1 Social tagging …… 98
4.5.2 Summary …… 99
4.6 RESEARCH STRATEGY …… 99
4.6.1 Introduction …… 99
4.6.2 Design …… 99
4.6.3 Data collection periods …… 101
4.6.4 Locating and collecting data …… 105
4.6.5 Sampling …… 107
4.7 ETHICAL CONSIDERATIONS …… 108
5. ANALYSIS …… 112
5.1 INTRODUCTION …… 112
5.2 TIMELINE …… 112
5.3 RESEARCH QUESTIONS: CHARACTERISTICS OF INFORMATION NEEDS …… 115
5.3.1 Different actors: "Who' are aspiring undergraduates asking …… 115
5.3.2 *What kinds of information are aspiring undergraduates asking for?* …… 112
5.3.3 Do actors cover different subject areas? …… 127
5.3.4 How do they go about asking these questions? …… 176
5.3.5 Do students believe they can achieve the grades necessary? … 181
5.3.6 Is quality an issue, does incorrect information get shared? …… 186
5.4 RESEARCH QUESTIONS: OBSTACLES TO INFORMATION NEED …… 190
5.4.1 If prospective students are referring to and/or using resources what are they? …… 190
5.4.2 Can learners access the information they need when they require it? …… 205
5.4.3 Do aspiring undergraduates have the skills they need to effectively locate reliable information? …… 210
5.4.4 Do aspiring undergraduates have the skills they need to complete their application? …… 220
5.5 SUMMARY …… 229
6. DATA SYNTHESIS: KEY FINDINGS …… 230
6.1 INTRODUCTION …… 230
6.2 DATA SYNTHESIS: KEY FINDINGS …… 230
6.2.1 *Schematic view of findings* …… 244
6.3 RESEARCH AIMS & OBJECTIVES: A REVIEW …… 247
6.4 METHODOLOGY: A REVIEW …… 248
6.5 CONCLUSION …… 253
7. CONCLUSIONS AND RECOMMENDATIONS …… 255
7.1 INTRODUCTION …… 255
7.2 CONTRIBUTIONS TO KNOWLEDGE: A REVIEW …… 255
7.2.1 Methodology …… 255
7.2.2 Aspiring undergraduates …… 256
7.2.3 The information marketplace …… 260
7.3 RECOMMENDATIONS …… 262
7.4 FUTURE LINES OF INVESTIGATION AND ENQUIRY …… 265
APPENDICES …… 270
GLOSSARY (*abbreviations and commonly used definitions*) …… 310
REFERENCES …… 312

List of tables

1.1 Addressing the research objectives 20
1.2 Needs assessment framework 20
1.3 Characteristics of information need as identified by Nicholas and Martin (1997, p.43) 21
1.4 Contributions to knowledge 26
2.1 Major sections of the literature review 27
3.1 Nicholas and Martin's adapted needs assessment framework (Nicolas and Martin, 1997) 59
3.2 When do aspiring undergraduates decide to progress into Higher Education? 78
3.3 The amount of time aspiring undergraduates spend evaluating universities 79
3.4 Resources being used by aspiring undergraduates 80
4.1 How and where each of the research objectives are addressed 88
4.2 Nicholas and Martin's (1997) needs assessment framework 89
4.3 Characteristics of information need and the corresponding research questions 90
4.4 Final order of research questions and findings to be presented in chapter 5 92
4.5 Token template 95
4.6 Data collection periods 100
4.7 Data collection 1 103
4.8 Data collection 3 105
4.9 Protocol for sampling size 107
5.1 Total number of tweets collected 112
5.2 Different actors during the application process with few or no references ... 120
5.3 Themes of information that only appeared in one data collection period 126
5.4 Are questions being directed at a recipient? 177
5.5 Who are questions being targeted at? 177
5.6 The use of hashtags in questions 178
5.7 Is inaccurate information being shared? 186
5.8 Terms used to find whether incorrect information is being shared 187
5.9 Online and offline resources across data collection periods 190
5.10 Online resources 193
5.11 Physical resources 197
5.12 Other resources 200
5.13 Access terms and tokens 205
5.14 Reliable information terms and tokens 210
5.15 Applications: groups of terms 220
6.1 Aspiring undergraduates: summary of key findings 245
6.2 Summary of the research objectives 248
6.3 Strengths of the methodology 249
6.4 Challenges and limits of the methodology 251

List of figures

1.1 The application cycle …… 14
1.2 Research strands and structure …… 25
2.1 Wilson's model of information behaviour (Wilson, 1996) …… 31
4.1 Stages of data collection and analysis …… 94
4.2 Creating datasets …… 95
5.1 Tweets during the application process …… 113
5.2 Tweets during A level results …… 114
5.3 Tweets during the first semester of university …… 114
5.4 Total number of different actors during each data collection period …… 117
5.5 Different actors present during all three data collection stages …… 118
5.6 Shift in different actors between data collection periods …… 119
5.7 Themes during the university application process …… 123
5.8 Themes during A level results and the start of clearing …… 124
5.9 Themes during the first semester of university …… 125
5.10 Before: different actors and applications …… 128
5.11 Before: different actors and the decision making process …… 130
5.12 Before: different actors and emotion …… 132
5.13 Before: different actors and gap years …… 135
5.14 Before: different actors and university courses and content …… 137
5.15 Before: different actors and grades …… 139
5.16 Before: different actors and location/size …… 140
5.17 Before: stakeholder and progression/career prospects …… 142
5.18 During: different actors and applying …… 145
5.19 During: different actors and congratulations …… 146
5.20 During: different actors and decision-making …… 147
5.21 During: different actors and emotion …… 149
5.22 During: different actors and gap years …… 150
5.23 During: different actors and information seeking …… 153
5.24 During: different actors and life …… 154
5.25 During: different actors and finances …… 155
5.26 During: different actors and grades …… 156
5.27 During: different actors and progression/careers …… 157
5.28 During: different actors and social themes …… 158
5.29 During: different actors and timescale …… 159
5.30 After: different actors and dropping out of university …… 160
5.31 After: different actors and information seeking …… 165
5.32 After: different actors and finances …… 166
5.33 After: different actors and social reasons …… 168
5.34 After: different actors and timescale …… 169
5.35 Shifts in online resources being used during the three data collection periods …… 192
5.36 Shift in physical resources over the three data collection periods …… 193
5.37 Applications: references to time …… 221
5.38 Application forms and different actors …… 225
6.1 Venn diagram of the information marketplace …… 244

Appendices

A.1 Types of support for aspiring undergraduates ………………………... 270
A.2 Prevalence of different actors from literature …………………………….. 272
A.3 Stakeholder terms from term frequency ……………………………….. 273
A.4 Different actors during the application process …………………………... 276
A.5 Different actors present during A level results and the start of clearing .. 279
A.6 Different actors present during aspiring undergraduates' first semester of University ……………………………………………………………….. 282
A.7 Different actors during all data collection stages ………………………… 287
A.8 The most prevalent different actors during each data collection period .. 291
A.9 Kinds of information: tokens identified in literature …………………… 292
A.10 Subjects with the top 100 word frequency counts during all three data collection stages …………………………………………………… 292
A.11 Subjects during the UCAS application period ………………………… 295
A.12 Subjects during A level results and the start of clearing …………….. 297
A.13 Subjects during the first semester at university ……………………... 299
A.14 Resources found in literature …………………………………………... 301
A.15 Resources identified through word frequency ………………………... 302
A.16 Resources: all terms and tokens ……………………………………… 303
A.17 Resources across all three data collection periods ………………….. 305
A.18 Applications: term frequency …………………………………………… 307
A.19 After: different actors and the location/size of universities …………….. 308
A.20 After: different actors and progression/career prospects ……………… 308
A.21 After: different actors and university facilities …………………………… 309
A.22 After: different actors and emotion ……………………………………….. 309

List of accompanying material

1. Dodd, L., Chowdhury, G., Harvey, M. and Walton, G. (2017) November. Information Seeking Behaviour of Aspiring Undergraduates on Social Media: Who Are They Interacting with?. In *International Conference on Asian Digital Libraries* (pp. 245-255). Springer, Cham.
2. Walton, G., Dodd, L., Pickard, A. and Hepworth, M. (2018) Information discernment, misinformation and proactive scepticism. *Journal of Librarianship and Information Science.*
3. List of conferences research findings have been presented at.

Acknowledgements

Upon starting my PhD journey I was told that this would be my research apprenticeship, the completion of which would signify a start rather than an end. As with any apprenticeship this has not been a solo endeavor, indeed its completion is the culmination of the supportive work of a group of people to whom I will remain forever grateful. I have been fortunate enough to have crossed paths with multiple mentors, all of whom have unquestionably made me a better researcher.

I would like to take the time to thank Dr. Geoff Walton, whose encouragements and contagious enthusiasm taught me a fundamental lesson about passion for my work; as a result I have thoroughly enjoyed the learning process and my time at Northumbria University. I am extremely grateful to Professor Gobinda Chowdhury who took me under his wing, and with a quiet patience bordering on sainthood, imparted so much of his knowledge. I have been exceedingly fortunate to have benefited from his wealth of experience. Last, but by no means least, a significant proportion of my growth must be credited to Dr. Morgan Harvey; some of my greatest jumps in the development of my thinking have been a result of his feedback and guidance, which have challenged even some of my baseline assumptions. I am doubtlessly a better analyst for it.

It's impossible to measure the gift that comes from irreversibly changing the way someone sees the world. While I may never be able to repay those to whom I am in debt I hope that I can do them justice and that my work continues to reflect their investment in me going forward.

Finally, I would like to thank my husband. For assisting in the long commutes and for quietly waiting without complaint for hours when I'm reading, writing, or, pacing the floor. This then is for you.

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Committee on the 22nd of October 2015.

I declare that the Word Count of this Thesis is 71,892 words

Name: Laura Anne Dodd

Signature: L.Dodd

Date: 28/03/2018

1. INTRODUCTION

> '… *there seems to be a gap in the information needs of potential students*'
>
> (Moogan et al., 1999, p. 211)

Every year more than half a million people submit applications to undertake full-time undergraduate degrees at Higher Education institutions in the UK (UCAS, 2017). These applications represent life-changing decisions and a significant investment, personal and financial, in individuals' own futures. University continues to be a significant personal and financial investment in individuals' futures for those that choose it; indeed the percentage of graduates in employment or further education has been gradually rising since 2011/2012 (Higher Education Statistics Agency, 2017).

Despite this there is relatively little information surrounding how aspiring undergraduates (defined as individuals that are considering, or, are in the process of entering Higher Education) coming to universities in the UK make decisions about Higher Education (Punj and Staelin, 1978; Moogan et al.,1999). However, the lack of a substantial body of literature should not be misinterpreted as being indicative that an information need does not exist. Indeed, thoughts that an 'information gap' is likely to exist are not at all new; the view that *'careers advice in England has never been as good as it needs to be'* (CBI, 2013, p.22) has been present for some time.

The potential existence of this 'information gap' represents a worrying danger, not just to the 564,190 applicants (UCAS, 2017) and 48% of all 18 year olds that progress into Higher Education (Department for Education, 2017), but to an unknown quantity of invisible learners that might have been there but were perhaps lost as a result of this 'gap'. These invisible potential students might not be counted in reports favouring traditional methodologies because they ultimately do not submit an application, or, they dropout so are not included in statistical summaries of application submissions or graduate destination data.

The proposed research here is therefore important as it seeks to address some of these concerns by assessing the extent to which this gap exists and considering how these aspiring undergraduates are attempting to meet their information needs in a modern age. It also seeks to carry this research out in such a way that might include evidence from a representative group that includes some of these 'lost' students.

In a sense the lack of a body of research relative to the information behaviour, defined as *'those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information'* (Wilson, 1999, p.249), of aspiring undergraduates is perhaps at odds with research on information behaviour as a whole given that 19% of it relates to students (Julien et al., 2011). It is intriguing then why research on aspiring undergraduates in particular might be under-represented in literature?

There are, of course, a number of pertinent reasons why considering the information needs and behaviour of aspiring undergraduates is a potentially confusing and conflated area. Not least:

- Information needs do not remain constant. Especially considering the length of time from initial considerations through to enrolment is potentially a process lasting several years.
- It is not possible to typify a stereotypical 'aspiring student'. They could be any age or race or come from a plethora of different socio-cultural backgrounds. Given this variety in the range of potential applicants they could potentially have very different information needs at different stages in the application and decision making process.
- Like many complex information needs, the overall process does not consist of a 'single' search for information in a controlled environment. Rather, the journey as a whole requires aspiring undergraduates to make many decisions repeatedly and in a time-sensitive manner (see admissions cycle figure 1.1 below).

In some respects then the lack of a body of research as a reflection of these challenges is not unsurprising. However, whilst the challenges have not deterred

the proposed investigation, it is especially pertinent that they are acknowledged as, if these blurry boundaries constitute the context of this research, it is critical that the approach and subsequent framework for analysis be clearly defined and outlined. Therefore the following initial pages here aim to make plain the outlying context, parameters, aims, scope and approach of the research that follows.

1.1 CONTEXT

This research touches on three key subject areas, introductory outlines have been provided for each below in the following order:

1. Context. This considers and describes the educational environment and outlines the motivations for this research.
2. Information behaviour. Which outlines precisely 'what' is being considered and is the focus of the proposed research.
3. Social media, defined as being an online application with user-generated content where people and organisations can create profiles, which can be linked to other profiles via the service (Obar and Wildman, 2015). The final subsection (of section 1.1.3) brings us to 'how' and begins to build a case for the use of a novel methodology.

Given this context the research reported here aims to investigate the information behavior of aspiring undergraduates in UK on social media, viz. Twitter (a micro-blogging social media site). Specific aims and objectives of this research are discussed in Section 1.2.

Once these preliminary areas have been introduced: then the aims, objectives and the proposed work that follows can be seen in some provisional context.

1.1.1 Context: the educational environment

Considerable existing research has considered and identified several reasons, which outline why a focus on aspiring undergraduates might be considered timely. These are not limited to but include the following:

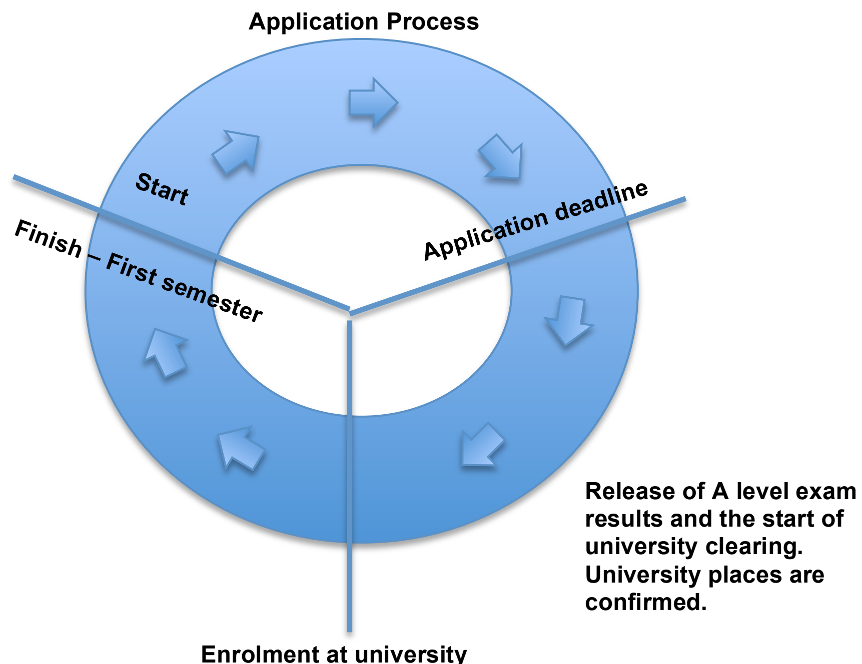
- The demand for graduates level skills are set to increase, and it is currently estimated that by 2020 40% of all jobs will need a degree (Universities UK,

2009). This translates into an extra 3.5 million graduates that will be required in the near future (Universities UK, 2009).

- Participation figures have risen dramatically during the last fifty years. Rising from a modest 5% in 1960, to a current rate of more than 40% (Tomlinson, M., 2016).
- There have been notable changes in policies relating to Higher Education in recent years (Tomlinson, M., 2016), therefore it cannot be assumed that older data might still be accurate given the ever changing landscape.

The diagram in figure 1.1 (below) illustrates the university admissions cycle demonstrating how prospective students must make potentially life-changing decisions, repeatedly, and in a time sensitive environment. In order for aspiring undergraduates to progress successfully into Higher Education (HE) there are a number of factors (e.g. application forms, grades, etc.), which all have their own information requirements. The proposed study seeks to examine how, at each stage, the information needs of aspiring undergraduates are, or aren't, being met.

Figure 1.1. The application cycle



What makes this a timely investigation for aspiring undergraduates is that a particularly influential decision was taken in 2005 by the British Government to place schools/colleges in charge of the provision of their own careers advice (Department for Education, 2005). Whilst research suggests that issues were present in the provision of information prior to 2005 (CBI, 2013), reports on the state of advice and guidance since have been critical. In 2013 Ofsted, the British educational standards inspector and regulator, concluded that only 20% of learners aged 17 to 18 were receiving adequate levels of careers advice/support (Ofsted, 2013).

Contrary to what might then be suspected, the numbers of aspiring undergraduates applying for, and attending university have not dropped (UCAS, 2014). This raises intriguing questions. If the prospective undergraduates of the future are not meeting their information needs through traditional in-house channels (Ofsted, 2013), how are they managing to successfully navigate progression into Higher Education?

1.1.2 Information behaviour overview

The following section outlines some of the key concepts that form part of information behaviour that are pertinent to the investigation.

> *'… their apparent facility with computers disguises some worrying problems … young people have a poor understanding of their information needs and thus find it difficult to develop effective search strategies'*
>
> (Nicolas, Rowlands and Huntington, 2008, p.12)

Despite the fact that the Internet is now commonplace in the lives of today's learners (ONS, 2017), information literacy, defined as '*knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner'* (CILIP, 2017), rates have not improved (Nicolas, Rowlands and Huntington, 2008). Indeed, we know that young people tend not to be careful, or discerning, when they are online (Miller and Bartlett, 2011). In addition they can't necessarily locate information when they need it (Miller and Bartlett, 2011), and even if they can, it doesn't automatically follow that they can make informed decisions based on their findings (Candy, 2002).

Consequently there are worrying potential ramifications for aspiring undergraduates; in order to progress and succeed, not just in Higher Education but in work and life, they need to be competent digital citizens and be capable of engaging critically with online content.

'There is lots of evidence of poor literacy and digital skills getting in the way of people's ability to learn'

(House of Lords, 2015, p.770)

However, there are even greater additional challenges here. Even given that more than half of jobs require individuals to possess greater digital capabilities than the rudimentary ones needed to be a digital citizen (House of Lords, 2015), and even though todays' learners have a wealth of information available at their fingertips (McAfee, 2013); there is limited recognition from millennials, defined as those born between 1980 and 1995 (Williams, 2015), themselves that they need these skills. Generally there is a poor level of understanding about what digital literacy is and what it can offer, for example some students believe that information literacy is just merely an extension of ICT (Information and Communications Technology), (Andretta, Pope and Walton, 2008).

'Our approach at the Open University is to embed those skills rather than make them explicit. You come in because you want to learn history, not digital skills. If you ask people whether they need digital skills, they say, "Oh no, I don't need that", but actually they do.'

(Professor Martin Weller, The Open University, House of Lords, 2015, p.770)

Whilst students will acknowledge that information literacy skills are useful in specific contexts, they often assume that because they believe themselves to be already IT (Information Technology) literate, or, because they aren't interested in IT as a subject, that they don't need digital literacy (Andretta, Pope and Walton, 2008), which is understood as information literacy in a modern digital environment (Lankshear and Knobel, 2008).

Clearly this paints something of a complicated picture, and if we take a step back and consider these individuals in a wider context it becomes no less troubling. Not least because the Internet is unregulated; it consists of a sea of information that is potentially neither robust, nor accountable (Obama 2009). Conversely the fact that people are central to many interactions on Twitter and behave like hubs that join up information (Elsweiler and Harvey, 2014), is potentially a double-edged sword. Critically, whilst most tweets are truthful they can also carry rumours and misinformation, albeit often unintentionally (Castillo et al., 2011). Therefore, given that young people in this context do not tend to apply fact checks, this makes them vulnerable (Miller and Bartlett, 2011).

In summary, just because aspiring undergraduates have Internet access this does not automatically mean that they have the maturity, experience or abilities required to protect themselves. We cannot confuse their fondness or fluency with technology with digital literacy skills (Elliot, 2006). Unfortunately for millennials growing up online, any mistakes they make, like a digital tattoo, do not necessarily disappear (McAffee, 2013).

1.1.3 Social media overview

'… the interactive Web has the ability to manipulate offline beliefs and actions, by affecting students' perceptions of credibility and attractiveness, their affective learning, and state motivation in the educational process.'

(Papacharissi, 2010, p.27)

Where millennials are concerned, social networks are now an integral and intrinsic part of everyday life, whether they are at home or at school (Jones and Harvey, 2016). These networks operate as information hubs, especially for those with similar interests (Gil de Zúñiga, Jung and Valenzuela, 2012) where information doesn't merely exist but where they can also ask questions. Given that such platforms, including Twitter, are increasingly being used as a primary method of communication (Macskassy, 2012), it is perhaps natural to wonder that, if an information gap does exist, to what extent aspiring undergraduates might be attempting to meet their information needs via social media?

'In social media, people are open with their thoughts, publish shorter documents (e.g. Tweets) more regularly, and demonstrate and describe behaviour which would simply not appear in other more closely controlled and edited contexts.'

(Elsweiler, D. and Harvey, M., 2015, p.27)

Twitter is potentially well suited on a number of fronts to meet the information needs of millennials and provide a candid insight into their experience of the application/enrolment process. Tweets are not only capable of providing specific and up-to-date information, but they can also provide insight from the personal experiences of others (Hurlock and Wilson, 2011). In a wider sense it also provides multiple channels for interpersonal feedback, peer acceptance and reinforcement of group norms (Papacharissi, 2010).

The Internet is used regularly by nearly all 16-24 year olds (ONS, 2017); and Twitter itself is consistently ranked in the top three most popular social media websites (Ebizmba, 2017; Livewire, 2017). Whilst it does not necessarily follow that this is the most popular site among aspiring undergraduates it is one that UCAS are particularly active on: making it a well-suited location to search for relevant data with a reported 328 million monthly active users (Twitter, 2017). Whilst UCAS do use other social media sites (e.g. Facebook) as the communications are not being publicly published in the same way, these arguably may have been a less ethical choice.

Lovejoy and Saxton (2012) have also demonstrated Twitter's capacity for stakeholder engagement and showed it to be more effective than mass communication (e.g. journalism) and/or information that is already available on websites. Indeed, more recent work has indicated that '…*Twitter users desire high speed access to the latest information. People see Twitter as going beyond web search engines in this respect, a means of having such information at one's finger tips. '* (Elsweiler and Harvey, 2015, p.26).

Ultimately little in-depth information is known to date about how aspiring undergraduates in particular are making use of online social resources. For

example whether it is beneficial, and critically, who they are engaging with? Prior work has demonstrated that these information 'hubs' (Elsweiler and Harvey, 2014) not only exist but are a critical component of online information behaviour, and so we seek to investigate this.

1.2 AIMS AND OBJECTIVES

1.2.1 Aims

The aim of this research is to examine the information behaviour of aspiring undergraduates on social media, specifically Twitter, throughout the university admission cycle from the learner's initial UCAS application in January through to their eventual enrolment at university the following September.

1.2.2 Objectives

This research seeks to address the aim through the following research objectives:

1. To establish whether it would be possible to adapt, or adopt, an existing methodology; or, whether a new methodology should be developed for qualitative analysis of a large volume of Twitter communications, and interpretation of information behaviour in a specific context.
2. To study the information behaviour of aspiring undergraduates by:
   a) Establishing the information needs of aspiring undergraduates.
   b) Assessing the extent to which these information needs are being met via Twitter.
   c) Developing policy/practice recommendations for appropriate IAG (advice and guidance) provision.

1.2.3 Research questions

The following tables (1.1 to 1.3) show how the research objectives are to be addressed. For a schematic view of how the research title, aims and objectives are reflected in the structure of this report please see figure 1.2 (located in section 1.5).

Table 1.1. Addressing the research objectives

Objective	Addressed	See chapter(s)
1	Considered as part of the methodology.	4
2.a	Explained directly below this table.	3, 5 and 6
2.b		
2.c	Detailed in the recommendations.	7

The following research questions reflect research objectives 2.a and b in more detail. These objectives require that the study first conducts an assessment of needs, then, uses this to ascertain the degree to which the needs of aspiring undergraduates are being met via Twitter. In essence, objective 2.a will use literature (chapter 3) to establish a baseline against which we are then able to measure objective 2.b (chapters 5 and 6).

The proposed needs assessment has the following structured framework (see Chapter 3. Needs assessment for further information), it is then pertinent that the research questions are direct reflections of these areas. Ultimately these are the questions that we need answers to (from literature and the data in chapters 3 and 5) in order to fulfill objectives 2.a and 2.b.

Table 1.2. Needs assessment framework

Needs assessment framework:
• Characteristics of information need: subject *(information purpose and function),* nature (*intellectual level),* viewpoint, quantity and quality/authority, speed of delivery, and processing/packaging. • Obstacles that stand in the way of people meeting their information needs: training, time, resources, access, information overload.

(Nicholas and Martin, 1997, pp.43)

These are the research questions that reflect each area:

Table 1.3. Characteristics of information need as identified by Nicholas and Martin (1997, p.43):

Characteristics of information need:	
Subject *(information purpose and function)*	What kinds of information are aspiring undergraduates asking for?
Nature *(intellectual level)*	How do they go about asking these questions? Do students believe and can they achieve the grades necessary (intellectual level)? Are they capable of completing the UCAS form successfully (intellectual level)?
Viewpoint	Who are aspiring undergraduates asking (i.e. different actors)? Do different different actors cover different subject areas?
Quantity and quality/authority	Is quality an issue, does incorrect information get shared (misinformation)? Who do different actors recognise as an authority (influence)? ** Information overload and/or poverty is reflected in the question below (see '1.2.3 Research Questions, Information overload').*
Speed of delivery	What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?
Processing/packaging	Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?
Obstacles to aspiring undergraduates meeting their information needs:	
Training	Do aspiring undergraduates have the skills they need; • Skills needed to complete their application 1 • To effectively locate 2 reliable information

	(information discernment)? *1 Already covered by Intellectual level question in relation to UCAS applications above.* *2 Element of information seeking already covered by the Nature question above.*
Time	Are there key differences between the different stages of progression (before, during and after)? ** This question will not be asked in it's own right but will be reflected in the methodology which employs three data collection periods (for the before, during and after stages). All other questions here can then be considered in this way.*
Resources	If prospective students are referring to and/or using specific resources what are they?
Access	Can learners access the information they need when they require it?
Information overload	Is there any evidence that the learners are at risk of information overload (or poverty)?

Please note that whilst each of these questions are individually addressed in sub-sections of the analysis (chapter 5) they are later presented in an order that is logical for the reader (i.e. that logically presents related findings in sequence) rather than the arrangement here.

1.3 INITIAL CASE FOR A NOVEL METHODOLOGY

This research seeks to examine the finer behavioural characteristics of aspiring undergraduates. Assessing the elements of information need and gauging the extent to which needs are being met arguably lends itself best to a qualitative approach given that we are considering written communications and addressing some open ended questions (e.g. what kinds of information are aspiring undergraduates asking for?). The proposed methodology allows for exploration with a potentially wide scope of responses and will allow new themes to emerge and to

help us develop understanding through a range of qualitative approaches (e.g. discourse analysis).

However, it is simply not practical to establish separate searches to locate relevant tweets on Twitter for *every* individual research question (see below). The research questions reflect areas outlined in the needs assessment and therefore reflect different elements of the information needs of this particular group. As such they are specific but it would not be manageable to formulate eighteen different searches, each based on its own linguistic framework. Particularly, given the need to keep each under constant review as the data is being collected (e.g. to check the material for relevance and to ensure material such as trending hashtags are not missed). Instead it was logical to initially make a larger collection of all of the data relevant to aspiring undergraduates during key timeframes (i.e. during their university applications, the release of exam results, and, enrolment at university). Time could then be taken to investigate each question against relevant material in its own right.

Collecting tweets en masse is not new (e.g. Pak and Paroubek, 2010; Lin and Ryaboy, 2013; Lahuerta-Otero and Cordero-Gutiérrez, 2016). If qualitative coding software can be considered an extension of traditional cataloguing (e.g. using the Dewey Decimal Classification) then arguably traditional libraries have been already been managing and structuring large volumes of qualitative information so as to facilitate research for some time, albeit perhaps not at the level (e.g. paragraph and sentence) attempted here. However, applying this study's hybrid methodology to Twitter data in order to consider the information behaviour of aspiring undergraduates, has not (to the best of my knowledge) been attempted previously.

1.4 SCOPE

The proposed topic touches on multiple subjects and numerous potential schools of thought. Indeed, when we combine these with the proposed methodology (chapter 4) one of the primary challenges that must be addressed is that of scope. Else, without carefully considered direction such a project could easily become unmanageable.

While the following sections (chapters 1 to 4) outline the intent and direction of this research it is worth reiterating clearly from the outset what is being deemed as being beyond the remits of this research and therefore where the boundaries are. In particular:

- The aspiring undergraduates are the focus of the research. Whilst a novel methodology is being employed this is not in itself the focus.
- It is in no way intended that the volume of evidence collected is to be investigated in its entirety using qualitative methods. Therefore a series of precise research questions that reflect the objectives are being employed to target specific approaches and sets of information.
- The proposed research aims to avoid adopting any political stance regarding admission into higher education (e.g. widening participation agendas). It takes no view on whether individuals should, or shouldn't, progress into Higher Education. It merely aims to examine the elements of the information journey learners take and will only make recommendations at the end that might facilitate those individuals' information needs during this period – regardless of the outcome (i.e. whether they choose to enroll, or not).

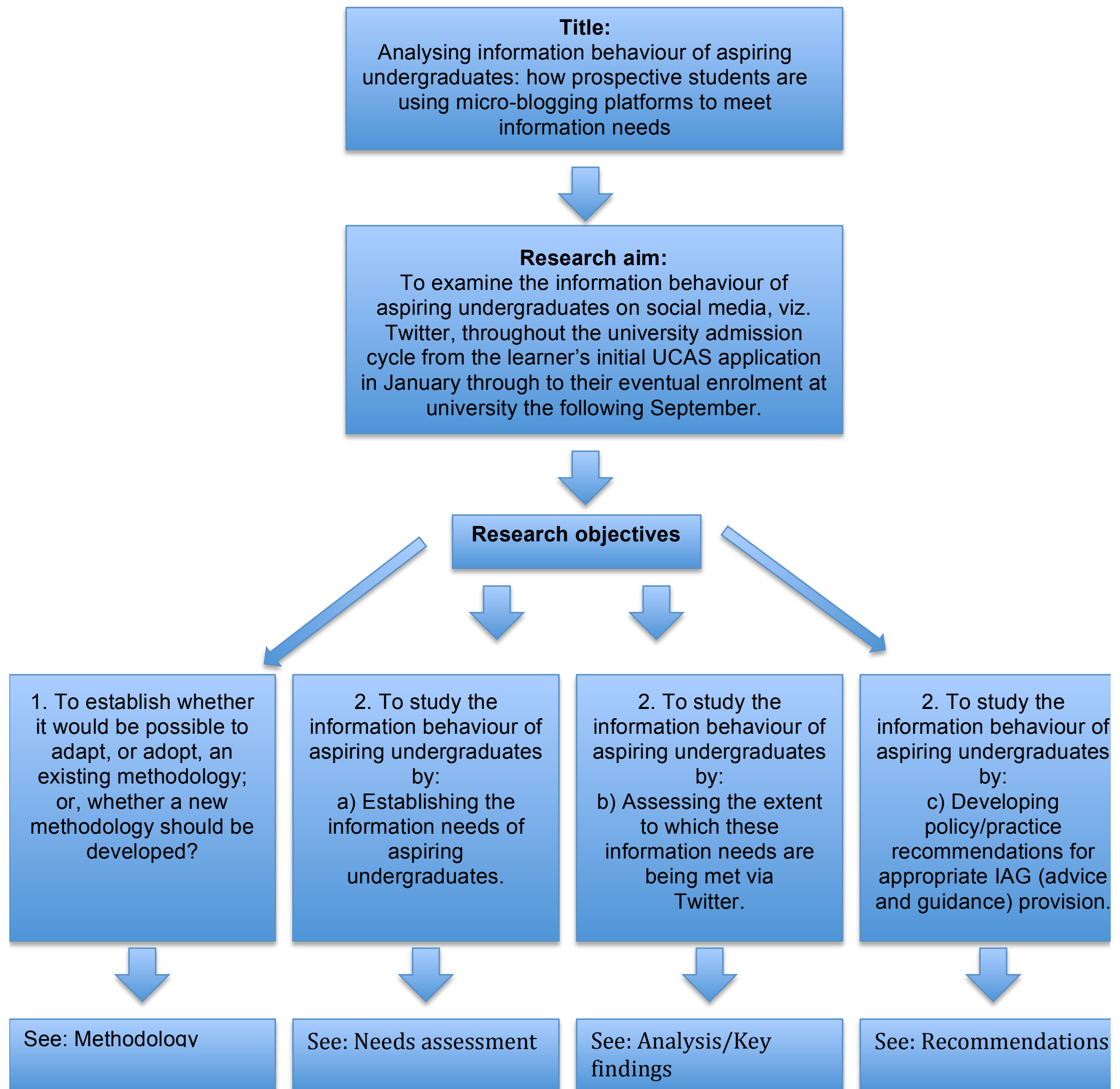
1.5 THESIS STRUCTURE

The literature review (chapter 2) has been separated into three parts. The initial section on **information behaviour** begins by considering 'what' we are examining. Subsequently the succeeding section on **social media** explores the 'how', or means, before the final segment on **education** establishes the context and case for this study.

The chapter on **needs assessment** (chapter 3), acts as a bridge between the review of literature and the methodology helping to demonstrate how the wider reading informs, and the needs of learners feed into, the research and analysis framework. The **methodology** (chapter 4) then outlines the strategy and associated theories connected with the approach. Finally the **analysis** and findings (chapter 5) are presented in individual sections; each one representing and addressing one of the research questions (see table 1.3). The second to last chapter (chapter 6) draws together a **summary** of findings and conclusions, before chapter 7 addresses and includes the **contributions to knowledge**.

The following figure 1.2 illustrates how each strand of the research is addressed:

Figure 1.2. Research strands and structure



1.6 CONTRIBUTIONS TO KNOWLEDGE

There are three key potential contributions to knowledge, which are direct reflections of the research objectives. These are:

Table 1.4. Contributions to knowledge

Research objective	Contribution to knowledge
1	A methodological framework for the analysis of textual data from social media.
2.a, and 2.b	The extent to which the proposed methodology can determine whether information sources satisfy aspiring undergraduates' information needs. An understanding of aspiring undergraduates and their research needs in context.
2.c	Policy/practice recommendations for the provision of appropriate advice and guidance for aspiring undergraduates.

2 LITERATURE REVIEW

2.1 INTRODUCTION

Given the objectives and research questions (see sections 1.2.2 and 1.2.3) it was decided to review relevant literature in three different sections that are inter-related for the purpose of this research, namely **information behaviour**, **social media** and **education**. The following table provides an overview of these major sections of the literature review:

Table 2.1. Major sections of the literature review

Sections (in order)	**Summary**
1. Information behaviour	**Information behaviour** is the focus of the study and considers 'what' is being examined.
2. Social media	S**ocial media** brings us to consider the 'how'; the platform on which we are to consider the information behaviour of aspiring undergraduates.
3. Education	The final section on **education** seeks to establish the context and case for this study.

This initial review of literature is followed by a shorter highly focused review of literature, which forms a **needs assessment** (see chapter 3). Given that the needs assessment is more of a specific targeted activity that is designed to address a key objective (objective 2.a see section 1.2.2), it has been intentionally kept separate. Placed between the literature review and the methodology, the needs assessment effectively acts as a bridge between the traditional review of literature conducted here and the methodology.

It should be noted that the three sections of this literature review are not necessarily equally relevant. A disparity was observed during this review of literature in the availability of evidence for the different sections; notably that there appeared to be considerably less recent material for education in comparison to information

behaviour and social media. Whilst it cannot be said conclusively that more recent information pertaining to the educational context of this study does not exist, given time limitations more recent and/or relevant evidence could not be found. This observation and some considerations of the causes and consequences for this study are reviewed in more detail in section 2.4.1.

2.2 INFORMATION BEHAVIOUR

The information behaviour of aspiring undergraduates is the focus of this study. The following sections (2.2.1 to 2.2.4) seek to clarify what is meant by 'information behaviour' and to highlight potentially relevant concepts in the context of this study.

2.2.1 Introduction

Information is an integral part of the learning and gaining knowledge process, it provides the raw tools for learners to succeed, not only at home and in school, but throughout their lives (Shenton and Pickard, 2014). Information facilitates a continual learning process that allows us to update our skills, knowledge and understanding necessary to make informed decisions and solve problems.

As children of the information age, today's learners potentially have a wealth of information at their fingertips thanks to smartphones, tablets, etc. (McAfee, 2013; Brooks and Lasser, 2018). However, as the Internet is not thoroughly regulated information is not always accurate (Lazer et al., 2018); in addition data exists in such volumes that it puts learners at risk of information overload (Bartlett & Miller, 2011). Importantly, just because the information exists doesn't mean that learners can necessarily find, make judgments and/or use the information effectively.

Terminology and definitions in academic and non-academic literature often vary; e.g. terms such as IT (information technology) and digital literacy are often used interchangeably, and in some cases it is not clear whether terms such as 'digital literacy' have been used with a clear understanding (House of Lords, 2015). This blurring of understanding between terms is not new; terms such as 'information literacy' and 'computer literacy' have been used synonymously with differing,

overlapping and even contradictory definitions that has created much confusion over the years (Candy, 2002; Bundy, 2004).

2.2.2 What is ‘information behaviour’?

The human species has been using and sharing information long before we ever thought to define and study it. As Case has observed the term ‘information’ appeared in Chaucer’s tales (roughly between 1372 and 1386), but places its origins in Latin and Greek in a pre-Christian era (Case, 2012). Despite its long history, as Case has concluded, there is not one single definition, but that if one was to be employed that it must be broad and has suggested that information is ‘*any difference that makes a difference*’ (Case, 2012, p.66).

‘Information behaviour’ as a term has been considered in a myriad of different contexts by many different individuals, all with varying interests and motivations (Case, 2012). Given that it has been written about in ‘*thousands of documents from several distinct disciplines*’ (Case, 2012, p.14), it is of little surprise there has been considerable debate surrounding a definition. The two key considerations in selecting a definition of ‘information behaviour’ for this research was that it should; firstly, be well regarded and widely accepted in the field, and that secondly it should suit the context of this study. Wilson’s definition was therefore chosen as it met both of these requirements:

Information behaviour is defined as *‘those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information’* (Wilson, 1999, p.249).

2.2.3 Relevant concepts and theories

Information seeking

Case has defined information behaviour as encompassing ‘*information seeking as well as the totality of other unintentional or passive behaviors*’ (Case, 2012, p.5). For the purpose of this research information seeking is being defined as ‘*a conscious effort to acquire information in response to a need or gap in your*

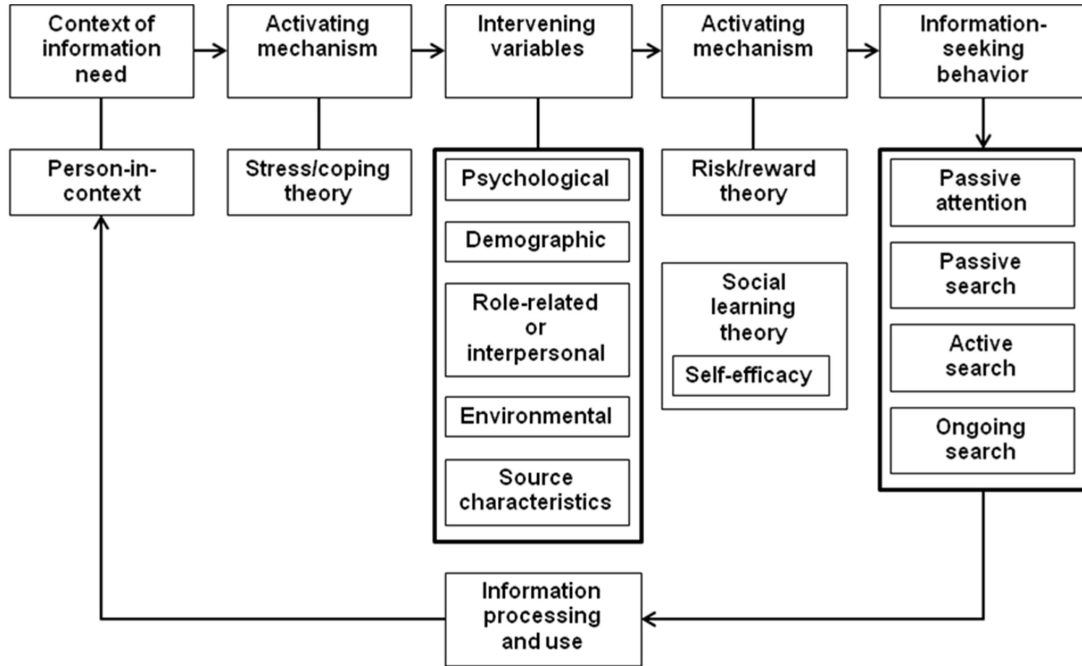
knowledge' (Case, 2012, p.5). Many models of information seeking exist, which operate at varying levels (Wilson, 1999). As it is outside the scope of this research to conduct a review of them all, an established and widely accepted pre-existing review (i.e. Wilson, 1999) has been used to guide and identify the most appropriate model for consideration. Selection of the following model should not be misinterpreted as a rejection of others, as Wilson concludes '*they are complementary, rather than competing*' (Wilson, 1999, p.267).

The disadvantage of certain models (e.g. Kuhlthau's model) is that they have a distinct 'start' and 'end' stage identified as part of the information seeking process. This was perceived to be less suitable for considering information seeking online given that, for instance, whilst one user might start a search, other users could adopt, modify and continue this search. Ergo the individual that starts a search for information online has little, or no, control over when that search might ultimately end. It is also important to recognise that the context of this research is not limited to the mechanics of university applications; it seeks to consider the wider journey of the aspiring undergraduate in a larger and more holistic sense. Therefore whilst this study will consider that process from three data collection periods that examine the before, during and after stages of the transition into university: the 'after' stage should not be confused the 'end' stage in an information-seeking model. Considering information seeking over a 16 month period that involves numerous decisions will not involve 'one' solitary search for information; aspiring undergraduates need to progress mentally (e.g. with decisions) and move physically and this is likely to require repeated, continuous searches for information, ergo there is no perceived 'end' date when it is believed searches will stop.

There are two advantages of Wilson's model (see figure 2.1) within the context of this research. Firstly, the emphasis on intervening variables and elements (e.g. social learning theory) arguably complement an online social environment. Secondly, Wilson's model is appropriate for representing the information seeking behaviour of aspiring undergraduates as it is an iterative process, and information needs move from one stage to the other, as the subjects move from on cycle of the admission process to the next. For example, the primary stage is identified as

being a ‘*context of information need*’ (Wilson, 2000, p.53), which, given that this forms the baseline for analysis later (see section 5.2), is particularly apt.

Figure 2.1. Wilson’s model of information behaviour (Wilson, 1996)



(Wilson, T.D., 2000, p.53)

Literacies

Information literacy is defined as ‘*knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner*’ (CILIP, 2015). Information literacy warrants some consideration here as it provides learners with the raw tools to navigate their personal and professional lives so that they are better able to understand and navigate the world in which they live (CILIP, 2015). In summary:

> *‘Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.’*

(The Alexandria proclamation, 2005)

Historically, there has been some confusion and debate surrounding the term 'digital literacy' and how it fits with 'computer literacy', 'ICT literacy', 'e-literacy' and 'media literacy', (Bawden, 2001; Kinzer et al., 2016). Within the context of this study it is understood as information literacy in a modern digital environment (Lankshear and Knobel, 2008), and it is therefore the ability to deal with information using technology and its various formats (Bawden, 2008). However, digital literacy goes beyond being merely a set of competencies and it '*… ascends towards high-level intellectual and metacognitive behaviours and approaches'* (Coonan, 2011, p.20).

Today's learners have access to a wealth of information (McAfee, 2013), and yet it has been observed that young people appear to be ill equipped in such an environment (Yelland, 2007), which 'i*s a concern with preparing students as best we can for a world in which there are few constants'* (Kinzer et al., 2016, p.12).

> '*Living in the twenty-first century means that we need to be able to deal with vast amounts of data and information and have the ability to absorb, synthesize, and transfer it into knowledge and understandings that have relevance to our lives … it is hard to negotiate meaning in the face of such massive quantities of information'*
>
> (Yelland, 2007, p.17)

The first international forum on Media and Information Literacy (MIL) considered MIL to be '*a combined set of competencies (knowledge, skills and attitudes)*' (online, UNESCO, 2011), and reaffirmed their conviction that MIL was a fundamental human right capable of enhancing the quality of human life. The consideration and potential implication for this research is that, whilst we know that the majority of young people have access to the Internet (see section 2.3.4), this may not automatically mean that they are able to locate and/or use the information as desired/needed. Indeed, in 2015 the Chartered Institute of Library and Information Professionals found that 6% of people who lack digital skills are aged 15 to 24 (House of Lords, 2015, p.258). More recently there is concerning evidence of the limits of these skills taking effect; for example not only do the majority of students trust health-based information they find online: less than half of them use credible sources (i.e. that has been overseen by a suitably qualified medical

professional), (Ettel et al., 2017). So within the context of this study we should make no assumptions about the capabilities or skills of aspiring undergraduates.

Information discernment

Simply put, information discernment is understood to be '*how people make judgments about information*' (Walton, 2017). This is a particularly relevant concept for the proposed study given that '*if an individual is misinformed, that person's decisions may not be in their best interest and can have adverse consequences*' (Lewandowsky, Ecker and Cook, 2018, p.7). Given that we know online information is not always accurate (Lazer at al., 2018) students rely on their ability to discern between accurate and inaccurate information in order to make decisions. For example, in the context of this study poor information discernment could lead to poor decisions, which may have repercussions later on (e.g. leaving university prematurely).

It has been known that young people are neither careful not discerning online for some time (Miller and Bartlett, 2011). Earlier research conducted by Nicolas, Rowlands and Huntington (2008), examining the so-called 'Google Generation' concluded that technology/information had not improved information literacy rates of young people (Nicolas, Rowlands and Huntington, 2008). Indeed it was noted that *'… their apparent facility with computers disguises some worrying problems … young people have a poor understanding of their information needs and thus find it difficult to develop effective search strategies'* (Nicolas, Rowlands and Huntington, 2008, p.12). Later Miller and Bartlett (2011) surmised that young people could not locate needed information, were unable to detect bias and did not apply fact checks, which made them vulnerable; on an extreme level they noted that this meant that young people were more likely to be influenced by extremist and/or violent ideas (Miller and Bartlett, 2011). More recent literature demonstrates that these concerns are still as relevant today (e.g. Walton et al., 2018): time and so additional developments in technology would appear to have had little, if any, effect on the discernment levels of adolescents.

It is also worth considering the relationship and extent that self-efficacy might play in information discernment; so not merely asking whether an aspiring

undergraduate ***can*** differentiate between accurate and/or inaccurate information but considering whether they have enough confidence in their own ability to do so. This has been well documented and and as Zimmerman (2000) concludes two decades of research have clearly linked self-efficacy as a predictor of student's motivation and learning. Skills in themselves are not necessarily enough (Jackson, 2018; Bandura, 1977), learners also need to have confidence in the abilities they are developing. Nationally this is important as the House of Lords has made their intentions for learners clear in that they aim to deliver '*a cultural shift towards preparing learners to learn for themselves*' (House of Lords, 2015, p.12). However, despite this there have been few investigations into the psychosocial, social and cognitive effects surrounding Information Literacy (Kumar and Edwards, 2013; Walton and Hepworth, 2011).

> *'The rise of the digital economy brings new risk … These risks include loss of assets and lack of confidence in digital technologies, resulting in unwillingness to use them.'*
>
> (House of Lords, 2015, p.9)

2.3 SOCIAL MEDIA

The following section considers the medium that will be used to examine the information behaviour of aspiring undergraduates. In particular it seeks to attain an understanding of social media platforms, and, to consider some relevant principles and appropriate concepts.

2.3.1 Introduction

Social media platforms are particularly suitable places to gather data from aspiring undergraduates given that they are increasingly being used as a primary method of communication (Macskassy, 2012). In addition these are places where people, including aspiring undergraduates, openly share personal thoughts, which would not happen in more formal and regulated contexts (Elsweiler and Harvey, 2015). As social media will provide the evidence for this research the following sections review how these sites have evolved and explain why Twitter in particular has been selected as this study's chosen data source.

While this particular section on social media concludes with outlines of relevant concepts and theories it is worth appreciating that social media sites are an area of interest and research across numerous subject disciplines (Romero, et al., 2011). The challenge that this creates is that it presents a myriad of research, which is continually being updated because sites such as Twitter were only incorporated in 2007 (Twitter, 2015) and so they are arguably still evolving. As such existing and regular reviews of literature (e.g. Kelly and Ruthven, 2013; Mai, 2016) have been used to guide and target the reading and the review that follows.

2.3.2 History and context

Informed digital citizenship; aspiring undergraduates in context

The analysis of the UK Digital Taskforce and TeenTech CIC suggested that *'… well over half the workforce requires digital skills that extend beyond the basic skills of digital citizenship*' (House of Lords, 2015, p.1007). Ergo, in order for teens to progress and succeed successfully as adults they need to be able to engage critically with an online environment to become competent and fully functional digital citizens. This, however, is not straightforward. As McAfee summarised whilst teens might be the first generation to grow up in a cyber world their mistakes, much like a

tattoo, do not disappear if they make a mistake online (McAffee, 2013). McAfee's 2013 survey found that; 21% of teens had sent or posted images online which they later regretted; 10% reported having been approached online by an adult they did not know, and 16% had been the victim of mean/cruel behavior. These are notable risks, which place increasing importance on young people developing the skills, and understanding to be able to navigate digital worlds safely. In essence, just because they have Internet access does not automatically mean that aspiring undergraduates might have the maturity, experience or abilities required to live safely in the digital world. These are relevant considerations as they make up and help explain part of the context of this study from the user (i.e. aspiring undergraduates) perspective. Notably it outlines that there are already known challenges and difficulties for teenagers online and this will help frame how findings may be interpreted later; for example, what might be considered 'new' findings, and what may be an extension of pre-existing, known, problems (e.g. mean/cruel behaviour and mistakes being made with no apparent fear of recrimination).

History

Given that interest in oral and written communication was a subject of interest in ancient Greece and Rome (Briggs and Burke, 2010) to some degree it's not possible to pinpoint a single date where social media as we currently know it suddenly came into being. Rather it has been evolving for some time and as Briggs and Burke (2010) conclude; many features to be found in the media are older than commonly believed. For instance TV series were pre-dated by radio series, which were predated by published series of stories published in the 19th century (Briggs and Burke, 2010). That said, what can be identified are notable periods in the evolution of social media; for example: 'the media' as a term first started to be used and appeared in the Oxford English Dictionary in the 1920s (Briggs and Burke, 2010). The invention of the World Wide Web in 1991 marked another such notable period (Van Dijck, 2013), and the ability to publish diaries as online weblogs became tools that created online social connections (Van Dijck, 2013). The emergence of Web 2.0 was also critical in creating new prospects, allowing more everyday social activities to move online (e.g. photo sharing).

The creation of platforms, each with their own particular online activity (e.g. blogging or sharing photos), came at the end of the 90s (Van Dijck, 2013). These included:

1999 - Blogger

2001 – Wikipedia

2003 – Myspace

2004 - Facebook and Flickr

2005 – YouTube

2006 – Twitter

(Van Dijck, 2013, p.7)

It should be remembered that these sites are not, nor may never be, fixed and final completed products (Van Dijck, 2013); ergo they are in an ever-changing state and respond to changes in technology, business objectives, user trends, etc. Similarly this ever-changing market inevitably means that over time some sites have come to flourish (e.g. Twitter) whilst others have fallen out of favour (e.g. Myspace), (Van Dijck, 2013).

2.3.3 Choice of media: Twitter

' … different social media document the same event differently.'

(Scifleet, Henninger & Albright, 2013, Vol.18, No. 3)

It did not take very long, seven years in context after the launch of Twitter (Van Dijck, 2013), for researchers (e.g. Scifleet, Henninger and Albright) to observe that the use and experiences of actors on social media platforms varied depending on the forum being consulted (Scifleet, Henninger & Albright, 2013). Careful consideration therefore must be given to support the deliberate selection of one type of social media site over another. The following points outline the rationale for selecting Twitter as the data source for this study:

- **UCAS**. Given that aspiring undergraduates must submit their university applications via UCAS, it is therefore logical to utilise a source of data where UCAS themselves are active and relevant communications are known to be taking place. UCAS use six different social media sites in total (Facebook,

Twitter, LinkedIn, YouTube, Instagram and Campus Society), which are used by UCAS in different ways. For example, UCAS use YouTube to share how-to videos (e.g. step by step instructions on how to complete application forms). From these six social media sites only two are actively promoted to aspiring undergraduates by UCAS for the purpose of connecting and/or communicating with them, which are Facebook and Twitter (UCAS, 2018). Twitter was consequently assessed to be the more ethical option between the two for data collection (see section 'ethical considerations' in section 2.3.3 below).

- **Popularity**. Whilst the order of rankings vary (e.g. Ebizmba versus Livewire), Twitter consistently ranks as being one of the three largest social media platforms (Ebizmba, 2017; Livewire, 2017) with 328 million monthly active users (Twitter, 2017). It should be acknowledged that despite Twitter's popularity, it does not automatically follow that this is a site popular with aspiring undergraduates in particular. Indeed generally speaking there are more popular sites (e.g. Facebook; Ahmed, 2017), however it is challenging to determine exactly 'which' site might be most popular among aspiring undergraduates given that they are not a homogeneous group and that year on year the make up of this group is continually shifting. For instance, whilst stereotypes might suggest that aspiring undergraduates are teenagers only 61.1% of those starting undergraduates courses are under the age of 21 (Office for Students, 2017); so it would not be accurate to make assumptions on aspiring undergraduates' preferences on social media based on age. In addition given that information on sites such as Snapchat are not designed for the public domain it makes logical sense to select an outward facing site with publicly accessible information that has one of largest audiences to increase chances of capturing as much relevant evidence as possible.
- **Ethical considerations**. The purpose of social sites such as Twitter is to publish content and attract followers by placing users' messages in the public domain, this was seen to be ethically preferable to sites such as Facebook which focus on information exchanges between friends/family (Moreno, et al. 2013). Factoring in the public or private nature of social media sites quickly removed many sites from being considered viable

options (e.g. Facebook Messenger). Tumblr was considered as a viable alternative, however a review of the site suggested far less relevant material and it also lacked the active presence of UCAS.

Context: previous studies of Twitter

Conducting research on/via Twitter is hardly new (e.g. Java et al, 2007; Kwak et al., 2010; Gleason, 2018): indeed there are academic reviews outlining the myriad of ways in which it can be used for research (e.g. Ahmed, 2017). More specifically it has been used to consider the behaviour of both teenagers (e.g. Gleason, 2016), and information seeking behaviours (Dodd et al., 2017); therefore there are ample examples with potentially transferable considerations for this study. This information has been considered in two ways; firstly, it has been reviewed with the context of this study in mind to ascertain what is already known about teenagers searching for information on Twitter, and secondly, the types of data analysis used for Twitter data have also been considered.

Information seeking behaviour on social media has been a topic of interest for some time (e.g. Efron and Winget, 2010; Lee et al., 2012, Yang et al., 2011); indeed information seeking has been considered in a number of different ways (e.g. motivations for information seeking; Paul et al., 2007). Some considerations from previous studies relevant to this study are as follows (please note findings pertinent to information behaviour have been included in section 2.2 of the literature review):

- Platforms such as Twitter are used to search for information: but, it is not necessarily efficient (Ranganath, et al., 2017). When users search for information their '*questions are buried among other posts, impeding social media users from getting timely responses'* (Ranganath, et al., 2017, p.12).
- There are differences in how different demographic groups and even how different personality types use social media to search for information (Kim et al, 2014). Given that no demographic information will be available for each tweet during the analysis for this study it will not be possible to compare data samples from different aspiring undergraduates; however, patterns may potentially emerge if online actors identify demographic issues themselves. For example, if a disabled aspiring undergraduate feels they are being

treated unfairly they may be motivated to tweet about it, and so we can consider demographic/personality factors in that way.

- There have been observations about the nature of adolescent behaviour on Twitter in particular that teenagers openly discuss taboo topics (e.g. smoking marijuana; Cavazos-Rehg et al, 2014); this also tends to be done with very little consideration of the consequences (Thompson et al, 2015). Whilst frank discussions would doubtlessly be of interest what will then need to be factored into the methodology will be thought and appropriate protocols for potentially handling tweets of an extreme nature (e.g. illegal activity, death threats); please see section 4.7 for further details.

As Ahmed (2017) has demonstrated, in terms of collecting data from Twitter, NVivo is one of the viable software options identified. This was selected over other tools for three key reasons; it was readily available within the university, it did not require programming knowledge (e.g. R), and it was a package I was familiar with and had used since 2007. In terms of forms of data analysis that have been used on Twitter data there is a wide variety; which is perhaps unsurprising given that even if a researcher chose to focus on sentiment analysis as Pandrey et al. (2017) have explained there remain numerous methods for this (e.g. lexicon based methods which might include statistical or semantic frameworks, or, methods based on machine learning). From such a rich suite of viable options what was of particular interest were Twitter studies that had employed hybrid methods of data analysis (e.g. Pandrey et al., 2017). The rationale for this study's methodology in contained in chapter 4; however it was important to note that there was evidence of the successful creation and use of hybrid forms of data analysis for Twitter (e.g. Pandrey et al., 2017; Aswani and Ilavarasan 2018). It is also worthwhile acknowledging that whilst this study's adopted blend of methods are qualitative (e.g. content and discourse analysis) that others have blended quantitative methods (e.g. Aswani and Ilavarasan 2018). Ahmad et al. (2017) have reviewed the performance of some hybrid data analytic methods, including hybrid qualitative and quantitative methods, which date back to 2004, for sentiment analysis. This provides this study with some context: namely that researchers have and remain to be exploring what is possible using hybrid methodologies. As such whilst this research might be using a combination of approaches for a specific user group in a

context that that might not been done previously (to the best of my knowledge and belief), hybrid methodologies are not new: and there is evidence they can work (Ahmad et al., 2017).

2.3.4 Relevant concepts and theories

The following sub-sections consider relevant theories and concepts.

Digital access

'… the Government should define the internet as a utility service that is available for all to access and use'

(House of Lords, 2015, p.9)

Digital access remains uneven geographically and those living in the South East of England (including London) have the highest levels of access at 94% (ONS, 2017). Previously concerns surrounding uneven access have been reflected in the conclusions from the House of Commons (2015), which has stated that *'We are concerned about the pace of universal internet coverage … In particular, we find it unacceptable that, despite Government efforts, there are still urban areas experiencing internet 'not-spots …'* (House of Commons, 2015, p.9). However, figures indicate this gap may be closing as Scotland has seen the greatest rise in Internet access '*from 48% in 2006 to 90% in 2017*' (ONS, 2017).

However, given that even four years ago The Office for National Statistics (ONS) had concluded that '*almost all (99%) 16-24 year olds had used the Internet*' (ONS, 2014, p.1), and only 0.03% of 16-24 year olds hadn't used the Internet within the last three months (ONS, 2014), arguably digital access is commonplace in the lives of today's learners. In summary Internet usage among young people is so high that it would suggest that the effect of coverage issues aren't necessarily hindering 16-24 year olds. Whilst 11% of households (ONS, 2016) in Great Britain do not have Internet access, learners may still be able to gain access via a school/a library, or, via mobile devices.

Trust and misinformation

As Lewandowsky (2012) identifies, it takes more effort to be proactively critical rather than to be trusting. A study conducted by Flanagin and Metzger in 2000 found that people rarely verified web-based information and considered it as credible as television, radio and magazines. This lack of awareness can result in safety issues (including security issues such as credit card fraud) putting individuals at risk (House of Lords, 2015). Online security groups (e.g. McAfee, 2013) have identified a need for education and concerns for the safety of individuals online have also been outlined by the House of Lords:

> *'We are concerned that there is an inadequate level of awareness amongst the population regarding online safety and personal risk management.'*
>
> (House of Lords, 2015, p.9)

There is a sharp disparity between how users report to behave and the reality of their actions. In a case study conducted by Eysenbach and Köhler (2002) when users were asked what they perceived to be trustworthy they were able to describe logical measures of credibility (e.g. author and date). However, when users have been given practical tasks they have shown a tendency to return to default behavior of relying on the top results of search engines and don't apply any of their aforementioned credibility yardsticks for assessing credibility (Papacharissi, 2010).

> *'… most of the messages posted on Twitter are truthful, but the service is also used to spread misinformation and false rumors, often unintentionally'*
>
> (Castillo, Mendoza and Poblete, 2011, p.675)

It's important to acknowledge that there is a difference between misinformation encountered on micro-blogs, such as Twitter, to that in the real world. Online environments '*lack the clues that they have in the real world'* (Castillo, Mendoza and Poblete, 2011, p.682). Young people in particular are more vulnerable to misinformation as they lack experience making it easier for them to mistake false news for credible information (Castillo, Mendoza and Poblete, 2011).

Power/knowledge relations

Aspiring undergraduates might be searching for information, but new knowledge is unlikely to come from strong ties such as their peers, as individuals in these close circles tend to possess the same knowledge (Papacharissi, 2010). Similarly weak ties are inefficient because it takes too long to communicate and get a response, ergo new knowledge tends to come from '*somewhere in between*' (Papacharissi, 2010, p.13).

The strength of relationships is not the only consideration here: it also depends in part whether a peer might be considered to have more/or less knowledge and/or authority than the media (Papacharissi, 2010). In addition, different sources provide different levels of access to information therefore it is unlikely that aspiring undergraduates would only use one information source (Papacharissi, 2010). The implication for the proposed research is to recognise firsthand that given a prolonged state of flux and uncertainty there is nothing to say that the information seeking behavior will be a single step process at any point (Papacharissi, 2010).

The power or authority that a source is perceived to have on a given subject is subjective, it is ***assumed*** that they have experience with the desired topic and ergo '*their trustworthiness and relative expertise should be quite strong*' (Papacharissi, 2010, p.26). This presents interesting considerations in relation to hashtags and trending topics on Twitter given that we know that:

> *'Sunday and Nass (2001) found that people more highly value information presented on computers when they believe that the information was selected by other (unidentified) computer users.'*

(Papacharissi, 2010, p.26)

It has also been suggested that feedback, surveys, etc. online are commonly considered by users to have been written by other people like themselves (Papacharissi, 2010). In imagining and assuming that those that provided the feedback are comparable to themselves users could fail to consider whether the information is necessarily appropriate, or, what authority the author has to make such statements.

2.4 EDUCATION

2.4.1 Introduction

The domain chosen for this study is the university admission cycle within the UK, which has been initially outlined in section 1.1.1. The literature reviewed here seeks to establish a better understanding of the context and outlines some key themes, which follow through into both the needs assessment (e.g. finances), (chapter 3), and the methodology (e.g. key periods of progression), (chapter 4).

A brief consideration on the availability of relevant (i.e. recent) evidence for this section on education is warranted given that this has resulted in the inclusion of older evidence, which may be of questionable relevance. Whilst there is ample academic evidence on aspiring undergraduates (i.e. in journals); by their nature they tend to be focused and not widely applicable (e.g. for certain types of medical students such as those studying optometry; Pardhan, 2018). More widely there are several reasons why more evidence on aspiring undergraduates could not be easily located:

- General evidence on a national level tends to be quantitative (e.g. evidence from the Office for Students and UCAS). So, for example, the Office for Students considers demographic factors rather than individual perceptions.
- There have been structural changes to the organisations involved in the education system. For example, some organisations such as DIUS (the Department for Innovation, Universities and Skills) and QCA (which later became QCDA: the Qualifications and Curriculum Development Agency), which might have produced relevant reports no longer exist. DIUS closed in 2009, and QCDA in 2011.
- It could be argued that aspiring undergraduates fall between the research remits of different sectors. Organisations tend to be focused on either; 14-19 education (e.g. Ofqual), or, Higher Education (e.g. universities). For example, 14-19 education focuses on keeping learners participating in education but only up until the minimum ideal participation age of 18 (Government, 2018). There is no such minimum/maximum age limit or prescribed legal requirement for Higher Education; it is not compulsory and those interested in Higher Education can join at any age.

Whilst therefore older evidence has been included in the interests of providing some baseline for future findings, care should be taken when reviewing this information as it is potentially unlikely that research that is more than ten years old holds much current relevance.

2.4.2 Overview of the application process for UK based universities

The process of applying to a UK based university could be considered somewhat paradoxical given that whilst in principle it is a straightforward process arguably in practise the details and/or requirements can be increasingly complex. For example, it is possible for the process to be simply summarised in three steps as follows:

'1. Fill in your details, qualifications and course choices.
2. Write a personal statement to demonstrate you'll be a good student.
3. Include your reference and pay your application fee.'

(UCAS, 2018)

However, the details and requirements become more complex depending on; firstly, who the author of the advice is (e.g. UCAS or Study In UK), and secondly the aspirations and individual context/circumstances of the aspiring undergraduate themselves. For example, the university application process could start with; a consultation with an advisor from a private company (e.g. Study In UK, 2018); registering with UCAS (Prospects, 2018); or, selecting a course or university (British Council, 2018). The process of applying to a UK based university also depends on: what the aspiring undergraduate wishes to study (e.g. medicine), (UCAS, 2018) where they wish to study (e.g. Cambridge University), (UCAS, 2018) and whether they are a UK national, an EEA, Swiss National, or, an international student (e.g. from outside of Europe), (UCAS, 2018).

These discrepancies between authors and specific requirements are of interest in themselves as they help describe the information landscape aspiring undergraduates are required to navigate. One tentative observation regarding university application processes (i.e. UCAS, Study In UK, Prospects, the British Council), is that they have been framed solely for university applicants, which has the disadvantage that it does not help explain the roles and responsibilities of other

key actors in the application process (i.e. schools/colleges, UCAS, universities). As such the application processes being described (including figure 2.2. which is based on these) arguably do not provide a holistic view and tends to 'end' once applications have been submitted (e.g. UCAS, 2018) and not when aspiring undergraduates accept unconditional places and/or enter university.

2.4.3 Information and support: current context

' … we will devolve responsibility for commissioning IAG and the funding that goes with it, from the Connexions Service to Local Authorities, working through children's trusts, schools and colleges.'

(Department for Education, 2005, p.8)

The Department for Education's decision in 2005 to put advice and guidance (IAG) provision in the hands of local providers has received much criticism (e.g. Andrew, 2106; The Gatsby Charitable Foundation, 2014). The decision to allow centres to manage their own provision has raised concerns over quality control (Ofsted, 2013) and inconsistent levels of IAG provision (i.e. across different schools/colleges), (Andrews, D., 2016). Reviews of the delivery of IAG in schools/colleges found that whilst students in some centres received advice and guidance of a quality that was considered appropriate; others elsewhere did not (Ofsted, 2013). Lord Sainsbury (2014, p.2) summarised that:

'… *few people would say that all is well with the current system of career guidance in this country. It is especially regrettable therefore that the current situation, in which so many young people are kept in the dark about the full range of options open to them, has been allowed to persist for so many years*.'

(Lord Sainsbury, 2014, p.2)

This criticism of IAG has been acknowledged by the Government's own National Careers Council that have accepted that *'numerous reports have highlighted a growing need to give greater attention to careers provision*' (NCC, 2014, p.2) and who have accepted that '*we cannot pretend that the picture now is as we hoped it would be*' (NCC, 2014, p.4).

2.4.4 Information and support historically

> *'Careers advice in England has never been as good as it needs to be …. There is thus far little evidence that this is changing on the back of the new statutory duty on schools to provide careers guidance.'*
>
> (CBI, 2013, p.22)

It's important to recognise that concerns surrounding IAG (advice and guidance) existed prior to the changes brought about in 2005 (CBI, 2013). Indeed, given that the Department of Education concluded in 2005 that '*Too many young people don't get the support they need*' (Department for Education, 2005, p.56), this suggests that similar concerns (e.g. regarding inconsistent levels of provision) may have been present for some time. Several other issues were identified with the provision of IAG at this time:

- *'Many say they are turned off by having to discuss their life story with different professionals and being subject to numerous assessments.'*
- *'Other young people do not access the services they need because they are intimidated by the environment in which help is offered or because services are not open at convenient times or in easily accessible locations.'*
- *'Young people who need continued long-term support can lose continuity in treatment and support when making the transition between adolescent and adult services.'*

(Department for Education, 2005, p.56)

More recent evidence relating to these concerns could not be found (e.g. showing either an improvement, or, a decline), so it is not possible to ascertain the extent to which these issues might still exist. However, consideration of some of these issues could be seen to support the case for this study (i.e. assessing the extent to which the information needs of aspiring undergraduates are being met) in that online information could potentially addresses some of these challenges. For example, a digital platform could arguably be seen to offer information seekers a degree of anonymity and it does not require the information-seeker to enter an intimidating office at limited times.

2.4.4.1 Current provision

The National Careers Council has described the various providers and offerings of advice and information for young people as a '*marketplace*' (e.g. NCC, 2014, p.2). This could be seen to be possibly apt given the wide range of support available (see table A.1 located in the appendices). There is also evidence to support this 'marketplace' image as being one of inconsistent provision, reviews of IAG (advice and guidance) provision in schools by Ofsted are of note as they concluded that only a fifth of schools had sufficient provision in place up to age 16 (Ofsted, 2013). Ofsted surmised that what was available (e.g. via the National Careers Service) '*did not focus sufficiently on supporting young people'* (Ofsted, 2013, p.6). Subsequently some have questioned the degree to which IAG in the UK might be considered fit for purpose:

> *'… there are questions about whether our careers advice system is up to the task.'*
>
> (CBI, 2013, p.22)

Methods of support

Table A.1 (located in the appendices) illustrates some of the types of information and sources of support encountered through a wider review of literature. The wide scope reflects a notable body of research on IAG and as table A.1 demonstrates, there is no 'one' single point of reference for aspiring undergraduates. Further consideration of precisely 'what' aspiring undergraduates are using and what is seen to be useful/valuable in their eyes is explored in more detail in section 3.3.3 (chapter 3).

Overview of the process of progression for prospective learners

> *'It is important that your decisions are taken on the basis of accurate information … Whatever you choose now will commit you to certain directions at university and perhaps rule out certain careers.'*
>
> (Russell Group, 2013, p.23)

The Russell Group (2012) has made it clear that access to information is critical at an early stage as this data helps to inform decisions that influence which options remain available to aspiring undergraduates later on. Literature has highlighted three key periods of interest during an aspiring undergraduate's progression into higher education, which have been reviewed below. These broad categories represent the before, during and after stages of the aspiring undergraduate journey.

- *UCAS deadline ("before")*

The "before" period is being defined here as the period in which aspiring undergraduates prepare and submit their university applications. This is being taken as the period from September (when sixth form/college students enter their final year), through to the deadline for university applications the following January (for specific dates and additional details please see section 4.6).

Thomas (2013) identifies early engagement as being critical to successful progression and retention in Higher Education. Research has suggested that aspiring undergraduates currently aren't receiving enough appropriate information to adequately inform the early choices that they need to make and that this is having detrimental effects later on (Yorke, 2000; Harvey and Drew, 2006). A survey of non-completing undergraduates found that the most frequently cited reason for dropping out from university was that students felt they had chosen the wrong subject (Yorke, 2000). Young aspiring undergraduates in particular (i.e. those aged 18 or 19) were more likely to report a poor choice of subject as a reason for dropping-out of university (Yorke, 2000). Reasons that non-completing undergraduates gave for their poor initial choice of subject were as follows:

- The '*quality of advice given by careers services*' (Yorke, 2000, p.67)
- Parental pressure, because it was the decision expected of them (Yorke, 2000)
- The '*superficiality of their initial decision*' (Yorke, 2000, p.67)
- Universities providing information that non-completing students felt had been misleading and which they did think suitably reflected the real experience (Yorke, 2000)

- *Results day and the start of clearing ("during")*

The "during" stage is understood to occur during August when A level exam results are released in the UK and the clearing process begins. Clearing is the process that allows aspiring undergraduate students to find any remaining spare places universities might still have available for the coming year (UCAS, 2017). This is a key stage in the decision making process, as UKCES (2011) highlighted when they reviewed Parson's model dating back to 1909. The model suggests that in order for an individual to achieve the 'right' position, three things must be achieved:

> *'first, an accurate understanding of their individual traits (e.g. abilities, aptitudes, interests, etc.); second, knowledge of jobs and the labour market; and third, made a rational and objective judgement about the relationship between these two groups of facts.'*
>
> (UKCES, 2011, p.64)

For some aspiring undergraduates coming directly from sixth form/college this is the first time that they know 'what' their grades are, and ergo which university places are now available unconditionally to them. There is relatively little time given that results are typically released mid-August and freshers' weeks generally starts mid-September, so decisions must be made quickly.

- *Freshers' week ("after")*

Freshers' week covers the first week of the academic year, which typically features a series of events that are put on specifically for new undergraduates (Collins, 2017). This stage looks to ascertain whether the information aspiring undergraduates have received has adequately prepared them. A 2012 survey (Cambridge Assessment, 2012) found that 60% of universities had to provide extra support classes, typically in writing and independent learning skills, because students were not adequately prepared. More generally several core factors have been identified that can cause aspiring undergraduates to prematurely leave their studies and 'dropping out':

− *'previous unsuccessful attendance at university;*
− *living away from the family home;*
− *English not the first language;*
− *late application through Clearing System;*

− *low priority of course choice;*
− *no previous immediate family attendance at university;*
− *work commitments;*
− *having no friends in the class at the start of studies.'*

(Smith and Beggs, 2003, p.2)

2.4.5 Barriers to successful progression into Higher Education

Literature has identified the following challenges as hurdles to successful progression into Higher Education:

Finance

'Finance is a core concern for students …'

(CBI, 2013, p.5)

Unsurprisingly cost has been identified as a key area of concern for aspiring undergraduates (CBI, 2013). Even for those that have progressed into Higher Education reports from the National Union of Students have divulged that 25% of undergraduates nearly didn't apply at all due to financial worries (TES, 2009). It has been a concern that the increase in tuition fees could act as a hurdle for students of lower income families and to those that are the first in their families to attend university: for whom attending university is not considered normative (DCSF, 2011). There is some conflicting evidence though as to whether this has turned out to be the case; there has indeed been a significant decrease since 2012 in university applications from those aged 20 years or more (UCAS, 2017). However, university applications from those aged 18 in 2017 are higher than they ever have been (UCAS, 2017); this was also the case for disadvantaged (established using the POLAR3 classification system) aspiring undergraduates whose applications were the highest on record in 2017 (UCAS, 2017).

'2012 saw a 40% drop in applicants to study higher education part-time. It is unavoidable fact that this drop coincided with the student fee reforms.'

(CBI, 2013, p.21)

What has been recorded since the increase in tuition fees is a decrease in the number of students applying to study on a part-time basis (CBI, 2013). Although opinions that increases in tuition fees are the reason for the drop in part-time applications is not unanimous. An alternative argument is that there has been a shift in what aspiring undergraduates expect from universities, '*students now expect their university to fit around their lives rather than vice versa'* (Byrne and Flood, 2005, p.114).

Information asymmetry

> *'Information asymmetry blights the system: access and visibility to learners of all ages must be improved …'*
>
> (CBI, 2013, p.5)

As prior evidence has alluded not all aspiring undergraduates receive the same amount or quality of advice and guidance (Ofsted, 2013); however this patchy and/or inconsistent provision of data is not limited to aspiring undergraduates alone. The same principle applies to other actors (i.e. that support learners); academics, for example, have indicated they know little about A levels and that an increase in communication between schools/colleges and universities might improve the situation (Cambridge Assessment, 2012).

Timing

> *'Learners need access to the right information and at the right intervals to be able to make informed decisions.'*
>
> (CBI, 2013, p.22)

It has been suggested that information is needed at a far earlier stage (DCSF, 2011). GCSEs determine which A levels a student is able to take, which subsequently govern which options remain open to aspiring undergraduates at university (The Russell Group, 2012). Therefore advice and guidance in Year 11 (when students are 15 years old) should incorporate a larger view of the transitions

that students will go through and cover progression post-16, and post-18 (DCSF, 2011). It is also believed that this might help guard against peer/parental pressure and hearsay later on (DCSF, 2011). There is also an argument for the earlier delivery of information to aspiring undergraduates as more than half of aspiring undergraduates start in the first year of college/sixth form and only a quarter leave their data collection until their final year of school/college (Hobsons, 2007).

It has also been suggested that there needs to be an improvement in the turn around time of advice and guidance materials for aspiring undergraduates as employers have observed that the information being provided to aspiring undergraduates is out of date (UKCES, 2012).

Preparedness

'… the transition from school to university can be a particularly difficult and unsettling experience for many students as they are entering an unfamiliar domain'

(Byrne, M. and Flood, B., 2005, p112-113)

A lack of preparedness in aspiring undergraduates for HE (Higher Education) study is a common and not altogether new problem (e.g. Byrneand Flood, 2005). If new undergraduates lack many of the skills necessary this creates a considerable learning curve for them, which may contribute to their dropping out (Cambridge Assessment, 2012). For instance, awarding body AQA has advocated the use of referencing (e.g. Harvard) in their examination papers on the basis that this will be a skill students will need later on at university (CERP, 2010).

There is concern from the academic community that students arriving at university are not capable of working at the appropriate level and that this is subsequently creating pressure on teaching staff to get students through the course (Civitas, 2005). A survey concluded that 48% of academics had felt pressured into giving a student that was not up to scratch a pass and 71% thought the university had enrolled learners who were ill-suited and incapable of studying at the necessary level (Civitas, 2005). In addition 42% of academics had reportedly found that when

they did fail a student that their decision was overturned by superiors and 20% admitted overlooking plagiarism (Civitas, 2005).

'The top three areas in which new undergraduates were considered to be least prepared were: (i) critical / higher order thinking skills, (ii) academic writing skills, and (iii) independent inquiry / research skills.'

(Cambridge Assessment, 2012, p.1)

Academics observed that whilst students were accustomed to taking exams they lacked analytical skills (Cambridge Assessment, 2012). Grades achieved prior to university appeared to be of little consequence and university teaching staff thought that newly enrolled undergraduates were generally ill prepared regardless (Cambridge Assessment, 2012). However, certain subjects were considered better preparation for university; for example history, which helped equip aspiring undergraduates with useful writing skills (Cambridge Assessment, 2012).

These concerns are not confined to academia, 37% of 500 businesses surveyed stated that the literacy/numeracy of employees they had hired directly from school was inadequate leading 33% of them to deliver training to address shortfalls (Civitas, 2005).

Demographic groups

Several demographic factors have been identified in literature that are worth noting. The intention is not to put undue focus on actively seeking out these issues, but to create an awareness of the challenges that exist for different aspiring undergraduates. These include:

- Family units

' … new pressures and influences are making progress more unstable, particularly for those without supportive families.'

(DCSF, 2007, p.12)

Not all families support academic aspirations (DCSF, 2007), and these aspiring undergraduates in particular have been described as a '*small but significant group*' (DCSF, 2007, p.12). This influence from family, positive or negative, should not be underestimated as it has been shown that '*parents' educational attainment to children's academic achievement is indirectly related through parents' educational expectations and specific parenting behaviors*' (Davis-Kean, 2005, p.303). This is perhaps unsurprising given the tendency more widely for individuals to inherit the social economic status of their parents (Gofen, 2009); ergo '*first-generation students are an exception to the rule'* (Gofen, 2009, p.1). Research has suggested however that first-time students tend to attend university because of special familial relations and support, rather than in spite of them (Gofen, 2009).

First-generation students can find the transition into HE (Higher Education) challenging not least as they experience '*substantial cultural as well as social and academic transitions*' (Gofren, 2009, p.4). This can result in a culture shock and aspiring undergraduates can lack some support from parents that don't possess this knowledge (e.g. of academic expectations), consequently first-generation students tend to receive less help in the initial processes of deciding where and what to study (Gofen, 2009).

- Public versus private schooling

The intake of students from independent schools is disproportional and considerably greater than might be expected (IoE, 2010). This is amplified for certain subjects (e.g. Science, Technology, Engineering and Maths) and indeed leading universities are dependent on the supply of students from independent schools to these areas (IoE, 2010). To illustrate just how much of a steer this puts on the destination of students:

> *'Just over half of all entrants from independent schools are admitted to the top 20% of universities (based on The Times 2010 league table of UK universities)'*
>
> (IoE, 2010, p.8)

'The higher the ranking of the university, the greater the proportion of independent school entrants in SIV subjects: for example, they account for almost 50% of Oxbridge entrants to these subjects.'

(IoE, 2010, p.8)

Clearly there is a strong link between top universities and private schooling for those that can afford it (IoE, 2010). Indeed '*independent schools have increased their share of places at the top 10 UK universities in recent years despite the efforts and resource devoted to the government's widening participation agenda'* (IoE, 2010, p.9).

- NEETs

'For these young people, entrenched personal problems and social exclusion have meant that they have often been beyond the reach of the public services designed to help them.'

(DCSF, 2007, p.12)

NEETs (those Not in Education, Employment or Training) have been a subject of concern for some time (e.g. Bynner and Parsons, 2002; DCSF, 2007; Mascherini et al., 2012; Mirza-Davies 2014). This is of interest within the context of this study as the prevalence and popularity of social media might arguably provide a better medium with which to communicate and interact with this particular group.

2.5 LITERATURE REVIEW: A SUMMARY

University places are in increasing demand and participation rates are increasing; despite this there is a notable lack of well defined and commonly agreed upon basic terms (e.g. 'careers advice'); this is arguably compounded by changing educational policies, which continually alter the context (e.g. the introduction and raising of tuition fees).

Different actors involved in the transition and support of aspiring undergraduates agree principally on two things, firstly they commonly recognise the importance of IAG (advice and guidance), and secondly they agree that current provision is not as

good as it could be. The primary challenge identified throughout the literature review however was a tendency for IAG literature to reiterate a need for better IAG but a lack of detail or suggestions on how these improvements might be carried out. For example:

> *'We need a comprehensive new approach to advice and guidance …'*
>
> (CBI, 2013, p.22)

In summary: the review of literature suggests a potentially under-researched and under-supported (NCC, 2014) group of active social media users. However whilst a gap may have been identified, arguably literature has also helped outline the case for a way to potentially address this gap. The popularity and use of social media amongst the target audience is high and a methodology using Twitter provides an opportunity to learn about the information behaviour of aspiring undergraduates and to subsequently address the research objectives (see section 1.2.2).

An additional final consideration is that of appropriate challenge, which whilst discussed more widely in other contexts (e.g. challenge based learning in schools) was not found in literature here but could be a consideration with relevant transferable consideration. In this context appropriate challenge would mean that that Higher Education should offer aspiring undergraduates **an appropriate level of challenge** and that the aim is not to remove all hurdles (i.e. to be accessible for all) but that a level of difficulty is suitable. As such, some difficulties might be expected especially given that to date many aspiring undergraduates have had their educational transitions managed for them (e.g. by parents between primary and secondary schools). For aspiring undergraduates coming to university directly from school/college this will be the first time that they have been responsible for such a transition that has personally potentially life-changing consequences.

3 NEEDS ASSESSMENT

3.1 INTRODUCTION

This chapter seeks to address research objective 2a (see 1.2.2), which aims to study the information behaviour of aspiring undergraduates, the first step of which is to establish the information needs of aspiring undergraduates. The following sections of this chapter will address this methodically, by:

1. Clarifying what this study understands 'information needs' to be.
2. Explaining what a needs assessment is, and how it might be carried out.
3. Using a framework to carry out an assessment of needs for aspiring undergraduates using existing literature.

It is important to understand that this chapter sits, as a hinge, between the research objectives (see section 1.2.2.) and the methodology (chapter 4). The needs assessment here provides the framework not only to address objective 2a, but for the research questions themselves, which follow in both the methodology (chapter 4) and the analysis (chapter 5).

3.1.1 Understanding 'information needs'

The definition of 'information need' has been a topic of debate for some time (Wilson, 1981; Wilson, 2006); not least as, for example, telling the difference between an individual's 'need' and a 'want' can be challenging (Wilson, 1981). In the context of this research 'information need' is understood to be a concept that consists of the following set of characteristics; '*subject, nature, function, viewpoint, authority, quantity, quality, place of origin, speed of delivery, and processing/packaging'* (Nicolas and Martin, 1997, p43). Information need is important as it forms *'a theory for the motivations of information-seeking behaviour'* (Wilson, 1981, p.3); however, Nicholas and Martin urge researchers to proceed with caution here as there have been debates on the value of needs assessments (Wilson, 1981; Cronin, 1981; Nicholas and Martin, 1997). Some researchers (e.g. Wilson) have, for example, favoured assessments of use over information needs assessments (Nicholas and Martin, 1997).

As Case observes (2012) one of the challenges of a 'need assessment' is that a lot of the time when 'information need' is being discussed what are really being examined are 'information seeking behaviours' (Case, 2012). This is because assessing needs are difficult because '*they exist in someone's head*' (Case, 2012, p.87). The key case in favour of an assessment of needs over an assessment of use for this study is that assessments of use focus on provision and information systems rather than the user (Nicholas and Martin, 1997); whereas here the focus lies on aspiring undergraduates and their information behaviour, which are being considered through their information needs. This research however concurs with Case's assessment that in this context what this will uncover and subsequently discuss are 'information seeking behaviours' (Case, 2012), but would argue that this is not problematic given that these views are complementary to each other rather than being contradictory.

Nicholas and Martin (1997) used the characteristics that they had identified as constituting 'information need' and built them into a framework, the structure of which can be used to conduct an assessment of information needs (see table 3.1), (Nicolas and Martin, 1997). This particular information needs framework has been selected for two reasons; firstly, it incorporates the earlier works of Line (Line 1969; Line 1974), which was an early skeleton framework which was practical but lacked detail (Nicolas and Martin, 1997), and secondly it has been well received by key figures including critics (e.g. Wilson), (Nicolas and Martin, 1997).

Table 3.1. Nicholas and Martin's adapted needs assessment framework (Nicholas and Martin, 1997):

Needs assessment framework:

- <u>Characteristics of information need</u>: subject *(information purpose and function),* nature (*intellectual level),* viewpoint, quantity and quality/authority, speed of delivery, and processing/packaging.
- <u>Obstacles that stand in the way of people (*aspiring undergraduates*) meeting their information needs, notably:</u> training, time, resources, access and information overload.

(Nicholas and Martin, 1997, pp.43)

Sections 3.2 and 3.3 summarise relevant literature for the characteristics and obstacles detailed in Nicholas and Martin's information needs framework (see table 3.1), (Nicholas and Martin, 1997). As this framework has formed the basis for the research questions (see section 1.2.3), the research questions have been used as sub-headings (e.g. section 3.2.1); this has been done to help form a baseline. The research has then been able to draw together answers to each research question from both the needs assessment here (chapter 3), and the analysis (see chapter 5), as part of the data synthesis process in chapter 6.

It should be noted that the volume of evidence for each research question is not even: they are a direct reflection of the literature and as such some areas have larger bodies of research than others. All of the sections are presented in order regardless of the amount of evidence that could (or couldn't) be located as the gaps had the potential to be just as interesting (e.g. a potential early indicator that this research may be able to contribute knowledge later on).

Finding recent evidence remained a challenge in conducting this needs assessment, as it had previously in the literature review section on education (see section 2.4.1). Limited relevant evidence has resulted in a reliance on a small number of older texts: as such the relevance of the material is arguably questionable, and, given the lack of data it was simply not possible to gauge any common academic consensus from such a small sample. As such findings were limited in that the material did not have the scope or depth to be able to facilitate, for example, multiple points of view and for/against-type debates. The evidence has been included in order to provide a baseline, however given that many of the references are, at least, a decade old means that this should be viewed more as a historical baseline. As more evidence could not be found in the time allotted for this study this does suggest that even if material does exist, that it is certainly not abundant and as such this lack of evidence arguably presents a case for this research; in essence that this study is considering aspiring undergraduates in a context that we know little about.

3.2 CHARACTERISTICS OF INFORMATION NEED

3.2.1 Subject

What kinds of information are aspiring undergraduates asking for?

'Subjects' here are understood to be topics of interest (e.g. grades) among aspiring undergraduates and should not be confused with specific degree course 'subjects' (e.g. architecture); specific course topics are considered under the larger subject heading of 'course and course content' below. Subject areas that aspiring students have reported to be of interest and/or of importance to them have been identified as follows:

- Reputation (Moogan et al., 1999)
- Accommodation (Moogan et al., 1999)
- Financial (Moogan et al., 1999)
- Grades needed (Moogan et al., 1999)
- Location and size (Moogan et al., 1999)
- Progression and career prospects (Moogan et al., 1999)
- Social reasons (Moogan et al., 1999)
- Course and course content (Moogan et al., 1999; Renfrew et al., 2010)
- University facilities (Moogan et al., 1999).

Each of these subject areas have been explored in more detail below:

- ***Reputation***

Official league tables are not the only way aspiring undergraduates consider a university's 'reputation', they are also interested in what university students think of their institutions via student satisfaction ratings (Renfrew, et al., 2010). When aspiring undergraduates are surveyed about what they consider to be 'very useful' information university students' satisfaction with the quality of teaching comes 1st, and satisfaction rates with courses come 2nd (Renfrew, et al., 2010). Other satisfaction rates considered 'very useful' by aspiring undergraduates are; satisfaction with support and guidance (ranked 5th), satisfaction with feedback on assessment (ranked 6th), and satisfaction with the university library (ranked 8th), (Renfrew, et al., 2010).

- ***Accommodation***

Focus groups of aspiring undergraduates cite accommodation as one of the types of information they most frequently search for (alongside course content and finance), (Renfrew, et al., 2010). However, the same focus groups observed that aspiring undergraduates were '*unaware of much of the information*' available (Renfrew, et al., 2010, p.6), which possibly suggests that whilst aspiring undergraduates had searched for this type of information they had not necessarily been successful in finding it.

It has been suggested that university students' possess their own unique perceptions when it comes to accommodation (Oppewal, et al., 2005), which implies a wide range of individual preferences. Hypothetically then this may make aspiring undergraduate searches for information, and indeed the provision of information, more complex given the potentially wide range of information that might be considered suitable.

- ***Course and course content***

Focus groups of aspiring undergraduates identified information on university courses, and their content, as being the most sought after (Renfrew, et al., 2010). However, despite their reported desire for this type of information the same focus group participants were unaware of relevant sources of information that were available to them (Renfrew, et al., 2010). One possible explanation for this was that the researchers (Renfrew et al.) observed that aspiring undergraduates displayed a lack of awareness of how relevant information related to their potential choice of course was (Renfrew, et al., 2010).

Specific types of information that aspiring undergraduates were interested in included; how satisfied existing students were on the course, what the standard of teaching on courses was like, and how many hours of teaching time courses included (Renfrew, et al., 2010). This caused Renfrew et al. to conclude that the types of information aspiring undergraduates were interested in was at course rather than institution level (Renfrew, et al., 2010).

- ***Financial***

Aspiring undergraduates participating in a focus group ranked finance, understood as costs that would be incurred by attending university, in the top three most frequently sought after subjects of information (alongside course content and accommodation), (Renfrew et al., 2010). Despite considering information on costs '*most useful*' (Renfrew, et al., 2010, p.9), aspiring undergraduates displayed a lack of awareness of many relevant sources of information (Renfrew, et al., 2010).

The type of detailed financial information that aspiring undergraduates were interested in include (in order of popularity): the '*cost of the halls of residence*', the '*maximum available bursary*', and the '*maximum household income for eligibility for a bursary*' (Renfrew, et al., 2010, p.4). Debt is an effective deterrent for some aspiring undergraduates interested in pursuing Higher Education; a study has found that 59% of those that ultimately decided not to attend university said that the prospect of being in debt had influenced their decision (Davies et al., 2008). This debate is still ongoing, and remains a major concern for aspiring undergraduates and university students (BBC, 2018).

Costs and debt were still concerns and influential factors for aspiring undergraduates that did want to continue into Higher Education; 42% of students whose families earned less than £35,000 per annum were considering attending a local university (Davies et al., 2008, p.1). A total of 72% of aspiring undergraduates that were intending to continue living at home while studying '*cited a desire to minimise debt as 'important' or 'very important*' (Davies et al., 2008, p.1). In total 31% of aspiring undergraduates reported that trying to stay out of debt had been a key factor in deciding where they wanted to study (Davies et al., 2008).

Despite the influence that costs and the prospect of debt has on the decision making of aspiring undergraduates (Davies et al., 2008), students only tend to use a small limited amount of the information sources available regarding financial support (Davies et al., 2008). They have, in summary, a '*low level of knowledge about the new arrangements for financial support*' (Davies et al., 2008, p.3), for example:

- '*Nearly three quarters of students in our questionnaire reported that they do understand what is meant by a bursary*' (Davies et al., 2008, p.3).
- *'Nearly thirty percent replied that they thought they were eligible for a bursary, but importantly nearly half did not know'* (Davies et al., 2008, p.3).

It is interesting to note that the '*proportion of students believing that they would be eligible for maintenance grants was much lower than the actual proportion receiving such grants*' (Davies et al., 2008, p.3), and yet *'Less than one third said they had actively searched for information about bursaries*' (Davies et al., 2008, p.3). So there is a possible risk that aspiring undergraduates might miss financial support they could be eligible for simply because they aren't looking for it. One possible reason for aspiring undergraduates' low level of general knowledge regarding financial support is that the nature of financial support that tends to be provided in sixth forms/colleges relates to money management (e.g. budgeting), rather than grants, bursaries and scholarships (Davies et al., 2008). Information on financial support is also generally not provided at an early enough stage; Davies at al., concluded that '*many students are only introduced to the options after they have effectively made their decisions'* (Davies et al., 2008, p.3), and that this resulted in a '*complex range of options*', that '*discourages efficient decision- making*' (Davies et al., 2008. p.4).

- ***Grades needed***

Aspiring undergraduates from public schools were more confident in their ability to secure good grades compared to those from state schools (Davies and Qiu, 2016). There was, overall, a positive relationship between the self-confidence that aspiring undergraduates had to achieve good grades and the marks learners actually received (Davies an Qiu, 2016).

There were two demographic factors that were reportedly influential in relation to the predicted grades that learners receive (e.g. before taking their A levels); firstly a small disparity has been found in the optimism of predicted grades between male and female students with predictions for male learners being more optimistic than those for their female counterparts (Delap, 1994). Secondly there is a small difference between the optimism of grades depending on a students age with grades for older learners aged 19 years or older being higher than those aged 18 or

younger (Delap, 1994). What has not been found in literature however has been any indication of how the delivery of predicted grades as a source of information might relate to aspiring undergraduates confidence and their decision making processes; for example whether higher than expected predicted grades might raise a learners confidence and encourage them to select a university with higher grade requirements.

- ***Progression and career prospects***

Aspiring undergraduates display a slight preference for information about employment, and employment rates over information on prospective earnings (Renfrew, et al., 2010). Interest in this area differed depending on whether the individual in question was applying to one of the top rated universities (e.g. Oxford or Cambridge University); aspiring undergraduates applying to these institutions were more likely to consider employment information '*very useful*' (Renfrew, et al., 2010, p.8).

Long term financial information and considerations have been found to have an influence on students decision-making early on in their academic career; research has found that providing students aged 15-16 with information on graduate salaries influences which A levels they subsequently choose (Davies and Qiu, 2016). Unsurprisingly then later on aspiring undergraduates' interests and motivations towards university are still found to correlate with their perceived future earning potential (Davies and Qiu, 2016) and potential salaries have been found to be an influential factor in the decision making process (Davies and Qiu, 2016). However, it should also be noted that aspiring undergraduates' expectations of graduate salaries are frequently inaccurate (Davies and Qiu, 2016), and they have a tendency to consistently over-estimate graduates earning potential (Davies and Qiu, 2016). These financially ambitious convictions tend to be particularly strong for subjects that aspiring undergraduates themselves are interesting in studying (Davies and Qiu, 2016).

Other subjects that were referenced but were not widely commented on included:

- Location and size

- Social reasons
- University facilities

3.2.2 Nature

How do they go about asking these questions?

Just because an aspiring undergraduate has the capacity does not mean that they won't adopt the path of least resistance and use methods that are less cognitively demanding (Research Digest, 2015). This question is somewhat complex as there is evidence to suggest that even when aspiring undergraduates consider a piece of information to be really useful, this does not automatically mean that they will actually try to search for it (Renfrew et al., 2010). Research conducted by Renfrew et al. sought to establish two things; firstly what aspiring undergraduates considered to be 'very useful' information, and secondly the extent to which the same individuals tried to search for the information they reportedly valued. The research concluded that more than 25% had not made any attempt to find any of the information at all (Renfrew et al., 2010). Even the most highly prized pieces of information (e.g. student satisfaction rates) were only actively looked for by 66% of the sample (Renfrew et al., 2010). Renfrew et al., (2010) also conducted some in-depth focus groups and although the aspiring undergraduates displayed an appetite for slightly different subjects compared to surveys (i.e. their primary interests related to courses and finance) their information seeking habits (or lack thereof) were observed to be similar (Renfrew et al., 2010). Again, few aspiring undergraduates were reported to have actively sought out the information, despite considering it useful (Renfrew et al., 2010).

Whilst Renfrew, et al. (2010), were not able to conclusively explain this behaviour they observed that a '*possible explanation is that prospective students were unaware that these data might be accessible'* (Renfrew, et al., 2010, p.6). Although they also noted that when aspiring undergraduates had attempted to locate the information that the majority had been able to find what they had been looking for (Renfrew, et al., 2010), which brought the researchers to the following conclusion:

'Many prospective students do not look for information even when they think it would be very useful. Therefore, an approach … will need to change the way in which they are guided towards available information and made aware of the importance and use of that information. '

(Renfrew et al., 2010, p.6)

Do students believe they can achieve the grades necessary?

Whilst evidence could be not found that addressed this question specifically, there is some related data that has some potentially transferable considerations. In particular whilst evidence did not establish what aspiring undergraduates thought of their own capabilities, it did allude to their understanding and beliefs about the nature of information more generally, notably:

- Giving aspiring undergraduates certain information (this could include predicted grade data), *'does not guarantee that prospective students will consider the information when making decisions or understand why they might do this'* (Renfrew et al., 2010, p.12).
- Aspiring undergraduates only consider a small restrictive amount of information to be a 'priority' (Renfrew et al., 2010, p.13).

Subsequently research has suggested that additional and/or new sources of information are unlikely to get much use (Renfrew et al., 2010), as aspiring undergraduates are not currently using existing available resources. The importance of IAG (advice and guidance) has instead been reiterated here because '*information provision does not equate with IAG*' (Renfrew et al., 2010, p.12). The implications for this research question are, in summary, that even if students are presented with estimated grade and/or performance information, it is unclear to what extent it might be considered valid or important.

Information searches start following 'problem recognition', in this case when students decide they potentially wish to attend university (Moogan et al., 1999). Aspiring undergraduates however are not a homogenous group and problem recognition occurs at different times for different students. For example: most students studying engineering at university claim that they always intended to go to

university (Hobsons, 2007), so their problem recognition may happen at an earlier stage than it does for others.

Certain demographic groups also have a greater desire for information (Renfrew et al., 2010). Demographic groups that have a higher participation rates in university in particular display a greater need for information, which include female, Asian and high performing aspiring undergraduates (Renfrew et al., 2010).

In summary the decision-making behaviour of aspiring undergraduates will alter depending on the person in question and their own unique context (Moogan et al., 1999). That being said as they are travelling through a required set of steps in order to reach their goals; their decisions are being made based on grade *estimations* and this is a critical factor in how aspiring undergraduates change their views and make decisions (Moogan et al., 1999).

Are they capable of completing the UCAS form successfully?

Whilst no literature could be found that addressed this question specifically there were two considerations with potentially applicable observations:

1. Interviews with careers advisors in schools have found that they have '*concern about the technical language used in information about HE, which can be a barrier to understanding and to making comparisons*' (Renfrew et al., 2010, p.14). In particular careers advisors have speculated that this might be particularly challenging for first-generation aspiring undergraduates, and/or, those that don't have access to support (Renfrew et al., 2010).
2. There has also been evidence indicating that aspiring undergraduates don't want complex information, even if the complex system were capable of providing, for example personalised data (Renfrew et al., 2010).

These points suggest that if aspiring undergraduates find certain aspects of the UCAS application form challenging that they might struggle with complex and/or technical language.

3.2.3 Viewpoint

Who are aspiring undergraduates asking (i.e. different actors)?

From the perspective of aspiring undergraduates the search for information and knowledge is, in part, so that they can '*feel more confident about making a decision*' (Moogan et al., 1999, p.213). Therefore gaining knowledge from others (e.g. teachers) is a method of reducing the perceived risk (Moogan et al., 1999). If we consider who aspiring undergraduates report to have consulted regarding Higher Education the key different actors are as follows:

- *Teachers*
- *Parents*
- *Themselves*
- *Friends*

(Source: Moogan et al., 1999, p.218)

Literature also included references to '*careers advisors, employers and sector stakeholders'* (Renfrew et al., 2010, p.10), albeit to lesser degrees. Relevant literature was found to reflect these four different actors (teachers, parents, aspiring undergraduates themselves and friends) and key findings have been presented for each below.

Do actors cover different subject areas?

- Teachers

> *'… young people have talked about the importance of 'trusted adults' who can encourage and support them to engage in new experiences and opportunities.'*
>
> (DCSF, 2007, p.79)

Later on in their educational lives teachers are perceived to be important for IAG in relation to qualifications and university (Hobsons, 2007). However, in comparison learners did not perceive advice from careers advisers to carry much weight (Hobsons, 2007), although there was no additional evidence to suggest why this might be the case.

Aspiring undergraduates are '*not equally receptive to feedback, guidance, or coaching, even from trusted mentors*' (Dobrow and Tosti-Kharas, 2012, p.266). Factors, which influence how receptive an aspiring undergraduate is to advice from a mentor, such as a teacher, include:

- Timing. Notably whether the advice comes during times of transition when individuals tend to be more receptive (Fiske & Depret, 1996; Roberts, Dutton, Spreitzer, Heaphy, & Quinn, 2005).
- Whether the advice is positive or negative; if advice is considered to be negative then the aspiring undergraduate is more likely to resist (London and Smither, 2002).
- Self-perceptions: notably whether the advice that is received is considered to be consistent with the aspiring undergraduate's self-perception (Dobrow and Tosti-Kharas, 2012, p.266); if it is not then the aspiring undergraduate '*might classify this negative feedback as being inconsistent with positive feedback received from other sources. They then view the negative feedback as inaccurate and therefore ignorable'* (Dobrow and Tosti-Kharas, 2012, p.267-268).

From a teachers perspective giving advice can be equally complex and '*teachers often feel conflicted about what type of career advice if any, to provide'* (Dobrow and Tosti-Kharas, 2012, p.276); this is reportedly particularly true when teachers advise young students, which can be seen as difficult because teachers don't want to dishearten and/or discourage students by delivering negative feedback (Dobrow and Tosti-Kharas, 2012).

- *Parents*

It has been observed that as the attendance of undergraduates from middle class families has grown at universities over the years that when these graduates subsequently go on to have children of their own they then encourage them to consider university (Moogan et al., 1999). This is perhaps unsurprising given the link between the education parents and their children (Moogan et al., 1999); typically aspiring undergraduates whose parents attended university will have been encouraged to consider their educational future far sooner (Moogan et al., 1999).

It should be remembered that aspiring undergraduates are not necessarily making decisions alone. The effects of having a positive and trusted role model cannot be underestimated and are well proven (DCSF, 2007), 22% of students surveyed reported turning to family/friends for support (LSC, 2008). Parents are key in decision-making processes, though there is a difference in who children might turn to depending on the type of support being sought (Hobsons, 2007). Maternal figures are important and tend to be consulted on matters such as education; however, if the advice relates to employment (e.g. seeking a suitable employer) then learners tend to seek a male/father figure (Hobsons, 2007).

There is nothing to say that the trusted adults that aspiring undergraduates turn to for help necessarily know about, or, understand the educational system with its myriad of different options and pathways (NFER, 2010). In a 2010 survey more than 80% of respondents were not convinced that parents had enough knowledge to be able to counsel their children (NFER, 2010).

In terms of adolescent activity on social media: there is a disparity between parent's perceptions of their teenager's online activity versus what is actually happening. In a 2013 survey conducted by McAfee, 21% of parents believed that their child wasn't a member of any social media sites compared with 100% of children who said that they were (McAfee, 2013). The same study found that 13% of children had lied to get around restrictions their parents had put on the Internet and 19% had lied to their parents about online activities (McAfee, 2013).

- Aspiring undergraduates themselves

In terms of what perceptions aspiring undergraduates have of university before they arrive, it is largely as anticipated, '*improving knowledge and education*' was the main impression for 29% of aspiring undergraduates (Moogan et al., 1999, p.218). '*Being hard work'* was the main impression for 14%, and a smaller 6% see universities as being '*big with a lot of facilities*' (Moogan et al., 1999, p.218).

The information that aspiring undergraduates reportedly want is similar to that which '*information advisors, employers and sector stakeholders feel they need'* (Renfrew et al., 2010, p.10), with one notable exception; information advisors, employers and

sector actors did not perceive student satisfaction ratings to have the same value that aspiring undergraduates did (Renfrew, 2010, p.10).

There are also a softer set of impressions and assumptions that aspiring undergraduates have of university life that don't directly relate to education. Nearly a quarter of aspiring undergraduates (23%) saw university as a place to '*enjoy living/socialising*', for 17% it was about '*gaining independence and becoming self-motivated*', and for 11% it was about '*meeting friends for life*' (Moogan et al., 1999, p.219). Aspiring undergraduates also made general references to the 'experience' that learners have at university socially as motivating factors for attending (Moogan et al., 1999, p.220).

Students do not always see the value in certain skills (e.g. digital literacy), (Andretta, Pope and Walton, 2008). There is an assumption that because they can use a computer, or, because they have no interest in computers that that they don't need digital literacy (Andretta, Pope and Walton, 2008). Some learners either perceive skills such as information literacy as merely an extension of ICT, or, because they believed themselves to be IT literate, a waste of time (Andretta, Pope and Walton, 2008). This misunderstanding of what skills, such as digital literacy are and what they have to offer can be problematic at university and as the following example illustrates some universities have addressed this challenge by embedding the learning of these skills into their courses:

> *'Our approach at the Open University is to embed those skills rather than make them explicit. You come in because you want to learn history, not digital skills. If you ask people whether they need digital skills, they say, "Oh no, I don't need that", but actually they do.'*
>
> (Professor Martin Weller, The Open University, House of Lords, 2015, p.770)

- Friends and peers

Peer groups have a strong influence on aspiring undergraduates (Moogan et al., 1999). If an aspiring undergraduate's peer group are likely to attend a particular university then it becomes increasingly likely that they will also apply (Moogan et al.,

1999). Close friendships are especially influential as '*The individual learns the behavior appropriate to his position in a group through interaction with others who hold normative beliefs about what his role should be, and who reward or punish him for correct or incorrect actions*.' (Brim, 1966, p.9). However, the degree of sway that even close friends have is not the same for all aspiring undergraduates; females for example tend to be influenced more by peers than their male counterparts (Davies and Kandel, 1981). Potential influence also increases relative to the length of time that an individual has spent among friends and/or peers (Curtis, 1974); therefore the longer an aspiring undergraduate has been around a peer group and/or friends the stronger that peer/friend influence will be.

While aspiring undergraduates may try to assess their own perceived suitability for university they will also attempt to gauge the reactions that close friends will have in response to their choices (Hurrelmann and Engel, 1989). Aspiring undergraduates also try to anticipate and to prepare for how their social status will alter going to university (Hurrelmann and Engel, 1989); this "anticipatory socialization" is, '… *the acquisition of values and orientations found in statuses and groups in which one is not yet engaged but which one is likely to enter*' (Merton, 1968, p.438-439).

Research does not always agree on how the influence of peers compares to that of trusted adults such as teachers and parents. In some cases peers are reported to be more influential (Moogan et al., 1999), whereas other bodies of research have concluded that parents have the strongest influence on the decisions of aspiring undergraduates (Davies and Kandel, 1981; Moogan et al., 1999).

3.2.4 Quantity and quality/authority

Is quality an issue, does incorrect information get shared?

Whilst no research could be found that examined misinformation in this context, there were examples of aspiring undergraduates using unofficial sources of information. '*Word of mouth*' and '*friends*' are both frequently reported as being commonly used resources (Moogan et al., 1999 p.219). These sources have no quality control procedures and therefore there can be no guarantee that the information being shared is accurate. More generally it has been noted that there

can be huge differences in '*the extent to which students had accessed any formal career advice*' (Renfrew et al., 2010, p.7).

Who do different actors recognise as an authority (influence)?

Both universities and UCAS are described as being '*used by different groups of students, and are "trusted" and recognised sources'* (Renfrew et al., 2010, p.12). The issue of trust is seen as being a barrier to any new emerging providers of information coming onto the scene as any '*new source of information would need to establish its credentials and be promoted effectively and aggressively (which would require significant expenditure and resource input)*' (Renfrew et al., 2010, p.12). Given that universities and UCAS are well-established and trusted by aspiring undergraduates it has been suggested that any future plans for improvement would do well to use these providers of information instead of attempting to re-write the rulebook and attempting to create something new (Renfrew et al., 2010).

There is something of a disparity in literature in terms of how aspiring undergraduates recognise existing university students and graduates. Aspiring undergraduates use and find student satisfaction ratings useful, and the importance they place on this type of information might suggest they hold it in high regard (Renfrew, et al., 2010). However, despite this, aspiring undergraduates are not interested in the qualities and/or traits of existing undergraduate students at universities (Renfrew et al., 2010). Researchers speculated that this disinterest in other students, for example those that drop out, occurred because aspiring undergraduates believed that these were individual cases that reflected only on those individuals (Renfrew et al., 2010).

3.2.5 Speed of delivery

What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?

In the timeframe permitted no information could be found that specifically considered the speed of the delivery of information to aspiring undergraduates.

3.2.6 Processing/packaging

Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?

Aspiring undergraduates have reported that they find it difficult to evaluate their final university choices based on prospectuses (Moogan et al., 1999): describing them as not being suitably '*user-friendly*' (Moogan et al., 1999, p. 223). Aspiring undergraduates typically wanted information that was easier to understand, and that clearly explained, in detail, the courses, timescale and career options (Moogan et al., 1999). Suggestions from aspiring undergraduates on how they thought prospectuses should be presented were varied. Some aspiring undergraduates had a preference for materials that were well designed, whereas others had more specific requests:

'There needs to be pictures of the University in general, together with course handbooks from individual faculties.'

'It would be helpful to have guides with details of the grade requirements too, instead of having to refer elsewhere for such details.'

(Moogan et al., 1999, p.223)

Open days were considered by aspiring undergraduates to be an important and useful way to narrow down their final university offers (Moogan et al., 1999). In particular the staff, organisation and presentation of open days left significant impressions on aspiring undergraduates (Moogan et al., 1999).

3.3 OBSTACLES TO ASPIRING UNDERGRADUATES MEETING THEIR INFORMATION NEEDS

3.3.1 Training

Do aspiring undergraduates have the skills they need to complete their application?

One of the reasons aspiring undergraduates reported to find the application process challenging was that they did not have much, if any, prior experience making decisions of this nature (Moogan et al., 1999); they also felt that they had lacked support during the application process (Moogan et al., 1999). In a survey over 40% of aspiring undergraduates stated that they found organising and managing data complicated (Moogan et al., 1999).

Teachers have concerns about their students' ability to locate reliable information (Bartlett and Miller, 2011). Bartlett and Miller's research (2011) found that 47% of teachers reported to have experienced arguments with pupils as a result of inaccurate internet-based information, and 18% said that this happened at least monthly (Bartlett and Miller, 2011).

From aspiring undergraduates' perspective: the inability to 'test drive' university and short timescales create anxiety and stress (Moogan et al., 1999). Research has suggested that more than half of aspiring undergraduates found that collecting the information they needed was difficult due to the myriad of potential institutions and courses that were on offer (Moogan et al., 1999); this reportedly results in the majority of aspiring undergraduates being '*afraid of making the wrong decision*' (Moogan et al., 1999, p.222). In addition, it is arguably difficult for students to be confident in their decisions given that their choices are dependent on grade estimations (Moogan et al., 1999). Whilst aspiring undergraduates can struggle to manage and prioritise data efficiently in light of grade uncertainty, some have explained that they have been able to overcome these challenges by either; consulting with teachers, and/or, by including options for different universities which require higher and lower UCAS points to allow for different grade outcomes (Moogan et al., 1999).

3.3.2 Time

Are there any key differences between the different stages of progression (before, during and after)?

Research recognises that the admission of aspiring undergraduates into Higher Education is a process and consequently this is not the first study to collect data in three stages (i.e. reflecting before, during and after stages), (e.g. Moogan et al., 1999). However, it is not possible to make direct comparisons here with other pieces of research (e.g. Moogan et al., 1999) as the timings of the data collection periods are very different and are therefore not directly comparable. For example, the research of Moogan et al. (1999) was conducted in three stages that took place over four consecutive months (Moogan et al., 1999). This is of interest as Moogan et al.'s research concluded that over a four month period that '*the stages were not necessarily discrete and sequential and fed back into each other'* (Moogan et al., 1999, p.217). In comparison the data collection periods being proposed here are far more spread out and represent the before, during and after stages of a 16 month journey. This methodology then will offer an opportunity to consider whether over a longer period the stages are distinct, or, whether they are still, as Moogan et al. (1999) found, that they are interrelated and comparable.

However, there are other valuable considerations to be garnered from preceding research: not least in terms of how we understand the importance of ***time*** throughout the transitional process. The choices that aspiring undergraduates need to make, repeatedly, over a long period has led researchers to describe the process as *extensive problem solving* (Kotler, 1997; Moogan et al.,1999). Time is important because factors such as deadlines are the parameters that help us understand the context for each data collection period. For example; many aspiring undergraduates typically receive their exam results in August, understanding the timing of this is important as it means that their decisions up until that point are based on estimations (Moogan et al., 1999), which can change.

Table 3.2 shows broadly 'when' aspiring undergraduates decide that they want to apply to Higher Education. A high proportion (78%) of aspiring undergraduates have already decided that they would like to apply to university before they enter their final year at sixth form/college (Moogan et al., 1999). However, samples with

wider age ranges of aspiring undergraduates (the control sample) show that they are more likely to decide that they want to apply closer to the UCAS deadline (Moogan et al., 1999). As more recent data could not be found it cannot be assumed that aspiring undergraduate habits have not changed; however, as many of the popular educational pathways remain (e.g. GCSE – A-level – Degree) the data provided a broad baseline against which later results could be compared.

Table 3.2. When do aspiring undergraduates decide to progress into Higher Education?

TABLE 1
Dates of decision to enter higher education

When did you decide to continue your studies?	Main Sample %	Control Sample %
Before June 1996	33	30
July to August 1996	45	27
September to November 1996	22	43

(Moogan et al., 1999, p.219)

Searches for information do not stop once application forms have been submitted (Moogan et al., 1999). As aspiring undergraduates frequently apply to more than one university they still need to narrow down their choices once they start receiving offers and there is considerable range in the amount of time they invest in this process (Moogan et al., 1999). As table 3.3 shows the amount of time that aspiring undergraduates spend evaluating universities varies (Moogan et al., 1999). The wide spread of different amounts of time needed to carry out this task by different aspiring undergraduates indicates that this process varies considerably from person to person (Moogan et al., 1999). What the table doesn't explain however is 'why' the length of time needed to conduct this evaluation differs (e.g. what are the influential factors).

Table 3.3. The amount of time aspiring undergraduates spend evaluating universities

Time spent evaluating alternative universities/colleges

How long did the evaluation process take place?	Main Sample %	Control Sample %
Couple of weeks	19	9
1 month	19	18
2 months	31	34
3 months	13	14
4–5 months	12	20
7 months or more	6	5

(Moogan et al., 1999, p.221)

3.3.3 Resources

If prospective students are referring to and/or using specific resources, what are they?

The cost of going to university is a significant financial investment; research that is conducted by both aspiring undergraduates and their parents has been described as '*pre-purchase information acquisition*' (Moogan et al., 1999, p.212). This likens the cost of attending university as being comparable to that of any significant financial investment or purchase. In addition *'the current and ongoing global financial situation has placed an emphasis on cost effectiveness and efficiency from the sector and the delivery of value for money'* (Renfrew et al., 2010, p.2).

Unlike a physical product (e.g. a car), which can be test driven prior to purchase what is being offered by universities is a service (Moogan et al., 1999; Roberts and Allen, 1997). This service cannot be trialed in the same way as a product and so given that the 'purchase' involves a sizeable financial investment this represents a risk (Moogan et al., 1999). Therefore open days, where aspiring undergraduates can sample lectures and acquire detailed information, can provide valuable knowledge. The numbers of parents attending university open days are increasing and the information being requested on these days is becoming increasingly detailed (Moogan et al., 1999). Whilst this cannot be directly attributed to the

increase in tuition fees it signifies that information seeking, and knowledge, is being seen as increasingly important by 'potential investors' (e.g. aspiring undergraduates and their families), (Moogan et al., 1999).

Whilst research overlapped, in terms of 'which' resources were reportedly being used by aspiring undergraduates (see table 3.4 below), the way and order in which they were ordered (e.g. in terms of popularity) differed. Table 3.4 provides a sample of the resources cited in literature along with an indication of the resources popularity/prevalence according to the source.

Table 3.4. Resources being used by aspiring undergraduates

Resource	**Source**
Careers fairs	• At least a quarter of students attended careers events/fairs (Hobsons, 2007).
Careers service and/or advisors	• Careers services were used by more than half of all aspiring undergraduates (Hobsons, 2007). • Half of aspiring undergraduates reported consulting careers officers (Moogan et al., 1999).
CD Roms	• CD Roms were mentioned but were reported not to be a commonly used source of information (Hobsons, 2007).
E-mails	• E-mails were mentioned but were reported not to be commonplace (Hobsons, 2007).
Library	• Students surveyed generally used the information located in the careers section of their library (Moogan et al., 1999).
Local jobs/careers centre	• Local careers centres were

	mentioned but were reported not to be a commonly used source of information (Hobsons, 2007).
Magazines	• Less popular but still used by at least a quarter of aspiring undergraduates were magazines (Hobsons, 2007).
Peers/parents	• A fifth of aspiring undergraduates reportedly used peers/parents as a source of information (Moogan et al., 1999). • 70% of aspiring undergraduates spoke to friends and family for advice (Renfrew et al., 2010).
Presentations from universities	• A quarter of students attended presentations from universities (Hobsons, 2007).
Prospectuses/course handbooks	• One of the two most popular resources used by over three quarters of aspiring undergraduates were university websites and/or prospectuses (Hobsons, 2007). • Nearly a third of students relied on handbooks/prospectuses (Moogan et al., 1999). • Prospectuses were one of the two main sources of information being used by approximately 88% of aspiring undergraduates (Renfrew et al., 2010).
Recommendations/word of mouth	• Recommendations/word of mouth were used by more than half of all aspiring undergraduates (Hobsons, 2007).

Statistics (e.g. from surveys, such as student satisfaction surveys)	• '*In summary, the majority of the information items regarded as very useful by prospective students are available through existing data collections such as the NSS and Destination of Leavers from Higher Education (DLHE) survey'* (Renfrew et al., 2010, p.10).
Teachers	• Teachers were used as a source of information by 65% of aspiring undergraduates (Renfrew et al., 2010).
TV advertisements and/or programs	• TV advertisements were mentioned but were not reported not to be a commonly used source of information (Hobsons, 2007).
UCAS materials (e.g. directory, guide books)	• More than half of aspiring undergraduates started their search for information by using the UCAS directory book (Moogan et al., 1999). • Education directories (i.e. the UCAS directory) was used by more than half of all aspiring undergraduates (Hobsons, 2007). • Around 80% of aspiring undergraduates used resources from UCAS (Renfrew et al., 2010).
University open days	• More than half of aspiring undergraduates attended university open days (Hobsons, 2007).
University websites	• University websites were one of the two most popular resources used by over three quarters of aspiring

	undergraduates (Hobsons, 2007). • University websites were reported to be one of the most commonly used resources popular with approximately 90% of aspiring undergraduates (Renfrew et al., 2010).
Visits to universities (Including open days and/or interviews)	• Open days were reported to be useful in the final decision making process (Moogan et al., 1999). • 68% of aspiring undergraduates attended open days and/or attended interviews at universities (Renfrew et al., 2010).
Websites (Including education and comparison websites)	• Education websites were used by more than half of all aspiring undergraduates (Hobsons, 2007). • Reportedly *'just under 30% making use of online comparative websites'* (Renfrew et al., 2010).

Most of the resources considered valuable by aspiring undergraduates are already available (Renfrew et al., 2010). Whilst there are differences in the reported popularity, or preference, of different resources according to different sources this is perhaps to be expected given that these pieces of research were conducted years apart. Arguably technology has evolved and tastes have changed.

Aspiring undergraduates are not all alike; they have different interests and use resources differently (Renfrew et al., 2010). For example, disabled aspiring undergraduates tend to use resources such as UCAS less and are more likely to consider open days to be a useful source of information (Renfrew et al., 2010). Two types of aspiring undergraduates in particular are more likely to consider any/all information resources to be very useful, these are:

- *‘Second generation students are more likely to rate pieces of information as very useful, particularly those relating to accommodation and the local area. They make more use of each source of information.*
- *Science, technology, engineering and mathematics (STEM) students are more likely to rate information as very useful. In particular they are more interested in the availability of specialist equipment, industry links and undergraduates‟ A level grades; they make greater use of the available information sources, notably UCAS and online comparison sites.’*

(Renfrew et al., 2010, p.8)

3.3.4 Access

Can learners access the information they need when they require it?

The importance of access is not disputed, ‘*reports place emphasis on prospective students having access to good quality information, advice and guidance (IAG), and access to comparable information’* (Renfrew et al., 2010, p.1). However, although research has indicated that the majority of the resources aspiring undergraduates value are already widely available (Renfrew et al., 2010), conversely aspiring undergraduates can still be ‘*unaware of much of the information*’ (Renfrew, et al., 2010, p.6).

Whilst there are concerns about how accessible certain materials are for aspiring undergraduates from providers (i.e. the use of language and complex terminology), (Renfrew et al., 2010), there are notably more challenges being observed at the user end. In particular even when aspiring undergraduates value a piece of information, they will not necessarily search for it (Renfrew et al., 2010). A quarter of aspiring undergraduates do not make any attempt to find any of the information they reportedly value (Renfrew et al., 2010). Focus groups have found information seeking habits, or rather lack thereof, to be similar across aspiring undergraduates regardless of subject interest (Renfrew et al., 2010). There are two possible explanations that have been observed in connection with this behaviour:

- Aspiring undergraduates display a lack of awareness of ***how*** relevant information relates to their choices and/or themselves (Renfrew, et al., 2010).

- Aspiring undergraduates did not know that information they purportedly valued ***could*** be accessed (Renfrew et al., 2010).

When aspiring undergraduates do search for information, the majority report that they are able to find what they are looking for (Renfrew et al., 2010), so it would appear that they potentially have the skills and the level of access needed to locate needed information when they try.

There are other softer, social implications of attending university for aspiring undergraduates. One of the information searches that aspiring undergraduates did report as being difficult was when they tried to evaluate information about moving away from home (Moogan et al., 1999). Although in this case they did not elaborate as to 'why' this subject in particular was problematic.

3.3.5 Information overload

Is there any evidence that the learners are at risk of information overload (or poverty)?

Although no information could be found that talked about information poverty and/or overload *and* aspiring undergraduates, there were applicable findings that were relevant. For example, aspiring undergraduates report that they find evaluating degree courses and universities difficult due to the large number of universities and courses on offer and they find that this requires a large amount of reading (Moogan et al., 1999). Prospective learners also report to have found '*loads of prospectuses which were either boring or just difficult to understand*' (Moogan et al., 1999, p.223). More generally there is ample evidence in relation to information overload in adolescents, however these results must be viewed with some care, as not *all* aspiring undergraduates are teenagers. Principally despite adolescents appetite for online information they struggle with information overload as they have an '*inability to manage and reduce large volumes of information*' (Todd, 2003, p. 38). More specifically this ability to cope with significant volumes of data is being compounded by their inability to create efficient searches for information, which return highly relevant data. For example, adolescents tend to conduct only very simple searches, which involve a lot of guessing when it comes to search terminology (Todd, 2003).

There is also evidence of adolescent information overload on other social media sites on, for example Facebook, where adolescents reportedly struggle with '*an increased amount and decreased quality of information*' (Koroleva et al., 2011, p.4). As a result, adolescents tend to use friend/interest-based heuristics to narrow feeds down in order to focus on information they want to see by, for example, by hiding the feeds of friends they don't find interesting and don't frequently communicate with (Koroleva et al., 2011).

3.4 SUMMARY

As no previous assessment on the information needs of aspiring undergraduates could be found, relevant evidence has been collated from other sources; as a result we are able to focus on some questions here better than others.

Whilst aspiring undergraduates have interests in many different subject areas and may be actively searching for information, they aren't necessarily finding highly relevant data on these topics (Renfrew, et al., 2010). Challenges have also been identified from a provisional standpoint as students have been identified as having a wide array of interests and preferences, which subsequently mean that a wide range of information must be provided to cater for this scope in information needs. However, critically even if all of this information exists (which it may already do as the types of information aspiring undergraduates perceive to valuable already exist) aspiring undergraduates struggle to form effective search strategies and to locate highly relevant information, if they choose to search for it at all (Renfrew et al., 2010). Indeed, even when aspiring undergraduates are presented with pertinent data they can display a lack an awareness of how it is relevant to them (Renfrew, et al., 2010). A good example of this is that aspiring undergraduates tend to possess little knowledge on the financial support that is available, which is primarily because they only use a very small amount of the information that is available (Davies et al., 2008). As a result many aspiring undergraduates only find out about relevant information (e.g. on financial support) long after decisions have been made, which is hindering effective decision-making; they must be introduced to the information far earlier if they are to make use of it (Davies et al., 2008). Similarly, while long-

term career and financial prospects influence the decision-making processes of aspiring undergraduates their expectations are simply not realistic and they consistently overestimate their future earning potential (Davies and Qiu, 2016).

The picture this paints is of challenges that are predominantly at a user rather than provider level. Given that aspiring undergraduates are not currently using many of the resources available it is unlikely that any new sources of information are going to get much use (Renfrew et al., 2010). Whilst there are suggestions for simpler language and less complex data from careers advisor and aspiring undergraduates it is debatable whether a simplistic system would be capable of delivering the wide range of personalised information needed. Arguably even when it comes to tailored advice from trusted mentors (e.g. teachers), aspiring undergraduates are not all equally receptive (Dobrow and Tosti-Kharas, 2012). In other cases when aspiring undergraduates consult trusted adults outside of the education system there are also no guarantees that these mentors will know or understand the educational system themselves (NFER, 2010).

4. METHODOLOGY

4.1 INTRODUCTION

There are certain milestones in life, which require us to seek out and make decisions based on information. Passing through the final years of compulsory education, or, leaving the security of a job for Higher Education is arguably one such rite of passage. These periods of progression are unique in that they are environments whereby, in order to succeed we must navigate an information environment that is critically not of our own design (Elliot, 2006).

The methods for data collection and analysis as well as the justifications for those are discussed in this chapter. Sections 3.2 to 3.7 outline the research questions before exploring related theory followed by a detailed explanation of how these questions have been answered in practice. Finally this chapter concludes with a review of ethical considerations.

4.2 RESEARCH QUESTIONS

Each of the research objectives are reviewed in turn below (see table 4.1) next to corresponding columns that show 'where' and 'how' each of the objectives are addressed.

Table 4.1. How and where each of the research objectives are addressed

Objective	Addressed	See chapter(s)
1. To establish whether it would be possible to adapt, or adopt, an existing methodology; or, whether a new methodology should be developed for qualitative analysis of a large volume of Twitter communications, and interpretation of information behaviour in a specific context.	Considered as part of the methodology	4

2. To study the information behaviour of aspiring undergraduates by: a) Establishing the information needs of aspiring undergraduates.	Addressed via a needs assessment	3
2. To study the information behaviour of aspiring undergraduates by: b) Assessing the extent to which these information needs are being met via Twitter.	Explored as part of the analysis (Chapter 5) and summarized as part of the Key findings (Chapter 6)	5 and 6
2. To study the information behaviour of aspiring undergraduates by: c) Developing policy/practice recommendations for appropriate IAG (advice and guidance) provision.	Detailed in the recommendations	7

In summary, as table 4.1 shows, objective 1 is addressed here in the methodology (see sections 3.3 to 3.5). Objectives 2,a and b are both based on the information needs of aspiring undergraduates; in order to effectively consider and explore these, as chapter 3 has explained, Nicolas and Martin's (1997) needs assessment framework has been used as it defines information need as a set of fundamental components upon which research questions can be based. As a reminder the following tables have been provided which show; firstly, the characteristics and obstacles that make up Nicholas and Martin's needs assessment framework (table 4.2), and then subsequently a table (see table 4.3), which demonstrates how each strand of the framework directly corresponds to a research question.

Table 4.2. Nicholas and Martin's (1997) needs assessment framework

Needs assessment framework:
• <u>Characteristics of information need</u>: subject *(information purpose and function),* nature (*intellectual level),* viewpoint, quantity and quality/authority, speed of delivery, and processing/packaging. • <u>Obstacles to aspiring undergraduates meeting their information needs:</u> training, time, resources, access, information overload.

(Nicholas and Martin, 1997, pp.43)

Table 4.3. Characteristics of information need and the corresponding research questions

Subject ***(information purpose and function)***	What kinds of information are aspiring undergraduates asking for?
Nature ***(intellectual level)***	How do they go about asking these questions? Do students believe and can they achieve the grades necessary (intellectual level)? Are they capable of completing the UCAS form successfully (intellectual level)?
Viewpoint	Who are aspiring undergraduates asking (i.e. different actors)? Do actors cover different subject areas?
Quantity and quality/authority	Is quality an issue, does incorrect information get shared (misinformation)? Who do different actors recognise as an authority (influence)? ** Information overload and/or poverty is reflected in the question below (see '1.2.3 Research Questions, Information overload').*
Speed of delivery	What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?
Processing/packaging	Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?
Training	Do aspiring undergraduates have the skills they need; • Skills needed to complete their application 1 • To effectively locate 2 reliable information

	(information discernment)? *1 Already covered by Intellectual level question in relation to UCAS applications above.* *2 Element of information seeking already covered by the Nature question above.*
Time	Are there key differences between the different stages of progression (before, during and after)? ** This question will not be asked in it's own right but will be reflected in the methodology which employs three data collection periods (for the before, during and after stages). All other questions here can then be considered in this way.*
Resources	If prospective students are referring to and/or using specific resources what are they?
Access	Can learners access the information they need when they require it?
Information overload	Is there any evidence that the learners are at risk of information overload (or poverty)?

It is appreciated that there are a notable number of research questions; however it should be remembered that whilst the use of Nicolas and Martin's (1997) framework ensures that all elements of information need are appropriately considered: it is a template. Not all questions will have the same level of relevance for our specific audience (aspiring undergraduates), and therefore it is not anticipated that that the findings for each question will be of equal size. Indeed there may be very little (if any) evidence in some areas. In cases where questions cannot be answered these will not be included in the analysis (see chapter 5) and the limits of the methodology will be reviewed in chapter 6 (see table 6.4 for a summary of methodological limitations).

While all of the questions (see table 4.3) have been addressed in the analysis they are not presented in the original order presented by Nicolas and Martin (1997), (see table 4.4). The order in which the findings have been presented in the analysis (see chapter 5) have been altered because logically it makes sense for the reader to start with research questions/findings that provide broader views to help establish some context before delving into more detailed lines of enquiry. For example, it is useful first to identify 'who' is speaking (i.e. different actors) before going on to consider 'what' they talking about (e.g. subject). The following table (table 4.4) shows all of the research questions in the order in which they have been addressed in the analysis (see chapter 5).

Table 4.4. Final order of research questions and findings to be presented in chapter 5:

- 'Who' are aspiring undergraduates asking (i.e. different actors)?
- What kinds of information are aspiring undergraduates asking for?
- Do actors cover different subject areas?
- How do they go about asking these questions?
- Do students believe they can achieve the grades necessary?
- Is quality an issue, does incorrect information get shared?
- Who do aspiring undergraduates recognise as an authority?
- What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?
- Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?
- If prospective students are referring to and/or using resources what are they?
- Can learners access the information they need when they require it?
- Do aspiring undergraduates have the skills they need to effectively locate reliable information?
- Do aspiring undergraduates have the skills they need to complete their application?
- Is there any evidence of information overload (or poverty)?

4.3 SUITABILITY OF THE APPROACH RELEVANT TO THE RESEARCH AIM/OBJECTIVES

The research methods used in this study differ from previous educational research methodologies (e.g. the research of Davies et al., 2008), which rely on the use of interviews/ questionnaires, etc. There were three core reasons for the decision to develop and use new approaches rather than use previously employed methodologies:

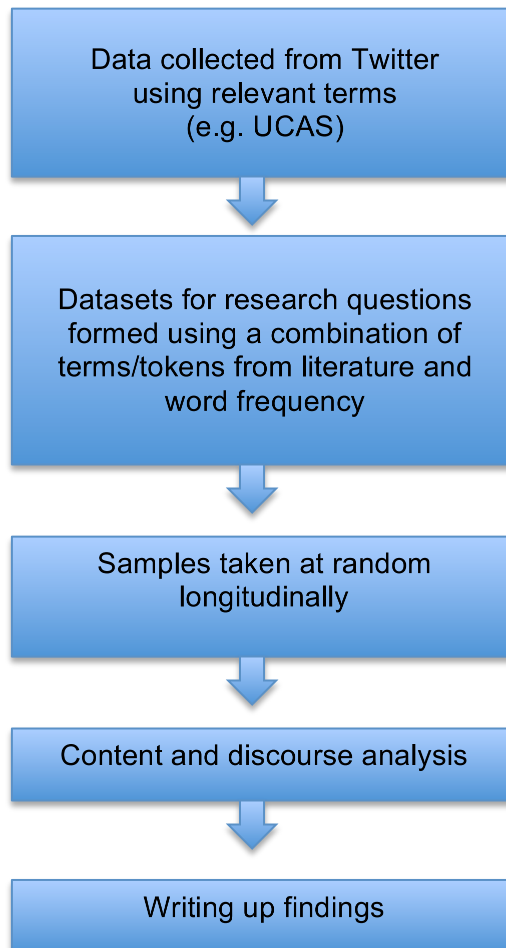
1. Access. Firstly, the research sought to benefit from the fact that nearly all of 16 to 24 years olds use the Internet (ONS, 2017), and that these communications are taking place in public online forums; therefore the data was readily available and in ample supply.
2. Seeking a representative sample. It is appreciated that collecting data from social media sites has limits, for example some Twitter users are passive and do not post or engage with online material (e.g. by liking or sharing posts) as such they are invisible as they aren't providing any evidence that can be captured. However, this research sought to benefit from adolescents' tendency to be honest and uninhabited online (Elsweiler and Harvey, 2015), which had potential advantages over traditional data gathering methods. For example; one challenge associated with traditional interviews is that schools/colleges understandably might prefer to present researchers with aspiring undergraduates that will reflect positively on their institution; as such it is unlikely that, for example, researchers will be presented with challenging pupils, or, students that are performing poorly. Capturing data from aspiring undergraduates in online spaces where aspiring undergraduates can share data anonymously might remove any fear of recrimination allowing for a greater variety of comments: both positive and negative. Subsequently, it could not be assumed that the views of learners would necessarily correspond with previous research.
3. Appropriate approaches for exploring the subtleties of information behaviour. Many social media analysis tools already exist (e.g. Keyhole); these have not been used as a tool for analysis as they typically operate on a mathematical basis (e.g. they count terms and/or tokens), so cannot identify behaviour such as humour, which was a potentially important element in terms of understanding of how aspiring undergraduates behaved

online. Term and token frequency were used as a way of locating relevant data; but it is important to understand that this was a starting point as a way of providing data for other approaches (e.g. content analysis).

4.3.1 Overview of the research process

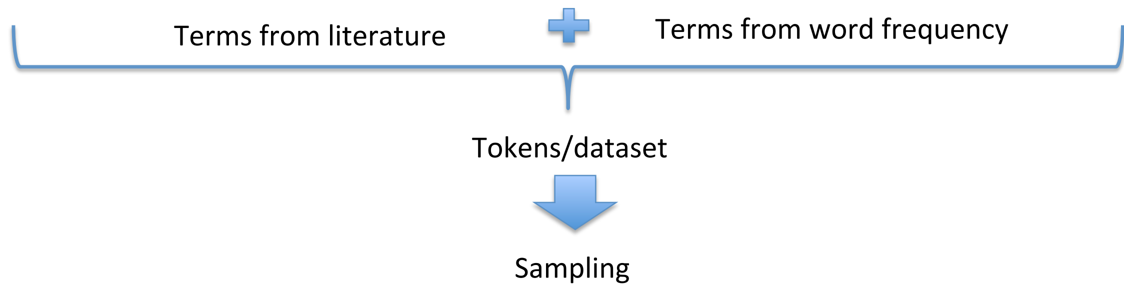
Figure 4.1 provides an overview of the different data collection stages and how this leads to the analysis (see section 4.4). Please note that how data has been collected from Twitter in the first instance is a reflection of the data collection periods and the research strategy and has been covered in section 4.6.4.

Figure 4.1. Stages of data collection and analysis



The following diagram 4.2 provides an overview of how datasets have been created from the information located on Twitter. Terms/tokens were used, located though a review of relevant literature, and, word frequency, which then formed datasets, which could be sampled in response to each research question. Samples were then used as the basis for further content and discourse analysis.

Figure 4.2. Creating datasets



Using terms/tokens from literature *and* word frequency might not always have been necessary in terms of providing a sufficient volume of data to sample; however the dual approach was advantageous in that it not only identified what was present (e.g. in literature), but also what was either lacking or missing (e.g. from the evidence), or vice versa. For example, some actors identified through a review of literature, such as the National Careers Council (see 5.3.1), were not present or being referenced at all online. Figure 4.2 was translated into the following template (see table 4.5), which was used for forming datasets for each research question.

Table 4.5. Token template

		Token dataset
Terms from literature*		
Terms from word frequency	**Before**	
	During	
	After	

4.4 APPROACHES FOR ANALYSING DATASETS

Once the data has been collected from Twitter and sampled in response to the research questions (see sections 4.6.4 and section 4.6.5 which explain these processes as part of the research strategy), two approaches were used to analyse the samples:

4.4.1 Content analysis

Content analysis within the context of this study is very much the bridge that facilitates and provides some structure between the raw sampled data and the finer elements of discourse analysis (see 4.4.2). Content analysis has been described as '*a systematic and objective means of describing and quantifying phenomena*' (Elo and Kyngäs, 2008, p.108), which makes it an appropriate method of objectively categorising volumes of information in such a way that it begins to become manageable.

Given that a substantial body of knowledge on exactly the same topic as this study could not be found (indeed that is rather the point of this investigation), literature suggested adopting an inductive over a deductive approach (Elo and Kyngäs, 2008). That is to say that the project employed open coding on the tweets that were sampled in response to the research questions and therefore, for instance, all of the specific child nodes were not be clearly defined and labeled ahead of time. Not having a coding framework that was pre-set and rigid meant that the coding framework could evolve and flexibly reflect the data content. For instance if online actors began to talk about a new stakeholder (e.g. teachers) then a 'teachers' node could be created and added to the coding framework.

One of the limitations of content coding in this context is the literal manner in which it involves reviewing evidence '*word by word to derive codes … highlighting the exact words from the text that appear to capture key thoughts or concepts*' (Hsieh, H.F. and Shannon, 2005, p.1279); which could be considered somewhat limited in comparison to, for example, thematic coding, which allows a greater degree of inference on behalf of the analyst. However, content coding was seen to have two distinct advantages here; firstly, it caters to the nature of some of the research questions, such as *'Who' are aspiring undergraduates asking?* (see table 4.4),

where what is of interest is likely to be specific nouns, which involve little inference (e.g. teachers). Secondly given that the nature of tweets are so short and out of context, making judgement inferences could arguably be difficult and potentially inaccurate on such little data.

4.4.2 Discourse analysis

Whilst content coding would provide the building blocks for analysis in terms of describing 'who' and broadly 'what' was being discussed: discourse analysis was used to provide some deeper analysis by considering 'how' these social interactions were taking place. However, whilst discourse analysis, being the study of linguistic patterns, is well suited and facilitates the understanding of social interactions (Jørgensen and Phillips, 2002), it is worth recognising that the most obvious challenge to using this method is the extent to which this would work if it was only considering a single, short, isolated tweet. Therefore it is important to acknowledge that some larger social interactions and (hopefully) some common patterns across those communications were necessary for this method of analysis to work and provide useful insight(s). Subsequently as a result in some cases where the nature of the evidence was extremely diverse it was necessary to increase the number of samples (see section 4.6.5 for details).

It was hoped that considering tweets linguistically might provide some level of deeper insight into, for example, the mental attitudes of aspiring undergraduates (by reviewing the way in which topics are being discussed). The primary reason that this was suspected to be so apt in the context of this study is that as the needs assessment has identified (see chapter 3), there are two processes (mental and practical) at play for those that make the transition into university. The first is a mental deliberation about the aspiring undergraduates' future when they decide they potentially want to go to university; the second process is practical as they are then required to complete their UCAS applications. Therefore a method that could be capable of providing some insight into the mental processes of aspiring undergraduates was potentially particularly appropriate. Critically '*truth is not an objective reality to be known for all time*' (Walton & Cleland, 2016, p.2), and as such mental processes can be deliberated, debated and is continually subject to change. This is of interest because whilst what might be the 'right' decision for an individual

is subjective, practically speaking there is a set application process in place for universities and little room for negotiation.

4.5 QUALITATIVE PHILOSOPHY

The inclusion of some '*French theory*' (Cronin and Meho, 2009, p.1) has been included in order to identify some of the deeper principals of understanding, which may critique and/or legitimise the use of a novel methodology. Clearly an extensive investigation into the works of the French theorists would be a significant undertaking and is therefore outside the realistic remits of this study. Therefore summative works (i.e. the works of Cronin and Meho, 2009), which have encapsulated highly cited works within the field of Information Studies have been used to guide and target reading.

4.5.1 Social tagging

The ability for social media users to create/use hashtags to categorise content as they perceive it rather than in accordance with an pre-established structure could be argued to be practicing a degree of unconditional hospitality which was advocated by Derrida (Fox and Reece, 2013). The challenge in the context of this research is that this invariably means that these categories are constantly changing and as a result 'a' definition or singular understanding will be permanently incomplete (Fox and Reece, 2013).

If we adopted a deconstructive stance and, for example, accepted the premise that we can never fully understand an author's true intent (e.g. their motivations and what they really mean) then any analysis framework would inevitably reside in a permanent state of indecision. Indeed, on that basis it could be contended that it would be easier not to acknowledge these challenges at all. However, by recognising the '*personal, subjective and unregulated nature of tags*' (Fox and Reece, 2013, p.8) it is then it has been possible to strengthen the research by:

- Avoiding pre-established subject nodes for content analysis. Critically, by purposely choosing not to attempt to 'define' a node appreciating that each concept has potentially different meaning for each user (Fox and Reece, 2013).

- Incorporating clear quality control mechanisms into different stages of the methodology and analysis. Including wider perceptions and feedback on subject areas for example. This may also have the additional benefit of helping to mitigate some personal unconscious bias.
- Never presuming that certain positive, or negative, tags in connection with certain subjects are absolute. Accepting the possible existence of opposing tags/views in each case (Fox and Reece, 2013). For example, for every user that describes a source of advice/guidance as ‘brilliant’, another might denounce it as ‘rubbish’.

4.5.2 Summary

Subject nodes during coding were intentionally not given set definitions. However, in order to be able to group and detract some meaning from the categorisations the study encouraged feedback from fellow postgraduate research students. Discussing the understanding and meaning of certain terms helped to identify and challenge any assumptions I might have made about the meaning of certain words or acronyms. Greater consideration was also given as to how best to represent a range of views/emotions in relation to these categorisations for analysis purposes. For example simply labeling a source of information/guidance as ‘good’, or ‘bad’ as a reflection of a proportion of users may not be fairly representative and altogether appropriate.

4.6 RESEARCH STRATEGY

4.6.1 Introduction

The following sections outline the practical strategy developed for carrying out the proposed research.

4.6.2 Design

In order to gather evidence effectively three data collection periods were identified which represented the before, during and after stages that aspiring undergraduates pass through.

Table 4.6. Data collection periods

Data Collection 1	From the beginning of September till the UCAS deadline on the 15th of January. The deadline for the majority of undergraduate courses (excluding Cambridge, Oxford and medical courses) occurs in the middle of January for a September enrolment later that year. During this stage aspiring undergraduates must do two things; they must first decide that they want to apply and then secondly they must successfully navigate the practical application.
Data Collection 2	From the beginning to the middle of August; the second data collection period spans A level results day and also marks the beginning of clearing. Up to this point university offers are typically conditional, so the grades received at this stage will affect the options available. Depending on the outcome of their results the aspiring undergraduates must then decide based on the offers available which they wish to pursue (if any).
Data Collection 3	From the beginning of September until the end of December: the last data collection stage covers enrolment at university, their first week (known as freshers' week in the UK) and their first semester.

The periods when the data collections were scheduled to take place were opportunistic and were not conducted in order. The following timescale illustrates practically when each was conducted:

- August 2015: Data collection 2 (A level results day/start of clearing).
  Data was gathered between the 1st of August 2015 until the 20th of August 2015 to cover A level results day (and the start of clearing) which was on the 13th of August 2015.
- September to December 2015: Data collection 3 (freshers' week).
  This took place between the 1st of September 2015 and the 31st of December 2015.
- September 2015 to January 2016: Data collection 1 (UCAS deadline).
  This data collected period took place between the 1st of September 2015 and the UCAS deadline on the 15th of January 2016.

Analytic challenge: Speed of changes and accuracy

Online movements and trends could be considered to be comparable to that of a living organism in that they are constantly moving and can change direction rapidly. New hashtags and trends were found to appear overnight, and, disappear just as quickly. One of the key challenges therefore was developing a rapidly evolving semantic framework that could be used to support searches for data collection.

4.6.3 Data collection periods

It was originally anticipated that each data collection period would be relatively short and last not longer than two weeks. This was for two reasons; firstly, the collection was seen to be a sample and the aim was not to try and collect all available data constantly throughout the transition that aspiring undergraduates go through. Secondly, it was believed that the sheer volume of data would make managing data from longer time periods unmanageable and impractical.

In practice it was found that whilst the data collected was indeed relevant, it appeared to be an extremely narrow snapshot of a bigger timeframe of deliberation. By concentrating on such a limited number of days leading up to, for example, the UCAS deadline many of the concerns related only to logistics such as submitting their application forms and not the decision making process. In addition, in terms of manageability it was never anticipated that identifying and coding terms would be done by hand, therefore volume mattered little in terms of manageability.

Greater consideration of the context of each data collection period concluded the following:

1. **Before**. The data collection period was extended to run from the start of September, covering the start of the academic year, until the main UCAS deadline in January. By expanding this window and focusing on highly relevant search terms (e.g. UCAS) it is hoped that some of the decision making process might be captured rather than merely the end result (i.e. submitting their UCAS application). A potentially useful byproduct would hypothetically be that we might capture those who consider university but ultimately either choose to defer (e.g. take a gap year), or, choose not to attend at all.

2. **During**. It was planned that by starting the data collection at the beginning of the month it would later be possible to examine the build up, and ultimately the peak of activity on the day itself. The cut-off date after results day however was brought forward for two reasons; firstly, the release of GCSE results over a week later would mean that many search terms such as #resultsday would then no longer solely be referring to A levels. Secondly, the timeframe between a place becoming unconditional on results day and enrolling at university is short. Depending on when the university in question holds their freshers' week it could be less than a month between results day and arriving on campus. Therefore there is a degree of urgency for the aspiring undergraduates to make a decision quickly in order to make the necessary preparations. So it was not anticipated that by ending the data collection period the day before GCSE results day much would be lost as many would have already made and confirmed their final choices by then.
3. **After**. There were two key amendments to this data collection period.
   1. Upon reflection, whilst the data gained during freshers' week would be of interest it would not necessarily provide the kinds of information needed. For instance, in the newly enrolled undergraduates perspectives did they make the right decision? Were things as anticipated at university, and if not why not? In order to capture these reflections the data collection period was extended to run until Christmas (and the end of their first semester). This allowed enough time for them to settle in and reflect. It is also commonly the period whereby if students do decide that they've made a mistake early on, they might leave/drop out, which was potentially of interest.
   2. Any themes, good or bad, at this stage must be considered in context. Each university is unique and therefore if an undergraduate encountered a problem would it be possible to tell if this was a common problem, or, an issue specific to that institution. In order to potentially account for this, and gain additional insight it was decided that the information sharing behavior surrounding a select group of universities would also be captured (see table 4.7).

Data collection 1

The first data collection was conducted between the 1st of September 2015 and the UCAS deadline on the 15th of January 2016, which is the main deadline for undergraduate courses. The longer time scale of four and a half months was focused on a smaller core search relating to the online application process. Running a more precise search long term has been designed to capture the deliberation process illustrated as follows. Please see table 4.8 (and corresponding text) for the rationale in choosing these specific universities.

Table 4.7. Data collection 1

Month	**Details**
September 2015	- Start of final academic year for A level students - Open days for 2016 prospective undergraduate students: • 11th and 12th of September – University of Nottingham • 16th of September – Staffordshire University (for nursing and midwifery courses) • 19th of September – Staffordshire University • 26th of September – Northumbria University • 26th of September – University of Derby • 26th of September – University of Warwick
October 2015	- 15th October deadline for Oxford/Cambridge/Medical courses - Open days for 2016 prospective undergraduate students: • 3rd of October – Birmingham City University • 10th of October – Staffordshire University • 18th of October- University of Derby • 24th of October – Northumbria University • 24th of October – University of Warwick
November 2015	- Open days for 2016 prospective undergraduate students:

	• 11th of November – Staffordshire University • 14th of November – Birmingham City University • 14th of November – Staffordshire University • 21st of November – University of Derby
December 2015	- Open days for 2016 prospective undergraduate students: • 5th of December – Staffordshire University
January 2016	- 15th January general deadline for undergraduate courses

(UCAS, 2015; Opendays.com, 2015)

Data collection 2

The second data collection was conducted between the 1st of August 2015 until the 20th of August 2015 to cover A level results day (and the start of clearing) which was on the 13th of August 2015. Whilst this data collection period was far shorter than the other two in terms of timescale it was anticipated that this period could possibly provide a sharp spike in terms of the volume of tweets.

Data collection 3

The final data collection was scheduled to take place between the 1st of September 2015 and the 31st of December 2015 to cover the students first semester at university. Following some preliminary searches that suggested that there is considerably more chatter surrounding some universities than others it was decided to include information relating to six universities in total. The chosen universities were as follows:

Table 4.8. Data collection 3

University	Ranking*
The University of Warwick	7
The University of Nottingham	25
Northumbria University	60
Birmingham City University	88
University of Derby	94
Staffordshire University	103

* As set out in the 2016 University League Table compiled by The Complete University Guide.

4.6.4 Locating and collecting data

In order to locate and capture relevant information on Twitter the following steps were taken:

1. A map of semantic terms were used to search for relevant information using Twitter's advanced search function (https://help.twitter.com/en/using-twitter/twitter-advanced-search). These terms were compiled by:
   (i) Twitter searches started with the specific term UCAS, which is uniquely specific to those in the UK (all undergraduate university applications go through UCAS's online system).
   (ii) Queries were expanded to capture terms such as *application* or *applying* and *university* that might suggest someone was considering or talking about university applications.
   (iii) Query results were manually sampled and checked in order to locate other words, hashtags or phrases that might also be relevant.
2. The software NCapture was used to capture the data. The advantages of using NCapture are that it works with NVivo, which automatically imports the data into a NVivo database, and that it allows for the collection of non-textual data (e.g. videos). This was potentially desirable as it was anticipated that the use of memes, etc. could add value to the analysis: however time restrictions restricted the analysis to textual data only. The main challenge and disadvantage of using NCapture was the resulting large file sizes. A stress test was conducted to test whether the size of the files would be

problematic; this was done by compiling, copying and running queries on thousands of files containing textual and visual data (e.g. photos). The stress test found no problems, and consequently during the analysis no problems were encountered.

3. NVivo was used to manage (and subsequently aid in the analysis) the data.

Regular (i.e. daily) manual checks of the results and queries were conducted during the data collection periods (see section 4.6.3 for details). During these checks the results of the searches from Twitter's advanced search function were reviewed to ensure they were returning relevant results. For example, it was necessary to alter certain search criteria using terms such as *university,* which is used in many countries and required a geographic filter. Similar care had to be taken with abbreviations such as *uni* as it is also a type of sushi. Results for each search term were typically reviewed with three factors in mind. Typically then one of three actions was taken:

1. Data is highly relevant and the search parameters (including terms) become a line of investigation from which other trials may now be conducted.
2. Evidence is somewhat relevant. Varying factors will then be employed to assess whether the results can be improved by varying the search terms. For instance applying a UK only filter.
3. Information is not relevant. In this case typically there either are no results, or, it is clearly evident that the material is not relevant and will not be collected.

It is acknowledged that locating and capturing data in this way from Twitter will have limitations. It is unknown within the context of this study the degree to which such short communications will be capable of answering the research questions. In addition ethical considerations (see section 4.7) will mean that even if online actors do share their real names/personal details: that this information will be made anonymous and subsequently will not be used during the analysis. Whilst the tweets themselves will need to have clear references to a UK-based university application in order that they are able to be located and collected in the first place; what remains unknown is the extent to which this alone will provide a useful context for analysis. For example, knowing what the subject matter is in relation to (i.e.

university) will not necessarily clarify the intent of the actor (e.g. whether they are sincere or a troll). These challenges and limitations will also be reviewed and summarised post-analysis in section 6.4, which will review both the challenges and limits of the methodology itself but also of using Twitter as a data source.

4.6.5 Sampling

Datasets were formed in response to each research question using the term/token template outlined in table 4.5. Each dataset consisted of three parts: each one coming from one of the three data collection periods (see table 4.6 for details), which represented the before, during and after stages that aspiring undergraduates pass through on their information journey. The datasets for each research question were sampled at random in a longitudinal manner, so that any findings that occurred could be considered over time. Wherever possible (i.e. when there was a sufficient number of tweets in the dataset) data was sampled at equal intervals; for, for instance, if the data had been collected over ten days then five tweets were collected from each day. In order to mitigate against any potential researcher bias the first tweets that were encountered were collected; this way it was not possible to subconsciously select a tweet that might be considered 'better' or 'worse'.

The following table (4.9) provides a summary of sampling sizes. The sizes of samples were not always identical for two reasons; firstly, there was not always enough tweets in the dataset, and secondly the nature of the tweets varied considerably. In some cases the themes/findings in response to each research question quickly became extremely repetitive, whereas in other cases themes/findings were extremely diverse. In instances where themes/findings were diverse sample sizes would be increased; this meant sampling continued until themes/findings did become repetitive and new patterns ceased to emerge. The option to allowing for a possible increase in the sampling size in response to the nature of the data was included to help potentially ensure that any important findings would not be missed.

Table 4.9. Protocol for sampling size

Total number of tweets available	Total Sample Size
Less than 50 references per data collection period (less than 150 per dataset)	Sample all available data
Standard initial sample size of 50 references per data collection period (150 per dataset)	150
In exceptional cases where findings/topics were diverse samples of 100 references were taken per data collection period (300 tweets per dataset).	300

Two approaches were used during the analysis of the samples, each is discussed in turn in greater detail below:

- **Content analysis** provided a systematic approach necessary to answer, for example, 'what' information sources were being used.
- **Discourse analysis** was used as the focus on language was one of the factors, which stands this research apart from existing works (e.g. questionnaires).

The research adopted these three analytical approaches in order to consider the evidence on different levels, starting more broadly before proceeding to consider the evidence in greater depth and detail. Content analysis provided much of the context in each case (e.g. *what* was being said); social network analysis allowed a deeper understanding, for example of *what* was being said by *who* (and a consideration of the relationships involved); finally, discourse analysis allowed the research to consider *how* and *why* certain behaviours were taking place.

4.7 ETHICAL CONSIDERATIONS

The research focused on aspiring undergraduates' information behaviour during their transition into Higher Education. The sampling was conducted randomly and consisted of social network users. Evidence gathered will came from publicly accessible micro-blogging platforms (i.e.Twitter) where this cohort discusses this topic (e.g. via Twitter hashtags).

Aspiring undergraduates

Learners in their final year of college/sixth form will have to make the decision as to whether they wish to submit an application form for university in accordance with the UCAS deadline of the 15th of January. Therefore some of the aspiring undergraduates would still be 17 at this point during the first data collection. However, as all of the evidence was gathered is in the public domain the involvement of parents/carers was not required.

Consent and self-published material

The proposed evidence had already been placed in the public domain by the respective authors on micro-blogs/blogs therefore consent was not required. In the case of Twitter (micro-blogging), participants are given a choice by the service as to whether they are willing to make their tweets public or private; ergo if the authors didn't want their communications shared then it would not be possible to see them. Blogs are self-published and it could be argued that they exist purely as a means for the authors to share their views/knowledge with others; the writers want followers to read and engage with their material and therefore consent is implicit.

There is arguably a question of the purpose of such posts from users; that is to say that whilst they want others to read their content they may not necessarily be as comfortable for their communications to be analysed. This conundrum was examined by research conducted by Moreno, M. et al. (2012) during a study that sought to establish adolescents' views regarding participation in Facebook research. The research concluded that the majority of adolescents viewed the use of Facebook for research positively, findings, which as the report highlights are consistent with verdicts from U.S. courts.

Selection

As the evidence was in the public domain participants were not to be recruited. Search criteria were used on Twitter and consisted of carefully constructed hashtags and terms, which are specific to this period of progression to locate relevant material (e.g. #UCAS).

Notification

Please note that Twitter was informed via e-mail of the intention to conduct the proposed study, which gave them an opportunity to comment and provide feedback beyond the (limited) guidance that was available on their website. However, no response was received.

Protocols for dealing with adverse (e.g. abusive) material

The primary personal moral quandary that the proposed study presented was whether I personally might inadvertently have come across aggressive or threatening messages. However, in these cases there are guidelines set out by Twitter's bully policy that would have allowed me to anonymously report this behaviour if I encountered abusive material.

Anonymity

As the username a young person might use on social media websites does not necessarily reflect their real name, and, no personal data (e.g. home addresses) are being sought it would neither have been possible or realistic to circulate findings to all of the participants. However, it is anticipated, and hoped, that my final thesis will be published; therefore the final report will be freely available for any interested parties to read.

Social media users choose what information to make public on their profile pages, however for the purposes of this research only their tweets/posts were captured. The only information that would appear in connection to these tweets/posts would be the author's username and the time/date stamp to indicate when it was published. Although it is common for Twitter users to use a pseudonym (e.g. TinkerbellFan) rather than their real name all usernames were replaced with an anonymous code name (e.g. learner1) so that we are still able to trace the development and progress in a learner's thinking. The ID code document, which linked usernames to code names was kept separately and was password protected. All evidence (including quotes) has been paraphrased in chapter 5, ergo there are no direct quotes, which could potentially be traced back to their original online author.

The names of any family/friends mentioned by learners in their tweets/posts were also anonymised (e.g. 'XXXX told me about the careers fair in town'). However, in the case of the names of sixth forms/colleges being given, category codes were given to indicate the centre type where possible (e.g. St Augustine's Catholic College would be replaced with 'ReligiousCollege'). This was important as there was potentially a relationship between centre types (e.g. academies) and the types of careers advice on offer. For example, there could hypothetically have been a difference between high-performing private/faith-schools that provided students with advice and support sessions versus some colleges, which provided none.

The only names that were not anonymised were those of well-known public figures and celebrities. For instance if a learner had been particularly inspired after watching Professor Brian Cox on television to pursue a science based degree then it was useful to capture the potential influence that individuals like this were having.

Data storage

The evidence was downloaded straight from Twitter and kept in a password protected NVivo file on an external encrypted hard drive. The hard drive was kept in a secure laptop bag with a combination lock whilst in transit and on campus, and in a secure combination safe when I was at home. The original data and the ID code file was not kept on university servers or on my personal computer at home.

Data retention and disposal

After the research is complete (i.e after the viva voce) the ID code document that links the social media usernames with the allocated code names will be deleted. In accordance with the Research, Ethics and Governance Handbook, the faculty will then be consulted with regards to archiving an electronic copy of the evidence (i.e. the NVivo file containing the evidence) in the University's offsite storage facility. Authorised destruction can then be arranged at an appropriate time.

5 ANALYSIS

5.1 INTRODUCTION

All of the research questions (see section 1.2.3) have been addressed below. The findings have been presented in a slightly adjusted order to the original list (see table 4.4) in order to provide the reader with a logical sense of progression through the findings. The only question which is an exception is '*Are there key differences between the different stages of progression (before, during and after)?*'. This question is considered in a broad sense first as it establishes some context but it has then been embedded and considered as part of all of the other research questions where it is used in order to make comparisons between the different stages of an aspiring undergraduates progression. Some of the findings presented in this chapter have been published and in these instances references have been provided.

5.2 TIMELINE

Whilst caution should be exercised when quantifying qualitative data the following figures have been provided for the purpose of providing some context. In total the number of tweets retrieved across all three periods of progression totaled 494,180. The figures broken down are as follows:

Table 5.1 Total number of tweets collected

Data Collection Period	**Number of Tweets**
1. Before (UCAS applications)	155,100
2. During (Summer - Exam results/clearing)	180,473
3. After (Autumn – Enrolment and first semester)	158,607
Total	**494,180**

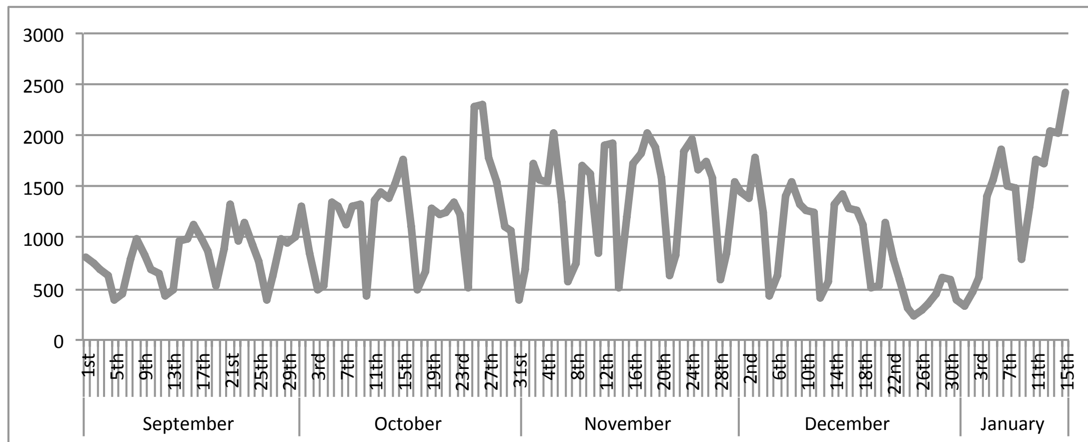
(Dodd et al., 2017)

Twitter's own search facilities were used to filter out a significant proportion of irrelevant material in the first instance. For example, when the results were initially reviewed for relevance some search terms such as 'university' contained a notable

proportion of information only relevant to American universities and colleges. Therefore, in this instance the ‘UK only’ geographic filter was employed to ensure that the material being retrieved was relevant.

The volume of communication did not stay at a consistent, fixed level during any of the points of transition. Indeed the volume of tweets behave differently and vary depending on the context. For example, if we consider the overall volume of captured tweets during the application process there is a distinct pattern for each stage, as shown in figures 5.1, 5.2 and 5.2.

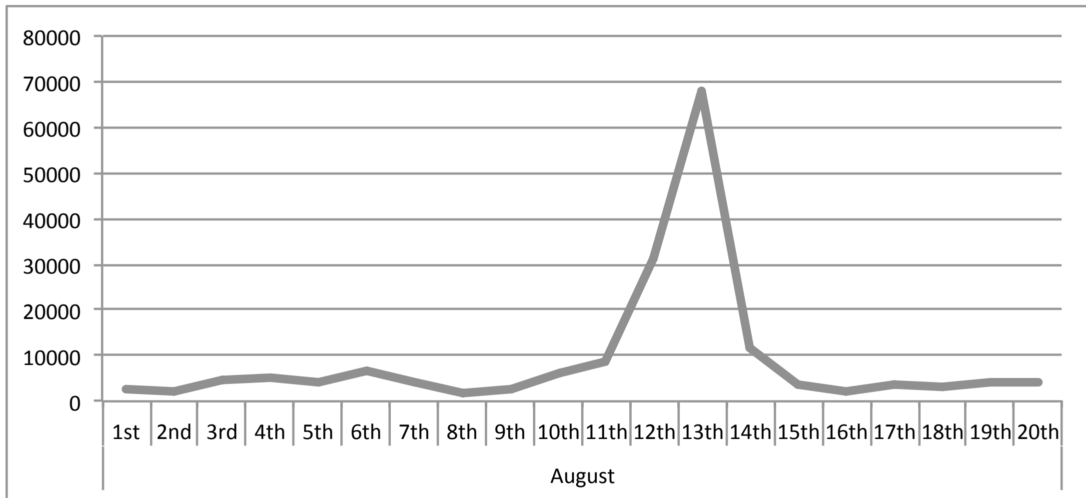
Figure 5. 1. Tweets during the application process



(Dodd et al., 2017)

As figure 5.1 illustrates, chatter peaks on weekdays and falls during the weekends. For many aspiring undergraduates this will represent days when they are in college and/or sixth form. There is then a lull during the Christmas holidays before a short peak that occurs just before the deadline in January. If we then compare this to the volumes of communication being exchanged during the release of exam results the pattern is distinctly different. This takes place during school holidays and demonstrates a single spike where there is a lot of sudden communication when decisions need to be made very quickly (figure 5.2).

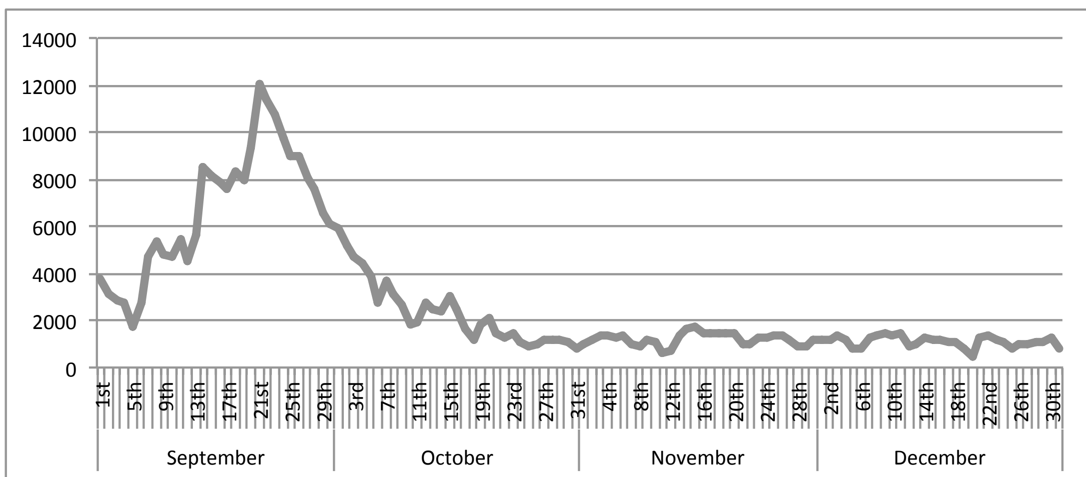
Figure 5. 2. Tweets during A level results



(Dodd et al., 2017)

If we consider the volume of communication during the first semester at university it is again distinctly different. Here there is an initial rise during freshers' week when the students first arrive, enroll and settle in, etc., which slowly falls to a steady, low level. Here conversations in Higher Education don't follow a Monday to Friday pattern as they had done previously during the application process (see figure 5.1).

Figure 5. 3. Tweets during the first semester of university



(Dodd et al., 2017)

5.3 RESEARCH QUESTIONS: CHARACTERISTICS OF INFORMATION NEED

Each research question begins by providing two things; firstly an introduction, which elaborates on the research question and explains the context, and secondly details (e.g. a table), which explains which terms and/or tokens have come from a review of literature and which have come from word frequency. In each case this will be followed by an analysis of the results, except in cases where the research question could not be fully answered the cause or restrictions of the methodology have been discussed instead. It may be noted that whilst NVivo does have an automatic term stemming tool as the precise terms it uses to create tokens cannot be known, or, altered this function was not used.

5.3.1 Different actors: 'Who' are aspiring undergraduates asking, who are they talking about?

Introduction

In this section we ask who some of the prominent online actors are during progression into Higher Education. We want to know if aspiring undergraduates are consulting sources online who these conversations are with, or, about. From literature (see section 2.4) different actors here were understood to potentially be: individuals, parties, public or private organisations, charities, trusts or collectives.

Identifying terms and tokens

Tables A2 and A3 (located in the appendices) show the stakeholder terms and tokens identified through literature and term frequency for each data collection period. Search parameters to locate frequently mentioned different actors were set to identify words with at least three letters, to ensure abbreviations such as 'sis' rather than 'sister were still captured but to avoid unnecessary stop words (e.g. 'a'). The cut-off point for identifying stakeholder terms through word frequency was set at 1,000 references per data collection period, past which point the stakeholder in question was being referred to less than 1% of the time.

Some care must be taken when attempting to make any direct comparisons across the first two columns in tables A4, A5 and A6 (located in the appendices) given that the first column (terms from word frequency) consists solely of terms, and the second column consists of tokens (that come from literature). To this end the third column in each table (see tables A4, A5 and A6 in the appendices) has been provided to show a final complete list of different actors for each data collection period, combining the contents of the first two columns. The third columns list all of the different actors as tokens in bold and then the terms that each token encompasses underneath. While terms have been grouped into tokens, hashtags and terms beginning with the @ symbol have been intentionally kept separate. This is to initially allow the analysis to see how users are using categories and to be able to potentially consider whether there are differences when different actors are being talked about rather than to. Any different actors terms/tokens identified as part of a review of literature that were found to have no references at all in the evidence were not included in the final combined list of different actors (see tables A4, A5 and A6 in the appendices). These were noted but not included in the final list as it risked making the final list appear misleading if there was a named stakeholder but no data. Care was taken to count word frequency across tweets so that if a single tweet mentioned a term (e.g. 'family') multiple times it would still only count as one reference.

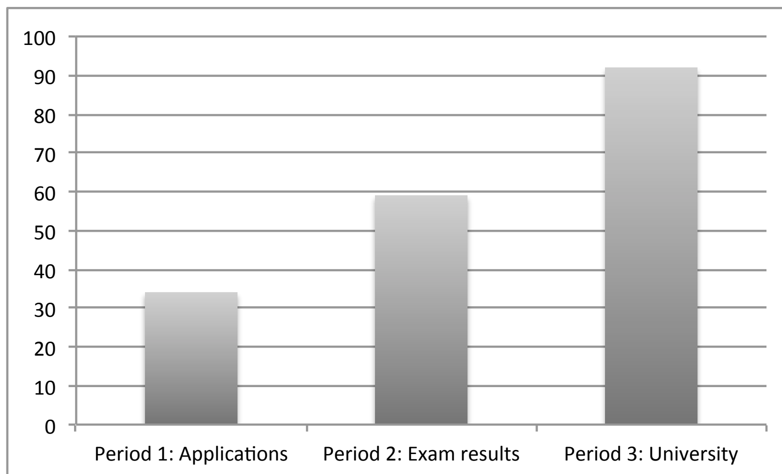
Whilst some overlap naturally occurred between the lists of the different actors found in literature and those found through term frequency (see tables A2 and A3 in the appendices), the lists were not identical. For example some different actors (e.g. the National Careers Council) did not appear at all through term frequency. This observation is important as the absence of a potentially key stakeholder is of interest and this would have been missed if the methodology has relied solely on term frequency to locate and identify agents. This then demonstrates that the use of the dual approach to locating/creating tokens is capable of capturing information that might otherwise be missed: arguably a strength of the methodology.

As the data in tables A4, A5 and A6 illustrate (see the appendices) the different actors talking/or being talked about in during each of the three stages of

progression period vary. As such table A7 compares these periods and shows the shift in the different actors that are present online over time.

The number of different actors tokens increased notably between each period as figure 5.4 illustrates. There were a total of 34 different actors identified during the application process compared with 59 during the exam results/start of clearing, which rose to 92 during the students' first semester at university.

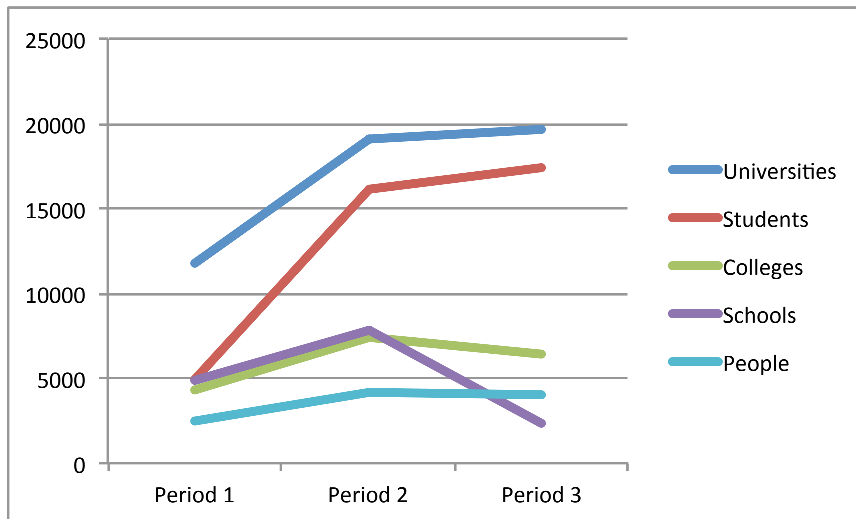
Figure 5.4 Total number of different actors during each data collection period



(Dodd et al., 2017)

Figure 5.4 shows that the range of different actors involved in communicating online during undergraduates' first semester is exponentially more diverse than during their initial application period. In considering what the three periods might have in common only a very small number of core different actors were found to be present (by more than 1%) during all three stages of progression; these are shown in figure 5.5 below (see table A.8 in the appendices for the original table of overlapping actors during each data collection period).

Figure 5.5. Different actors present during all three data collection stages.

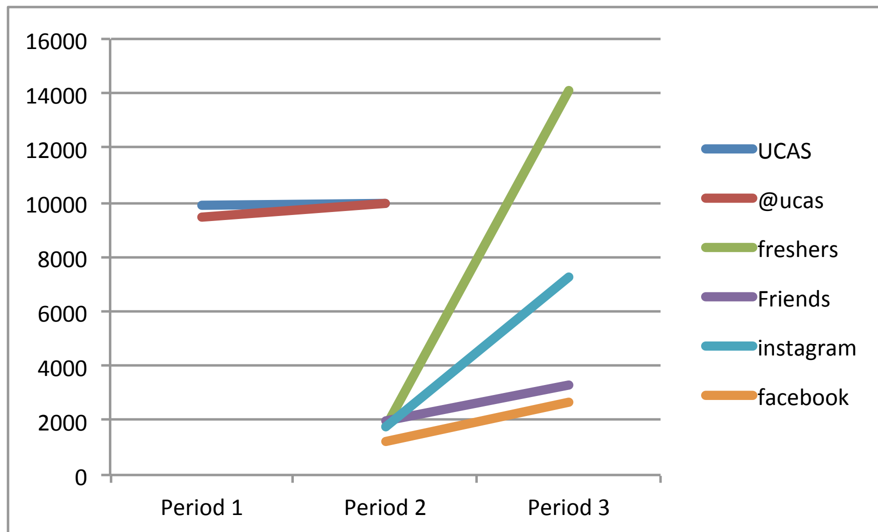


(Dodd et al., 2017)

As figure 5.5 shows there were only five stakeholder tokens present during all three periods of progression, of these *universities* and *students* increased in frequency whilst references to *colleges* and *schools* decreased. The majority of different actors tended not to be present during all three stages of progression. Other than the prospective student themselves different actors only tended to be present during stages in which they potentially had an interest, or, an active role. For example, as figure 5.6 illustrates, UCAS references are prevalent during the application and results/clearing process but drop off to a negligible level once individuals have moved on to their respective universities.

The following figure 5.6 shows some examples of the shifts that occur with different actors that are present across at least two of the data collection periods. Whilst UCAS references remain relatively consistent until the point at which students no longer need them, particular social references to friends and other social media networks (e.g. Facebook) increase.

Figure 5.6. Shift in different actors between data collection periods.



(Dodd et al., 2017)

Given the limited overlap it is worth highlighting the different actors, or patterns of different actors, that are only present in conversations during certain stages of a students progression. In particular:

- References to *families* only occur to any significance (more than 1%) during the application phase.
- The nature of commercial individual users that were prevalent during each stage changed and were specific to the decisions being made at that point. For example, in order, relative to each data collection period; @gapyear, @alevelresults, and @jobsplane.

Summary

Just as the patterns in the volume of chatter differ during the three different periods of progression so do the different actors talking, being talked about, and/or being talked to. Most actors aren't present during all three stages of progression and tend only to be present during stages in which they potentially have an interest, or, an active role. What is also worthy of note are the gaps present in the data. Rightly, or wrongly, there are some key actors, which are largely absent from conversations taking place on Twitter (table 5.2).

Table 5.2. Different actors during the application process with few or no references

Tokens with the fewest references	
National careers council – 0 references	Jobcentre – 0 references
Children's Trusts – 0 references	Ofsted – 1 reference
Local Authorities – 1 reference	National Careers Service – 5 references
Department for Education – 6 references	Careers Advisers – 80 references

(Dodd et al., 2017)

In some cases, for example tokens for 'brothers' and 'sisters' (189 and 89 references respectively) low figures are unsurprising; even if an actor is actively communicating with their sibling online it is potentially unlikely that they will actively use a term that clearly identifies their relationship every time (e.g. 'hello brother'). However, several official organisations (e.g. the National Careers Council) that have been identified as being key sources of support are not present to any significant degree.

Contextual factors, such as time, affect patterns in the volume of communication during each period of progression for aspiring/new undergraduates. The data suggests distinctly different online environments during each stage of progression. As the aspiring student progresses more actors join the conversation and the environment becomes increasingly diverse. Comparatively very few actors are actively present during all three stages of progression. Most actors are active for only one, possibly two periods of the progression.

Despite students' known reluctance to engage with educational institutions online (Jones and Harvey, 2016), three of the five stakeholder tokens that were continually being referenced during all three datasets were universities, schools and colleges. Of course there is nothing to suggest here that users were talking to these institutions, merely that they were being referenced. What would therefore make an interesting line of investigation going forward is to consider a deeper form of discourse analysis that might address why Twitter is such a suitable medium for users to talk *about* institutions rather than *to* them. As a reflection of this and as a wider consideration UCAS would appear to have some success breaking this

convention and stands in stark contrast to other central agencies that were referenced little, if at all.

5.3.2 What kinds of information are aspiring undergraduates asking for?

Introduction

This research question considers 'what' aspiring undergraduates are looking for. The remit for this question was potentially very broad; so whilst literature suggested topics (e.g. see table A.9 in the appendices), this could also potentially refer to *types* of information, for example statistics. The interpretation of what this question might encompass was intentionally left open in order to potentially allow for new topics and/or types of information to emerge.

To avoid any unnecessary repetition the kinds of information aspiring undergraduates were asking for have been outlined here but each individual theme has been explored in depth in the following section (see section 5.3.3).

Identifying terms and tokens

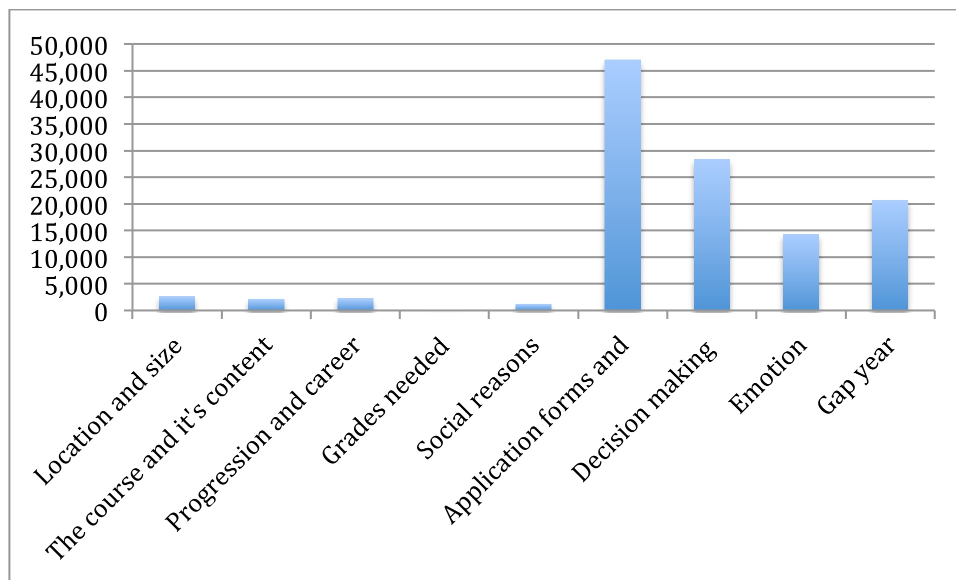
Table A.9 and A.10 (located in the appendices) identify the potential terms and tokens for this research question. There were two challenges here; firstly the tokens found through a review of literature were extremely broad and as such whilst they were useful in terms of providing the research with themes or categories they were too general to be able to accurately begin to speculate relevant terms. For example location could involve the names of any location in the UK. This was a reflection of the literature (e.g. Moogan et al., 1999) that had a tendency to categorise information and not describe it in a detailed way that described what each subject constituted.

The second challenge was that any noun, or verb, could potentially be indicative of a subject that aspiring undergraduates were interested in. Essentially this was the opposite of the first challenge in that it provided a wealth of information at a detailed level. To this end the methodology provided the solution to it's own problem in that terms from word frequency naturally grouped and largely reflected the themes outlined in literature and there was enough synergy between the literature and evidence that the two lists could be combined for each stage easily (see tables A.9 and A.10 in the appendices).

Initially the word frequency terms from each data collection period were grouped to indicate those that potentially related to the themes from literature as well as themes that fell outside of these areas. The overarching themes that have been underlined (see tables A.9 and A.10 located in the appendices) indicate new themes that have emerged through word frequency rather than the literature review. It should be noted that efforts were consciously made not to make overarching blanket tokens that would be run across all three data collection periods. As table A.10 (located in the appendices) illustrates different conversations are happening at different points in time. Indeed, even if the same topic is being discussed during different data collection periods it cannot be assumed that aspiring undergraduates might not be talking about it in the same way. Therefore each data collection period has been treated and investigated independently.

Figure 5.7 shows the dominant topics of conversation during the university application process, Please note that these tables are only intended to provide a broad overview of topics here and that each individual theme will be investigated separately in the section that follows (see table A.11 in the appendices for the summary table of all subjects during the UCAS application period).

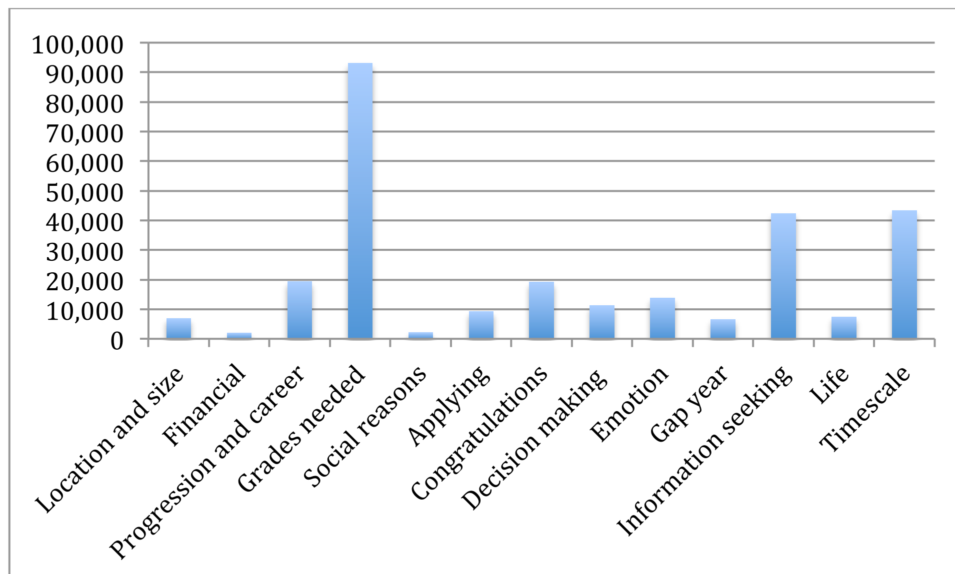
Figure 5.7. Themes during the university application process



While there are references to the themes found in the literature the three leading themes relate to the application forms themselves, the decision-making process and also gap years (see figure 5.7). There were also a cluster of emotional exchanges that were not tied to any topic in particular but that reflected the perceived importance and stress of the process.

The following figure 5.8 illustrates the main overarching themes during the release of A level results and the start of clearing (please see table A.12 located in the appendices for the summary table of all subjects recorded during this data collection period).

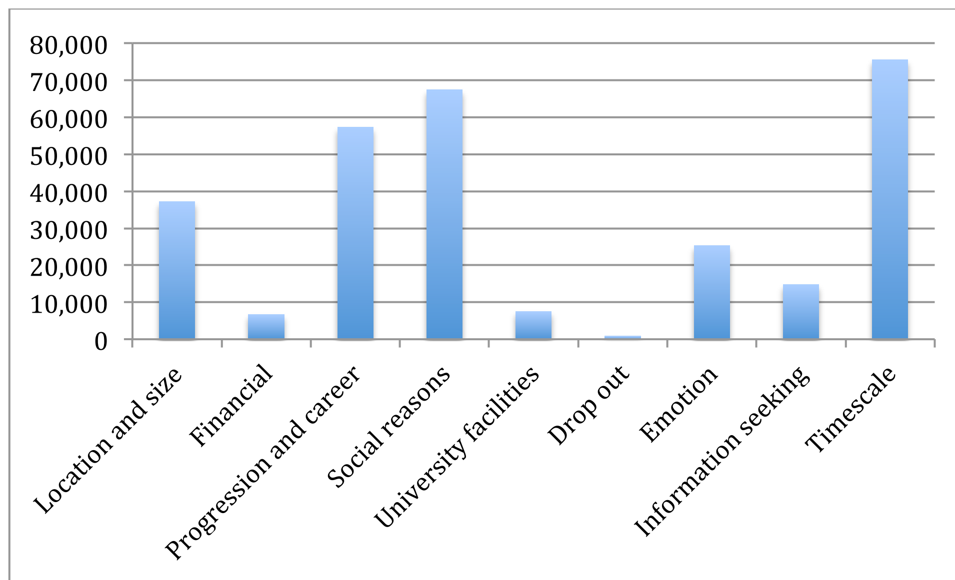
Figure 5.8. Themes during A level results and the start of clearing



As figure 5.8 illustrates there is a notable shift in the overarching topics aspiring undergraduates are interested in during the summer period. The most popular topic related to aspiring undergraduates' results and the grades they need for university. Each of these themes are individually explored below (see section 5.3.3).

Figure 5.9 shows the overarching themes present during aspiring undergraduates' first semester in university (see table A.13 in the appendices for the summary table of all subjects recorded during this data collection period).

Figure 5.9. Themes during the first semester of university



As figure 5.9 illustrates there is a shift towards social factors and an increase in information related to progression into work. Time related factors are still present as are financial and geographical references.

Summary

Some subjects identified in literature (e.g. academic reputation) were not being talked about during one or more of the data collection periods. This does not necessarily mean that subjects such as a university's academic reputation aren't important to aspiring undergraduates an/or that it is not being talked about; only that it is not being discussed on social media. Though the lack of evidence means it is not possible to speculate why these types of conversation are not taking place.

The methodology has identified kinds of information not noted in literature, some of these, for example emotions, are not linked to a 'topic' and are a reflection of the aspiring undergraduates themselves in that particular context. The theme of time (or lack of) also arguably helps to show us what aspiring undergraduates are concerned about. Compared to the kinds of information found in literature emotions, decision-making and concerns about deadlines are arguably more fluid concepts compared to 'grades', which have a physical real-world component; however these have as much prevalence as 'traditional' themes for aspiring undergraduates. That

these themes are being given as much attention indicates that these are potentially as important to aspiring undergraduates as topics such as accommodation and overall they might help to provide researchers with a wider, more holistic, understanding of the experience of aspiring undergraduates.

Comparing themes specific to a particular phrase of progression is interesting because the topics reflect the journey for aspiring undergraduates. They cover considerations that are specific to that particular period of progression and no other (e.g. dropping out of university). Table 5.3 shows subject areas that only appeared in one of the data collection periods.

Table 5.3. Themes of information that only appeared in one data collection period

During the UCAS application period	**During exam results and the start of clearing**	**During the first semester at university**
- The course and it's content - Application forms and personal statements	- Applying - Congratulations - Life	- University facilities - Drop out

The kinds of information that are of interest to aspiring undergraduates can arguably be concepts rather than facts, or, things. As table 5.3 shows while aspiring undergraduates can talk about things such as what facilities a university has, or, application forms that have a real-world component; they also discuss their lives as a whole and offer each other support (e.g. via congratulations). These emotional and social factors constitute a meaningful proportion of the online world of aspiring undergraduates and as such in this context it is necessary to consider redefining 'what' they might consider to be useful and to widen our understanding of the roles information play.

5.3.3 Do actors cover different subject areas?

Introduction

Each topic (identified in 5.3.2) has been addressed below. This question brings together the different actors and topics that have already been identified (see sections 5.3.1 and 5.3.2) to examine the relationships in how different actors and subjects overlap. So, for example, whether different actors are involved in some conversations more than others and considering how this is happening.

Identifying terms and tokens

Terms and tokens have already been identified for both actors and subjects (see 5.3.1 and 5.3.2), so datasets already existed that could be used for this question. In order to compare subjects and different actors effectively in this case and to be able to sample the evidence easily a matrix was created of the two datasets (using NVivo software), (section 4.3.1 in the methodology). It cannot be assumed that any subject/stakeholder relationship continually remains the same over time, therefore each data collection period (representing the before, during and after) has been considered below in turn.

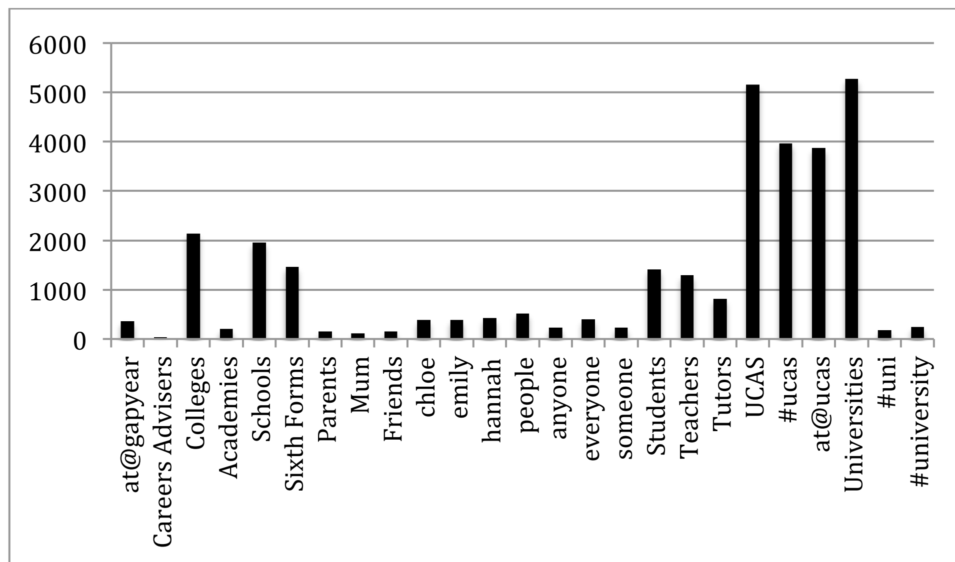
Individual names (e.g. ‘hannah’) were intentionally not grouped as, for example, ‘named persons’ for two reasons. Principally because it was observed that in these cases these names did not represent multiple users called, for example, Hannah, but because there tended to be one particularly active, and/or, popular user. Secondly then these then were not grouped because, like commercial companies, there were some early indications that the behaviour (i.e. intentions and motives) of different named individuals were potentially very different. As such they were initially kept separate so that potentially factors such as influence could be considered with a view that these groups could be easily merged later if necessary.

Subjects and different actors: during the application process - Applications

The following figure 5.10 shows which different actors are being referenced most frequently in relation to the subject of applications. UCAS and universities were the

actors most frequently involved in communications referring to applications. Please note that the terms UCAS, #ucas and @ucas have not been grouped as a token as these differences reflect the way in which UCAS were being referenced (e.g. whether they were being spoken about or to).

Figure 5.10. Before: different actors and applications



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

Whilst students did talk about UCAS, there was ample evidence that aspiring undergraduates were asking UCAS questions directly, which occurred when the term @ucas was used. These questions tended to be personally specific to the aspiring undergraduate in question. In response to this UCAS would typically respond with individual answers as well as wishing those that they interacted with the best of luck with their application. Communication with UCAS in this case was typically initiated by the aspiring undergraduate.

> *'@ucas_online My application has been sent early as I already have my results (following a gap year), does this mean I'll get my decision earlier?'*

Whilst aspiring undergraduates frequently made the link between universities and applications the nature of the communications differed considerably from those mentioning UCAS. The vast majority of these references were coming from aspiring

undergraduates and were talking ***about*** universities rather than ***to*** them. Even those questions that a university potentially could provide some answers to were not being directed specifically at an institution, so tended to go unanswered. For example:

‘Will taking a gap year influence my scholarship application? If so I’d be better going straight to university.’

There were two types of tweets that referenced educational centres (i.e. schools, colleges and sixth forms), some came from students who were talking about the support (or lack of) that they had received from centres. However, there was also communication coming from centres (e.g. schools/colleges) who were proactively using Twitter to communicate with their students.

‘@nameofcollege If you want to study medicine you need to submit your UCAS application by the 15th of October.’

References to students and/or teachers were very similar in nature to those comments surrounding educational centres. Teachers for example were both being talked to, and about.

‘@Frenchteacher, can you please contact me via e-mail. My UCAS application needs you!’

‘I’m attempting to send my application but my teacher hasn’t filled in my reference’

These patterns of conversation with these actors remained the same regardless of what specific part of the application forms were being discussed. It seemingly made no difference whether the aspiring undergraduate was talking about deadlines or personal statements; if the question related to application forms then they tended to communicate with these actors in particular in these ways.

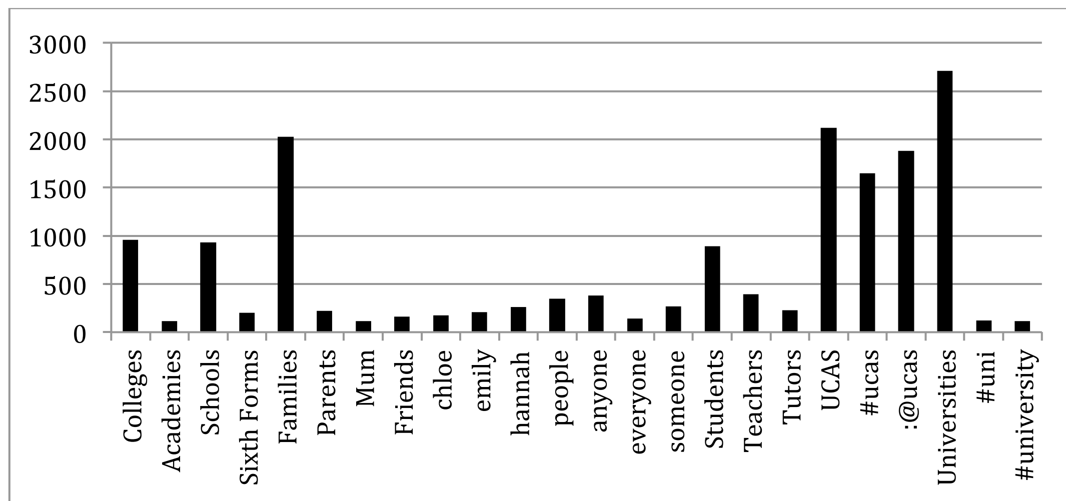
In summary, while students did talk about UCAS communication was nearly always being initiated by the aspiring undergraduates. Communication between aspiring undergraduates and educational centres and/or teachers moved in both directions and could be about, or to, either party. Conversations referencing universities however typically came from aspiring undergraduates who were talking about

university and in comparison there was very little information coming from universities themselves in relation to application forms.

- ***Decision making process***

Figure 5.11 shows which actors are being referenced most frequently in relation to the decision making process. In this case, while universities and UCAS are both still prevalent, families are notably more involved in the decision making process in comparison to applications.

Figure 5.11. Before: different actors and the decision making process



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The elevated number of references to families here should be viewed with some care. There were two trending themes, which occurred during this data collection period that may have made this result higher than it might normally have been. The first theme was in response to a news story from a family whose child had decided to take a gap year and had subsequently been involved in a serious accident. This theme tended not to be discussed openly in itself but tended to be a story that was being shared among aspiring undergraduates in relation to decisions (e.g. whether to take a gap year or not).

'Gap year student in critical condition in hospital, family desperately searching for help'

The second trending theme related to promotions from travel companies who, rather than just targeting school/college leavers with gap year materials, were attempting to encourage entire families to consider taking a gap year with their children. The majority of this material came from companies and tended not to be picked up and shared among aspiring undergraduates themselves.

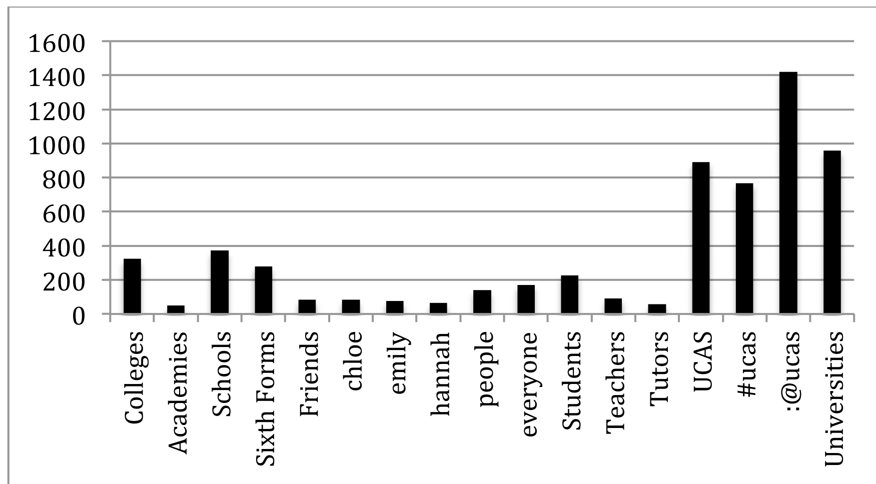
'Take a gap year as a family'

These two themes can be seen as arguments for and against the decision to take a gap year. They are both however examples of how other different actors are indirectly feeding information into the decision making process. It is important to recognise that the original authors of this trending material (the media, or, travel agents) are not impartial and both stand to benefit financially from aspiring undergraduates and their families. Whilst aspiring undergraduates did not tend to use Twitter to discuss these topics, their prevalence indicates they are nonetheless present and part of the context in which aspiring undergraduates are making decisions.

- ***Emotion***

As figure 5.12 illustrates, high levels of emotion were predominantly being expressed in connection with UCAS and universities for aspiring undergraduates. At this period in an aspiring undergraduates progression these are two key actors with which they have limited and/or indirect contact (e.g. select open days and e-mails rather than face-to-face contact they have regularly with teachers).

Figure 5.12. Before: different actors and emotion



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

Regardless of which actors were being referenced, it's important to observe that they were continually being talked *about* and not *with*. As such the different actors identified here were being identified as a source and/or contributing factor to highly emotionally charged states (e.g. stress).

'I'm going to have a mental breakdown any second due to the stress of college, ucas and work'

Whilst it was clear that anxiety and stress were being linked to UCAS and/or universities, tweets tended to be generic and lacked any detail that might explain 'why' these actors were being identified in connection with stress. For example:

'Family, college, finances and ucas have ruined my life'

Although there was no single common factor identified as a source of stress aspiring undergraduates did indicate that having to manage multiple factors (e.g. jobs, homework and school) combined with tight timescales and deadlines was stressful. This suggests that highly charged emotional states are potentially a result of having to manage these multiple factors (e.g. UCAS and schoolwork) simultaneously within a limited timeframe that is perceived to be possibly unmanageable.

*'School work. Work. Coursework. Deadlines. Finding a place to live in halls. Sorting finances. *stress levels rising*'*

In some cases the stress on aspiring undergraduates was reported to be so severe that it was affecting them not just mentally but physically. Again, while there were loose references to different actors (e.g. UCAS) they did not detail precisely 'why' these organisations or experiences were considered to be stressful.

'My UCAS application might be sent today and I'm so nervous about it I feel sick ☹'

'I'm having chest pains and I blame UCAS ☹'

Despite combinations of factors (e.g. school work, finances, family) being identified as contributing to stress; the one factor cited by aspiring undergraduates as providing some relief was meeting the UCAS deadline. As none of the other factors aspiring undergraduates mentioned as being causes of stress were mentioned in connection with relief this possibly suggests that whilst various factors contribute to stress they are not necessarily all equal and some (e.g. UCAS forms) cause more stress than others.

'UCAS has been completed and sent! I am feeling really good!'

The way in which aspiring undergraduates talked about stress and the UCAS application forms in particular was of interest as they seemed to hold extremely unrealistic timeframes and expectations in terms of what they expected from UCAS, and when. Despite the time taken it had taken aspiring undergraduates to contemplate, prepare and finally submit their university applications, once they had been sent there was a certain level of impatience that was almost immediately evident even though the deadline had not yet elapsed.

'Sent my UCAS today. Already checked my e-mails a million times …'

'UCAS form was sent literally a few hours ago and I'm already waiting here like 'what's happening?''

‘feel infinitely worse now, I’ve had one reply in almost 3 weeks …’

There was nothing present in the tweets to suggest ‘why’ some aspiring undergraduates held such unrealistic expectations regarding turn around times for their UCAS applications. So, for example, it is not possible from the data found here to ascertain whether this might be a result of misleading, or, a lack of information.

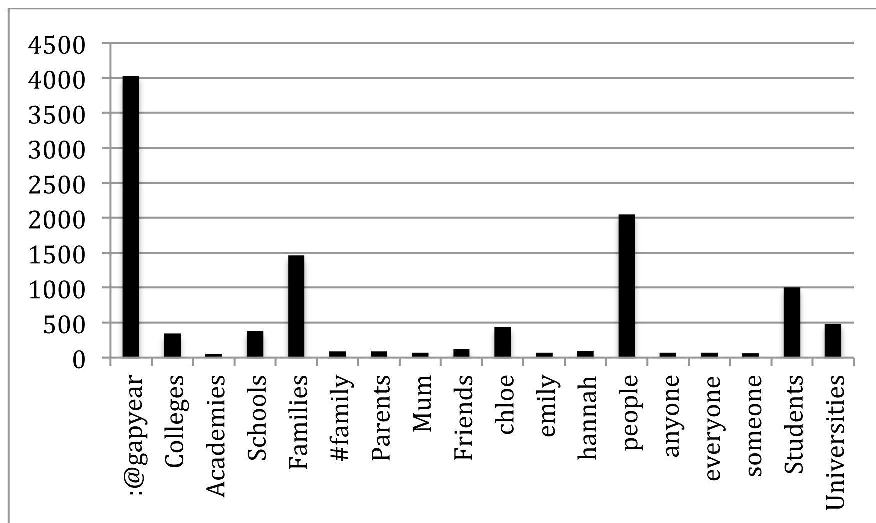
It is worth noting that aspiring undergraduates that chose to take a gap year did not necessarily manage to avoid anxiety and stress any more than their counterparts who chose to progress directly into HE (Higher Education). Some aspiring undergraduates found the realities of work and/or travel to be also emotionally taxing.

‘I went on a gap year to earn money and go abroad so I’d stop crying and stressing over my education … but now travel and work have me stressed and crying’

- ***Gap years***

There was a very different set of actors involved in conversations surrounding gap years. UCAS and universities prevalent in previous conversations were not as active and instead there was an increase in communications between aspiring undergraduates and commercial companies (e.g. travel agents), families and friends.

Figure 5.13. Before: different actors and gap years



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The majority of tweets that mentioned families came from commercial companies (i.e. travel agents selling gap years). Whilst travel agents did use Twitter to target aspiring undergraduates their products/services were also targeted at parents.

'Arrange a gap year as a family www.websitesellinggapyears.co.uk'

There was also overlap between the commercial companies that had an interest in selling products/services to gap year students and the references being made to 'people'. In particular there was concern among aspiring undergraduates and/or animal right activists that some of the options available from gap year companies (i.e. the option to handle lion cubs) were unethical. The majority of comments in this case then were an attempt to attract and inform a wider audience (i.e. 'people') and discourage aspiring undergraduates from taking up these options.

'*Ban Lion Petting people! Stop sending volunteers to Lion Jungle while they allow cub petting'*

Tweets from actors other than aspiring undergraduates (i.e. families and people) differed in their views on gap years. Opinions ranged from those who were in

support of aspiring undergraduates taking time away from studying, to those that were strongly against gap years.

'Gap year definition = a sabbatical from formal education for the purpose of self awareness'

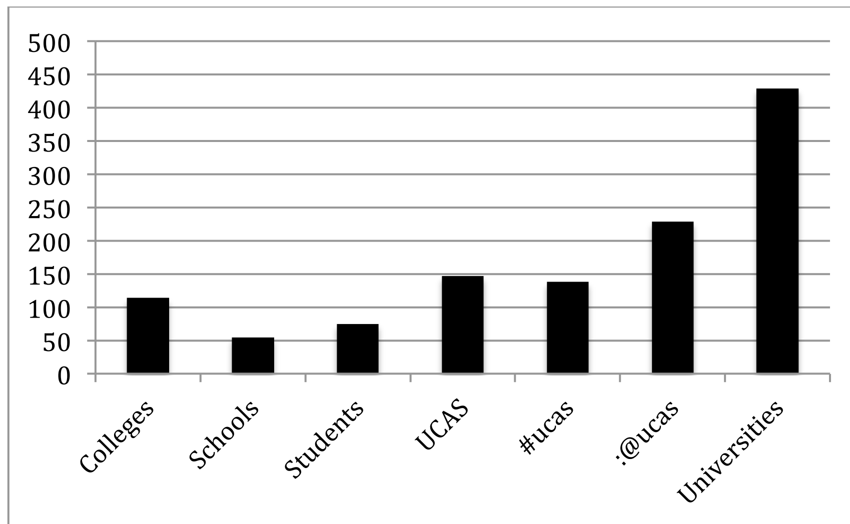
'Learners are costing us tax payers £9,000 a year. After this they need a gap year?! And they pay this money back when? Idle youths. Go to work.'

As the examples above illustrate wider actors can have widely different perceptions and interpretations of gap years and were typically not sharing impartial information in either respect. In both of these cases the information being shared is being stated and could potentially be misinterpreted as fact rather than one individual's opinion; it could be argued that neither tweet is necessarily either factually correct, or, that they agree with a more widely understood dictionary definition of what a 'gap year' is.

- ***Theme - Course and content***

Information being shared on Twitter in relation to university courses and their content was being done by a relatively narrow selection of actors. Please note that references to colleges and schools were initially kept separate in case there was any discernable difference between the information being shared by colleges and/or sixth form schools. UCAS related terms were also kept separate as this helped identify when information was coming *from/to* UCAS (i.e. @ucas) or when they were being talked *about* (i.e. ucas), which provided some initial broad context.

Figure 5.14. Before: different actors and university courses and content



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

Actors were being talked about and not to, or, with here. The nature of comments were the same regardless of which stakeholder was being referenced in that they tended to be very broad and generic, lacking any specific details. As the following example shows, the lack of detail makes some questions arguably impossible to answer:

'Did the university stop offering this course?'

In this case without additional information (e.g. 'which' university and 'which' course the user is referring to) it is extremely unlikely that the user is likely to receive a useful response to their question. As a result even when potential conversations regarding courses were started they tended not to attract responses and develop further into conversations. This arguably demonstrates that some aspiring undergraduates struggle to phrase questions in such a way that are likely to provide useful responses and that this could be hindering their searches for information.

There was also evidence to suggest that university courses and their content may not be well understood by aspiring undergraduates. Though it is difficult to ascertain

whether this might be a result of the previously observed poor information seeking skills, or, whether they just found this topic in particular difficult to understand:

'I am far too confused to be able select a course at uni ...'

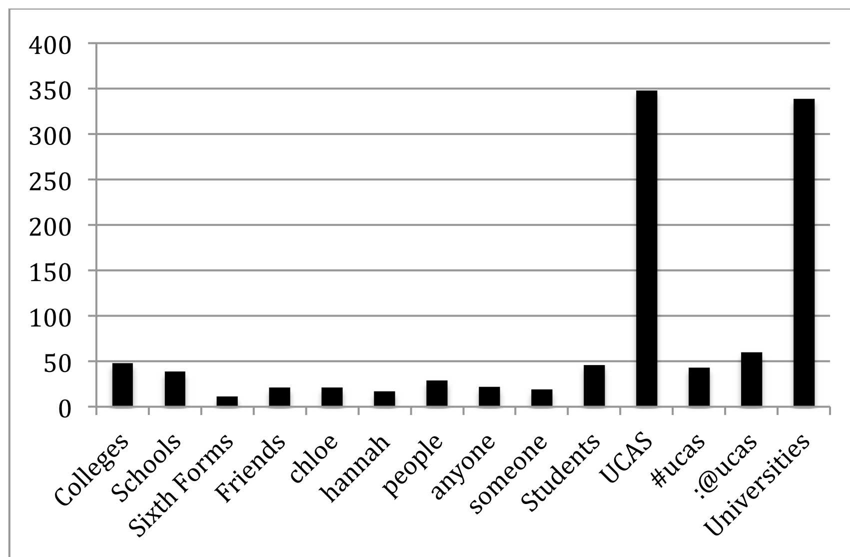
'I took a year out again because I started another course at uni but it was the wrong one for me …'

As the two examples above show there is a potentially interesting reflection between aspiring undergraduates that reported to find this topic difficult to understand and those that later make the connection between dropping out and choosing the wrong course. Whilst we cannot allude to 'why' this topic is reported to be so confusing as typically no details are provided what we can observe later is the possible knock-on-effect that this confusion has on their decision-making process. This effect on retention is considered directly below (see figure 5.30 and the accompanying section titled '*Dropping out*').

- ***Theme – Grades needed***

References here were predominantly being made in relation to UCAS and universities as these are organisations, which use grade information to facilitate entry onto undergraduate courses. In this case UCAS were being talked about rather than with which accounts for the disparity in frequency between the terms UCAS and @ucas.

Figure 5.15. Before: different actors and grades



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 10 references have not been included.

All the comments being made by aspiring undergraduates tended to be very similar as they were seeking information regarding grade/point requirements. What was notable and common across these searches however was the way in which these questions were being posed. For example:

'I have a HND, do you know how many UCAS points I get for one of these please?'

This example is typical of the type of questions being posed by aspiring undergraduates that tend to go unanswered. In particular two common factors were observed, which may have been influential in whether these questions attracted responses (or not). These are as follows:

1. Questions are not being aimed at individuals or organisations that can help. Aspiring undergraduates might mention 'UCAS' but the majority did not ask them directly. In comparison those users that did ask questions of UCAS directly all received responses.
2. Questions frequently lack enough detail or information that would enable other users to provide an answer. For example, as figure 5.15 shows there are plenty of loose references to 'universities', but given each institution has it's own grade requirements for each course it is impossible to provide an

accurate answer unless the aspiring undergraduate provides more information.

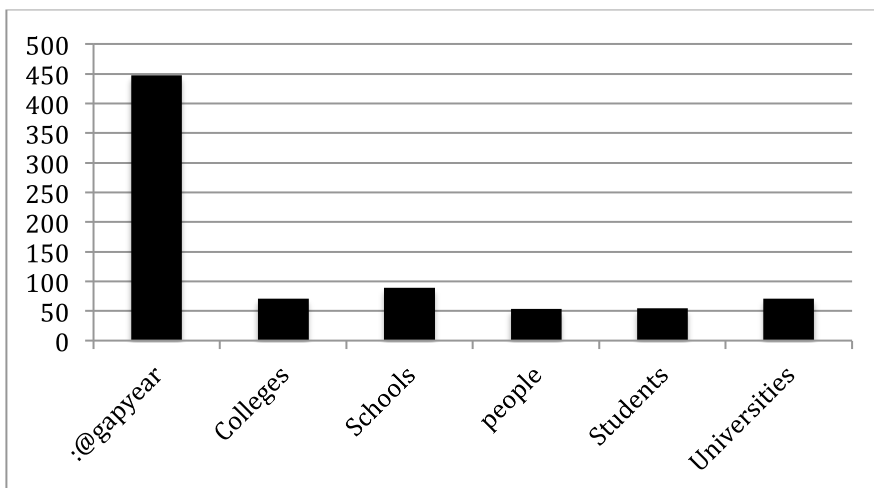
There was also evidence that some aspiring undergraduates were trying to openly get around, or even cheat, the UCAS points system. In these cases aspiring undergraduates displayed no fear of recrimination and the nature of the questions being asked were similar to the comments in relation to predicted grades (see section 5.3.5) in that some individuals were unwilling to accept the information they'd been given and were attempting to alter or barter with those decisions.

'Do you know if you can buy UCAS points?'

- ***Theme – Location and size***

There are two elements that must be initially appreciated in order to properly understand the context of the communications here. Firstly, none of the comments retrieved were talking about the location and size of university campuses, however just because aspiring undergraduates were not talking in the way that was expected did not mean that the findings were not of interest. The second element to appreciate is that, as figure 5.16 illustrates, the prevalence of communication from commercial entities (i.e. @gapyear) were related in topic but was not connected to the discussions that were taking place between aspiring undergraduates (and other actors).

Figure 5.16. Before: different actors and location/size



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The references being made by aspiring undergraduates discussed their longing to travel, which often conflicted with their desire to continue their education. Tweets made reference to colleges, schools, people, students and universities but aspiring undergraduates tended not to be talking with, or, to these individuals/organisations.

'I want to go to university, but I also want to take a gap year so I can travel the world'

'I want to travel the world really badly but I don't want to put off going to uni for a year'

Although aspiring undergraduates reportedly found the decision to choose between travel and education difficult their Tweets did not contain questions. None of the Tweets sampled indicated that they were lacking information; however, it cannot be conclusively said that there was no information-seeking activity taking place here as it could be argued that these statements could be seeking, for example, the opinions or approval of peers rather than facts.

Reflective statements from current university students who felt they had made the wrong choice between study and travel possessed the same qualities. These comments were not questions and did not suggest at any point that they had, for example, lacked the correct information needed to make the correct decision.

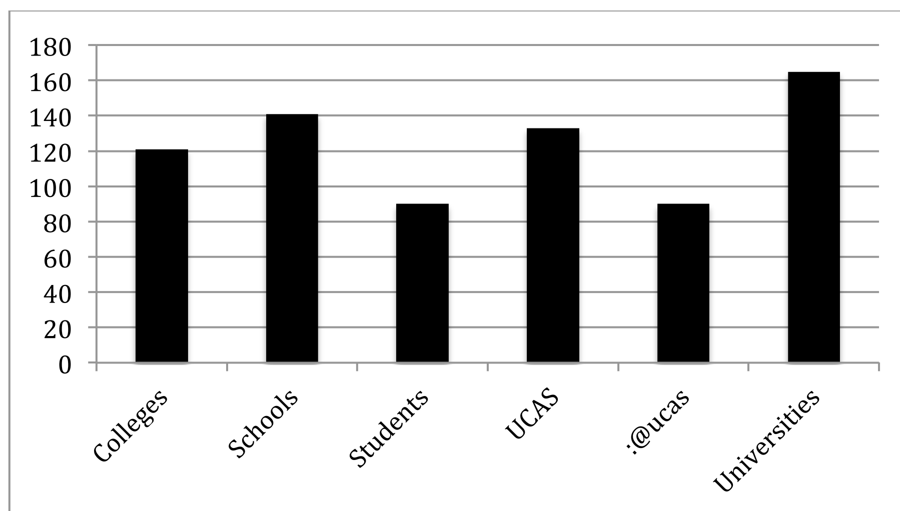
'My biggest regret in my life is not taking a gap year before university to travel the world'

Two factors support the view that despite the similarity of the comments these decisions are personal and that the 'right' decision is entirely dependent on the individual in question and their contexts. Firstly, comments always took place in the first person, aspiring undergraduates refer to 'I', 'Me' and 'My' rather than generalising to a group such as 'we', or 'our', and secondly the use of verbs (e.g. 'want') support the idea of individual feelings and desires.

- ***Theme – Progression and career prospects***

As figure 5.17 shows there was a relatively tight group of actors involved in communication and discussions surrounding progression and career prospects. What is of particular interest in this case is not the actors, which are present but rather the ones, which are notably absent. Despite the topic being work related there tended not to be any references to employers, businesses or even industries (e.g. loose references to a 'medical' career).

Figure 5.17. Before: stakeholder and progression/career prospects



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

One possible reason for the lack of references to employers/industry was that the comments relating to progression tended not to be long term; aspiring undergraduates tended to concentrate on immediate issues, such as decisions that needed to be made in the nearer, foreseeable future. So, for example, while aspiring undergraduates made loose references to 'work', they did not talk about specific careers or long-term goals.

'Do I go to university, or do I work? I need God to help me, I can't decide'

With the exception of the term @ucas, communications were not coming from colleges, schools, UCAS or universities. Discussions relating to progression and

careers were nearly all coming from aspiring undergraduates who might make mention of other actors but they were not using Twitter to talk with, or, to them.

The nature of the comments from aspiring undergraduates were in one sense diverse in that the wording, specific details and experiences being recounted differed. However, there was an overall sense from all of the tweets that were sampled that the experience and even the prospect of progressing, into work or university, was proving challenging.

'I really tried to get work experience after college when I was on my gap year. But even though I'm a good student it's difficult.'

In terms of identifying common challenges and/or themes it is worth noting that while financial concerns were not widely mentioned they were identified as being an influential factor for a small number of aspiring undergraduates. The language and descriptions being used, as in this example, where the aspiring undergraduate describes their financial situation as a '*knife edge'* coveys the perceived importance this has and implies that this restricts the options that are realistically available to them.

'The advice we get to take gap years before university doesn't work for the majority of students living on a financial knife edge'

There were not any other common, specific, factors among the challenges that were identified by aspiring undergraduates. The problems that were being described were all unique to a specific individual, as in this example, which recounts advice from siblings as being contrary to their own desires:

'Wanted a gap year to sort out student stuff but my brothers/sister have told me to work??'

Despite a lack of common specific challenges there was a trend from a notable proportion of students to list a combination of multiple generic factors as being collectively problematic. Aspiring undergraduates identified that there was not 'one' specific problem but rather that it was a combination of numerous responsibilities

that were, at best, affecting the time they had available for social activities, at worst they reported to be struggling to manage at all.

'Struggling to balance college, work, family stress and ucas. It's killing my social life'

'Struggling to balance college, ucas, my homework, work, family and a social life. It's just not possible.'

'In between college, housework, exams, family and ucas I'm going to die of stress'

'I'm not coping. I can't manage my university application, friends, finding enough money (for Christmas) and keeping up with college all at once'

Where aspiring undergraduates listed combinations of responsibilities the term 'stress' was used in half of the comments that were sampled: although arguably statements such as '*I'm not coping*' imply that stress may also have been present in those cases. Ergo there would appear to be a strong connection between the perceived inability to cope and manage numerous responsibilities simultaneously with the impact that this is commonly reported to be having on aspiring undergraduates (i.e. stress).

Subjects and different actors; during A level results/the start of clearing

As figures 5.18 to 5.29 demonstrate far more actors were involved in communications during the second data collection period: notably the environment becomes far more commercial with, for example, the emergence of private companies (e.g. joblink). This represented a shift in the nature of the tweets as previously many actors were being referenced by aspiring undergraduates but (with the exception of UCAS) were frequently not active themselves whereas tweets here were coming from the actors identified in each of the graphs and the voices of aspiring undergraduates are less prominent.

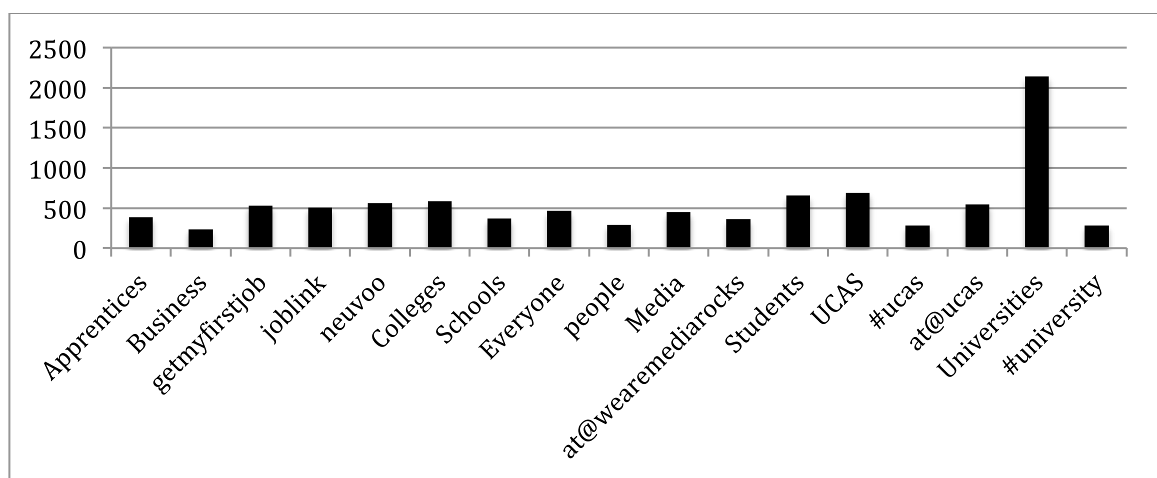
The change in the online environment is perhaps unsurprising given that there has also been a shift in the offline worlds that aspiring undergraduates inhabit. During this data collection period all aspiring undergraduates had left full time education

and were the target audience for a number of businesses that catered specifically to this group (e.g. getmyfirstjob). As a reflection of the shift in different actors the quality of communication had also altered (e.g. subsection on ‘gap years’ below).

- ***Applying***

The most frequently referenced actors in connection to the theme of applying were universities; these tweets were straightforward and came from both aspiring undergraduates and universities.

Figure 5.18. During: different actors and applying



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The main relationship worthy of note here was between aspiring undergraduates and universities; aspiring undergraduates used Twitter to pose questions to universities. Where aspiring undergraduates were able to identify and/or direct a question to a specific university they were frequently successful in getting a response. However, there was a tendency for some aspiring undergraduates to fail to identify any recipient in their tweets and in these cases their questions frequently failed to elicit any response.

‘The university has accepted will I still be able to decline and apply for somewhere else?’

While universities did respond to individual questions that aspiring undergraduates sent them there were also ample examples of universities being proactive and many made efforts to help signpost aspiring undergraduates to useful sources of information. This was typically providing aspiring undergraduates with either information that related to clearing, or, the contact information of designated clearing staff.

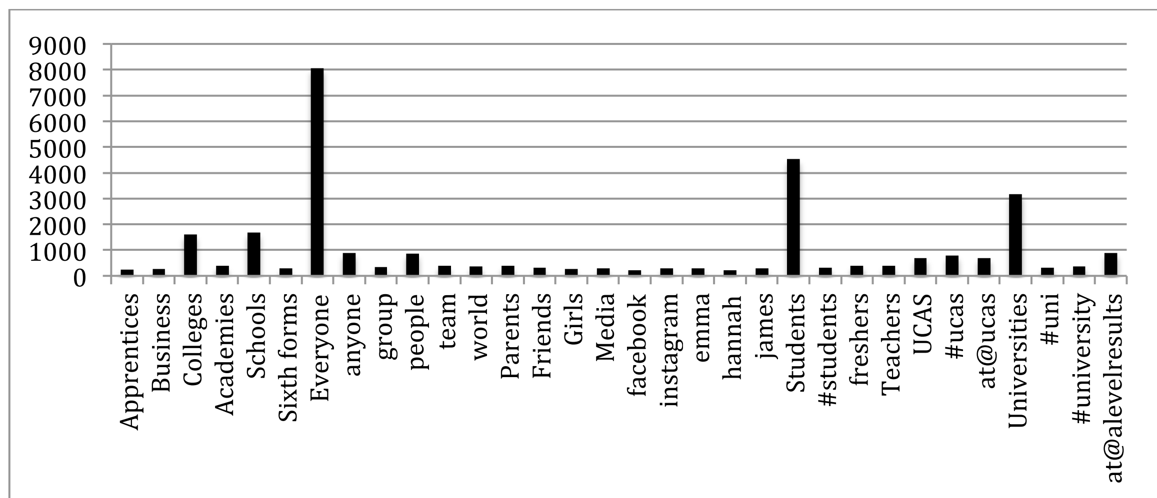
‘Find out how to apply for a place through clearing www.university.ac.uk/clearing’

‘Looking to apply through Clearing? Chat to our clearing experts today.’

- ***Congratulations***

The universal sentiment behind this particular theme was straightforward in that different actors wanted to congratulate aspiring undergraduates on their exam results. Where this particular theme differed from other topics was that it attracted, in comparison to previous themes, a very wide number of actors.

Figure 5.19. During: different actors and congratulations



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

Whilst some Twitter users were congratulating a specific individual, which accounts for the references to names (e.g. emma), typically tweets were being targeted more

generally at groups and/or all individuals who were receiving exam results. So, for example well-wishers tended to address ‘students’, or, ‘everyone’ which accounts for the results seen above in figure 5.19. Messages were frequently short, closed comments that simply wished those receiving results well.

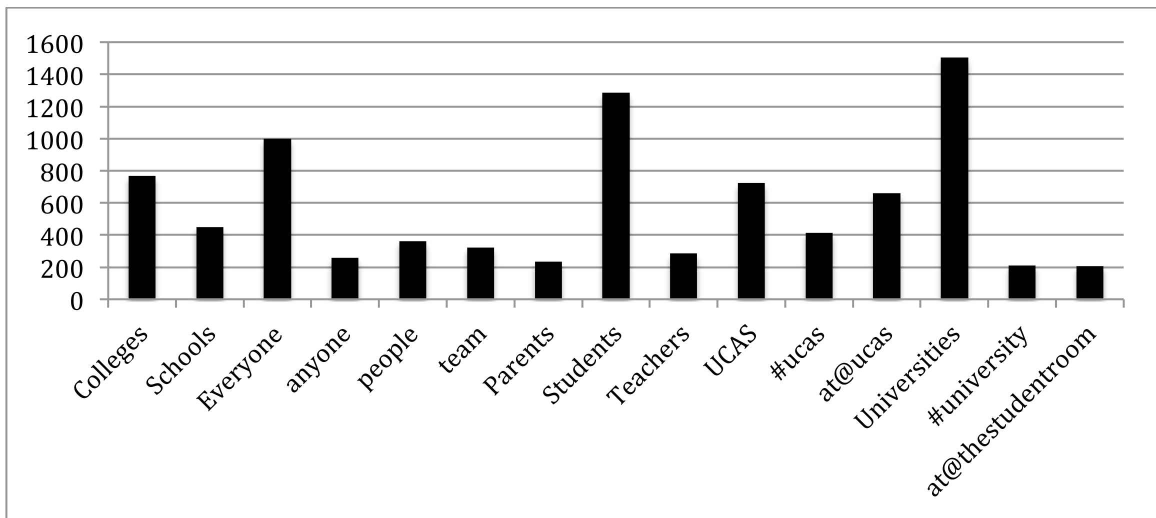
‘Congratulations on your A level results everyone’

‘We would like to send a big congratulations to everyone receiving their A level results today’

- ***Decision making – Advice***

There was a wide spread of different actors present in relation to the theme of advice, with information coming from universities being notably prominent; in comparison communication referencing ‘students’ and ‘everyone’ were not coming from these actors and were either references *to,* or, *about* them.

Figure 5.20. During: different actors and decision-making



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The nature of all of the comments being made here, regardless of which stakeholder was being referenced, were uniform in that they were offers of help and

advice being aimed *at* aspiring undergraduates; there very little (if anything that could be found) coming *from* aspiring undergraduates. For example:

> *'If you have your grades and aren't certain what you want to do next? We're here for support and advice'*

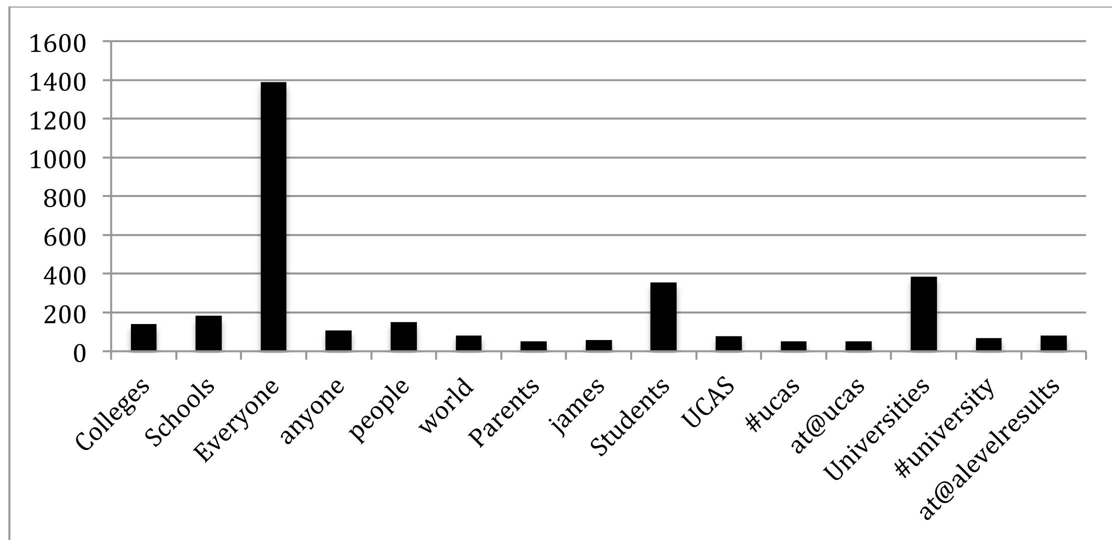
> *'You can see our advisors today from 9am onwards for advice and/or support'*

It is worth remembering that these communications were being collected a short number of weeks before university courses were due to start. Whilst there is ample evidence of the *supply* of information here, there is far less (at least on Twitter) demonstrating *demand* from aspiring undergraduates at this stage. Given that this study has located evidence to indicate that information gathering and decision making processes for aspiring undergraduates have been happening since, at least, September the previous year (when the data collection first started), (see '5.3.3' section titled '*decision making process'*); arguably these offers of support, the kind of which had not been observed previously, are arriving too late.

- ***Emotional***

The numbers of references here were far lower than for other themes, therefore figure 5.21 below represents those different actors with 50 references or more. Whilst these communications were identified as displaying emotion they were not, (as figure 5.21 illustrates, being targeted at single individuals and rather were coming from a range of different actors and being towards those receiving exam results as a collective (i.e. 'students' and 'everyone').

Figure 5.21. During: different actors and emotion



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The emotion being shown here was a reflection of the context as many aspiring undergraduates were in the process of receiving exam results and different actors were simply expressing optimistic aspirations and well-wishes: for example:

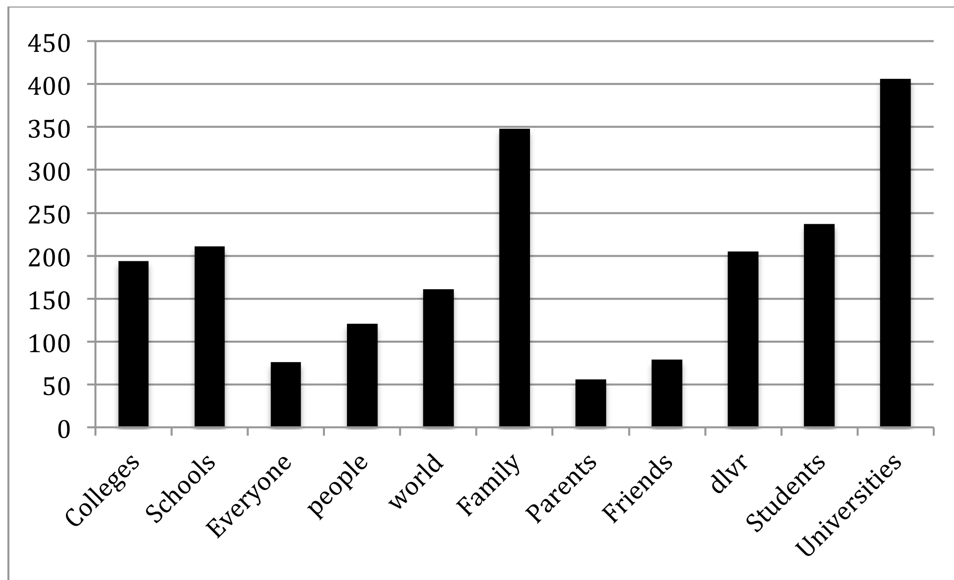
'We really hope all students get good grades today'

The sentiment behind these communications mirrors the nerves and the context of results day and actors were trying to be positive in a time of stress and anxiety.

- ***Gap year***

The numbers of references here were far lower than for other themes within the same data collection period (e.g. compared to the theme of 'congratulations'), and were significantly lower that the number of references to gap years recorded during the first data collection period (see section 5.3.3 '*Subjects and different actors; during the application process*', subsection '*Gap years*'). Figure 5.22 only represents those actors with 50 references or more.

Figure 5.22. During: different actors and gap years



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

Tweets were not coming from, or being aimed towards, universities; rather these communications were casual and indirect references that were being made by other actors (with the exception of families, see figure 5.22). As universities were neither involved, nor the subject of these tweets, these communications have been considered in context with the other themes that follow here.

All of the sampled tweets that referenced families were commercial in nature and were coming from businesses targeting families. These advertising messages were typically encouraging families to take a gap year together and came in very low levels (e.g. a couple of tweets) from multiple small organisations, which is why none of the authors appeared as a stakeholder in figure 5.22. Identifying 'who' these commercial authors were was frequently difficult as often neither their username nor the tweet made plain 'who' they were, or, 'what' they were selling (e.g. a product or a service); as such it could not be assumed that they were travel agents. In addition many did not include any signposting towards additional information (e.g. a link to a website), for example:

'@houfes91 We'll help plan your family gap year'

Given the lack of information being provided it is perhaps unsurprising that there was very little evidence that these small commercial entities were successfully engaging with other users; these tweets typically did not attract likes, were not shared and did not receive responses from other users.

The tweets involving students overlapped with the other actors (i.e. colleges, schools, everyone, people, world, parents and friends) and these were insightful in two ways; firstly there was evidence of aspiring undergraduates recounting advice they'd be given, and smaller subgroups of aspiring undergraduates identified influential demographic factors in relation to gap years. In both cases aspiring undergraduates tended not to seek information (e.g. by asking questions) and their tendency to either be recounting in the past tense or to be reflecting on events that were currently happening suggested that the majority of decisions (i.e. on whether or not to take a gap year) had already been made.

Aspiring undergraduates in their tendency to recount information that they'd been given gave examples of advice that did not necessarily come from an unbiased, reliable source. For example:

'My boss gave me advice. Told me to take a gap year and make lots of money and spent it on travelling, shopping and nights out'

The manner in which some of these examples of advice were recounted indicated that aspiring undergraduates either did not agree with the information they'd been given, or, that they had not found it to be beneficial. A good example of this was advice that aspiring undergraduates had received from parents, who could either be in support of, or against, gap years; in both cases there was evidence from aspiring undergraduates that suggested that the information they'd received had not been right for them.

'It is extremely obvious that neither mum, nor dad, are happy about me taking a gap year'

'How did my mum manage to talk me into taking this gap year?'

The variation in what aspiring undergraduates report to be the ‘right’ advice and what they later consider to have been the ‘correct’ decision places an emphasis on individual context; that is to say what an aspiring undergraduates believes to be the ‘correct’ decision is entirely dependent on their personal circumstances and who they are (e.g. their views and beliefs). The subjective nature of decisions was also evident when aspiring undergraduates later reflected on their decisions. For example this aspiring undergraduate chose to go directly to university as they believed they’d just end up sitting around if they had taken a gap year. However whether this would have been the case and whether they personally felt they wanted and/or needed a break depends on the individual and their unique context.

‘Finances for uni all done. I’d just be sitting on my bum for a year if I took a gap year’

There were two demographic sub-themes present in the tweets relating to gap years that are worthy of note. While they did not occur in great volume they show that different sets of considerations exist for certain aspiring undergraduates:

1. **Financial** (constraints). These financial references observed a disparity between the decisions and behaviour of students perceived to be wealthy versus those that were not. These comments indicate that some aspiring undergraduates were aware that their own circumstances were markedly different from that of other aspiring undergraduates.

    ‘Don’t post pics of your new watch please, you’re wearing an amazing gap year around your wrist’

    ‘It shouldn’t be frowned upon if you take a gap year to work in order to save and avoid student debt’

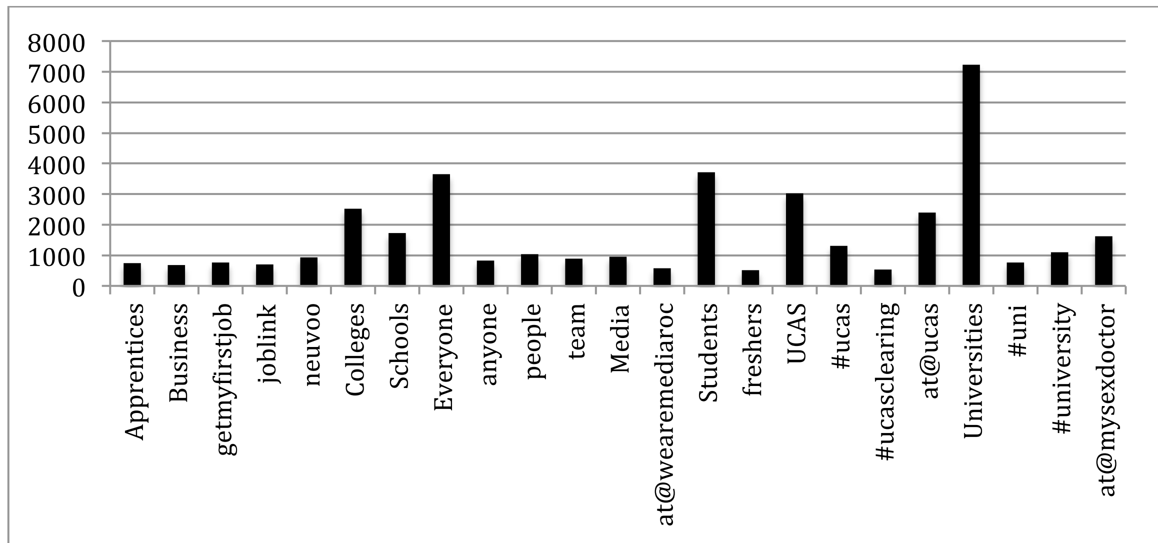
2. **Cultural**. Some aspiring undergraduates observed that gap years were a western concept that they weren’t used to. Whilst gap years weren’t seen as being common in other cultures there was evidence that these aspiring undergraduates were receptive to the idea and there was evidence of peers helping to explain the concept.

'I don't want to be one of those annoying western pre-students, but I want a gap year'

'Lol, a gap year before university isn't bad. It happens commonly in the USA and the UK where it's not a big thing.

- ***Information seeking***

Figure 5.23. During: different actors and information seeking



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 500 references have not been included.

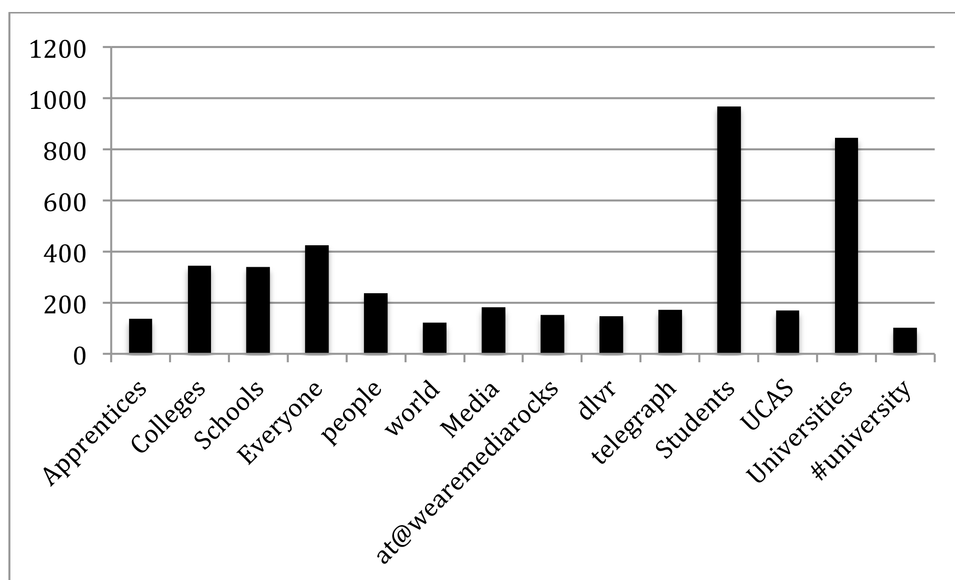
The number of references here were higher than for other topics (e.g. in comparison to conversations relating to gap years). Tweets coming from universities were higher than for any other stakeholder: and they were proactively providing information for aspiring undergraduates. This represents a notable jump in communications coming from universities that had not been observed in the first data collection period. One possible explanation for this increase could be found in the tweets themselves in that they frequently referenced clearing teams, which are frequently short-terms staffing solutions designed to assist prospective students. These could be responsible for the rise in universities using Twitter to facilitative and encourage direct communication with aspiring undergraduates during this period.

'@University We're opening longer hours during results day/clearing. You can get in touch from 6:30am till 8pm'

'@uniofhcounty We still have some course places available. Ring our hotline 01782 123 345'

- ***Life***

Figure 5.24. During: different actors and life



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 100 references have not been included.

The references to 'life' here should not be confused with references to progression, as these tweets were not referring to future careers, and/or, life in any futuristic sense. Instead these communications were referring to life styles and mostly referred to how university students were perceived to be living in the present. These references to what aspiring undergraduates perceived to be student and/or university life tended to focus predominantly on social rather than academic activities. For example:

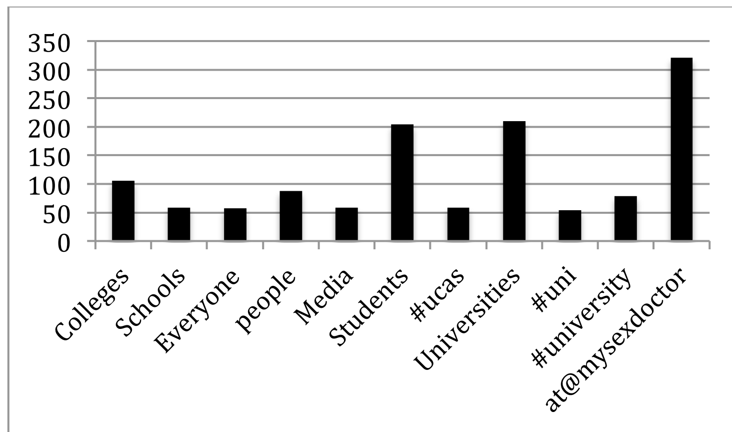
'Congrats time to celebrate in proper student life style'

'Get into student life, meet other newbies at the party'

This is a potentially interesting depiction of 'student life' by aspiring undergraduates; considering that these views are being shared *before* aspiring undergraduates have started at university it would be an interesting follow-up line of investigation to consider whether these perceptions alter once they have gained some practical experience of life as a university student.

- ***Theme – Financial***

Figure 5.25. During: different actors and finances



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

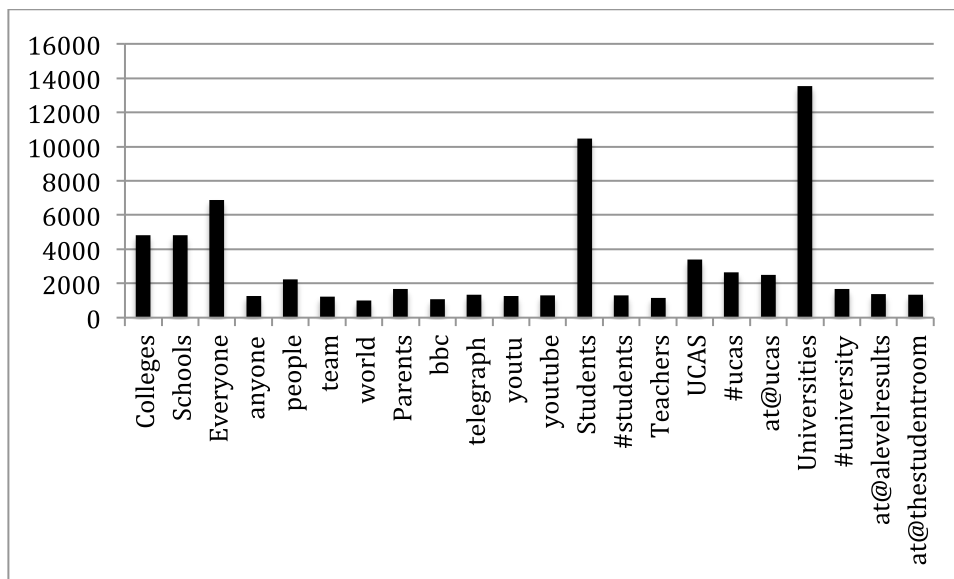
References to finances focused on free resources and sources of information rather than the price of items, and/or, issues of money management. Tweets were predominantly advertising messages that came from organisations (including university based social clubs) targeting aspiring undergraduates. There was a wide range of products/services being offered for free, which ranged from product samples and food through to free sports and social events (e.g. nightclub entry).

'Freshers Fair is on the beginning of October. Come and get your free bag of goodies!'

'Need to learn about health and sex issues? Download our free mobile app'

- ***Theme – Grades needed***

Figure 5.26. During: different actors and grades



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 1,000 references have not been included.

Grades were a popular topic and the number of references here were far higher than for other subjects (e.g. in comparison to financial tweets). The nature of the comments were all very similar in that they were tweets coming from aspiring undergraduates referencing the grades that they needed to get into university. These tweets were overwhelmingly autobiographical statements rather than questions; as such these comments tended not to start conversations or elicit responses from other users.

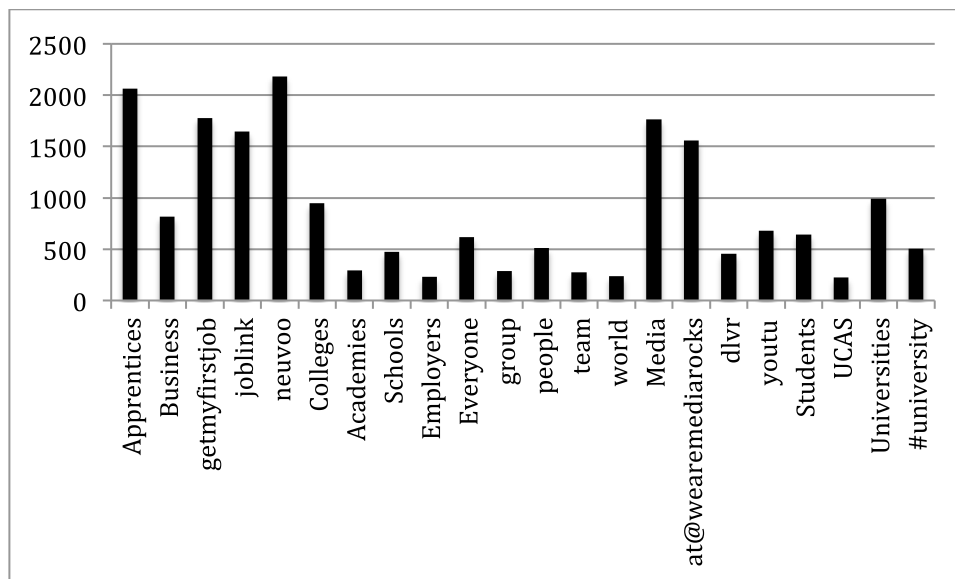
'1 more day to wait till I find out if I managed to get the grades needed for university'

Once aspiring undergraduates received their exam results their reactions understandably varied depending on whether the results were higher or lower than they had been expecting. However, the nature of their comments remained the same in that they remained statements and they weren't, for example, using Twitter to find out whether their grades had earned them a university place.

'I've got the family curse. One mark off the grades we want every single time.'

- ***Theme – Progression and career***

Figure 5.27. During: different actors and progression/careers



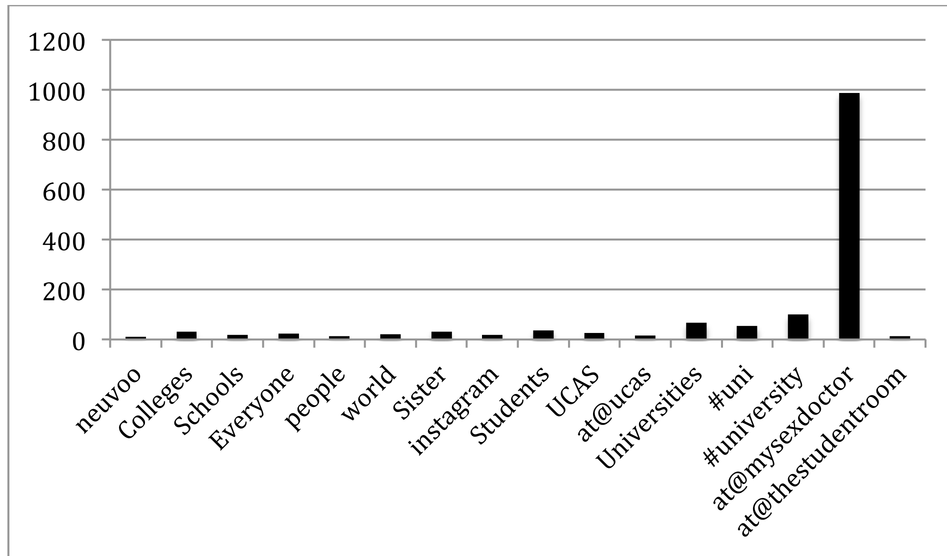
*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

The theme of progression and careers had a strong commercial element and tweets were almost all from private companies (e.g. recruitment companies) targeting school/college leavers. The range of careers being advertised varied considerably from childcare to marketing, however there was very little evidence that aspiring undergraduates were engaging with these companies. Only two tweets had attracted likes and it was not possible to confirm that this low level of engagement had come from aspiring undergraduates and not, for example, other company employees.

'Tizz is recruiting! If you're interested in hairdressing in Oxford apply now!'

- ***Theme – Social***

Figure 5.28. During: different actors and social themes



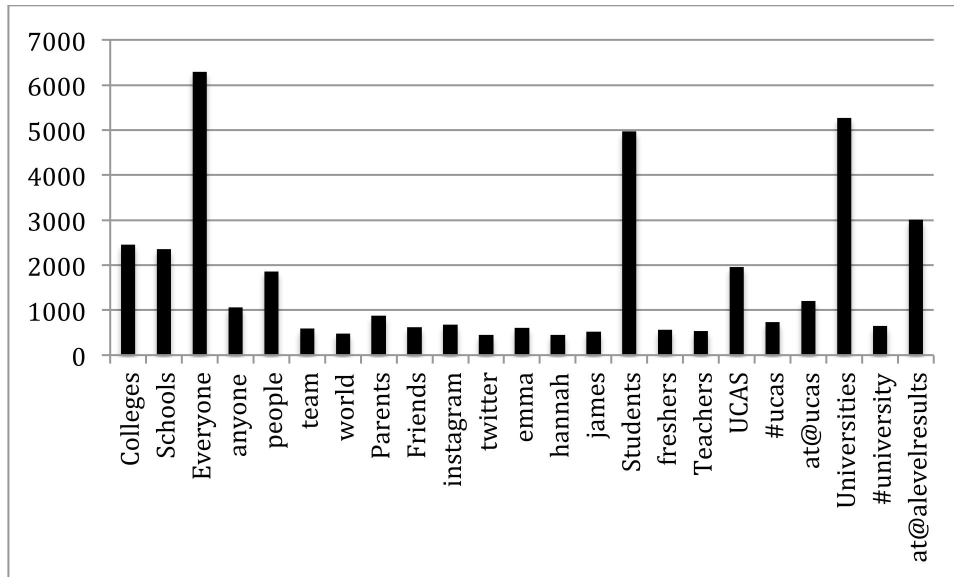
*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 10 references have not been included.

The numbers of references here were far lower than for other subjects. This particular theme was primarily in relation to sexual health and/or general health issues and as the figure 5.28 illustrates tweets mostly came from one user, which was advertising a mobile phone application.

'Would you like to find out more about health and sex?'

- ***Timescale***

Figure 5.29. During: different actors and timescale



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 450 references have not been included.

Whilst students were frequently being mentioned these communications were not coming from aspiring undergraduates and instead tended to be coming from a wide variety of other actors (e.g. universities, schools and colleges) who were talking about and/or to aspiring undergraduates. Tweets did not talk about time as a topic in itself: rather it was being used as a reference point and/or a unit of measurement in relation to other events that were happening during this data collection period.

'Try not to be nervous about tomorrow, we're here for you! See our guide http://www.educationalguide.co.uk'

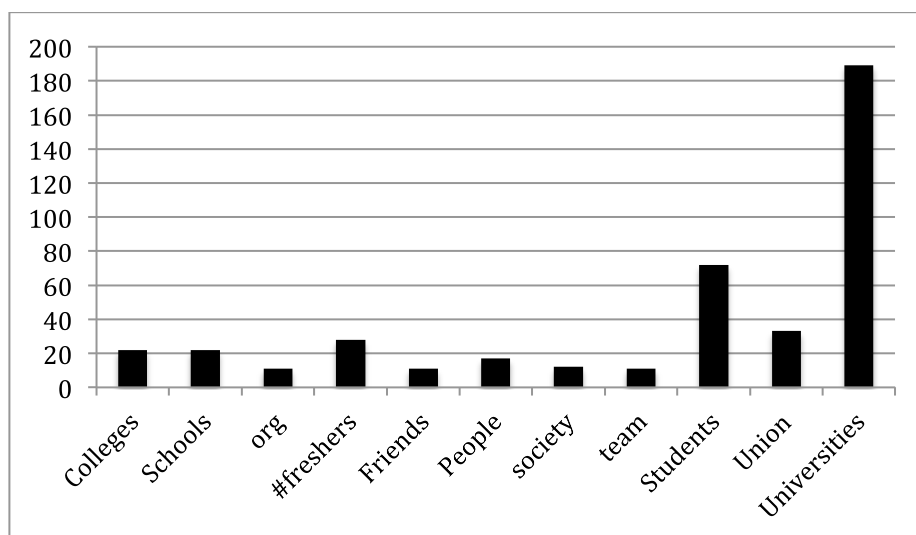
'Getting ready for results day tomorrow! Big decisions to be made by our learners.'

Although time was not being directly talked about: these comments provided a sense of the context in that these references were a continual reminder of the tight time constraints for both aspiring undergraduates and universities.

Subjects and different actors; during enrolment and their first semester in university

- ***Dropping out***

Figure 5.30. After: different actors and dropping out of university



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 10 references have not been included.

This theme, although relatively small in comparison to others (e.g. to the theme of emotion), was important as it related to university students, who since joining university were prematurely leaving. The primary challenge that this dataset presented was assessing the sincerity of these comments; whilst they came from aspiring undergraduates who were talking about university the tweets existed on a scale, from the humorous, through to those that were more serious in nature. Some, for example, referenced such impractical or unrealistic notions that it could be reasonably assumed that the authors were not being sincere:

'I still have time to drop out of uni so I can be a Pokemon trainer yeah?'

'I've seen one episode of Tattoo Fixers and I want to leave university so I can be a tattoo artist.'

Assessing the degree of seriousness was challenging when aspiring undergraduates were talking about intending to drop out of university as they were talking about an event that hadn't happened yet. As such it was not possible to tell

from an isolated tweet whether the aspiring undergraduate was intending to leave, or whether they were, perhaps, having a one-off bad day. What is of interest is that these students were taking to Twitter to document these decisions before they were (or weren't) taking place. Although these statements aren't structured as questions it could be argued that publishing details of personal difficulties is an open display that someone possibly needs help and that support groups (e.g. student support departments in universities) could potentially use this information to intercept and support aspiring undergraduates at a point before they disengage and leave; or to use this information to better understand and improve existing support.

'I'm honestly thinking about dropping out of university. I really can't take it. I've snapped.'

There were eight broad categories of reasons that university students gave for why they were either considering, or, had dropped out of university. Whilst students tended to identify a cause they did not always expand to explain 'why' they felt they had made the wrong decision (e.g. as in the example provided above). These categories were:

- **Social.** These tended to relate to romantic causes. In some cases students appeared to have struggled with the end of a relationship whereas in other cases they wanted to leave university in order to be able to have a relationship.

'I did not drop out of university. I had a massive boyfriend upgrade … '

'University is the reason I can't get married yet. So I think it's better that I drop out now.'

- **Mental and physical health.** There were examples that indicated that these issues experienced could be physical and/or mental. These comments did not indicate whether they were receiving, or had attempted to find, support; so it was not possible to tell what difference (if any) this might have made.

'… I'm a professional at being poorly and dropping out of university. Five times!'

'I just want to sort out my mental health, but I can't find it in myself to drop out of uni'

- **Academic challenges.** Some university students reportedly were struggling with the work they had been given. Although they would frequently referenced assessments of all kinds (e.g. essays, presentations, exams) they did not expand to explain why they found these challenging. For example they did not say whether it was a result of the timescale, whether they were struggling to write references, etc.

'This is my 1st break down at university. It's vile. I want to leave, this assignment.'

'I can not manage this essay, I'm done at uni, can I leave?'

- **The course.** These comments tended to make sweeping generic statements about the course in general, with the exception of two examples where it was just a component of the course (i.e. a module or placement) that the students weren't reportedly happy with.

'I honestly really didn't want to be doing this course at uni, dropping out'

'Terrified about doing my university placement. I'd rather drop out than do it'

These examples are of interest because course details are either already known, or could have been known, to the student before they started their course, which raises a question of whether these issues could have been avoided? There is a notable gap in the evidence here in that the students were **not** finding fault with the course; for example by saying that the course had not been what they'd expected, or, that they considered it poor quality. Students' tendency to reflect and talk in the first person and say '*I didn't like the course'* and not project perceived blame onto the university by saying, for example, that '*the course was rubbish'* is interesting in

that the students themselves are acknowledging that the issue tends to be at the user rather the provider end.

- **Financial.** Not all students were reporting to be able to manage financially. As they did not provide details and spoke only of general financial constraints it was not possible to tell whether this was a result of unforeseen events (e.g. a car breaking down), or, perhaps poor money management.

  'I'm completely broke, might have to drop out get a job and live with my parents forever'

  'I can't find someone to live with next year, having to drop out because I don't have enough money to live alone.'

  Conversely there was also evidence that some university students wanted to leave but felt that they weren't able to because of the financial commitment they'd made.

  'Really tired of people telling me it's alright to leave university if that's what I want. They're not going to pay these student loans off for me are they! Blathering gits.'

- **Independent living.** There was some evidence that students had developed a greater appreciation for the home comforts that their parents had previously provided and that they were finding living independently, in comparison, more difficult.

  'I just really want to drop out of uni, go home and get my parents to feed me again'

- **Progression/career.** There were a number of university students that had decided that a degree wasn't necessarily the most appropriate preparation and/or pathway for the career they wanted (e.g. for practical vocations such as hairdressing). These university students weren't necessarily disengaging from education but were looking to exchange their current course for one

that would give them the specific skills and/or training that they would need (e.g. via an apprenticeship).

‘I honestly am going to drop out of university and start a hairdressing apprenticeship’

‘My mum & dad found out I’m dropping out of university to go to culinary school’

These comments don’t indicate ‘when’ these undergraduate students might have decided that they were interested in these careers; so it is not possible to tell whether this was prior to their university admission, when careers advice may have directed them towards a more appropriate course, or, whether this was after they had enrolled at university.

- **Parental.** For those that were considering leaving university, or had already left, parents were frequently cited as being a concern. In some cases university students were worried about what their parents would think if they were to leave.

‘Need to search Google. How can I leave university without my mum/dad finding out?’

In some cases the concern was more specific and referenced the finances that parents had invested. There were references to this financial commitment coming university students as well as parents (in cases where the parents were financially supporting the student), which demonstrated that the financial outlay had created a certain obligation and pressure on the university student to succeed (i.e. to stay in university and earn a degree).

‘I can’t drop out. My mum and dad have spent so much money on me.’

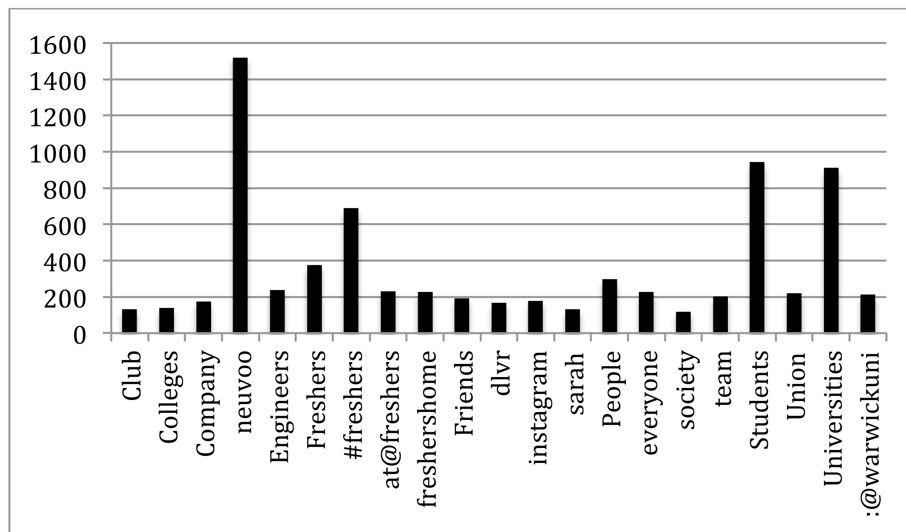
‘Apparently I’m an evil mum just because I don’t want my child to drop out of uni because of financial reasons …’

In a small number of cases university students identified their parents as being responsible for their decision to enrol at university and cited this as their reason for leaving. This suggests that Higher Education was perhaps neither appropriate, and/or, what the student wanted.

'My parents sent me to university, but I just dropped out so I could be a mechanic'

- ***Information seeking***

Figure 5.31. After: different actors and information seeking



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 100 references have not been included.

There were two kinds of references here, the first relating to 'looking', which excluding references to aspiring undergraduates and/or university staff 'looking forward' to things (e.g. the start and end of the semester), consisted of searches by private companies (e.g. neuvoo) searching for suitable university students and/or graduates to fill job roles.

'Seeking freshers for IT related jobs neuvoo.co.in/job.php1234'

The second kind of reference that could be found here involved the term 'need', and these comments represented very specific searches for information by university

students. The detail in each search was unique as it depended on the circumstances and/or the university student in question. These searches ranged from preferences on assignment binding, to finding a taxi, through to a search '*for a sympathetic ear*'.

'We need to find a workspace where we can work in our groups. Let us know if you agree, any ideas?'

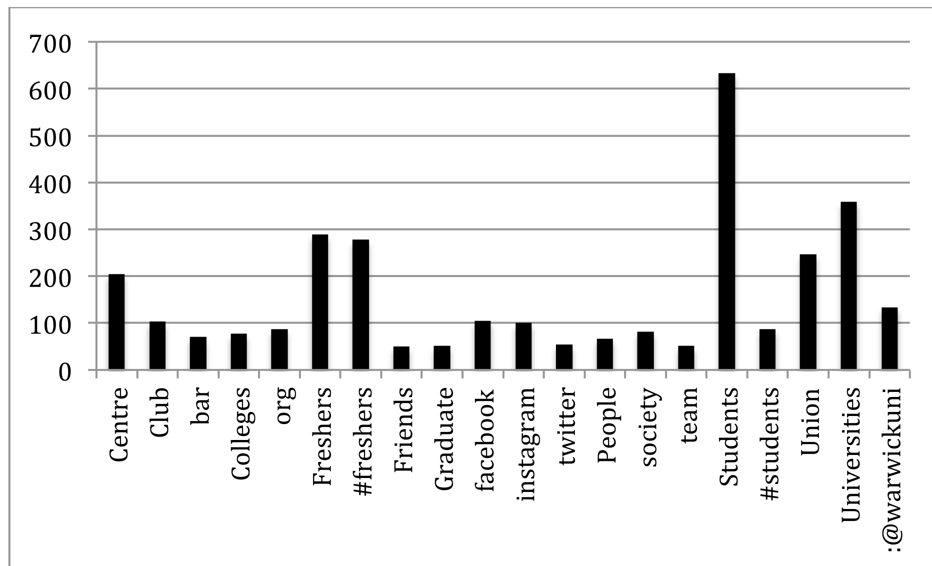
Whilst it was difficult to generalise these searches into categories as they were individually subjective; what could be found was evidence that when detailed questions were being asked in this way university staff and peers were active in responding.

'Hello, In order to get a new student card you'll need to go into the main campus library'

Examples of responses (such as the one above) demonstrate that university students are not only using Twitter to search for information, but that in some cases they are receiving useful information in return.

- ***Theme – Financial***

Figure 5.32. After: different actors and finances



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 50 references have not been included.

With the exception of references to the financial implications of students prematurely leaving university (see section titled '*Dropping out*' above), aspiring undergraduates didn't use Twitter to talk about their finances. Instead the comments that were found here related to promotions and free items being offered to students (e.g. by university societies, bars, etc.).

'Attention all University freshers, there are free puddings being given away at the freshers fair'

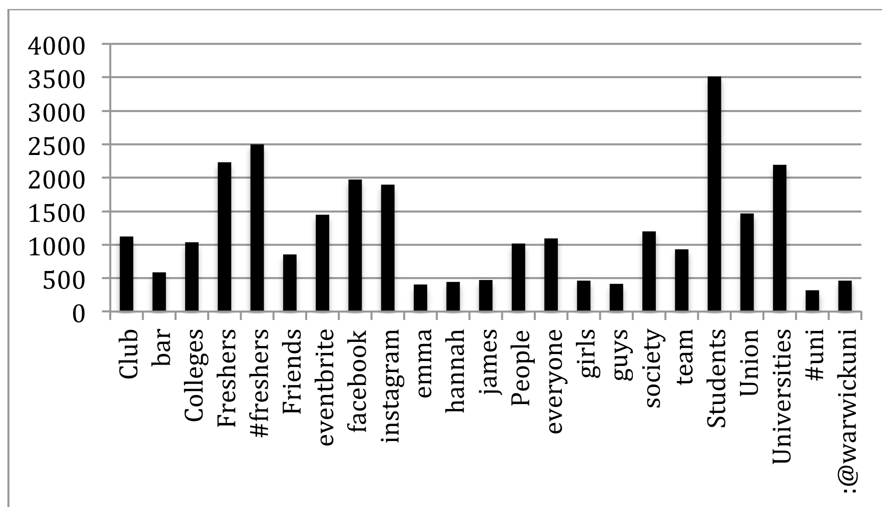
'Come see the free taster sessions that the student clubs have arranged later on today'

'Make sure you visit the freshers fair soon, there are lots of groups and organisations to join and free food'

There is an interesting gap in the evidence here given that finances have been identified as an attributing factor to university students dropping out: but that they aren't otherwise being discussed up until the point when it becomes enough of a problem that students are considering leaving university altogether. This would be a potentially interesting follow-up line of investigation to question why ordinarily university students aren't discussing financial matters; for example do they have budgets and/or financial management habits, or, are financial matters not seen as important and/or of interest?

- ***Theme – Social reasons***

Figure 5.33. After: different actors and social reasons



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 400 references have not been included.

Social references fell into three broad categories; those that were advertising upcoming events (e.g. *'we're going to the freshers fair in the union today! Come find our stand for free ice creams!*'), and positive or negative views that were being expressed by aspiring undergraduates after the social events had taken place. The positive feedback that came after the events tended to be extremely generic (e.g. '*the party last night was brilliant'*) and tended not to include details to say, for example, why they had found it enjoyable. However, the negative feedback had a tendency to include more details and give some indications as to 'why' the university student had not necessarily enjoyed the event.

'I have no idea how other students are out every night during freshers week. I went once, caught the flu and pretty much slept for 7 days,'

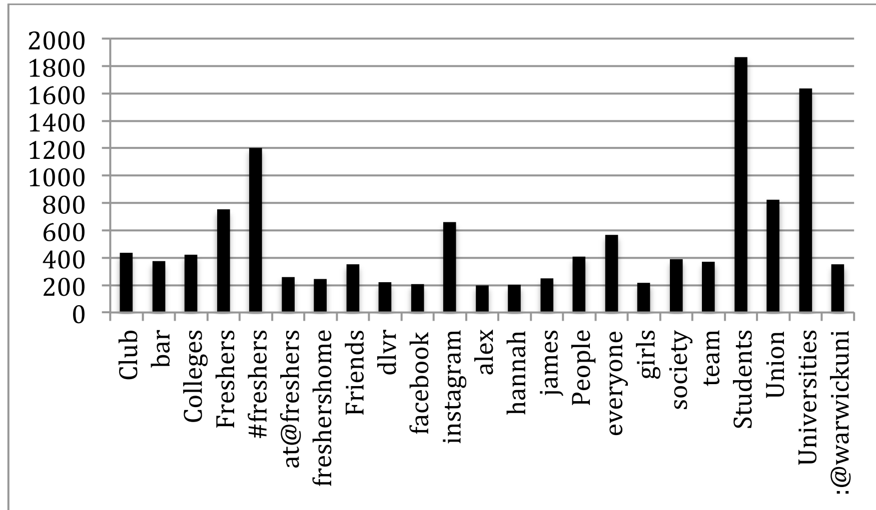
*'*happy crying* freshers week is finished! It was a horrendous seven days of learners, bad advice, tidying, moaning and annoyed foreigners'*

Social events are a potentially useful way for newly enrolled university students to gain valuable information (see chapter 5, section 5.4.1). That there is evidence to suggest that not all students find these events to be enjoyable and/or useful is of interest and it would be useful to understand *why* some information sources favour,

or are favoured, by certain groups, or types, of university students. To avoid repetition this finding has been explored in more depth in section 5.4.1 (chapter 5).

- ***Timescale***

Figure 5.34. After: different actors and timescale



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 200 references have not been included.

Some references (e.g. the use of the term 'today') were similar to comments from the second data collection period in that they did not talk about time as a concept in itself but as a measure for events that were happening. However, here the concept of 'time' was also discussed as a commodity, for example aspiring undergraduates would discuss whether they thought an activity was a worthwhile use of their time, or, whether they had enough of it to be able to do something (e.g. study full time).

'I'd definitely want Michael and Mohammed to be my tutors, really worthwhile time spent with them at Uni'

'My time at uni has made me the person I am today, it'll stay with me forever. I love that uni and always will.'

University students also described time in positive or negative ways; for example they might consider certain activities to be '*worthwhile*', or, '*a good time'*; otherwise in the case of looming deadlines it could be negative if they didn't have enough of it. The way in which aspiring undergraduates talk about time as a finite resource here

is interesting as if we compare it to comments found during the first data collection period (a year earlier, see quote below) we can still see that having enough time was arguably an issue but they never recognised or referred to time in their tweets:

'Struggling to balance college, ucas, my homework, work, family and a social life. It's just not possible.'

Given the short nature of the tweets it is only possible to speculate as to why these tweets appear to have evolved from only recognising the components of the problem (e.g. jobs to do), through to being able to identify time as a limited resource that needs to be well spent. For example, it is not possible to tell if this change may be a result of getting older generally, or, whether university students might be developing time management skills; this could be an area that would benefit from further future investigation.

Other themes:

- ***Theme – Location and size (figure A.19 in the appendices)***

  The only way that location and/or distance were being referenced once aspiring undergraduates had enrolled in university was in terms of walk-in sessions, drives and local services that were being provided. Whilst distance and locations were not talked about in their own right, university services (including freshers activities) tended to advertise events and/or services using terms (e.g. '*on campus*', or, '*walk in*') that identified them as being easily accessible (i.e. that could be reached on foot).

  'A big technology company is having a walk-in recruitment drive for freshers. You can apply here …'

- ***Theme – Progression and career prospects (figure A.20 in the appendices)***

  Tweets referencing careers were coming from private companies (i.e. jobs agencies), and/or, individual employees of these companies (e.g. angela) and were targeting university students. As figure 5.35 shows certain companies (e.g. @jobsplane) were particularly active on Twitter and were using it to either; try and find suitable university students for certain types of

jobs (e.g. engineers), or, to search for students with specific skills (e.g. technical/science skills).

‘We have walk in interviews for those freshers with software skills’

- ***Theme – University facilities (figure A.21 in the appendices)***

  Tweets relating to university facilities came from university departments, and/or organisations that were connected with the university (e.g. the Students’ Union), and were aimed at new, and/or, existing university students. These tweets were typically raising awareness of the campus and its facilities; these comments could be very general (as the quote below suggests), or, they could be referring to something more specific such as the students union.

  ‘New students should explore the campus when you first get here. You’ll find all sorts!’

  To avoid repetition university facilities have been explored in more depth in section 5.4.1.

- ***Theme - Emotion (figure A.22 in the appendices)***

  The comments here were positive and came from students who were reportedly enjoying university life. These tended to be very generic statements to either being a student, the university, or, the geographical location of the university. The tweets did not give more details to explain what element of university they liked in particular (e.g. halls of residence). However, the strength of feeling indicates that, at least at that point in time, the university students were happy in their decision to attend university.

  ‘Love my uni …’

  ‘Love university, love freshers, love Manchester’

Summary

- Before

Support for aspiring undergraduates varied considerably; while UCAS were particularly proactive (e.g. offering support and responding to questions), other actors (e.g. the National Careers Service) were absent altogether. Support from schools and/or colleges also differed; some were actively supporting their students on Twitter whereas some did not use it at all.

The manner in which aspiring undergraduates asked questions affected whether or not they were likely to receive a useful response, for example, whether questions were clearly being aimed at an appropriate recipient (e.g. UCAS). See subsection 5.3.4 in Chapter 5 for more details.

Aspiring undergraduates could struggle with indecision and some worried that they would make the wrong choices. For example, while many aspiring undergraduates expressed a desire to travel the world they were also concerned with their ability to progress into university. This may not be being helped by the bias amount of information coming from companies that sold gap years. There was evidence to suggest that there were variations in what different actors thought a gap year was for.

The perceived short timescale and importance of the decisions being made resulted in high levels of stress and emotions for aspiring undergraduates. Aspiring undergraduates tended to focus on the foreseeable future (e.g. within the next twelve months) rather than being focused on long-term careers.

Finally, it is worth noting that not all aspiring undergraduates have the same opportunities and some face more hurdles than others. In particular aspiring undergraduates from lower income households and/or those that had extra curricular commitments (such as caring responsibilities) reported that they were either struggling, or felt unable to cope.

- During

There was a notable increase in communications that offered advice, which was not present to the same extent in the other data collection periods. In particular there was a rise in communications coming from universities who were proactively offering and signposting support. As a notable proportion of these tweets referenced clearing teams it is not known whether the sudden increase in the number of communications was a result of these short-term staffing solutions, which might explain why universities weren't as active during other data collection periods when these staff weren't there.

Aspiring undergraduates, schools/colleges and universities were very aware of the short timescale involved during this data collection period (i.e. between the release of exam results and the start of the universities academic years); there was a sense of urgency in communications and, for example, there were frequent reminders of looing deadlines. Sentiment and emotion present in aspiring undergraduates' tweets reflected this stressful environment.

A wide variety of different actors used Twitter as a way to congratulate aspiring undergraduates on their exam results. However, although the topic of grades was popular it was evident that not all aspiring undergraduates had managed to achieve the grades they so keenly desired.

There remained a significant amount of advertising not only from companies selling gap years but also from recruitment agencies looking to attract aspiring undergraduates. Views regarding gap years could be diverse, even when they came from the same stakeholder (i.e. parents), with some being strongly for, or against, the idea of their child taking a gap year.

There remained hurdles, and/or different sets of considerations, for certain aspiring undergraduates. Those from lower income backgrounds observed that they had fewer options available in comparison with wealthier peers; and, aspiring undergraduates coming to the UK from other cultures also reported finding concepts such as gap years confusing.

- After

The reasons that university students gave for leaving their studies prematurely fell into eight categories; social (e.g. romantic influence); poor health (mental or physical); a struggle to cope academically; the course; financial problems; independent living (e.g. away from parents); university as an inappropriate route of progression (e.g. for careers such as hairdressing), or, parental pressure. University students experiencing these problems made no mention of any support or help that they had received; whilst some of these challenges could arguably not have been predicted (e.g. romantic issues), at least some of these difficulties may have been improved, if not possibly remedied, with appropriate support. For example, earlier guidance may have directed students interested in hairdressing towards a more appropriate form of training; and, support provided later might have been helpful for those with health issues. Although Twitter was used by university departments to signpost certain facilities (e.g. the gym), the eight challenges that have been identified here weren't being directly addressed.

Whilst there were similarities among those experiencing difficulties there was far less cohesion among the university students that were using Twitter to search for information. These searches tended to be specific to each students' individual context and as such could not be generalised and/or grouped in the same way.

Although advertising from gap year companies had diminished there was a continuing rise in the amount of advertising overall. However, communications now came from a much wider range of companies and groups; including recruitment agencies, bars, clubs and university societies. The way in which these groups tried to appeal to newly enrolled students had also changed with a notable amount of advertising mentioning free products and/or services (e.g. free food).

University students remained conscious of timescales, but the way in which some of them talked about time had changed. Rather than merely identifying the components of the problem (i.e. the different jobs and/or responsibilities they had to manage), they identified time in itself as being a limited commodity that could be used in a positive way. This might suggest that they were developing an ability to

step back and see the bigger picture and were starting to think about time management.

Despite the fact that most of the emotions being expressed in university students' tweets were largely positive, it is important to appreciate that for a minority, aspects of university life, especially social events, were not always a positive experience. Not all newly enrolled students enjoyed, for example, drinking alcohol or going to clubs (e.g. as part of freshers' week).

5.3.4 How do they go about asking these questions?

Identifying terms and tokens

Tweets that had previously been analysed for other research questions (e.g. section 5.3.3 of chapter 5) demonstrated that using terms and tokens as a way to identify questions would not be appropriate because different actors, including aspiring undergraduates, did not always use a set format, (e.g. terms, tokens or characters such as the question mark '?') to ask questions. In order to answer this research question it was important to be able to review a representative example of questions and if a set term/token was used to locate and form a dataset then all of the questions in the dataset would only conform to the formula that had been used to run the search. Therefore in this instance the sampling procedure (see section 4.3.1) was used on the original data and terms and/or tokens were not used in this instance.

The first observation of note was that identifying questions was in itself challenging, and it was not always obviously when questions were being asked. The research ideally sought to capture a representative cross-sample of questions regardless of how efficient they were. However, this was interesting as arguably if questions could not easily be identified as part of a targeted search by a researcher then arguably a casual observer/Twitter user would not necessarily be ale to identify them as such either. The following broad guidelines helped identify questions and if a post contained one, or both, of these qualities then it was considered to be a potential question and was included in the sample:

- If the apparent question ended in a question mark (i.e. '?')
- If an unfulfilled need, want or desire was being expressed (e.g. 'does anyone know …')

The users asking questions by speaking about themselves in the first person (e.g. '*will I get the grades I need*?') can reasonably said to be aspiring undergraduates. However, given that they did not always identify themselves as such it cannot be conclusively proven that all of the questions sampled here came from aspiring undergraduates.

Sample overview

Table 5.4. Are questions being directed at a recipient?

Data collection period	No recipient	Recipient
Before	51	49
During	20	80
After	55	45

Each question was reviewed to see whether it contained the names of any individual(s) or organisation(s), which might be possible recipients. As table 5.4 shows there was not a dramatic difference between the before and after data collection periods. However, there was a notable shift that took place during the summer data collection period when a much higher proportion of questions were being targeted at specific individuals/organisations. Table 5.5 helps to explain why this shift might have occurred.

Table 5.5. Who are questions being targeted at?

Before		During		After	
Awarding body	1	Individuals*	9	Individuals*	37
College/school	1	Media	1	Other	3
Company/business	1	Other	1	University	6
Individuals*	27	College/school	2		
Media	1	UCAS	56		
Other	1	University	12		
UCAS	20				
University	1				

Please note: The numbers identified for each data collection period above will not necessarily equal the number of tweets that were targeted at recipients. A tweet can be targeted at more than one other user.

** It is not possible to tell from a Twitter handle what the relationship between the 'asker' and the 'recipient' is; they could be peers, family, etc.*

As the analysis in section 5.3.3 has explained UCAS are active actors on Twitter and what can be seen in table 5.5 is that they account for a significant proportion of the recipients of questions during the summer data collection, indeed during this

period 56% of the questions being asked involved UCAS. Considering the context though this is perhaps unsurprising as UCAS manage aspiring undergraduates' university applications and this is the period when aspiring undergraduates find out if their conditional offers of a university place have become unconditional.

There was no marked difference in the use of hashtags during the three data collections periods, as table 5.6 shows there were consistently low levels throughout.

Table 5.6. The use of hashtags in questions.

Data collection period	Number of tweets using hashtags
Before	10
During	11
After	8

The nature of the questions

- **Differences in the degree of seriousness of the questions**. Questions could be serious (e.g. '*how many UCAS points will I get for English*?'), and some could be considered humorous (e.g. '*what's the UCAS code if I want to be a Jedi?*'); and as the following example demonstrates, in some cases, communications could be considered to be both.

  'Do you know if Mike is taking a gap year too? Or is he off becoming farmer Giles?'

- **Differences in the specificity of the questions being posed**. To some extent (depending on the context of the question being asked) some questions could be perceived to be more or less efficient based on how overly general, or, precise they were. For example if we consider the following questions:

  'I have submitted my application and it has been confirmed as sent. However, I've waited a couple of days and haven't received the introductory e-mail I was told about?'

'What career is for me?'

Some questions have arguably clearer defined parameters than others; indeed, some are so generic that it would be extremely difficult to provide useful information in response.

- **Fact versus emotional searches**. Users were not always looking for hard facts and sometimes what they were searching for was emotional support and/or reassurance. For example:

'I'm terrified now my form has gone. Can I really do this? What if nobody wants me?'

- **Obvious versus oblique intent**. It is appreciated that assessing the intent of a question is potentially extremely subjective, not least as different researchers may interpret the same evidence differently. However, evidence suggested that in some cases what the users were literally asking for might not be the same as the personal motivation driving the question. For example:

'What are you doing there? Thought you were taking a gap year with me?'

Whilst the question is technically asking about the location and actions of another person, indirectly what they possibly really want to know is how the actions of the person they're asking will influence their own plans. As in the following example, the tweet is quite literally split and the authors first make a statement/question before reflecting it back to themselves. These kinds of questions and comments were not uncommon in aspiring undergraduate tweets relating to gap years as those interested in travelling during a gap year often did not want to go alone.

'Thinking about a gap year. Who wants to come with me?'

- **Reflective questions**. Some aspiring undergraduates appeared to ask questions as part of a reflective process and were asking questions as though to themselves (given that they couldn't realistically be answered by another

person). Whilst they might also be looking for emotional support, it could be that they are giving a voice to their thoughts and are externalising an internal mental process.

'Have I done well enough?'

'So … I got the place I wanted. Now what?'

Summary

Aspiring undergraduates did not necessarily ask questions in ways that were likely to elicit useful responses; for example, with the exception of the summer data collection period most questions were not being addressed to any recipient. Indeed, it could be difficult to identify questions even when they were being searched for due to a lack of indicators such as questions marks. There was also evidence of incredibly vague and/or general questions, such as '*HELP with UCAS plzzz*?' and '*gap year*?', which would be arguably be difficult questions to answer without additional information.

It could also be challenging to gauge the extent to which some questions were intended to be 'serious', 'funny', or, both. The meaning or intent of some tweets was not always obvious, and in some cases it was suspected that the question being asked may have been masking personal ulterior motives. As such questions could possess multiple and sometimes contradictory qualities (e.g. by being both serious and humorous), and could simultaneously be searching for multiple things (e.g. factual and emotional support).

5.3.5 Do students believe they can achieve the grades necessary?

Identifying terms and tokens

Arguably, it would not be realistic, nor fair, to attempt to judge the intellectual capacity of an individual on the content of a single tweet. However, it is possible to consider evidence that indicates whether aspiring undergraduates **believe** they are capable of achieving the grades needed to get into their university of choice. Whilst there are ways to gauge intellect other than exam results (e.g. IQ tests), given that in the context of this study it is the benchmark being used for entry into universities, it has been the measure that has been considered here.

It is only the first data collection that is relevant in relation to this question as this is when the final grades that many aspiring undergraduates will receive is still an unknown factor. Aspiring undergraduates awaiting exams (and the results) do not have to make their own best guesses as to what their results might be; two key pieces of information can be known to them at this point; firstly they can know what minimum grades are required by the universities, and secondly they are provided with predicted grades.

In terms of being able to pinpoint relevant information pertinent to this question this provides us with a useful starting point. Whilst lengthy term searches (e.g. believe + grades), or, random samples could be collected in the hope of locating some relevant information the provision of predicted grades provides a useful prompt. When students are given their predicted grades these will either be considered to be better, worse, or, roughly as the aspiring undergraduate anticipated. The reaction this causes therefore could provide insight as to whether they were expecting these guide grades to be better, worse, or, as they originally thought.

A search consisting of the terms ‘predicted’ and ‘grades’ provided a small but relevant dataset. The initial dataset contained 196 references in total, however following a manual review of the evidence that removed irrelevant comments (e.g. about the logistics of entering predicted grades on UCAS applications) 106 tweets

remained. As the dataset was small in this case the decision was taken to sample all of the tweets.

Responses to predicted grades

No aspiring undergraduates reported that their predicted grades were 'as expected', or to be broadly in line with what they had been expecting; although it might be that those that considered this to be the case were simply not motivated to tweet about it. All of the aspiring undergraduates in the sample indicated that the grades that they had been predicted were either higher or lover than they had been expecting. For some aspiring undergraduates the predictions they'd received were much lower than they had possibly been expecting:

'My predicted grades are rubbish.'

'Upset that the grades I've been predicted are BBC instead of AAB'

'lower than expected predicted grades on my UCAS …'

A small number of tweets demonstrated that there had been a disparity between what aspiring undergraduates thought they were potentially capable of compared with their predicted grades. Some aspiring undergraduates recounted examples of schools/colleges trying to ensure that the university choices aspiring undergraduates made were appropriate and realistically achievable:

'they won't send my UCAS, apparently the universities I've selected are too ambitious compared to what I've been predicted'

'they're holding up my UCAS form still because they want to talk to me about which unis I want to go to in relation to the grades they're predicting'

Some aspiring undergraduates used swear words and terms such as '*grrr*', which indicated frustration with what they believed to be an unfair assessment of their ability. The fact that applications may have been delayed, or even as the former example above indicates held back, indicates that there may be some unwillingness

on the part of the aspiring undergraduate to compromise and/or accept their predictions.

For some students this frustration possibly went a step further as some rejected their predicted grades altogether, believing that what they had received must in fact be a mistake:

‘College totally messed up my predicted grades’

‘my predicted grades are a mistake’

‘I’ve seen UCAS. Why are the grades I’ve been predicted all wrong’

Arguably it is difficult to ascertain whether these responses are the result of students struggling to accept their predicted grades, or, whether there might genuinely have been a mistake in some cases. However, there was similar evidence from other aspiring undergraduates that identified that they believed that a teacher was to blame. Again, it is not possible to conclusively prove that this was, or was not, the case; however, arguably given that most teachers repeat this process every year they arguably have far more experience of the UCAS process than some students may be giving them credit for.

‘How do I enter predicted grades. The teacher doesn’t understand.’

‘My teacher has issues putting my predicted grades in’

There were a small number of extreme examples that suggested of a degree of attempted bargaining was taking place when it came to predicted grades. This demonstrated in some aspiring undergraduates not only a refusal to accept what they believed to be an error but that they were trying to challenge and change what they had been given.

‘They’re moaning that I haven’t submitted my UCAS application but they won’t raise my predicted grades’

'Any students wanting to talk about raising their predicted grades for UCAS need to speak to their heads of department.'
(From a sixth form college)

For some aspiring undergraduates however the predicted grades that they'd received were good news and their positive responses indicated that this might have been what they had been daring to hope for, or better:

'Straight A predicted grades being sent to UCAS, really happy'

'Thrilled about my predicted grades'

'Delighted with the predicted grades going on my UCAS application'

It should be noted that receiving high predicted grades was not automatically cause for celebration among aspiring undergraduates, and some made a connection between predicted grades and stress. Therefore, while many aspiring undergraduates were happy with high predicted grades, for some this created a certain kind of pressure and expectation to achieve highly that worried them.

'my teacher thought he was helping me by predicting my grades as straight A but now I'm completely panicking'*

'my tutor giving me straight A predicted grades makes me really anxious.'

Conversely however, this was not the case for all students and for some aspiring undergraduates receiving high predicted grades provided some comfort and even motivation:

'my predicted grades have made me feel much better about my UCAS application'

'Now that my UCAS application is in and I have my predicted grades my determination has gone through the roof.'

Summary

There is evidence to suggest at this early stage in the application process that learner expectations do not necessarily align with predictions. Students' belief in their own abilities can be either too conservative, or, too ambitious. Receiving these early predictions of their academic ability can create stress, and at the extreme end learners may not be willing to accept the information they are given at all.

The mismatch between learners assessments of their own ability and grade predictions is of interest here as predictions evidently do not necessarily align with what the student's believe they can achieve. If we consider to what extent learner beliefs may be valid and question the accuracy of prediction itself it can be seen that these estimations are open to some debate. Only around 42% of grade predictions are accurate, however of those that are inaccurate, most are over (48%) rather than under-predictions (7%), (BIS, 2013). So whilst predictions are not always correct, for students it is unlikely that if predictions are wrong it will be the case that they perform better than expected, it is far more common that they achieve at least one grade lower than predicted (BIS, 2013).

This tendency for predictions to be higher and not lower than aspiring undergraduates' final grades only serves to emphasise how inaccurate learners' own assessments of their ability (for better or worse) can be. However, if the evidence is re-considered with this in mind there is some evidence, which might suggest why schools/colleges tend to give their students higher rather than lower predicted grades:

> *'I discovered the school send UCAS higher predicted grades so that they won't matter'*

Arguably sending in higher grade estimations means that aspiring undergraduates university options won't be curtailed any earlier than necessary; leaving as many opportunities open to them for as long as possible.

5.3.6 Is quality an issue, does incorrect information get shared?

Introduction

This question and section 5.4.3 are related. Initially, in this instance this question sought to ascertain whether, at a basic level, there was any evidence to demonstrate that incorrect information was being shared on Twitter. Section 5.4.3 then proceeds to consider 'how' this is happening and the aptitude of aspiring undergraduates to discern between reliable and inaccurate information.

The primary challenge in relation to this research question relates to the simple fact that information is not always 100% right, or, wrong. As a reflection of this, the investigation sought to focus on facts, which had as little opportunity for subjectivity as possible. Given that the study has previously identified the subject of 'time' as a popular theme (see section 5.4.2 of Chapter 5); the initial focus of the investigation was selected to be key dates (i.e. deadlines). Deadlines had a clear advantage as they are equally applicable for all aspiring undergraduates and correct/incorrect dates could be easily identified making them well suited to this task. The only limitation of this initial approach is that whilst the first two data collection periods have universal key dates (see below), the third does not given that universities across the UK can have different semester dates. However, misinformation will be considered across all three periods later in section 5.4.3 of Chapter 5.

Table 5.7. Is inaccurate information is being shared?

	Date to be considered
1st data collection period	The main UCAS deadline of 15th January 2016.
2nd data collection period	A level results day (13th August 2016)

Terms specific to the dates above (see table 5.7) were then used to create datasets (see table 5.8), which were then sampled and reviewed for inconsistencies.

Table 5.8. Terms used to find whether incorrect information is being shared

1st data collection period	Terms	Deadline AND UCAS OR ♯ucas OR @ucas
2nd data collection period	Terms	♯resultsday*

* The use of this hashtag in this instance was found to be better suited to identifying relevant material than searching for the date (e.g. ‘13’ AND ‘August’).

1st data collection period: findings

Questions asking when the UCAS deadline was were common and there was evidence to suggest that this might be, at least in part, due to a notable amount of confusion regarding the deadline. Although the UCAS deadlines were equally applicable for all aspiring undergraduates; individual schools and colleges were reported to be imposing their own (earlier) deadlines, which was confusing aspiring undergraduates:

‘I don’t understand what the difference is between our colleges deadline and the UCAS deadline?’

‘Tell me why my school felt like they had to lie to us about when the deadline for UCAS was?’

As trusted actors these internal school/college deadlines made it more challenging for aspiring undergraduates to identify correct/incorrect information as they did not make it obvious whether it was their own internal deadlines, or, the main UCAS deadline that they were referring to. However, even when they were clearly referring to the UCAS deadline there was still evidence of schools/colleges giving incorrect information to aspiring undergraduates:

‘Jan 13 @School You only have 24 hours till the UCAS main deadline.’

‘@College Come see us in advance of the UCAS deadline which is on Friday the 8th of January’

There wasn’t any conclusive evidence from schools/colleges themselves as to ‘why’ they were providing aspiring undergraduates with incorrect information. However,

given that the incorrect dates are all in advance of the real one, and as aspiring undergraduates speculated, it is possible that it's being done intentionally to prevent aspiring undergraduates from leaving their applications until the last minute.

'@myfriend yes the real deadline for UCAS isn't till Jan, the college have just told us it's tomorrow to prompt students to get the applications in early'

2nd data collection period: findings

Although the size of the dataset in this case was relatively large at 9,989 tweets it was an easy task to find factually incorrect messages. As the second example below illustrates there remained evidence that incorrect information was still being shared by educational institutions, albeit in this case a university (A level results day took place on the 13th of August).

'Aug 12 A real high point for all of those A level students receiving their grades today!'

'Aug 12 @University Wishing all the best to the students picking up their A level results today – We're looking forward to seeing you all shortly!'

In this instance there is little present in the communications taking place during this period to suggest why this might be happening, and, why some of these messages are coming 'from' educational institutions; this will be investigated further in section 5.4.3 in chapter 5.

Summary

Whilst it is perhaps unsurprising that incorrect information was being shared on Twitter given the findings reviewed as part of this study's literature review (see chapter 2); what was perhaps unexpected was that the most obvious instances of incorrect information being shared came from educational institutions. Regardless of intent, that inaccurate advice has been shared by different actors in positions of trust is concerning, not least as there is evidence that this has subsequently confused some aspiring undergraduates. Naturally this cannot be said to be true of all schools/colleges/universities, however there are enough examples demonstrating inaccurate information to suggest that the reliability of information

being provided to aspiring undergraduates from their own educational providers varies across the UK.

5.4 RESEARCH QUESTIONS: OBSTACLES TO INFORMATION NEED

5.4.1 If prospective students are referring to and/or using resources what are they?

Identifying terms and tokens

As the literature originally suggested in chapter 2 'people', including '*teachers, parents and friends*' (Moogan et al. 1999, p.222) are important resources for aspiring undergraduates. However, given that who these 'people' are and how they support different subject areas have already been addressed in sections 5.3.1 and 5.3.3 of chapter 5, it should be noted that this section has focused on physical resources (i.e. not people, groups or organisations).

The original tables showing all of the terms and tokens identified through a review of literature and word frequency can be found in the appendices (tables A.14 and A.15). Table A.16 in the appendices shows a complete compiled list of all terms and tokens that were found and finally table A.17 (see A.17 located in the appendices) shows a final tally of all of the references made to these resources across all three data collection periods. The following table 5.9 below summarises tables A.14, A.15, A.16 and A.17 (see appendices) and shows resources with 1,000 references or over, these resources have been initially grouped depending on whether the resources could be said to be online, offline, or potentially both.

Table 5.9. Online and offline resources across data collection periods

Tokens	Terms		
	Before	**During**	**After**
App	802	2,573	393
Blog	842	2,410	1,282
Email	5,012	2,405	1,059
Hashtags*	5	6,904	36
Media	698	5,163	898
Online	9,017	16,508	9,925

Photo	209	8,253	2,104
Social media*	2,007	10,411	6,264
UCAS track	2,302	2,672	2
Video	487	2,248	1,133
Website	1,092	1,237	467
Campus	323	766	7,539
Interview	711	227	7,295
Lectures	32	1,302	1,669
Library	115	301	1,128
Open days	304	1,190	1,044
Post	756	1,796	4,088
Social events	1,571	6,245	24,108
Guide	1,945	2,238	1,686
News	2,014	13,159	6,709
Phone	1,199	7,082	2,693
Research	532	428	2,532
Tips	1,058	1,829	1,853

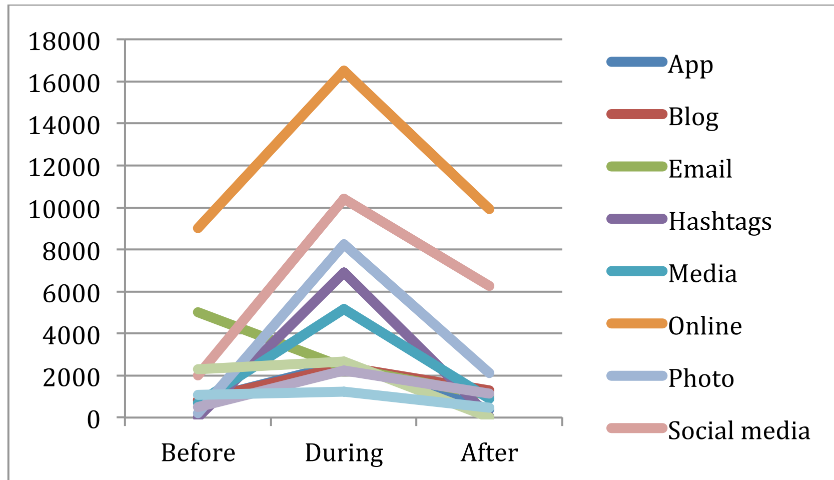
Green = Online resources

Yellow = Physical resources

Grey = Both

The type of resources being referenced at each stage of aspiring undergraduates' progression (i.e. during each data collection) shifts. The following figure 5.35 illustrates how references to online resources alter over the three data collection periods.

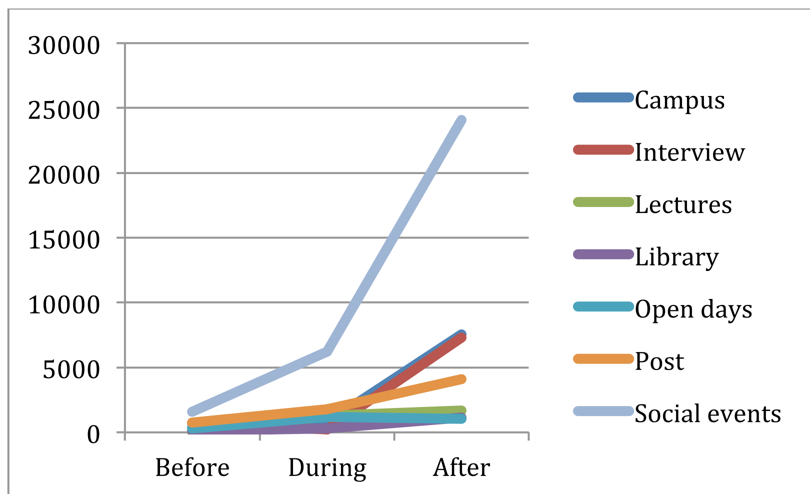
Figure 5.35. Shifts in online resources being used during the three data collection periods



The second data collection period, which took place during the release of aspiring undergraduates' exam results demonstrated a notable increase in the references of online resources (see figure 5.35). It is worth remembering that the timescale of the second data collection was very short as aspiring undergraduates only have a short number of weeks (approximately 4) between receiving their exam results and enrolling at university. There is then, during that second data collection period, a need to make important and final decisions quickly, which may explain a sudden preference for online resources, which aspiring undergraduates can access quickly.

The following figure 5.36 illustrates the number of references being made to physical resources over all three of the data collection periods.

Figure 5.36. Shift in physical resources over the three data collection periods



There was a significant rise in the use of physical resources during the third data collection period, which is when aspiring undergraduates physically arrived on campus at their chosen universities. All of the types of physical resources being mentioned (see figure 5.36) are arguably far more accessible to them in a university campus environment than they had been previously (e.g. libraries and social events).

All of the resources that have been identified in figure 5.9 have been briefly individually reviewed below (see tables 5.10 and 5.11). The references for each resource were sampled, with a sample of 30 tweets for each resource being taken across the three data collection periods (10 from each).

Online resources:

Table 5.10. Online resources

Online resources	How are they used?	Sample tweets
Apps	The references to the use of apps was, as might be expected, straightforward in that it consisted of users sharing apps that they thought others might find useful.	*'You can find clearing places live on the Telegraph app'*

Blogs	These were used by aspiring undergraduates as well as by larger organisations (including universities), who saw them as useful ways to share student experiences; they used Twitter to advertise links to these blogs.	*'See a student's account of their results day via our blog'* *'Been a while since I've added to my blog, I'm thrilled to be able to help other students with this'*
Email	Emails tended not to reference communication between peers but more formal and/or professional relationships between aspiring undergraduates and, for example, university staff.	*'A level results day soon. Anyone looking to come to our university? E-mail mary@university.ac.uk for information'*
Hashtags	When hashtags were used the tweet itself tended not to contain useful information, instead users were using them to try and attract the attention of aspiring undergraduates and they were advertising sources of information elsewhere (e.g. on websites). There was a notable range in the quality and arguably the usefulness of some of the information found via hashtags (e.g. #UniAdvice). For example, tweets came from companies trying to sell products/services, as well as those that were using it to promote drug use.	*'If you have your A level results get great advice #UniAdvice free visit http:www.awebsitehere.com'* *'Need a laptop, check out our products, brilliant prices! http:www.commercialcompany.co.uk #UniAdvice'* *'Smoke marijuana all the time … #UniAdvice'*
Media	Tweets containing the term 'media' tended to be extremely general and broad references and did not	*'Our students have made the national media'*

	include any specific details to indicate precisely which media they were referring to.	
Online	These tweets displayed a general preference for online resources. There was notable variation in the quality of the suggestions being made, from those referring to official sources through to an example that suggested aspiring undergraduates should use online sources to cheat.	*'There is brilliant advice available form @UCAS_online for those that want to go to uni'* *'Don't worry about your exam results brilliant tip just buy yourself better ones online'*
Photos	The use of photographs in tweets indicated how some users were choosing to communicate and there were examples of aspiring undergraduates using visual methods (i.e. photographs) to convey meaning (e.g. pride, or even humour) rather than solely relying on text.	Not applicable.
Social media	These were general references to social media as a whole rather than to any site in particular (e.g. Facebook). Not all users described social media in a positive manner; whilst the reasons given were all one-off comments they tended to relate to other themes that had emerged during the analysis. For example, users had observed the increase in different actors and commercial material (see sections 5.3.1 and 5.3.3).	*'… all the time social media is getting more commercial and far less social'*

UCAS track	Aspiring undergraduates apply for university places using the online UCAS track system; this is also key source of information for them as it provides responses to their applications in due course from universities (i.e. whether they are to be offered a place or not). In a small number of cases using UCAS track in a time-sensitive environment (i.e. during the release of A level results) appeared to result in a certain amount of stress as aspiring undergraduates and their parents reported anxiously waiting for decisions to be released online.	*'Got the best Christmas present! Checked UCAS track and I've gotten an offer from my first choice. Happy.'* *'Really tense time waiting for UCAS track to finally update, daughter got into university at last to study history'*
Video	These references came from users sharing videos that they believed would be of interest and/or of use to others. Whilst, like the use of photos, the analysis of videos as video rather than textual resources are outside the remit of this research, it is nonetheless a worthwhile observation to note that they are being used as a source of information and this may be a consideration for future research going forward.	*'If you're thinking about attending our university watch our video tour'*
Website	References to websites either came from those who were providing and/or sharing the resources, or, from those that	*'Results day related information can be found via our website www.coventryschool.com'*

	were recounting their experiences of using them. Some comments indicated that there may have been issues accessing online resources and this has been investigated in section 5.4.2 of chapter 5.	*'Tried to access my UCAS application but the site crashed …'*

Physical resources:

Table 5.11. Physical resources

Online resources	How are they used?	Sample tweets
Campus	Twitter was being used by both university students and staff to share information on campus services; this ranged from raising awareness about general facilities on campus (e.g. the library), through to sharing details for those with more specific interests (e.g. university societies). There was also evidence that university students were using Twitter to communicate with university staff, for example, to provide feedback on certain facilities that weren't working.	*'Next week come celebrate Diwali whilst supporting cancer research from 5pm onwards http://www.charityevent.ac.uk'* *'That sounds good! Thanks! We'll let those that work in campus services know about the vending machine issue.'*
Interview	Interviews were referenced in three broad ways. The first were references that were sharing news of interviews with leading members of university staff about their research. Alternatively references to interviews could also refer to interviews for aspiring	*'If anyone missed Professor Smith's interview on BBC Radio 4 this afternoon you can also catch it here. http://www.awebsite.co.uk'*

	undergraduates; these were all posted prior to the interviews taking place but they differed in that they were either referencing support that was available (i.e. information on interview preparation and training), or, they were referring to the interview itself. It should be remembered that interviews aren't only a way for universities to find out about aspiring undergraduates, they are two-way processes and they are potential opportunities for aspiring undergraduates to gather information about universities.	*'If you are anxious about your interview to study here you needn't be! Check out our tips to make sure it all goes well.'* *'Yes, you will have your interview then. There will be optional extras on the day such as sample lectures and you'll be able to speak to our existing undergraduates too.'*
Lectures	Arguably lectures are by their very nature designed to impart knowledge and are sources of information for both aspiring and newly enrolled students. There were also examples of universities putting on extra free lectures, however whilst these were being advertised on Twitter it was not always obvious what the subject of the lecture was.	*'FREE lecture tonight in the Empire building from 6pm onwards, everyone welcome. Room 109.'*
Library	Tweets from university libraries went beyond the traditional references to books and there were examples that they were using Twitter to raise awareness of their services and they were seeking to engage with newly enrolled university students in new ways. This included delivering training sessions (e.g. on referencing skills), the use of photographs to advertise special	*'Thursday am, come and join us for tea and cake in the Shakespeare Library foyer on the main campus'*

	collections, and even tea/coffee mornings.	
Open days	There was evidence that university open days were a popular way for aspiring undergraduates to gather information from the universities that they were interested in attending. The views of aspiring undergraduates who had reportedly taken part in open days demonstrated that they had been affective in persuading aspiring undergraduates to want to attend their university in particular. Some schools and/or colleges also had open days when A level results were being released. Some schools/colleges noted that this was not just for collecting results and that help was available for students during this time.	*'These brilliant bits made me want to be a student in Manchester! Uni open day. Hope I get the exam results I need'* *'Doors are open 8-3 Wednesday and Thursday, if anyone needs help come along'*
Post	It is necessary to widen the definition of what is traditionally understood to be 'post' as it was apparent that comments did not just relate to physical post that arrived through the letter box. Tweets including the term 'post' were also referring to, for example, blog posts and/or newspaper posts.	*'Worried about your results? Check out my blog post mariannesblog.blog.co.uk about A level results day'*
Social events	Whilst there were ample examples of social events being advertised (e.g. *'… freshers rave for first timers - make sure you don't miss out'*), despite frequently being presented as events that weren't to be missed, there was evidence that this might not be a wholly	*'Freshers week starts soon. I'm going to be absolutely skint from buying booze and drugs …'* *'So many social events to*

	positive experience for all students. So while social events are opportunities for newly enrolled university students in particular (e.g. through the activities organised as part of freshers' week) to share information, it's not necessarily always an enjoyable and/or positive experience. There was evidence that newly enrolled university students in particular could feel a certain amount of peer pressure to push themselves to excess; past points they may have been personally comfortable with:	*pick from, this is really stressful.'* *'One of the freshers events is fancy dress, no one realises I'm screaming inside'* *'The thing I hate about freshers is all the pressure to eat and drink rubbish until you become sick'*

It is important to appreciate that not all of the information being provided to newly enrolled university students necessarily impacts them in a conducive and/or positive way. That social events have been identified by newly enrolled university students to be impacting their health, finances and that some find it stressful may be counter productive as arguably part of the aim of freshers' week should be to welcome and induct new undergraduates. Given that health issues and poor finances have been identified as being causes/attributing factors to university students prematurely dropping out of university (see figure 5.30), for some social events may be prematurely exacerbating problems. For example, encouraging newly enrolled university students to spend more money than they can afford in the first week of university may subsequently impact their ability to manage financially later on in the semester.

Other resources:

Table 5.12. Other resources

Online resources	How are they used?	Sample tweets
Guide	It should be noted that not all the guides	*'Find out how to support*

	being mentioned in correspondence were necessarily being aimed at aspiring undergraduates. Some were aimed at informing those around aspiring undergraduates (e.g. parents).	*your children on A level results day with our parents guide* *http://www.alinkhere.co.uk'*
News	News came and was being shared by a wide variety of user types, which serves to remind us that aspiring undergraduates are not the only actors to be involved and/or have an interest in, for example, A level results. Sources of news included the following: - Local papers (e.g. the Leeds Chronicle) - National papers - Private tutors - Universities - Schools and colleges - School/college relevant bodies - Job/employment agencies - Career/support organisations * Please note that the list above is illustrative only and is not intended to be exhaustive.	
Phone numbers	Most of the tweets that included phone numbers were arguably intended to be useful. However, there was also evidence that companies were using events, such as the release of A levels results day, as an opportunity to advertise their products/services to aspiring undergraduates.	*'Experienced clearing staff are on phone, email and social media. Here to support and offer advice. http://www.auniversitywebsite.ac.uk'* *'If you get your A level results today book a table at Waterhouse Restaurant to mark the occasion*

		01532 216 902'
Research	These references were commonly referring to the research work of the universities and/or the work of a specific member of staff. This information tended to be shared by either universities, and/or, the wider media (e.g. newspapers).	*'Our universities research is going to help save the world http://www.ouruniversity.ac.uk/news'*
Tips	These could come from any Twitter user and subsequently they ranged in quality. For example, some university students wanted to help aspiring undergraduates by sharing their own personal experiences. Whilst these weren't unbias pieces of advice as they were advocating the things that they were providing tips for (e.g. gap years), their advice appeared sincere in that they weren't seeking to profit from the advice they were giving. Providing tips was also a marketing tool frequently being used by commercial companies (e.g. travel agencies selling gap years). It was frequently not obvious in these cases that the tips were coming from a company (e.g. as the author appeared as a person), and as the 'aim' was to attract aspiring undergraduates in order to sell gap years the appearance was arguably somewhat misleading and hid the authors motive.	*'Got a free year. Gap year was a brilliant idea. Get in touch for my tips …'* *'@amy Top tips for your gap year.'*

Summary

There is a shift in the kinds of resources being accessed depending on the data collection period being considered. In particular there was a notable preference for online resources during the short decision-making period when A level results were being released. This altered however when aspiring undergraduates went to university in the September and were surrounded by a plethora of physical resources around them on campus (e.g. libraries, social events, etc.).

There was a difference in the types of resources being referred to in literature compared to those that were being referenced on Twitter. The types of resources being used by aspiring undergraduates went beyond traditionally printed materials (e.g. prospectuses) and the use of new technologies (e.g. apps), had created new ways of finding and sharing information. As a result it is perhaps necessary to widen our interpretation of what is understood to be resources such as ‘posts’ and reconsider how the landscape of information for aspiring undergraduates has changed; blogs, photos, videos and social events are all viable opportunities that are being used to seek, gather and share information.

As literature had originally suggested not all of the information that was available was of good quality (Obama, 2009). In addition, there was evidence that some of the sources of information that aspiring undergraduates were using were not necessarily positive influences. For example, there was evidence that the social events that had been arranged for newly enrolled university students (i.e. as part of freshers’ week) placed a certain amount of social pressure on students to engage in excessive behaviours that not all were comfortable with.

Not all of the resources being used by aspiring undergraduates were text based and they also used visual images (i.e. memes and photos) to communicate. As this methodology has focused on textual forms of communication and these were potentially valuable sources of information it might be to consider how these visual and hybrid-visual (e.g. emojis) forms of communication can be included and considered in the future.

While the focus of the research is on aspiring undergraduates other actors were also using and sharing resources (e.g. parents); this reinforces the need to potentially widen our understanding of how resources are being provided and used. Aspiring undergraduates are not the only ones searching for information and it is necessarily to consider how those responsible for supporting aspiring undergraduates (e.g. parents and teachers) are using resources as arguably there is need to make sure that these actors are suitably equipped with accurate and up to date information.

As a final consideration it is worth reiterating that not all aspiring undergraduates were necessarily seeking ‘facts’ but that they were also searching for moral and emotional support (see section 5.3.4 of Chapter 5). It is not clear how the resources mentioned here might be meeting that need and as such this might be an area to take forward into plans for future research.

5.4.2 Can learners access the information they need when they require it?

This question relates to the practical logistics of whether aspiring undergraduates are physically able to access the information they need in order to progress successfully into university; this is not to be confused then with when aspiring undergraduates ***want*** information, which as section 5.4.4 of chapter 5 has demonstrated is not always realistic (e.g. wanting immediate decisions on applications that have only just been submitted).

Access issues have been considered in two broad ways as any difficulties encountered can either occur:

1. At the source, where it is the provider of the information, which may be responsible (e.g. if a website crashes).
2. At the receiving end, when it is an issue experienced only by the aspiring undergraduate that is out of the control of the information provider (e.g. a lost password).

Table 5.13 shows the terms and/or tokens that were used to create the dataset, which was sampled and used to respond to this question. Findings have been separated to reflect whether they represent information provider access issues, or, whether they were user access issues.

Table 5.13. Access terms and tokens

		Token dataset
Terms from literature		Access (Moogan et al. 1999, CBI, 2013) Accessible (Department for Education, 2005; Moogan et al. 1999) Accessibility (Official Journal of the European Union, 2014) Open (Department for Education, 2005)
Terms from word frequency	**Before**	Can’t AND find Where
	During	Crash OR crashing

		Broke OR broken Doesn't OR won't OR can't AND work
	After	Can't AND find Where

Information provider access issues

It should be noted that overall views from aspiring undergraduates and other actors were not negative. For example, there was some evidence that users thought that access via the UCAS system was exemplary and, for instance, should be replicated for other educational pathways (e.g. for vocational courses).

'There should be a UCAS type of thing for vocational options. That way teenagers would know what's available and be able to access it.'

There was evidence that UCAS were using Twitter to support aspiring undergraduates, which included helping them overcome access issues. Timely responses such as the tweet that came from UCAS below may help to explain why views of the UCAS were overall so positive.

'You can't access personal UCAS information via social media but you should be able to access your confirmation letter now.'

Two provider access issues were mentioned by aspiring undergraduates, the first was in relation to when phone support (i.e. UCAS's helpline) was available. Although it was not mentioned by aspiring undergraduates explicitly it might have been that some aspiring undergraduates could not phone during the day because they were in school/college.

'@ucas_online I really need to access your helpline number, but it's closed already (4pm). Any chance I could message someone for some support please?'

Secondly, some newly enrolled university students had observed that not all of the events that had been put on as part of their university's freshers' week were easily accessible for those with disabilities.

'I need to clean all of the muck from my wheelchair after the uni had their freshers fair in a horrible inaccessible boggy field'

Conversely however there was evidence that demonstrated some universities were proactively using Twitter to make sure they catered for disabled learners, which suggests that provision and considerations for newly enrolled disabled learners potentially varies by institution with some catering to wider demographics better than others.

'We're promoting access for BSL users, join our community this Freshers' Week!'

'Freshers' Fair is taking place next week, please let us know if you have any accessibility needs or requirements'

User access issues

Examples of user access issues were plentiful in comparison to problems with the providers of information. Overall the nature of the problems being experienced by aspiring undergraduates differed depending on two key factors; firstly, whether they knew where to go for help, and secondly how effective they were in asking for assistance. For instance, some aspiring undergraduates experiencing access issues did not know where to go for help:

'It needs a special school word to access UCAS and Mikes not around to ask … where do I go for help now?'

As this example illustrates questions were not always being targeted towards an appropriate recipient, but even when they were the questions frequently contained vague details that resulted in little, if any, responses. Not necessarily targeting questions and/or including a useful level of detail represents inefficient search strategies that may be hampering aspiring undergraduates' ability to get help when they need it.

There was ample evidence of UCAS helping aspiring undergraduates to access information, however some users were still reporting to struggle. These were all one-off isolated incidents that were not observed more widely, which suggests that

some difficulties were only being experienced by certain individuals. To give a practical example: the following tweet recounts a problem that an aspiring undergraduate is having accessing their UCAS account online. The problem being described is unique to that person as, for example, other aspiring undergraduates experiencing this problem had been able to either locate their passwords (themselves or via UCAS). However, this tweet is typical of this type of one-off problem in that their message includes no details as to 'why' they are unable to reset their password; so although they quickly conclude that this means that they can't access their UCAS account online they haven't provided sufficient information for UCAS to be able to immediately provide a useful answer.

'@ucas_online the password doesn't work, I can't reset. So I can't access my UCAS'

There were also some indications that access issues were potentially being hampered by poor information management skills, as the following tweet demonstrates. Typically aspiring undergraduates reported that they struggled to keep and/or remember their login information and/or passwords, which had resulted in access issues.

'Good news, I eventually found where I put that bit of paper that lets me actually get onto UCAS online … hurrah'

Summary

Considering access from the providers' perspective, it is potentially unlikely that aspiring undergraduates will make references to access if everything is working well in comparison with users that might be motivated to report problems and/or document their frustrations. So it is possible that the few faults being cited with providers is an indication that, generally, the systems that are in place work well.

User access issues that were cited tended to be personal and were not widely shared. Organisations (i.e. UCAS) were actively supporting aspiring undergraduates online and this was largely successful; if anything aspiring

undergraduates just wanted more of it (i.e. more support to be available outside of office hours).

Whilst we cannot conclusively say that the issues being experienced by aspiring undergraduates were, or were not, problems outside of their control (e.g. hardware/software problems at home); what can be said is that when access issues did occur some of the in-efficient search strategies that they were using were potentially hindering their ability to locate help and resolve problems in a timely fashion. For example, extremely vague descriptions of problems and failing to address questions to any appropriate recipient were common.

There was evidence from some aspiring undergraduates that poor information management may have hampered their ability to access information. Frequently important pieces of information (e.g. passwords) were reported to have been lost, and/or, forgotten. It is worthwhile noting here that there tended to be little recognition from aspiring undergraduates that they 'the user' might be responsible for some of the access issues being experienced and there was an overall tendency to project any blame elsewhere. For example, a user might typically report that '*the password',* or, *'the system doesn't work'* rather than acknowledging and/or accepting that the responsibility for forgetting, and/or, losing a password might be theirs.

5.4.3 Do aspiring undergraduates have the skills they need to effectively locate reliable information?

Section 5.3.6 provided evidence that incorrect information was being shared on Twitter. This research question then sought to ascertain whether there was any evidence that suggested aspiring undergraduates were able to correctly discern between reliable and/or unreliable sources of information. Please note that although section 5.3.6 was successful in identifying incorrect examples of data online, the same approach of using dates (i.e. deadlines) was not used in this instance as it inspired relatively little conversation among aspiring undergraduates, which was needed to be able to consider this question. Table 5.14 shows the terms/tokens that were used to create the dataset for this research question.

Table 5.14. Reliable information terms and tokens

		Token dataset
Terms from literature*		Literature focuses on news stories (e.g. Castillo et al., 2011): news OR media
Terms from word frequency	**Before**	lie
	During	lie
	After	lie

** Word frequency terms were reviewed for relevance and only those which were found to be relevant are listed here.*

Findings

The dataset (see table 5.14) found examples of misinformation that could be broadly categorised as being either: aspiring undergraduates sharing misinformation, or, aspiring undergraduates creating misinformation. In order to examine how aspiring undergraduates reacted and responded to these types of misinformation and to gauge, which, if any, methods of discernment were being applied: both examples of misinformation are considered below. Evidence was also considered longitudinally in order to ascertain if the skills/abilities of aspiring undergraduates to locate reliable information changed, and/or, improved over time.

The 1st data collection period

- Shared misinformation

Aspiring undergraduates spoke about the reliability of information in a limited capacity in that when they talked about lies they were only talking about what they *thought* or *believed* was a lie. There was no evidence that aspiring undergraduates had attempted to apply any fact checks, even when they suspected or believed information to be untrue. Consequently conversations were limited in that the 'truth' of information was being based purely on opinion and conjecture and not necessarily on any factual basis.

'This is exactly why I believe that gap years aren't true'

There was evidence to suggest that aspiring undergraduates did not necessarily share the common dictionary definition of lying. For example, their use of the token 'lie' is interesting in that what some aspiring undergraduates perceived to be lies were merely things and/or situations they had found, or believed to be, frustrating and/or unfair.

'Insurance for your gap year is the biggest lie'

'Can UCAS stop contacting me telling me how my decisions now impact my future that'd be great cos' THEY FUCKING LIE'

'Your UCAS form will be sent next week' Why is the teacher lying to me?'

Consequently it may be necessary to consider more generally what aspiring undergraduates' understand 'true' or 'untrue' information to be. Although the use of tokens such as 'lies' indicate that their understanding differed from the dictionary definition (i.e. being something that is factually untrue), there was no evidence to suggest that they were aware of the disparity between how they used the token and the dictionary definition (e.g. no aspiring undergraduate attempted to challenge and/or correct the way in which terms such as 'lie' were used).

Whilst what aspiring undergraduates' understood to be 'true' or 'untrue' may be open to debate, what was clear was when aspiring undergraduates encountered what they perceived to be a 'lie' that it could provoke in them a strong negative emotional response. This was evident through the use of strong language such as swear words and/or a frankly stated distaste for how, they believed, they'd been mislead. As the first example below indicates the use of the word 'lie' doesn't mean that the information they received was factually incorrect; just that they perhaps didn't get the information that they wanted.

'Recently I received a bullshit message from UCAS and got really, really excited but it was just a lie. Some survey.'

'People lying pisses me off the most. Don't toy with my emotions UCAS'

Although there wasn't any evidence of aspiring undergraduates applying fact checks themselves, there was evidence of a couple of aspiring undergraduates suggesting to their peers that they should '*get their facts right'*, or, '*look it up'*; so there were some indications that aspiring undergraduates were aware of the fact checking process and would tell others to apply checks even if there wasn't evidence to show they were doing so themselves. As the following reference shows, the author suggests that the peer with whom they are debating applies fact checks, however does not attempt to validate his own claim by doing so (e.g. by providing a website link to some suitable evidence).

'LOL that is factual. I didn't make it up, it's the truth. Look it up! Pulease.'

- Creators of misinformation

Despite the lack of discerning behaviour from aspiring undergraduates at this stage there was ample evidence that they were creating misinformation. These untruths were being consciously acknowledged and, via Twitter, being published into the public domain with no apparent fear of recrimination. The most common admission from aspiring undergraduates related to their university applications:

'There are going to be a lot of lies from me throughout my UCAS application'

'One massive lie on my UCAS form 'I love sports outside of school''

There was an interesting disparity between the openness with which aspiring undergraduates admitted having lied and the strong emotional reactions they displayed when they believed they had been lied to. Without additional information it is only possible to speculate why aspiring undergraduates in this context consider the same behaviour acceptable and/or justifiable in themselves, but not in others. However, it may be worth noting that as the misinformation they created was being aimed at a remote organisation (i.e. UCAS) and not a person it could be the lack of a personally identifiable 'victim' (i.e. they didn't think any person would be hurt through their actions). Given that we know aspiring undergraduates find applications stressful (e.g. section 5.3.3. of Chapter 5), it could also be that the importance of the application, having possible lifelong consequences, makes providing untruths more of an acceptable risk. It could also be possible that aspiring undergraduates have different sets of information expectations from different actors and that UCAS are perceived to represent higher professional standards and are subsequently held to account more severely for any perceived flaw. These considerations could be potentially investigated in more depth going forward via a series of interviews and/or focus groups.

The 2nd data collection period

- Shared misinformation

There was a significant increase in the recognition of unreliable information during this data collection period; however this did not coming from aspiring undergraduates. Existing university students, and potentially graduates (given that they were referring to their university experiences in the past tense), were using hashtags such as ♯uniadvice to share their experiences and views; in particular they sought to dispel myths and untruths that aspiring undergraduates and newly enrolled university students might encounter. The advice itself ranged considerably and there was little comparable repetition between the tweets; subjects ranged from getting out of bed in the morning, through to dating advice. For example:

'When you come to university nearly all of your mates will promise to come see you and stay. These are lies, it won't happen.'

'Be prepared for freshers flu, it's not a myth! #uniadvice'

'Advice for uni. Don't use your overdraft, it's a lie!'

'Biggest load of rubbish ever are the textbooks you get told are all 'required''

These trending 'mythbusting' tweets are of interest as they are the reflections of users who have been aspiring undergraduates recounting their own personal experiences with misinformation. Arguably the tendency for the hashtag # uniadvice to trend suggests that experiences with misinformation and/or misleading information were common enough that a number of Twitter users could relate and contribute. Given that these users who had previously been aspiring undergraduates were not seeking to profit from their recommendations and that some examples, such as the one below, suggested that they didn't want others to make the same mistakes, suggests that their intentions were sincere.

'You'll get told that your first year is a doss year … don't believe the lie. Don't relax, do the work because I did that and I so regret it.'

Some advice waned not just against misinformation that aspiring undergraduates in the past had received from others but also against assumptions that they had made themselves.

'Biggest fib to myself was telling myself that in class/lectures that I'll managed to remember everything and that I didn't need to take notes. #uniadvice'

There were very few responses and no evidence of engagement (e.g. likes or shares) from current aspiring undergraduates themselves to this type of advice, so it is difficult to ascertain what influence, if any, these recommendations might have had. Whilst it wasn't possible to conclusively tell from the couple of responses the hashtag #uniadvice posts did receive that the comments came from aspiring undergraduates; the nature of the comments possibly suggested that the lack of

engagement might have been indicative that aspiring undergraduates didn't necessarily appreciate or were willing to accept the advice that was being shared:

'Biggest load of rubbish you've ever heard is advice about uni'

- Creators of misinformation

There was evidence that aspiring undergraduates were not necessarily merely creating misinformation but that other actors were encouraging them to do it. It wasn't clear from the evidence 'who' these suggestions were coming from (e.g. siblings), however they commonly referenced CVs (Curriculum Vitae) and encouraged those unhappy with their exam results to lie about them in the future.

'Teenagers should remember, just lie on your Curriculum Vitae if you don't happen to get the desired A level results. It's unbelievably easy.'

Some of these negative encouragements indicated that they thought that lying was acceptable due to a perceived low level of risk (i.e. that they wouldn't get caught). Although they always referenced the CV itself none of the references identified who these false documents were being designed to mislead (e.g. a university or employer); so whilst they were openly advocating cheating no 'victim' of these untruths were ever acknowledged.

'No-one is going to check your C.V. Don't fret about your A level grades everyone so just lie and make them up'

'Don't worry about A level results. Lie on your CV, no-one will know. A B in English? I can't even spell!'

When it came to misinformation from aspiring undergraduates themselves this tended to be behaviour motivated by a fear of what others, especially parents, might think of poor exam results. Some aspiring undergraduates were extremely anxious not to disappoint their parents to the extent where some were considering lying about their exam results; although as these were all written in the future tense it is not possible to know whether they ultimately did or not.

'I might have to lie to my parents tomorrow, they're going to be heartbroken with my grades'

After

- Shared misinformation

Despite the lack of engagement from aspiring undergraduates previously (i.e. during the second, summer data collection) to advice that had been given to them previously (e.g. via #uniadvice), many newly enrolled university students were now making the same type of comments themselves regarding misinformation. Initially during the first few weeks there remained some evidence that newly enrolled students remained unwilling and/or reluctant to accept advice:

'So happy freshers week is over! It was just a week full of students and bad advice …'

However, there was a notable shift in the nature of the comments as the newly enrolled university students progressed through their first semester at university. Precisely when comments were made depended on when each student observed a disparity between their experience and what they had reportedly been led to believe (and had been expecting). In some cases these observations were made as soon as students' first week in university. Whilst it was clear that aspiring undergraduates felt they had been mislead, there were no indications of 'why', or, from 'whom' they might have gotten these misplaced ideas.

'the propaganda and hype about freshers and life at uni is a complete lie everyone'

'what a pissing lie freshers is, I've never fucking been less fresh in my life'

Conversely, one frequently referenced misperception from newly enrolled university students related to freshers' flu, which they commonly believed was misinformation until they caught the illness themselves. Newly enrolled university students frequently referenced their knowledge of the illness in the past tense, indicating they had been informed about it; but, there seemed to have been a common reluctance to accept the information and as a result it had been perceived to be a myth.

'I believed freshers flu wasn't true … till now'

'To be honest I believed freshers flu to be a myth, till people in lectures got it'

'My first seven days here I thought freshers flu was a bunch of rubbish … but you should see me now'

Newly enrolled university students didn't elaborate to explain why they had believed freshers flu had been a myth, therefore other than a general previously observed reluctance to accept advice (e.g. (e.g. ♯uniadvice) generally its not possible to assess 'why' they believed this to be misinformation. What is of interest however is that regardless of advice, the newly enrolled university students themselves only admit to having altered their perceptions after they had some personal experience of it. What would therefore be a valuable follow-up line of investigation would be to consider whether aspiring undergraduates were generally reluctant to accept advice, or, whether this skepticism was being associated with certain resources and/or sources of information in particular.

- Creators of misinformation

Newly enrolled university students continued to be open and forthcoming in their admissions over commonly told lies that they had told. The nature of these mistruths had altered again in comparison to other data collection periods in that, regardless of the theme of the lie, they claimed to have been lying to themselves as much as they were to others. These untruths were typically reported to have been in circumstances where good intentions had given way to peer pressure/bad habits; in these cases newly enrolled university students reported reiterating their good intentions both to themselves and others but were conscious of the fact that they weren't going to keep them.

'… the most frequently told mistruth that uni students tell themselves is 'It's ok, I promise I'll start doing it tomorrow''

'I keep saying to myself that I won't drink excessively through freshers, but I know I'm lying to myself'

It is difficult to assess in terms of 'lying to oneself' the extent to which the original intentions were sincere; arguably it is difficult to convincingly lie to yourself if you are conscious from the start that the information is untrue. Given that all of these examples depict a work/study versus social struggle it is potentially more likely that rather than being a conflict between truth and lies what these newly enrolled students are describing is that they are learning to manage a healthy work/life balance. In context previously many newly enrolled students will have had parents and/or teachers, which will have provided some personal and professional guidance (e.g. prescribed homework and bedtimes), which are now being self-managed. These comments suggest a learning process where the newly enrolled students are conscious of what they 'should' be doing (e.g. studying), but are free to make other decisions.

'Doesn't matter how often I tell people that I won't be drinking during freshers week … I know I'm completely lying'

'I said I'm not going to go out tonight for the first night of freshers, I'm too tired' complete lie'

Summary

The way in which aspiring undergraduates used terms such as 'lying' indicated that they didn't necessarily share wider dictionary definitions of these terms; for example, aspiring undergraduates described information to be a 'lie' if it failed to meet their expectations or if they perceived it to be unfair. Whilst some learners may have suggested that other users should '*check their facts*', which indicated some awareness of basic information discernment skills (e.g. fact checking), there was a notable lack of evidence that demonstrated discerning behaviour in aspiring undergraduates themselves (e.g. checking authors credentials).

Aspiring undergraduates freely admitted having lied, although what they lied about differed during each data collection stage. Common lies from aspiring undergraduates included fabrications on their UCAS applications, temptations to change exam results (e.g. to tell parents, and potentially on CVs), and reiterating false good intentions both to themselves and to their peers once they had enrolled

at university (e.g. that they weren't going to drink excessively and would study). Despite the relative openness with which some aspiring undergraduates admitted that they had created misleading and/or false information, they reacted strongly if they suspected that they could be being misled themselves. There was also evidence that other unknown Twitter users were actively encouraging them to lie. Justification for creating misinformation included; that it was perceived to be low risk (e.g. they didn't think they'd get caught); that it was easy to do; the pressure and potential impact of the circumstances; and, that there wasn't a personally known 'victim' involved (i.e. it involved lying to an organisation and not a known person).

Despite an ample supply of potentially useful advice for aspiring undergraduates there was very limited evidence of engagement with this information; indeed responses suggested that some aspiring undergraduates were reluctant and/or potentially unwilling to accept guidance. In some cases aspiring undergraduates were skeptical of valid advice they had been given, for example many aspiring undergraduates had dismissed freshers flu as a myth; critically they only reassessed the validity of the information when they had physically encountered it themselves (i.e caught the flu).

Finally, rather than a literal interpretation of behaviour being considered 'a lie' an alternative possibility is that the creation and/or sharing of incorrect information may be wholly intentional. Whilst it is difficult to assess the extent to which this may be the case in this context given that these were one-off tweets: there are actors online (e.g. trolls) *'for whom the intent is harm. These users take pleasure in causing upset and negative responses in fellow users'* (Kirman et al., 2012). While we cannot know the authors true intent it is important to acknowledge that it is entirely possible that those that intentionally seek to spread misinformation and/or upset are a part of the information landscape. Given the prevalence of literature attesting to the activities of trolls on Twitter (e.g. Kirman, er al., 2012), what is potentially an interesting consideration going forward is not 'if' trolls are present on Twitter, but in this context to what extent aspiring undergraduates might be aware of it?

5.4.4 Do aspiring undergraduates have the skills they need to complete their application?

It was only necessary to consult the first data collection period for this question as that was when the aspiring undergraduates were completing their UCAS applications. The subject of applications had already been identified as a theme (see sections 5.3.2 and 5.3.3 of chapter 5), and as such an initial dataset relating to applications already existed to initially work with. Given that broader reviews of application forms had already been conducted (see sections 5.3.2 and 5.3.3) this section sought to achieve a more thorough examination of the evidence in relation to this question by identifying relevant sub-themes within the dataset and considering each in turn.

In this instance a review of the literature was not helpful in identifying potentially relevant terms and/or tokens, whilst literature referred to application forms for aspiring undergraduates generally, details of potentially relevant sub-themes could not be found; that is not to say that this evidence does not exist but merely within the realistic confines of this study (e.g. the timescale) that they could not be located. Term frequency was instead used on the applications dataset (used for sections 5.3.2 and 5.3.3 of chapter 5), which resulted in a sample of 1,837 tweets. Table A.18 (see appendices) shows a complete table of all of the terms that were located with over 50 references; potentially relevant terms were then taken and grouped into the themes shown in table 5.15.

Table 5.15. Applications: groups of terms

Themes	**References**	**Themes**	**References**
Time		**Needing help**	
Nov	587	Help	156
Sep	506	Need	134
Dec	385	Please	102
Jan	237	Know	65
		Questions	59
Just	146	Ask	58
Now	98	Advice	52

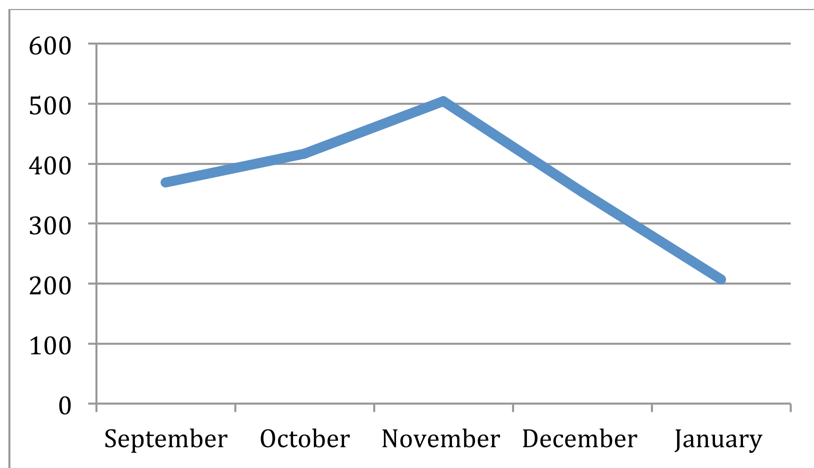
Finally Done Today	80 62 54		
Submitting the application Sent OR send Deadline	 514 73	**Good wishes** Luck Good Best	 156 93 87
Different actors @ucas uni OR university college teacher	 496 149 67 61	**Personal statement** Personal AND statement	 55

Each of the themes identified in table 5.11 have been reviewed individually below:

Time

Aspiring undergraduates were conscious of the timescale and deadlines associated with their applications. If we consider when the conversations taking place in relation to application forms happen we can see the following (see figure 5.37):

Figure 5.37. Applications: references to time



There wasn't, as might have been expected, an increase in the volume of tweets all the way up until the UCAS deadline in January. Instead there was a slow steady increase in the references to application forms that peaked in November and then declined steadily until the deadline for applications in January. Considered in context there are three reasons why the volume of tweets may not peak close to the deadline in this instance. Firstly, school and college holidays begin in December and do not end until at least the first week of January, which would leave an unrealistic amount of time for aspiring undergraduates to complete their application forms in if they were left until after Christmas. Secondly, it should be remembered that schools and/or colleges also contribute information to UCAS applications (e.g. references and predicted grades); therefore the schools and/or colleges also need to allow themselves enough time to process the applications before the deadline. Thirdly, whilst the main UCAS deadline is in January there is an earlier deadline before Christmas for aspiring undergraduates that either wish to apply to Oxford or Cambridge University, or, for those hoping to study medicine. It is potentially unlikely that schools and/or colleges were willing to accommodate and support two separate rounds of university applications, and therefore they may have been more likely to encourage all aspiring undergraduates to submit at an earlier date to make the submission process more manageable.

This suggests that the turnaround time between when some aspiring undergraduates, who are in their final year of school/college, start in the September and when they are likely to have submitted applications is approximately two months (rather than four if we assume they could have left their applications right up until the deadline). There weren't any examples of time management skills being employed by aspiring undergraduates (e.g. timetabling); however there were ample references to indicate that aspiring undergraduates may have struggled to decide and/or complete their applications in the allotted time.

'Stress! College have told me my UCAS form needs to be sent by next week. I feel like crying, I need to decide on my future'

Submitting the application

Some comments from aspiring undergraduates were extremely general and merely recorded the fact that they had managed to submit their university applications but little else (e.g. '*Sent my UCAS application'*). Other aspiring undergraduates expanded to demonstrate a wide range of emotions in connection with the process:

> *'I'm relaxed, anxious, thrilled, delighted all at once – My UCAS application has finally been sent!'*

None of the aspiring undergraduates commented on how easy, or, difficult they had found submitting their applications. Arguably given that aspiring undergraduates have documented the event but not felt motivated to comment on any difficulties suggests that they did not necessarily struggle to submit their applications. However, there were some behaviours observed in connection with the submission process that are worth noting; for example, there was a certain degree of impatience evident from some aspiring undergraduates once they had submitted their university applications.

> *'Since I sent my UCAS application, every couple of minutes I check my e-mils to see if I've had an offer'*

> *'Submitted my UCAS form earlier today, must've looked at my e-mails at least 26,342 times already'*

Arguably it's unrealistic for aspiring undergraduates to expect a response so quickly; although it cannot be gauged from the evidence why they might have anticipated receiving a decision in such an impractical and/or improbable time. This was not the only aspect of the submission process that aspiring undergraduates may have been confused about; there was also a certain amount of confusion from aspiring undergraduates, and their parents, more generally about what happened to university applications once the forms had been submitted. The following tweets provide an example of an exchange between a parent and UCAS who were trying to help and/or explain what happened to applications after aspiring undergraduates had submitted them.

'@ucas Did you send your application to the college for your reference?'

‘@parent My daughter has sent her UCAS application, it mentioned that it would be sent to her school. Were we too late?’
‘@ucas The UCAS application can’t be sent to universities without a reference.’

Possibly as a result of this lack of understanding and/or appreciation as to how the submission process itself worked some aspiring undergraduates demonstrated frustration as they waited for their schools and/or colleges to complete their contributions to their UCAS applications.

‘It’d be lovely if my school could get off their backsides and sort my reference and submit my UCAS application’

‘My bloody school have only just finished my UCAS application reference. It’s been so long, it’s only just been sent to the universities’

Another area that caused some confusion and anger among aspiring undergraduates were the fees they were required to pay in order to submit their applications. Some of the strong emotional reactions suggested that aspiring undergraduates may not have been forewarned of the submission charges, and/or, they didn’t understand the need for the fees. This arguably reinforces the possibility that aspiring undergraduates didn’t necessarily have a thorough understanding of either the submission process, or, the roles that key actors (e.g. UCAS and schools/colleges) play in their applications. For example, no tweets (indeed at any stage of the analysis) demonstrated that aspiring undergraduates may have been aware that UCAS were a registered charity.

‘By the way, why the fuck do we have to pay £32 just to submit UCAS applications?!’

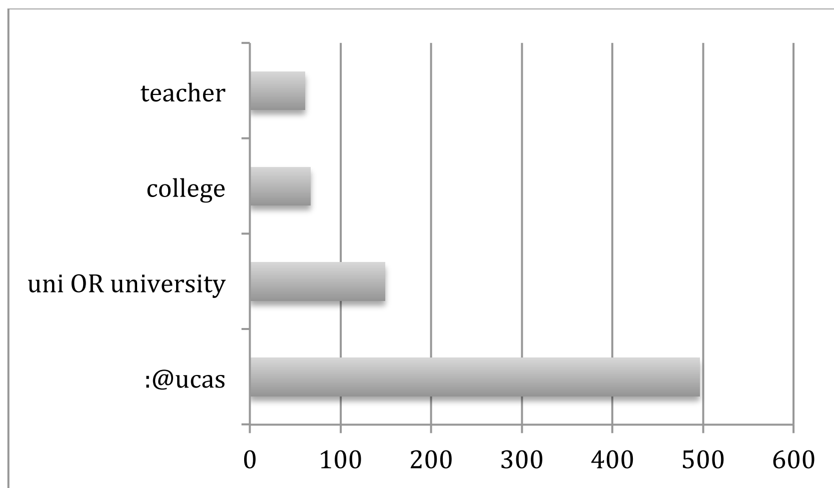
‘UCAS is crap, why should I have to pay in order to submit my university application???’

‘Twenty plus quid to submit my UCAS application? Isn’t nine fecking thousand a year at university not enough already?’

Different actors

There was a small concentrated group of actors that were either talking, or being talked about in relation to application forms (see figure 5.38). UCAS was the most prevalent organisation that was actively communicating with aspiring undergraduates whereas universities, colleges and teachers were mostly being talked about rather than to.

Figure 5.38. Application forms and different actors



Needing help

UCAS were particularly active in supporting aspiring undergraduates to complete and submit their applications. Other actors (e.g. awarding bodies) appeared to be aware of the help UCAS offered and there was evidence that they would signpost aspiring undergraduates to UCAS for support.

'UCAS online. If you need help to get your university application sorted we're right here!'

'AwardingBody. Hi Rachel, You will need to talk to UCAS about this. We aren't involved in the university application process.'

The main challenge that was cited by aspiring undergraduates in relation to the university application process were personal statements, and this has been explored in greater detail below. Otherwise the issues being encountered by

aspiring undergraduates were individual one-off problems and there were no commonly strong themes. Issues ranged from; needing to consult with a specific teacher, needing to focus, needing to access their online school system, and, needing a specific piece of information from a particular person (e.g. a teacher).

Personal statements

Personal statements were a part of the application form that aspiring undergraduates commonly reported to find challenging; three key issues were identified:

- **Time management**. Aspiring undergraduates' most commonly reported problem was that they had not allocated a sufficient amount of time to complete their personal statements, and/or, had left it until last minute:

  'UCAS application has to be in, in 48 hours. Haven't even started the personal statement …'

  'Not started the UCAS personal statement yet and tomorrow is the deadline'

- **Helpful/unhelpful advice.** Not all of the advice that aspiring undergraduates received on how to write personal statements was potentially helpful. These ranged from some actors (e.g. parents) who arguably had good intentions to some (unknown authors), whose unkind responses to requests for help were undoubtedly neither constructive nor useful.

  'my dad forcing me to finish my UCAS application is ok, but forcing me to write all of my personal statement about cats isn't helpful'

  'What a stroppy little girl with a ucas application, you're a cow, how do you write your personal statement? Selling yourself?'

- **Proof-reading**. A small number of aspiring undergraduates were concerned about their spelling, grammar, and/or, language and wanted someone to look over their personal statements in case they had made any errors.

Although in these cases they did not clarify precisely 'who' they wanted to proof-read their personal statements (e.g. teachers).

Other challenges that were mentioned only once in relation to personal statements were; an aspiring undergraduates who struggled to find the right wording, one applicant who was concerned that they didn't know how to sell themselves, an individual that described finding the task stressful, and one that reportedly lacked personal confidence.

Good wishes

Tweets offering aspiring undergraduates good luck were straightforward, simple and did not reference any challenges that they thought aspiring undergraduates might encounter, or, skills that they thought they might need to complete the task.

'UCAS online @aspiringstudent Wishing you the best of luck with your application'

'Sending good luck to all of you that are sending your UCAS forms off today'

Summary

It is important to appreciate that while challenges and potential opportunities for improvement have been observed, overall aspiring undergraduates did not report that they had experienced significant difficulties in completing and submitting their UCAS applications. It is possible that some aspiring undergraduates lacked, or had not yet developed, certain skills that would have been useful to them (e.g. time management skills); however, several actors (i.e. UCAS and schools/colleges) were present to remind them of the timescales/deadlines and offer support.

The element of the application form aspiring undergraduates reportedly found most challenging was completing the personal statement. This was not necessarily because they struggled to complete the task itself but was a result of either; leaving it until last minute, having been given unhelpful advice (e.g. from parents), and/or, because they wanted the reassurance of having their work proof read.

In several respects aspiring undergraduates reported more challenges *after* they had finished filling in their university applications. There was evidence to suggest that aspiring undergraduates' understanding of the submission and application process may have been limited, for example:

- In some cases aspiring undergraduates displayed surprise and even anger at the fees they needed to pay in order to submit their university applications. Aspiring undergraduates tended not to differentiate between the money they paid to universities and UCAS fees. Comments such as '*aren't I paying enough already'* and references to '*university money'* as a collective whole might suggest that aspiring undergraduates have a poor grasp of the roles and relationships that the different organisations involved play (e.g. that UCAS and universities are very separate entities).
- There was evidence to suggest that there was some confusion surrounding what happens to the application forms after they had been submitted, which left aspiring undergraduates feeling frustrated. In particular aspiring undergraduates could be impatient and some expected completely unrealistic turnaround times and responses from their schools/colleges, UCAS and universities.

Example such as these might support the case for more information to be provided to aspiring undergraduates about the application process as a cohesive whole (including timescale and the roles organisations play) rather than just the parts that require their direct involvement.

5.5 SUMMARY

Each of the research questions have been individually addressed in sections 5.3.1 through to 5.4.5. Not all of the research questions could be fully answered, in some cases there were limitations (e.g. with the methodology itself); a review of the strengths and/or limits of the methodology for each question has been summarised in section 6.2 and table 6.2.1 of chapter 6.

The summaries for each research question (sections 5.3.1 through to 5.4.5) have subsequently been taken and combined with the findings for the research questions in chapter 3 (the needs assessment) to provide a cohesive overview and response to each research question in chapter 6 (data synthesis: key findings). This has included observations on the similarities and/or differences between the original findings that came from literature (in chapters 2 and 3) and the findings from the analysis (chapter 5). The final chapter 7 provides final conclusions and also uses the synthesised evidence in chapter 6 to provide some recommendations.

Finally, in some cases the evidence has raised and prompted further questions and considerations. For example, whilst certain aspiring undergraduate behaviours have been observed (e.g. changes in their perception of time, see section 5.3.3), there was insufficient evidence in this case to be able to fully explain them. In other cases the use of visual methods to communicate (e.g. memes and photos), also means that some evidence was outside the remit of this study. These questions and considerations have been brought together in chapter 7, which provides a summary of suggestions for how these queries could be taken forward and incorporated into future research.

6. DATA SYNETHESIS: KEY FINDINGS

6.1 INTRODUCTION

This chapter sits between the evidence (chapter 5) and final conclusions, recommendations and contributions to knowledge in chapter 7; it brings together evidence from literature (chapter 3) and the key findings from the analysis (chapter 5) in order to consider how new evidence compares and relates to pre-existing knowledge. This chapter seeks to conclude how, and where, the research aims, objectives and research questions have been met, and considers and summarises where methodological approaches have worked well, and where there were limitations.

6.2 DATA SYNTHESIS: KEY FINDINGS

The following sections combined findings from literature (chapter 3), which used existing literature to address the research questions (see table 1.3) together with key findings from the analysis (see chapter 5). Each research question has been provided as a subheading in the same order as in chapter 5 as this provides a logical sense of progression through the findings (e.g. by establishing context before examining finer behavioural characteristics). For each research question a summary has been provided, which brings together both sets of evidence (i.e. chapters 3 and 5) and considers how newer findings (i.e. chapter 5) compare and relate to what had been known previously (i.e. in chapters 2 and 3).

Are there any key differences between the different stages of progression (before, during and after)?

This was not the first study to collect data from aspiring undergraduates in three stages, however the timings of data collection periods in previous studies differed considerably so care must be taken in considering and/or comparing past (e.g. Moogan et al., 1999) and present findings (i.e. from chapters 3 and 5). In particular the data collection periods (see chapter 4) were far longer compared to, for example Moogan et al,'s study in 1999, which lasted four months, and represented the aspiring undergraduates' journey into Higher Education over a total of sixteen months. Therefore whilst this research concurs with prior observations to an extent

in that, over a four month period '*the stages were not necessarily discrete and sequential and fed back into each other*' (Moogan et al., 1999, p.217): on a larger scale they were very different. Data collection periods conducted before or after one another (i.e. collection periods 1 & 2, 2 & 3) had some similarities (e.g. actors); however when compared data collected during the first and third data collection periods they differed considerably. For example, the number of different actors identified over the three data collection stages grew exponentially (see figure 5.4) and only a very small number of core actors were present during all three data collection stages (see figure 5.5). Similarly if we compare figures 5.1, 5.2 and 5.3 we can see distinctly different patterns in the volume of tweets over time; therefore what this research has demonstrated are distinctly different patterns over a longer period of time.

Despite the main deadline for university applications being in January, evidence here (see section 5.4.4) supported previous findings that showed that high proportions (78%) of aspiring undergraduates have already decided to apply to university before they entered their final year at sixth form/college (Moogan et al., 1999). Chapter 5 found that many aspiring undergraduates had reportedly completed their applications weeks, if not months, in advance of the deadline. Knowing that both decisions and applications are being completed well in advance of the deadline has significant implications for the timing of the delivery of support. In essence, whilst support in their final year has been proven to be helpful if different actors responsible for supporting aspiring undergraduates hope to be able to provide meaningful contributions to decision-making processes: they need to contribute and engage earlier. For example, universities were found not to be actively engaging in conversations with aspiring undergraduates until the second data collection period (see sections 5.3.1 and 5.3.3); this research suggests if they wish to have meaningful impact and engagement with aspiring undergraduates, these communications may need to happen far sooner.

Whilst prior research has observed that searches for information do not stop once application forms have been submitted (Moogan et al., 1999), given that searches for information were continually observed throughout all of the data collections periods (see chapter 5): this research would expand on this by postulating that

whilst the nature, context and efficiency of searches change the searches themselves never ‘stop’. However, it might be necessary to alter our understanding overall as to what aspiring undergraduates are searching ‘for’; these are not always ‘facts’ (e.g. searches for emotional support).

‘Who’ are aspiring undergraduates asking (i.e. different actors)?

There were considerably more actors identified as part of this research (see chapter 5) in comparison with those referenced in literature (see chapter 3). For example, more than ninety actors were identified during the third data collection stage alone (see figure 5.4) compared to seven in the literature review (chapter 3). Part of this disparity occurred from a tendency in previous literature to describe groups of actors (e.g. employers). However, evidence here suggests that the use of generic groupings may be inappropriate and that there is an inherent risk in supposing that groups of actors hold similar views, motives and/or beliefs; this research has observed considerable disparity in the behaviour, views, motives and/or intentions of individuals/organisations belonging to the same ‘group’ (e.g. parents), (see section 5.3.3).

Given the wide range of different actors being referenced during one and/or all of the data collection stages (see section 5.3.1 and 5.3.3) what was of particularly interest were the gaps in the evidence; in particular where key actors that had been identified in literature were absent altogether. In some cases whilst the stakeholder was arguably important (e.g. the Department for Education) because their role did not require them to have direct contact with aspiring undergraduates, their absence was perhaps not unsurprising. However, groups such as the National Careers Service, Jobcentre and the National Careers Council were notably absent online. Whilst students’ are known to be reluctant to engage with educational institutions online (Jones and Harvey, 2016), and there was a tendency for aspiring undergraduates to talk *about* institutions rather than *to* them: UCAS had been successful in breaking this convention and unlike other organisations were particularly proactive on Twitter and there was ample evidence of aspiring undergraduates engaging with them for information and/or support.

What kinds of information are aspiring undergraduates asking for?

Not all of the subject areas identified in literature were being discussed at length online (e.g. course content). However, this does not mean that these topics weren't of interest/importance to aspiring undergraduates, just that they weren't being discussed in this instance on Twitter. The research identified previously unidentified (as known) kinds of information, which included fluid concepts such as time, emotions and decision-making. Irrespective of whether fluid concepts can be considered 'subjects' as they were being talked about in their own right they are arguably a reflection of aspiring undergraduates in those contexts. The prevalence of these kinds of information demonstrate what aspiring undergraduates are concerned and/or are talking about and as such are potentially as, if not more important, in some cases, as 'traditional themes' (e.g. accommodation). Considering not just what aspiring undergraduates *should* be talking about and appreciating what they *are* talking about and how this is happening might help to provide researchers with a wider, more holistic, understanding of the aspiring undergraduate experience.

Finances were identified as being a significant topic in literature (e.g. Renfrew et al., 2010), however during the first and second data collection periods these were only being referenced in very small numbers and only by aspiring undergraduates from lower income families. Financial discussions became more prevalent and arguably significant later in the third data collection period and it was later being cited as a reason for university students prematurely dropping out of university. So whilst there is clear evidence of the impact of poor financial management: evidence here did not suggest that it was being widely acknowledged or discussed during the early stages of aspiring undergraduates progression into university. Literature goes some way to supporting this apparent contradiction between aspiring undergraduates reportedly recognising the importance of financial matters (Renfrew et al., 2010) whilst knowing little about it and only using a small amount of the sources of information that are available (Davies et al., 2008). One tentative speculation is that there is a difference between knowing and understanding (which appreciates consequences). For example whilst aspiring undergraduates can be informed about financial matters (and freshers' flu), some may not truly appreciate their significance until they experience it themselves.

Do actors cover different subject areas?

Literature concentrated on the relationships that aspiring undergraduates' had with a relatively limited circle of actors (i.e. teachers, parents and peers), compared to the plethora of actors identified during the analysis (see section 5.3.3). As a result there was relatively little overlap in this case between literature and the evidence, particularly given that teachers and parents, which were identified through a review of literature were not prevalent actors on Twitter. Whilst the literature review (see chapter 2) had observed that aspiring undergraduates were not making decisions alone, it did not recognise the range of different actors present, and in particular the prevalent amount of bias marketing present throughout all three of the data collection stages. As some aspiring undergraduates struggled with indecision, it is important to acknowledge the prevalence that these commercial entities have in the online worlds that they inhabit. Whilst the companies themselves changed during data collection stages they were ever present, and some used intentionally misleading and arguably manipulative methods to try and attract aspiring undergraduates.

With the exception of UCAS, support for aspiring undergraduates from other actors varied considerably; not all schools/colleges were active on Twitter and universities only started participating in aspiring undergraduate conversations during the second data collection period. Views could also vary considerably, even when they were coming from the same stakeholder (e.g. parents in relation to gap years). Although there was an ample supply of advice available, particularly during the second data collection period from existing university students, lack of interest and/or engagement suggested that aspiring undergraduates were not always open to advice. Literature has observed that aspiring undergraduates can be unwilling to accept guidance, even from trustworthy sources (Dobrow and Tosti-Kharas, 2012), potentially particularly in cases when they perceive advice to be negative (e.g. debunking myths), which is reportedly when aspiring undergraduates are more likely to resist (London and Smither, 2002). One interesting observation in this case was the tendency for aspiring undergraduates to only reassess the validity of advice they had been given from existing university students ***after*** they had personally experienced it; at which point there was a tendency to reflect upon the original advice, re-evaluate it and the reiterate it (e.g. that freshers' flu was real and not a

myth). There is some research, albeit in a different context, that mirrors this behaviour: Renfrew et al. (2010) in considering aspiring undergraduates' views on those dropping out of university found that aspiring undergraduates were disinterested and speculated that this was because there was a tendency for aspiring undergraduates to believe that negative information and circumstances only applied to that particular university student and were unwilling to accept that it would, or could, apply to them (Renfrew et al., 2010).

The reasons that university students gave for leaving their studies prematurely fell into eight categories; social (e.g. romantic influence); poor health (mental or physical); a struggle to cope academically; the course; financial problems; independent living (e.g. away from parents); university as an inappropriate route of progression (e.g. for careers such as hairdressing), or, parental pressure. As references to university students leaving made no mention of any support or help, it is not possible to tell what influence/impact this may, or may not, have been having. However, what can be known is that these eight categories tended not to be addressed by those responsible for supporting newly enrolled university students (i.e. university departments).

Aspiring undergraduates had a tendency to compare themselves to their peers, which allowed us to identify some demographic factors during all three data collection stages. Despite reported rising numbers of undergraduates from middle class families (Moogan et al., 1999) aspiring undergraduates from lower income households reported problems throughout; they were acutely aware that they didn't have the same opportunities (e.g. the option to travel on a gap year) and finances were subsequently one of the reasons newly enrolled university students gave for dropping out. Aspiring undergraduates with extra curricular commitments and responsibilities also reportedly struggled to cope during the application process as they struggled to juggle jobs, family responsibilities, etc., alongside university applications. Aspiring undergraduates coming from abroad to study in the UK could also struggle to understand British and/or westernised concepts (e.g. gap years). Once aspiring undergraduates enrolled at university issues were still being reported, for example not all of the welcoming events (i.e. as part of freshers' week) at university were considered suitable, for example by disabled students (although

this varied considerably by institution), and by those that didn't necessarily enjoy drinking alcohol or going to clubs.

How do they go about asking these questions?

Literature identified that even if aspiring undergraduates consider a piece of information to be useful, this does not mean that they will try to search for it (Renfrew et al., 2010). This evidence builds on these findings in demonstrating that even when aspiring undergraduates did search, it was not necessarily in ways that were likely to elicit useful responses. For example, aspiring undergraduates frequently failed to address questions to an appropriate recipient, include a useful level of detail and/or structure queries so that it was obvious they were asking a question (e.g. including question marks '?'). Where the evidence here fundamentally differed from literature was that literature frequently typically depicted aspiring undergraduates asking for 'facts', described searches were sincere and that had a single-purpose. Aspiring undergraduate searches on Twitter however did not always have obvious meaning or intent and in some cases questions potentially masked ulterior motives. Searches could possess multiple and/or contradictory qualities (e.g. by being both serious and humorous), and could simultaneously be searching for multiple things (e.g. factual and emotional support).

Do students believe they can achieve the grades necessary?

The way in which literature identified patterns relating to aspiring undergraduates' confidence to secure grades has typically been through the use of demographic factors (e.g. gender). Given that no demographic information could be known about the aspiring undergraduates via Twitter this meant the emphasis on content and language gave this analysis a very different focus, and perhaps consequently, some findings align more closely with prior research that others. For example, whilst we cannot know what grades the aspiring undergraduates finally achieved the evidence hints that there may be some counter debate to the claim that there is a positive relationship between self-confidence and the marks actually received (Davies an Qiu, 2016). All of the aspiring undergraduate responses to predicted grades demonstrated that their own estimations and expectations were either too ambitious, or, too conservative. If we consider those that believed strongly that their grades were too conservative to be confident in their own abilities then there is a

mismatch: as if predictions are inaccurate then there is only a 7% chance that it will be an under-prediction (BIS, 2013). So it is unlikely that these outspoken individuals so confident in their ability will actually perform better than the low predicted grades that have surprised them. If anything, as the evidence has suggested, educational centres may have a tendency to over rather than under estimate aspiring undergraduate abilities as sending in higher grade estimations to UCAS means that university options won't be curtailed any earlier than is necessary, which leaves as many opportunities open for as long as possible.

Literature has shown that giving aspiring undergraduates information *'does not guarantee that prospective students will consider the information when making decisions'* (Renfrew et al., 2010, p.12) and that they only consider a small, limited, amount of information to be a 'priority' (Renfrew et al., 2010, p.13). However, in this case it was not necessarily true that aspiring undergraduates did not value predicted grade information and they were acutely aware of the impact it would have on their university applications. In this case it was more that some aspiring undergraduates questioned the validity and ability of those providing the information (i.e. teachers and schools/colleges), particularly if the predictions did not match their own personal assessments of their academic ability. Receiving an unexpected predicted grade could result in a range of responses, from joy and motivation through to stress, and in some extreme cases aspiring undergraduates were not willing to accept their predictions at all. In cases where aspiring undergraduates received predictions much lower than anticipated some evidence suggested that they found it easier to believe that teachers were at fault (e.g. that they didn't know how to do it properly and/or that they'd made a mistake), rather than being willing/able to accept that their own personal assessments were inaccurate. That there were examples of aspiring undergraduates trying to renegotiate and/or barter for better predicted grades arguably shows in some cases just how unwilling they can be to accept information if it runs contrary to their expectations.

Is quality an issue, does incorrect information get shared?

It had not been possible to find literature that had examined misinformation in this specific context previously (i.e. with aspiring undergraduates on Twitter), nonetheless as the literature review suggested might be the case (chapter 2)

examples of misinformation were found. What was unexpected however was that the most obvious instances of incorrect information being shared came from educational institutions, which was confusing some aspiring undergraduates. This obviously cannot be said to be true for all schools/colleges/universities, however it does demonstrate that the reliability of information from educational institutions varies. It may be the case that misleading information was being disseminated with good intentions (e.g. to prevent aspiring undergraduates from leaving applications till the last minute), however if this was the case then it was not explained in any of the cases observed.

Who do aspiring undergraduates recognise as an authority?

This question identified one of the limits of what can be analysed with this methodology; the more open and subjective the question was the more difficult it was to form effective combinations of terms/tokens. Given that there are limits to what can be asked of data collected in this way exploring aspiring undergraduate opinions may be better suited to a lengthier and potentially deeper method of data collection (e.g. interviews) in cases such as this. However, prior sections (e.g. section 5.3.3) have touched on the topic of authority in, for example, in asking 'who' the aspiring undergraduates were asking for advice (i.e. UCAS); as this arguably demonstrates some recognition of authority. Literature would have some evidence to support this tentative speculation, as universities and UCAS have been described as being '*"trusted" and recognised sources'* (Renfrew et al., 2010, p.12).

What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?

Literature that specifically considered the speed of the delivery of information to aspiring undergraduates could not be found in the timescale permitted. However, the concept of time was ever present throughout all three data collection periods. Particularly during the first and second data collection periods aspiring undergraduates were acutely aware of the short timescales involved, which resulted in high levels of stress and fraught emotions. The way in which aspiring undergraduates potentially understood and reported to manage their time evolved though Initially they tended to focus on the foreseeable future rather than on long-term goals, they expected impossible turnaround times, and had a tendency to list

all of their responsibilities before quickly concluding that they couldn't manage these things in the time given. This altered once they had entered university and rather than merely listing the components of the problem they began to talk about time as a commodity in itself that needed to be managed; they also had started to polarise their descriptions of time and would identify something as being a 'good', or worthwhile use of time, or, a 'bad' waste of time. It would be necessary to have a firm grasp of how aspiring undergraduates understand time and related terms (e.g. fast, slow), at the different points in their progression in order to be able to answer this question and consider whether the speed in which they can access information is a factor. In this case it needs to be understood how accurate/inaccurate aspiring undergraduate expectations are in order to be able to tell the difference in between a genuine issue and unrealistic or misplaced ideals aspiring undergraduates might hold.

Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?

Literature only considered the appeal of traditional forms of information for aspiring undergraduates such as prospectuses (e.g. Moogan et al., 1999). However whilst there were very few tweets that described the resources being used in the evidence (section 5.3.9) the nature of these comments were similar to some of those observed in previous research (e.g. Moogan et al, 1999) in that aspiring undergraduates only described the extent to which resources were considered fit for purpose. For example some aspiring undergraduates might comment on which resources were user friendly, but they tended not to comment on aesthetic appeal.

If prospective students are referring to and/or using resources what are they?

There are two fundamental differences to the findings in section 5.3.1 compared with previous literature; the first is that the rapidly evolving technology has provided a plethora of different ways for aspiring undergraduates to communicate. Resources have changed dramatically (e.g. from the use of CD-Roms to memes); what aspiring undergraduates are using has changed and the ways in which they are able to communicate and access information has changed. Therefore great

care must be taken in comparing past and present research and depending on the resource being considered given that the information landscapes have changed it is somewhat illogical to attempt to lift and transfer lessons and principles of old directly into these new digital environments. The second notable disparity is the way in which resources have been considered here, which has been a reflection of the methodology. Resources have been considered in many ways previously in literature; they have been considered as part of '*pre-purchase information acquisition*' (Moogan et al., 1999, p.212), they have considered preferences by demographic factors and literature has even considered the use of different resources between subjects (Renfrew et al., 2010). The methodology here differs in that it allows for an analysis of the use of resources over time and, notably, examines what aspiring undergraduates *are* using and not what they are reporting to use; as such we find a diverse array of resources that go beyond traditional handbooks and prospectuses.

The kinds of resources being used depended on what stage aspiring undergraduates were at (i.e. the data collection period being considered). Generally there was a notable shift in the preference for online resources when aspiring undergraduates received exam results and they needed to make decisions quickly. However, this changed completely when aspiring undergraduates arrived at university in the September, which signified a move towards the use of physical resources as they were now able to use a variety of resources on campus. During all three data collection stages it was necessary to re-examine what a 'resource' was; not merely as a result of the use of new technologies but as aspiring undergraduates shared social media posts, blogs, photos, videos and attended social events it was evident that there were a myriad of viable ways in which aspiring undergraduates were seeking, gathering and sharing information. The primary way in, which these differed from 'traditional' resources (e.g. open days) was that not only did the quality of the information vary, but that the sources of information that some aspiring undergraduates used were not necessarily positive influences at all. Aspiring undergraduates could be, for example, encouraged to lie about exam results and indulge in excessive behaviours that they weren't necessarily comfortable with. It is also worth reiterating that aspiring undergraduates were not always necessarily seeking 'facts' from difference sources

of information; they also searched for moral and emotional support (see section 5.3.4 of chapter 5).

Can learners access the information they need when they require it?

The relatively few access issues that aspiring undergraduates reported to have with providers (i.e. UCAS) are potentially an indication that the systems that are in place work well. Evidence from this study concurred with previous literature in that there was a tendency for any issues that were encountered to be at the user, rather than the provider, end. For example, literature has previously found that the majority of resources aspiring undergraduates value are already widely available but that they display low levels of awareness and will not necessarily be motivated to search for it (Renfrew, et al., 2010). Whilst this research found that user access issues tended to be individual problems that were not widely shared, when issues did occur inefficient search strategies were potentially hampering their ability to find help and resolve their issues in a timely fashion. It is worth noting that support was readily available (i.e. UCAS), and was observed to be successful in overcoming issues; if anything aspiring undergraduates accessing this help reportedly just wanted more of it (i.e. for it to be available outside of office hours).

In some cases there was evidence that poor information management had hindered aspiring undergraduates' ability to access information and lost and/or forgotten passwords were one commonly cited problem. There was a tendency in these cases for aspiring undergraduates to project blame onto others and/or even inanimate objects. For example, they tended to report that the password or the login didn't work rather than acknowledging that they might have forgotten it, or, had gotten it wrong. This potentially inability, or, unwillingness to be accountable in these types of situations (i.e. with passwords, or, with low predicted grades) is potentially an important observation that has implications for how future analysis on such issues is framed. Essentially that any 'blame' aspiring undergraduates assign should not necessarily be taken at face value.

Do aspiring undergraduates have the skills they need to effectively locate reliable information?

Aspiring undergraduates did not necessarily share the dictionary definition of terms such as 'lying' and described information to be a lie if it did not meet their expectations, or, if they perceived it to be unfair. Although some aspiring undergraduates demonstrated awareness of information discernment skills (e.g. fact checking), there was no evidence that any of these measures were being applied. This concurs with literature concluding that adolescents are not careful or discerning online (Miller and Bartlett, 2011); however what was less clear in this context was precisely what aspiring undergraduates understood true and/or false information to be. There was also a notable disparity between behaviour that aspiring undergraduates deemed acceptable to conduct themselves but that was completely unacceptable in others. For example whilst aspiring undergraduates freely admitted having lied themselves, they reacted strongly if they suspected another person/organisation might be misleading them. In some cases there was evidence that aspiring undergraduates were being encouraged to lie by anonymous sources. Reasons why aspiring undergraduates perceived lying to be acceptable included; that it was perceived to be low risk (i.e. they didn't think they'd get caught); that it was easy to do; that it was a result of the pressure; the potential impact telling the truth would have; and, that there wasn't a personally known 'victim' involved (i.e. it involved lying to an organisation and not a known person).

Do aspiring undergraduates have the skills they need to complete their applications?

There was little cohesion between the literature and the evidence in this case. Despite literature identifying concerns regarding *'the technical language used in information about HE'* (Renfrew et al., 2010, p.14) aspiring undergraduates did not report any significant difficulties in completing and/or submitting their UCAS applications. While prior research had also previously noted that aspiring undergraduates felt they had lacked support during the application process (Moogan et al., 1999) research here found that several actors (i.e. UCAS and schools/colleges) were proactively offering support. Given that this literature is approximately at least eight years old circumstances (i.e. the support available) may have changed and/or possibly improved. Some lesser challenges at the user, rather

than at the provider end potentially persisted however, and whilst in 1999 aspiring undergraduates had found organising and managing data complicated (Moogan et al., 1999), evidence here still indicated that some aspiring undergraduates lacked, or had not yet developed, data and/or time management skills that might have been useful to them.

The research (see chapter 5) uncovered some challenges that had not been reported on previously before (as known); for example some aspiring undergraduates reportedly found completing personal statements challenging. Overall though more issues were reported ***after*** aspiring undergraduates had finished filling in their applications. Aspiring undergraduates tended to have a low level of knowledge about how the submission and application process worked past the point, which directly involved them and this presented two challenges. Firstly some aspiring undergraduates displayed confusion about what happened to their forms after submission and had unrealistic expectations (e.g. of turnaround times), which left them feeling frustrated. Secondly, the surprise and anger expressed by some aspiring undergraduates at the application submission fee suggested they had not been forewarned of the charge. In this case as they appeared to have a low level of knowledge of the roles and responsibilities that different organisations played. For example, they didn't understand that the fees paid to UCAS and those paid direct to the universities were separate unrelated costs.

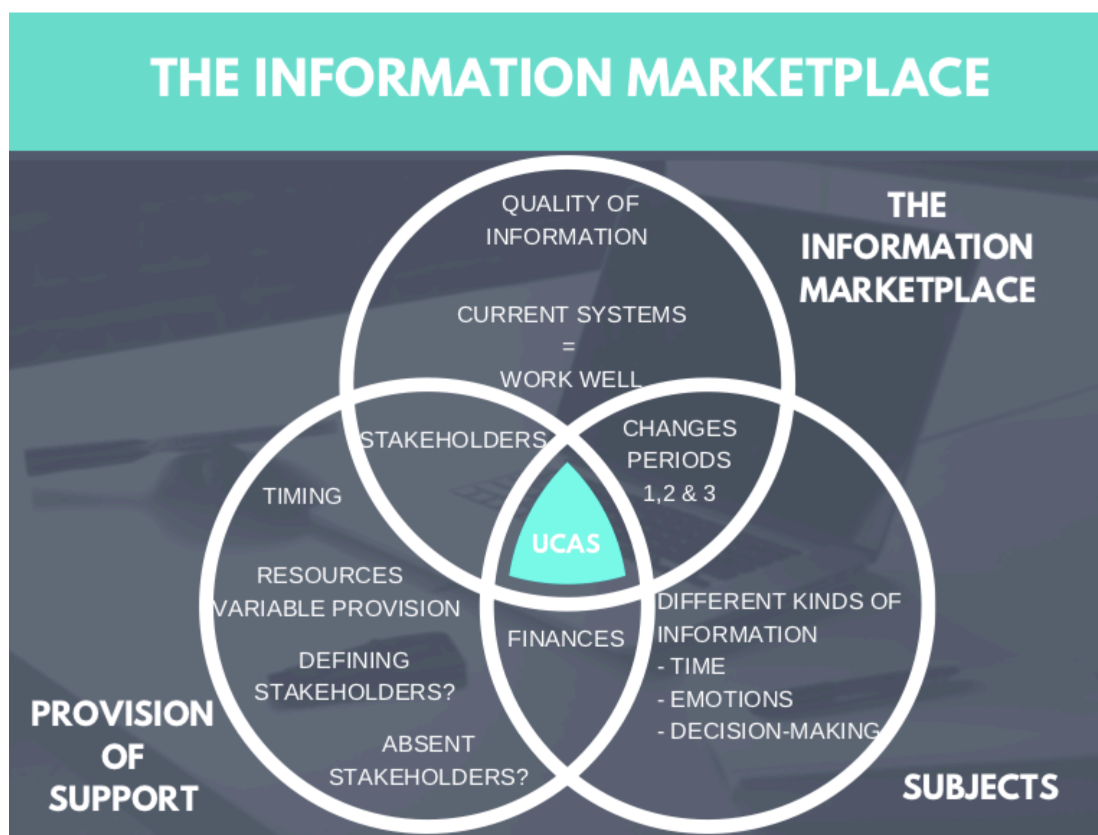
Is there any evidence of information overload (or poverty)?

There were limits as to what could be reasonably measured by the methodology in this instance. Literature has previously found that due to the large number of universities offering a variety of courses that aspiring undergraduates find it difficult to evaluate information (Moogan et al., 1999), and they have an '*inability to manage and reduce large volumes of information*' (Todd, 2003, p.38). Given that more details and a better understanding of the contexts would be required in order to address this question in a satisfactorily robust manner, it is recommended that this research question might be better addressed using an additional and/or alternative methodology (e.g. interviews).

6.2.1 Schematic view of findings

Findings (see section 6.2) can be viewed as falling into three broad categories relating to; the methodology, the information marketplace itself, and/or, aspiring undergraduates. Figure 6.1 and table 6.1 below have brought together the key topics relating to the information marketplace and aspiring undergraduates. The labels 'the information marketplace' and 'provision of support' in figure 6.1 should not be confused. The 'information marketplace' represents the wider structural context whereas 'provision of support' focuses on information coming from key actors (i.e. UCAS, universities, schools/colleges). The methodology has been summarised in section 6.4.

Figure 6.1. Venn diagram of the information marketplace



As figure 6.1 broadly demonstrates, UCAS can be considered a linchchpin underpinning information for aspiring undergraduates. Around UCAS are a number of related topics (e.g. the information marketplace, provision of support and subjects) some of which are inter-related. For example, moving clockwise around

the Venn diagram in figure 6.1, subjects in the information marketplace change depending on which data collection period you consider, however we perhaps need to reconsider what we consider 'subjects' (e.g. decision-making). Finances were one small but significant topic of concern that weren't being addressed to any notable degree by key actors responsible for providing support; in fact some actors (e.g. Jobcentre) were absent altogether. Evidence has demonstrated that we need to reconsider how we understand and class actors and resources in this context; in both cases what aspiring undergraduates are using and who they're interacting with go far beyond those mentioned in literature. Timing is an issue and some key actors (i.e. universities) are getting involved far too late in the decision-making processes of aspiring undergraduates to be able to have any early meaningful impact via Twitter. Information from wider providers (e.g. schools/colleges and parents) varies considerably and whilst evidence suggests that the systems that are in place work well, the further away you get from trusted sources (i.e. UCAS) the more misinformation gets encountered (e.g. schools/colleges) until the advice being given is, at best, immoral, at worst destructive and even illegal (e.g. lying, drinking to excess, taking drugs).

Table 6.1 summarises key findings in relation to aspiring undergraduates, these fell into four distinct general categories with a side theme of dropping out. The four over-riding categories were; knowledge, skills and capabilities; understanding; behavioural, and finally demographic.

Table 6.1. Aspiring undergraduates: summary of key findings

Knowledge, skills & capabilities	• Low level of knowledge about; submission and application process, and/or, the roles and responsibilities of key organisations (e.g. UCAS). • Personal statements were considered challenging • Some lacked, or had not yet developed, information and/or time management skills. • Despite awareness of information discernment skills there was no evidence that any measures were being applied. • Access issues were individual problems at the user, rather

	than the provider, end. • In-efficient search strategies (e.g. not identifying an any recipient; including useful details, and/or, making it obvious they were asking a question). Searches did not always have obvious meaning or intent, masked ulterior motives, could possess multiple and/or contradictory qualities, and/or could be searching for multiple things.
Understanding	• Unclear what undergraduates understand true and/or false information to be? • Aspiring undergraduates did not share the dictionary definition of terms such as 'lying'. Reasons why aspiring undergraduates perceived lying to be acceptable included; that it was perceived to be low risk; that it was easy to do; that it was a result of the pressure; the potential impact telling the truth would have; and, that there wasn't a personally known 'victim' involved. • Understanding and subsequently the way they managed their time evolved; from short-term focus and only being able to identify components of a problem to talking about time as a commodity in itself that needed to be managed in a positive way.
Behavioural	• Not necessarily seeking 'facts' (e.g. moral/emotional support). • Disparity in perceived acceptable behaviour (i.e. lying). • Tendency to project and not accept responsibility (e.g. lost passwords and low predicted grades). • Official versus personal assessments of academic ability result in a wide range of emotions. • Acutely aware of short timescales involved. • Potentially mismatched confidence versus ability. • Unwilling to accept advice (e.g. negative or from existing university students) until they experience it. • Difference between knowing and understanding (e.g.

	significance of finances). • Different patterns in the volume of tweets over time.
Demographics	• Lower income households. Aspiring undergraduates didn't have the same opportunities and finances were subsequently one of the reasons for dropping out. • Extra curricular commitments and responsibilities. Those with jobs, family responsibilities, etc. struggled to manage. • Culture. Aspiring undergraduates coming from abroad to study in the UK could also struggle to understand westernised concepts. • Freshers' week events were not always suitable for disabled students (although this varied considerably by institution), or, by those that didn't enjoy drinking alcohol or going to clubs.
Dropping out	• Reasons include: social causes; poor health; a struggle to cope academically; the course; financial problems; independent living; university as an inappropriate route of progression, or, parental pressure.

6.3 RESEARCH AIMS & OBJECTIVES: A REVIEW

The aim of this research was to examine the information behaviour of aspiring undergraduates on social media, specifically Twitter, throughout the university admission cycle from the learner's initial UCAS application in January through to their eventual enrolment at university the following September. This research sought to address this aim through the research objectives shown in table 6.2, which summarises where and how each of the objectives have been met.

Table 6.2. Summary of the research objectives

Research objective	**Chapter Reference**	**Summary**
1. To establish whether it would be possible to adapt, or adopt, an existing methodology; or, whether a new methodology should be developed for qualitative analysis of a large volume of Twitter communications, and interpretation of information behaviour in a specific context.	4	Summarised in section 6.4.
2. To study the information behaviour of aspiring undergraduates by: a) Establishing the information needs of aspiring undergraduates.	3	Concluded in Chapter 3.
2. To study the information behaviour of aspiring undergraduates by: b) Assessing the extent to which these information needs are being met via Twitter.	5 and 6	Considered and assessed in section 6.2.
2. To study the information behaviour of aspiring undergraduates by: c) Developing policy/practice recommendations for appropriate IAG (advice and guidance) provision.	7	Delivered in section 7.3.

6.4 METHODOLOGY: A REVIEW

Table 6.3 summarises where the methodology worked well and was able to successfully address the research questions (objective 1, see table 6.2). Please note that questions of a similar nature have been grouped together. Table 6.4 that follows examines and summarises the limitations of the methodology.

Table 6.3. Strengths of the methodology

Research question	**Strengths and observations**
Who are aspiring undergraduates asking (i.e. different actors)? What kinds of information are aspiring undergraduates asking for? Do different actors cover different subject areas?	**Nouns** – Tokens consisting of nouns worked well, particularly if they did not have a wide variety of similar or related terms. For example, 'UCAS' worked well as it had no commonly used variations whereas terms such as 'brother' were more complex as aspiring undergraduates could use terms such as 'bro', 'brother' or 'sibling', etc.
If prospective students are referring to and/or using specific resources what are they?	**Strength of a dual approach in the search criteria** – This search demonstrated the benefit of using a combination of terms from literature **and** term frequency. In this instance the later approach proved successful whereas the former found very little. However, the results in both cases were relevant and of interest and therefore arguably the data was more cohesive as a result of the duality in the approach.
Do students believe and can they achieve the grades necessary (intellectual level)?	**Nouns** and **case examples** – Searches were particularly efficient when specific nouns existed that related to a specific incident and/or event that was relevant. For example, in relation to predicted grades.
Are they capable of completing the UCAS form successfully (intellectual level)?	**Benefit of answering questions indirectly** – If aspiring undergraduates had been asked directly asked if they thought that they were capable (intellectually) of completing the UCAS form the answers and subsequently the results would

	arguably have been very different. This approach benefited from millenials' tendency to document their experiences and thoughts online.
Is quality an issue, does incorrect information get shared (misinformation)? Do prospective undergraduates have the skills they need to effectively locate reliable information (information discernment)?	**Recognition** and **scope of context** – There were two benefits of the methodology for these questions. Firstly, they benefited in using the data to answer a question in an indirect manner. Specifically when limitations in users skills or knowledge base are being considered it is arguably difficult to ask subjects about what they do not know. For example, aspiring undergraduates could struggle to respond to a question about a phenomenon if they weren't aware that it was happening. Therefore the approach seeks to answer such questions by passively observing. Secondly, collecting the data in a wider context with more actors allows us to observe a wider set of relationships. In this instance this was particularly important given that it was not just aspiring undergraduates creating and/or sharing misinformation; it was educational institutions. Had the methodology only focused on aspiring undergraduates then this finding would have been missed.
Can learners access the information they need when they require it?	**Scope of context** – The wider initial use of terms/tokens from both literature and word frequency were able to provide a broader context and as such the results were able to capture the positive and negative feedback from a wide array of different actors.

Table 6.4 summaries those questions, which could not be fully answered alongside summaries that detail the reasons for the limitations. The sole exception being the final row in table 6.4, which provides general observations.

Table 6.4. Challenges and limits of the methodology

Research question	**Limitations**
Is there any evidence of information overload (or poverty)?	**Context** – A tweet in this case did not provide enough information. It is not possible to tell from such limited information out of context.
Who do aspiring undergraduates recognise as an authority?	**Context and methodology** – In addition to limits of having short communications out of context there are also some complexities that arise when using this methodology with open questions (i.e. the nature of the question being posed matters). The more open and subjective the question was, the more difficult it was to create an effective formula of tokens.
What indications are there (if any) that the speed in which aspiring undergraduates can access information is a factor?	**Lack of common understanding and definitions** - The understanding of certain terms and concepts (e.g. reasonable timescales) are highly subjective. Lack of common meaning and explanations makes the data impossible to interpret.
Are there any indications that aspiring undergraduates find the way in which information is being processed or presented attractive/unattractive?	**Lack of data** – Whilst the methodology was effective for this question the results were far too low, consisting of single one-off instances, which could not be said fairly to be representative of aspiring undergraduates as a whole.
General observations on the nature of questions	**Context** – For example, it can be difficult to clarify whether content is intended to be 'serious', or, 'funny'. Indeed communications can be

	simultaneously be serving two functions (e.g. be looking for factual information and be humorous). The nature of communications exists on a scale and so this was found to be difficult with such short exerts. **Understanding/definitions and individual use of language** – Meaning and intent was not always obvious. In addition aspiring undergraduates would use slang, uncommon abbreviations and occasionally displayed poor English and/or grammar. **Information seeking –** Not all users were able to form effective/successful search strategies; indeed tweets could be borderline indecipherable. Whilst this in itself is of interest analysis is extremely limited here as the information is frequently short, vague and out of context.

It should be noted that there were also certain challenges and/or limits, which were a result of using this methodology with Twitter. These limitations included:

- Sampling anonymous data did not allow the analysis to follow certain tweets and review the communication patterns therein. In terms of inter rater reliability this is a clear limitation as there was no way of knowing how many tweets had come from the same user. It also did not allow the analysis to potentially be able to consider aspects such as influence through these communication exchanges.
- It is not possible to identity any of the actors: therefore it is not possible to conclusively know how many were truly aspiring undergraduates. For example, it is possible that an actor may have posted inaccurate information if they wanted to appear older or were attempting to impress peers.
- It was not possible to localise tweets effectively and consequently it was necessary to very careful during the data collection periods to only collect UK-relevant data (e.g. by focusing on specific terms that only applied to the

UK such as ‘UCAS’). However, this will have meant that relevant comments about ‘university’ will have been lost because it was not possible to ascertain whether comments related to universities in the UK or other countries (e.g. the USA). As it was not possible to know the location of tweets this subsequently meant that it was not possible to consider findings geographically.

- It was not always possible to gauge the seriousness and/or intent of tweets. Some actors may not have been serious, and/or, may have simply been trolling other actors in order to provoke a reaction.

It is suggested that many of the limitations observed here from both the methodology itself and/or the decision to use Twitter may have been at least partially mitigated by either; the use of a second social media site as a data source, and/or, a more traditional qualitative approach such as interviews. Whilst this might help inform any work going forward it would be necessary however, if two forms of data collection were to be used, to pare down the scale of the data collection (i.e. down from a data collection period spanning 16 months) in order to make the workload manageable.

6.5 CONCLUSION

The methodology has uncovered some potentially useful and valuable considerations, and whilst limits in the approaches have been observed, arguably what has been proven is that collecting and considering evidence in this way can provide insights into the aspiring undergraduate experience. Whilst some findings had similarities or cross over points with findings in literature, there is arguably enough disparity and variation to provide original value (see contributions to knowledge in section 7.2). In some cases the findings here have provided greater depth or added new considerations to existing knowledge (e.g. the different actors involved), in other cases it might have reassessed and questioned what was known entirely (e.g. resources used and online engagement with educational authorities). In several respects the evidence reframes how researchers might consider the wider context; critically aspiring undergraduates do not share the same

understanding of concepts (e.g. lying, time) and are not necessarily willing and/or may be able to fully understand yet the significance of advice they are given (e.g. on finances or health matters). The digital environments they inhabit are far larger than might previously have been anticipated, and some actors proactively seek to encourage aspiring undergraduates to engage in, at best immoral (e.g. lying), frequently unhelpful, and even illegal activities (e.g. drugs). In some cases the evidence, in uncovering certain behavioural phenomena, has raised more questions and these have been considered in chapter 7 as part of potential proposals for follow-on research (see section 7.4). The methodology and findings here offer an opportunity to provide insight that can improve support throughout the application and enrolment process (see section 7.3). UCAS have demonstrated engagement via social media is not only possible but can be effective and by using this as best practise other actors could learn to engage with aspiring undergraduates earlier to have meaningful impact. There is also the opportunity to improve support once aspiring undergraduates are in university; for example, knowing ‘why’ some aspiring undergraduates leave prematurely may help target support to those that need it.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This concluding chapter offers a final review of the contributions to knowledge this research has made through chapters 4, 5 and 6, and uses these lessons to address the final research objective 2c, which was to develop policy/practice recommendations for appropriate IAG (information advice and guidance) provision. As a last consideration this chapter reviews possible areas for future investigation, which could be examined as a part of postdoctoral research.

7.2 CONTRIBUTIONS TO KNOWLEDGE: A REVIEW

As a reflection of section 6.2.1, which identified key findings as either relating to the methodology, aspiring undergraduates, or the information marketplace, contributions to knowledge have been grouped under these three headings. These have been placed intentionally in this order as these headings also loosely reflect the research objectives 1 (methodology), 2a and 2b (aspiring undergraduates), and finally 2c (the information marketplace). The contributions lead into section 7.3 (below), which provides recommendations for appropriate IAG (advice and guidance) based on these contributions to knowledge.

7.2.1 Methodology

Research has demonstrated (e.g. section 5.3.1) that the approaches used in the methodology (section 4.4) work well for this particular audience (i.e. aspiring undergraduates) and for particular research questions (see section 6.4). The methodology had three particular strengths; firstly, using a dual approach to source terms/tokens (i.e. from literature and term frequency) proved advantageous as if one source was unable to locate useful terms/tokens then there was another viable alternative. As the terms/tokens from each source (i.e. literature and term frequency) were frequently different this also gave the resulting datasets greater scope. For example, terms/tokens from literature frequently allowed the analysis to consider and update knowledge on already known factors, whereas terms/tokens from term frequency allowed the analysis to identify new patterns of communications and trends.

The second notable advantage of the methodology was that it was an uncomplicated way to collect readily available data over a longer period of time (e.g. longer than 1 year). Being able to gather evidence over a longer timescale gave this research a far greater longitudinal range and this gave the aspiring undergraduate journey a narrative. For example; it was possible to see when events occurred, when different actors entered and left, to see how topics grew or diminished over time, and, notably it allowed for the collection of individual reflections over such a long period. The third significant observation and advantage was the nature of the data itself, which allowed, for instance, the analysis to consider what ***was*** happening, and not what aspiring undergraduates (or another stakeholder) ***claimed*** was happening (e.g. in response to questioning). This unobtrusive approach allowed for the gathering of natural and spontaneous communication. While opening the scope of what might be considered relevant in each case increased the size of the datasets the use of sampling kept the analysis manageable in the given timeframe.

7.2.2 Aspiring undergraduates

- Wider understanding of the context

This research has arguably considered aspiring undergraduates in a new context, not merely just in a digital environment but in the range of resources and different actors uncovered that have not been widely acknowledged (as known) previously. What has altered, at arguably some fundamental levels, is how aspiring undergraduates are understood and how they operate within the information rich digital environments they inhabit. Research concurs with literature in that, for example, aspiring undergraduates have some limited capabilities (e.g. information discernment, Miller and Bartlett, 2011), and that their searches for information can be inefficient (Nicolas, Rowlands and Huntington, 2008). However findings have expanded on prior knowledge by showing that aspiring undergraduates did not necessarily share commonly understood definitions of relevant terms and/or concepts (e.g. of time, lying) and it was not clear what they understood true and/or false information to be in this context. In addition, evidence has shown that aspiring undergraduates' searches for information can be complex (e.g. they can perform multiple functions simultaneously), contradictory (e.g. sincere and humourous), in addition to being inefficient (e.g. not structuring questions properly). Consequently

this alters and develops how researchers understand aspiring undergraduates in this context and has the potential to alter how analysts might choose to approach and/or interpret data.

What this research has demonstrated is a need to reconsider aspiring undergraduates in a broader context that extends past traditionally known actors (e.g. parents) and a need to recognise and acknowledge, for example, a not inconsiderable amount of bias and manipulative information coming from commercial entities. This biased material has not (as known) been widely acknowledged previously and ignoring it risks taking an inappropriately narrow view, which isn't truly representative of the digital worlds aspiring undergraduates inhabit. In addition prior research has displayed a tendency to focus, and even perhaps assume, aspiring undergraduates seek 'facts' (e.g. Renfrew et al., 2010); for example in section 3.2.1, which considered 'what' aspiring undergraduates were looking for, literature only made reference to traditional types of information on topics such as accommodation (Moogan et al., 1999). However, evidence has shown these factual searches are embedded and shared with softer searches for moral and emotional support. Understanding these are important because they contribute to a more cohesive and holistic depiction of aspiring undergraduate searches that arguably better reflects their decision-making processes. Finally, critically, this research has demonstrated that the context changes over time, and given the disparity (e.g. in actors, resources and behaviour) during different data collection stages this suggests that it may not be appropriate for research to make sweeping generalisations that claim to be equally applicable throughout.

- Aspiring undergraduate information behaviour

Behavioural

Several behavioural characteristics were observed in examining the information coming from aspiring undergraduates in this context. Whilst these had not been observed in information behaviour literature previously (as known) it is suspected that there may be some relevant principles and theories that could be transferred to this digital context from the school of psychology that might help explain some of these findings. For example, there was a notable disparity between the behaviour

that aspiring undergraduates considered acceptable to conduct themselves but that was deemed unacceptable in others (e.g. lying).

Aspiring undergraduates displayed interesting patterns of online behaviour when they encountered ‘negative’ information that ran contrary to their sense of self/state of being. In particular they could struggle to accept responsibility (e.g. lost passwords), had potentially mismatched levels of self-efficacy and could be unwilling to accept unwanted/negative information. Self-efficacy is a particularly interesting consideration in this case as the evidence runs somewhat contrary to previous research that has linked self-efficacy as a predictor of student’s motivation and learning (Zimmerman, 2000), and self-confidence to the marks actually received (Davies an Qiu, 2016). There were ample examples of aspiring undergraduates who felt that their predicted grades were a poor reflection of their own ability; however, the evidence in this case has shown that if predictions are wrong, it is unlikely that they will perform better and far more likely that they will receive poorer marks (BIS, 2013).

Whilst literature has indicated that aspiring undergraduates can be unwilling to accept guidance (Dobrow and Tosti-Kharas, 2012), this research has noted previously unobserved in this context arguably extreme examples of this behaviour. There were two instances of note; the first were aspiring undergraduates that so strongly rejected predicted grade information that they were either adamant that the staff were at fault, or, they were attempting to barter with staff/subject departments for predicted grades they felt they deserved. The second instances were reflections of newly enrolled university students as they acknowledged they had been mistaken about information they had received previously; for example, some students had refused to believe freshers’ flu was real until they had caught it themselves. These examples indicated that there was an important difference between knowledge and understanding, and providing aspiring undergraduates with information does not guarantee they will accept it. Although some aspiring undergraduates demonstrated an awareness of information discernment skills (e.g. fact checking), there was no evidence that any measures were being applied.

Knowledge, skills & capabilities

One observation that had not been found previously in literature (as known) was that aspiring undergraduates generally had low levels of knowledge about how the submission and university process worked (past the points which directly involved them), and the roles and responsibilities that key organisations involved (e.g. UCAS, schools/colleges and universities) played.

Some aspiring undergraduates lacked, or had not yet developed, data and/or time management skills that might have been useful to them. Whilst any information access issues tended to be individual problems, when issues did occur inefficient search strategies were potentially hampering their ability to find help and resolve issues in a timely fashion. Whilst previous literature had observed that aspiring undergraduates were conscious of timescales (e.g. Moogan et al., 1999) they had not (as known) made any observations on how they understood time itself. The way in which aspiring undergraduates potentially understood and reported to manage their time evolved. Initially, during the first data collection period, they tended to focus on the foreseeable future rather than on long-term goals; have unrealistic expectations of timescales, and whilst they identified tasks that took time they didn't make any reference to any management or coping strategies. This altered once they had entered university and rather than merely listing the components of the problem they began to talk about time as a commodity in itself that needed to be managed. Aspiring undergraduates also started to polarise their descriptions of time and would identify something as being a 'good', or worthwhile use of time, or, a 'bad' waste of time.

- Demographic factors

Demographic factors had been referenced previously in literature (e.g. Renfrew et al., 2010). However given that this has been a topical area of interest since the increase in university fees in 2012 (e.g. Burge et al., 2014), it is worth reiterating what is known from the evidence at this point. In particular there was evidence that aspiring undergraduates from lower income households experienced some difficulties throughout the application, admission/enrolment and their first semester at university; these aspiring and/or undergraduate students were acutely aware of the differences between themselves and their peers. For example, they were aware

that they couldn't afford the same equipment or opportunities (e.g. to travel) and finances were subsequently one of the reasons newly enrolled university students gave for leaving their studies prematurely. Aspiring undergraduates with extra curricular commitments and responsibilities struggled to cope during the application process in particular as they struggled to juggle jobs, family responsibilities, etc., alongside university applications. Aspiring undergraduates coming from abroad to study at universities in the UK could also struggle to understand westernised concepts (e.g. gap years). In addition not all aspiring undergraduates/newly enrolled university students reportedly enjoyed welcoming events (i.e. as part of freshers' week); in particular those that didn't necessarily enjoy drinking alcohol or going to clubs and some disabled students that experienced difficulties (although this varied considerably by institution).

7.2.3 The information marketplace

One general observation from the evidence worthy of note for future research is that care should be taken in how groups of different actors are described and depicted. Evidence has shown that individuals/organisations within the same 'group' (e.g. parents) can hold very different views, motives and beliefs; as such it may not be appropriate to generalise a 'parents' view.

- Successes, positives, role models

It is important to note that some of the findings (see section 6.2) were positive and evidence suggested that access and the support systems being run by UCAS worked well. In particular there were ample examples to show that UCAS were successfully engaging and supporting aspiring undergraduates via Twitter. Indeed, whilst there had been prior support to suggest that aspiring undergraduates had, in the past, felt they had lacked support (Moogan et al., 1999); evidence here found several actors (i.e. UCAS and schools/colleges) were proactive in offering and providing support and aspiring undergraduates on Twitter did not report any significant difficulties in completing and/or submitting their UCAS applications. Whilst some found the completion of personal statements challenging it is important to note that there is arguably a difference between (appropriate) challenge and a problem; and in this case the evidence did not suggest that the task presented any unreasonable difficulties (e.g. for disabled learners).

- Provision of advice and guidance

Despite ample examples of engagement and support between aspiring undergraduates and UCAS, other key actors identified in literature were absent altogether and were not providing information, or, were even being talked about (e.g. the National Careers Service, Jobcentre and the National Careers Council).

Evidence has demonstrated that it has been necessary to reconsider what a 'resource' is understood to be. Aspiring undergraduates shared a variety of social media posts, blogs, photos, videos and details of social events; displaying a myriad of viable ways that information could be sought and shared. The types of support and/or resources being used also varied depending on the stage in the application, admission, and/or enrolment process aspiring undergraduates were at (i.e. the data collection period being considered). For example, there was a distinct preference for online resources when aspiring undergraduates received exam results, compared to a shift towards the use of physical resources when they later enrolled at university.

Evidence found that applications were being completed well in advance of the main UCAS deadline, however universities were not engaging in online discussions until the second data collection period. This suggests that they are getting involved at least six months after aspiring undergraduates have decided on their preferred universities, which is arguably too late if they wish to offer support and/or hope to have an impact and attract potential students. Whilst universities were far more active during the second data collection period and once aspiring undergraduates were enrolling at university there was very little overlap between the type of support being offered and the reasons that university students gave for leaving their studies prematurely. Reasons for dropping out of university fell into eight categories; social (e.g. romantic influence); poor health (mental or physical); a struggle to cope academically; the course; financial problems; independent living (e.g. away from parents); university as an inappropriate route of progression (e.g. for careers such as hairdressing), or, parental pressure.

Support from schools and/or colleges varied considerably by institution; evidence suggested enough examples of misinformation to indicate that the quality of advice being given was inconsistent. It should also be noted that the sources of information that some aspiring undergraduates used were not necessarily positive influences at all and there was a prevalent amount of bias, misleading and arguably manipulative marketing methods, which have not been widely acknowledged (as known) in literature previously.

7.3 RECOMMENDATIONS

The following points outline policy/practise recommendations for developing appropriate IAG (advice and guidance) provision for aspiring undergraduates: thus fulfilling research objective 1c (see section 1.2.2).

- ***Greater clarity for aspiring undergraduates regarding the application process as a cohesive whole: including timescale.***
  The expectations of a notable number of aspiring undergraduates were not in line with what was realistic. It is therefore worth considering whether this could be addressed by providing aspiring undergraduates with more information about the application process as a cohesive whole rather than just the parts, which directly involve them (e.g. their application form).

- ***Greater transparency and early notice of the charges involved in making applications to university***
  Some aspiring undergraduates displayed frustration and anger at the fees needed to submit their university applications: their surprise suggested that they had not been forewarned of the charges. Aspiring undergraduates felt that the perceived high cost of university was already enough without additional unexpected charges. Given that UCAS and universities are separate entities this might suggest that prospective learners have a limited grasp of the roles that HE orientated organisations play.

- ***Widening the sphere of conversation at earlier stages in the decision making process***

  Early engagement is key to creating meaningful relationships and a sense of belonging in Higher Education (Thomas, 2013). However, universities are getting involved in online conversations at stages too late to be having significant impact in the decision-making processes of aspiring undergraduates. In the early stages of decision making UCAS were the most prevalent and actively engaged stakeholder whereas universities were predominantly being talked about rather than to.

  Whilst UCAS is the mechanism it should be remembered that a place at university remains the end goal for aspiring undergraduates and greater involvement in the early stages of decision making when prospective learners decide ‘where’ they might like to go may be more effective. This is arguably the point at which universities have the potential to have the most influence; particularly for high achieving students that secure their first offers and therefore don’t necessarily reconsider their options through Clearing.

  Similarly, whilst UCAS proactively supported aspiring undergraduates on Twitter there is arguably room for advice from other actors (e.g. universities). Evidence here suggests that, at least via Twitter, aspiring undergraduates are largely reliant on UCAS for support and assistance from other sources is, in comparison, limited. In addition the advice aspiring undergraduates received from different actors was not always helpful and the quality of advice varied considerably. Recognised figures of authority (e.g. universities) in this arena could do far more to combat poor quality information simply by being accessible and maintaining an active online presence. Evidence has consistently demonstrated aspiring undergraduates’ willingness to seek out and engage with UCAS; it is therefore not unreasonable to expect that UCAS’s example and success could be replicated for other actors.

- ***Morality and the question of policing***

  It is interesting to note the openness of some aspiring undergraduates that publicly and clearly state their intentions and later their alleged success to cheat various educational systems (i.e. exam boards, UCAS and universities). If we temporarily place individual culpability outside the remit of this study, which is arguably a subject of study and debate in itself, lessons can still be learned more widely here. Chiefly:

  1. This type of data is a useful source of evidence. In essence, if users are openly sharing 'how' they are cheating the system, and are placing this intelligence in public forums, then arguably this information can also be used the very organisations they are cheating to adapt and improve their systems.
  2. It could be argued that these messages placed so publicly with no apparent fear of recrimination potentially add an air of normalcy to these types of activities; this is arguably not being helped with low or no visibility by organisations that might provide more balance to these arguments.
  3. In addition greater visibility of organisations that aspiring undergraduates have an invested interest in (e.g. universities) may act as a deterrent in the first instance.

- ***Quality assurance in the provision of information from Further Education (FE) institutions***

  It is important that FE establishments, which many aspiring undergraduates implicitly trust provide a consistent standard of information. Evidence taken from this study has not always found this to be the case and whilst it is not necessarily surprising that incorrect information has been shared in this study; it is of concern that some of the most obvious instances come from sixth forms and colleges. Naturally this cannot be said to be true of all educational institutions. However there are enough examples demonstrating inaccurate information to suggest that the reliability of information being provided to aspiring undergraduates from their own educational providers varies, and as such it is suggested that greater quality assurance procedures are required.

- ***Information seeking and management skills***

  Poor information seeking skills were a continual reoccurring theme throughout this research. Common problems included; not targeting questions towards any particular individual/institution, poor English and/or grammar, and/or very vague descriptions or phrasing that impeded aspiring undergraduates' searches for information.

  There was also recognition from some users that poor information management had hampered their access to information: typically as key pieces of information needed to log in and/or complete forms had been either lost or forgotten. In other cases however there was occasionally little recognition that they themselves 'the user' were responsible for access issues and there was a tendency to project fault onto other external elements/organisations. For example, a user might cite that '*the password doesn't work'*, rather than making any admission that the responsibility for forgetting or losing it might be theirs.

  Given that these are skills necessary not only in Higher Education but arguably in life it is worth considering not 'if' they are needed but 'how' these skills might best be included in national agendas (e.g. the Government's Digital Agenda).

7.4 FUTURE LINES OF INVESTIGATION AND ENQUIRY

There have two ways in which possible future areas of investigation have been identified. In some cases the areas that have been highlighted below for possible further study were areas that could not be fully satisfied by the methodology (e.g. information overload). Whereas other areas reflect findings that have emerged during the analysis process but were outside the remit of this particular study and which may benefit from further attention and investigation.

- ***University engagement with aspiring undergraduates online***

  Evidence has shown there to be a communication mismatch between aspiring undergraduates and universities on Twitter. While HE (Higher Education) Institutions were present during all three datasets aspiring undergraduates were not necessarily communicating *with* universities; particularly in the first data collection period they were mostly being talked *about*. Universities only became more actively engaged in online conversations later on when aspiring undergraduates have already made their decisions and have submitted applications.

  One possible line of investigation going forward then would be to consider why Twitter is such a suitable medium for users to talk *about* institutions rather than *to* them. For example, do aspiring undergraduates find universities intimidating or assume that they won't respond to their questions? In-depth interview with both aspiring undergraduates and university staff members responsible for managing Twitter communications might help explore this in more depth.

- ***Crime and ill-intent; rationale and responsibility***

  It is also interesting to note the openness of some aspiring undergraduates who publicly state immoral, or even illegal, intentions and/or actions: ranging from cheating in exams through to drugs. Given that these comments appear sincere it would be an interesting follow-up to attempt to ascertain whether this lack of fear of reproach is purely naiveté, or, if the lack of a visible presence from certain parties (e.g. exam boards) are creating blind spots where these conversations are taking place seemingly free from recrimination.

- ***Misinformation: intent and expectations***

  The way in which aspiring undergraduates use certain terms such as 'lying', indicates that they don't necessarily share the dictionary definitions of these terms. For example, aspiring undergraduates describe information as 'lies' if it fails to meet their expectations, or, they perceive it to be unfair; however they don't consider their own mistruths (e.g. on application forms) to be

‘lies’. Where wider misinformation is concerned there is a notable lack of discerning behaviour from aspiring undergraduates (e.g. fact checking). One potential attributing factor, which may warrant further investigation with regards to misinformation and information discernment in aspiring undergraduates relates to the question of intent. ‘What’ aspiring undergraduates lie about and ‘who’ aspiring undergraduates are interacting with is intriguing in that they appear to measure the morality of their own misinformation on the perceived lack of a personally known identifiable ‘victim’. Aspiring undergraduates are generally not lying to actors they personally know (e.g. teachers), but to larger organisations which they are removed from and with which they have no face-to-face contact (e.g. exam boards and UCAS). With their own misinformation aspiring undergraduates perceive their actions to be a reflection of their ambitions, pressure and good intentions; there is nothing in the evidence to suggest they believe that anyone will get hurt by their untruths (e.g. lying on application forms) and as such they don’t acknowledge any risk.

These actions run contrary to the vented frustrations that aspiring undergraduates show if they are given any (and often illogical) reason to suspect that wider actors (e.g. UCAS) might not be reliable and accountable in the absolute sense. As such these findings surrounding the intent and interpretation of misinformation in aspiring undergraduates would make an interesting area to explore in more depth (e.g. via interviews and focus groups).

- ***Speed and the concept of time***

  The idea of time is an important concept for aspiring undergraduates; it is the ever-present measure that frames the context of each data collection period. Each stage of progression has a number of time-sensitive factors around which almost all decisions and actions orbit; successful progression is dependent on meeting a series of deadlines and this in itself appears to be poorly understood. Aspiring undergraduates, for example, do not have realistic expectations of turnaround times and it is unclear ‘why’ this is, or, how this affects the aspiring undergraduate and/or their progression. A

deeper qualitative approach might allow a researcher here to explore timeframes and the concept and importance of speed to aspiring undergraduates in this context.

- ***Access issues and in-efficient search strategies***

  Access issues for aspiring undergraduates were typically at the user rather than the supplier (e.g. UCAS) end. However, regardless of cause, when aspiring undergraduates did encounter access issues they were not always able to seek or find a solution. This was typical a result of in-efficient search strategies, which included very vague and ineffective descriptions of problems and failing to address questions to an appropriate stakeholder that might be capable of answering their query.

  What might be appropriate in this case is to consider which actors (e.g. careers advisors) might be well placed to support aspiring undergraduates. In particular to assess whether access and/or search issues persist in cases where a stakeholder has been assigned to support aspiring undergraduates.

- ***Questions relating to; information overload/poverty, authority and influence for aspiring undergraduates***

  Questions relating to information overload/poverty, authority and influence might be addressed in a more appropriate way by using deeper qualitative approaches (i.e. interviews and focus groups). The use of a different approach, or even a triangulation of methods (e.g. focus groups, interviews and questionnaires) might be able to provide a better understanding of the context from aspiring undergraduates that would be required in order to address these questions.

- ***Processing/packaging***

  In this case there was not enough correspondence to answer whether the processing and packaging of information is simply not a popular topic of conversation for aspiring undergraduates, or, whether these discussions are happening elsewhere. The dataset did not produce enough information to be

able to answer this question so in this case it is suggested that alternative qualitative approaches be used (e.g. interviews).

- **Socio-economic influences on the information behaviour of aspiring undergraduates**
  Evidence has eluded to the socio-economic backgrounds of aspiring undergraduates (e.g. figure 5.2.2 and accompanying text). In some cases there were findings that had the potential to link to be related to financial factors, but could not be conclusively linked. For example, some aspiring undergraduates were struggling to manage/cope with non-academic responsibilities (e.g. jobs, caring responsibilities). This would require a carefully considered approach; possibly a triangulation of mixed methods (e.g. using a combination of student data and diaries/blogs and/or interviews).

APPENDICES

Table A.1. Types of support for aspiring undergraduates

- **Careers events/fairs** (Hobsons, 2007). From 2011 the DCSF noted an increase in careers fairs as a means of supporting students through their transitional period (DCSF, 2011).
- **Youth Week**. Dating back to 2007 the DCSF contemplated the potential of a designated week designed to honour the accomplishments of youths (DCSF, 2007).
- **Employer collaboration**. The Department for Education conducted a survey of the affects of such links with industry concluding that they had successfully assisting in supporting progression (including to university) in many cases (DfE, 2010).
- **14-19 Prospectus.** Targeted for parents as well as students with details of courses as well as testimonials (DCSF, 2008).
- **Qualifications**. There is evidence that the qualifications themselves (e.g. Level 1 Diplomas) should help, support and prepare learners for progression (QCA, 2006).
- **Volunteering and mentoring**. Identified as being potentially particularly effective with those at risk of disengaging (DCSF, 2007).
- **UCAS.** All aspiring undergraduates come to university through the Universities and Colleges Admissions Service.
- **Jobcentre Plus**. A surveyed 18% of learners reported turning to Jobcentre Plus for help/support in relation to training/employment (LSC, 2008).
- **The Careers Service**. There has been concern regarding the design of the service and some have found the government's approach towards education in this regard perplexing (DCSF, 2011).
- **Other careers services**. These could be delivered in-house by schools/colleges or those provided in the local community (Hobsons, 2007).
- **Tutors**. Working with students on a one-to-one basis (DCSF, 2008).
- **Community/voluntary organisations**. In a survey 9% of students reporting using local/voluntary services for help (LSC, 2008).
- **In-school support**. Schools/colleges are expected to provide IAG but have

not been given any additional funds with which to provide this; it is feared that this will make it a real challenge for centres to remain unbias (DCSF, 2011).

- **Booklets**. Such as the Moving Up booklet circulated in 2008 (DCSF, 2009).
- **Teachers**. Learners have been told that teaching staff can assist on everything from exam techniques to IAG (Ofqual, 2009).
- **Role models**. Ex-students return to school/college to inspire learners to think about their future options (DfE, 2011).
- **Drop in sessions/surgeries**. There is evidence that students welcome the opportunity to converse with teaching staff on a personal one-to-one basis (Ofsted, 2008).
- **Universities**. Typically websites, prospectuses, open days and presentations that university staff might make in schools/colleges (Hobsons, 2007).
- **Education directories**. Such as those that might be provided by groups such as UCAS (Hobsons, 2007).
- **Education websites**. Including advertising e-mails from these sites (Hobsons, 2007).
- **Recommendations/word of mouth** (Hobsons, 2007).
- **Magazines** (Hobsons, 2007).
- **Television**. Advertisements or programs (Hobsons, 2007).
- **CD Roms**. Traditional resources that could be sources through the school/college or local library (Hobsons, 2007).
- **Pilots:**Exploring how events created and managed by youths could assist in periods of progression (DCSF, 2007).

Table A.2. Prevalence of different actors from literature

Tokens	Before	During	After
Local Authorities	1	6	4
Children's trusts	0	0	0
Schools	4,843	7,768	2,350
Colleges - Sixth forms - Academies	4,257 946 406	7,479 970 1,280	6,412 117 581
Department for Education	6	81	2
National Careers Service	5	155	0
National Careers Council	0	0	0
Ofsted	1	11	0
Employers	151	305	61
UCAS	9,897	9,972	151
Jobcentre	0	37	0
Tutors	868	483	153
Teachers	2,101	1,449	228
Universities	11,745	19,109	19,609
Parents - Mum - Dad	697 - 421 - 325	1,816 - 1,020 - 450	402 - 1,023 - 417
Careers advisers	80	120	21
Families - Brothers - Sisters	2,298 - 189 - 89	956 - 586 - 754	347 - 593 - 231
Friends	883	1,987	3,303

Table A.3. Stakeholder terms from term frequency

Before (155,100)			During (180,473)			After (158,607)		
ucas	**9,518**	**6.13%**	**students**	**9,998**	**5.53%**	**freshers**	**9,998**	**6.3%**
@ucas	9,462	6.1%	student	5,187	2.87%	freshers'	9,989	6.29%
♯ucas	6,336	4.08%	freshers	1,773	0.98%	♯freshers	9,983	6.29%
uni	**6,842**	**4.41%**	♯students	1,465	0.81%	@freshers	6,964	4.39%
university	3,428	2.21%	pupils	1,102	0.61%	freshershome	6,613	4.16%
universitie	1,024	0.66%	**everyone**	**9,997**	**5.53%**	fresher	4,168	2.62%
s	956	0.61%	people	4,176	2.31%	**students**	**9,954**	**6.27%**
unis	533	0.34%	anyone	1,963	1.08%	student	8,043	5.07%
♯university	460	0.29%	world	1,818	1%	♯students	1,393	0.87%
♯uni	**4,338**	**2.79%**	team	1,756	0.97%	**uni**	**9,924**	**6.25%**
school	4,065	2.62%	group	1,103	0.61%	university	9,961	6.28%
college	553	0.35%	**ucas**	**9,968**	**5.52%**	♯uni	1,521	0.95%
schools	403	0.25%	@ucas	9,986	5.53%	♯university	1,172	0.73%
academy	**3,054**	**1.96%**	♯ucas	3,592	1.99%	**instagram**	**7,251**	**4.57%**
@gapyear	**2,777**	**1.79%**	♯ucasclearing	760	0.42%	dlvr	5,722	3.6%
students	2,219	1.43%	**uni**	**9,968**	**5.52%**	facebook	2,652	1.67%
student	**2,466**	**1.58%**	university	9,334	5.17%	youtu	1,370	0.86%
people	882	0.56%	♯university	5,479	3.03%	twitter	1,007	0.63%
everyone	791	0.50%	♯uni	2,293	1.27%	**college**	**6,294**	**3.96%**
anyone	747	0.48%	universities	1,499	0.83%	school	2,239	1.41%
someone	**2,275**	**1.46%**	**college**	**7,119**	**3.94%**	**neuvoo**	**5,973**	**3.76%**
family	602	0.38%	school	6,347	3.51%	@jobsplane	4,312	2.71%
parents	490	0.31%	schools	1,511	0.83%	jobsplane	4,311	2.71%
♯family	**1,650**	**1.06%**	academy	1,232	0.68%	**union**	**5,451**	**3.43%**
teacher	685	0.44%	sixth form	949	0.52%	**@warwickuni**	**4,239**	**2.67%**
tutor	467	0.30%	**media**	**2,816**	**1.56%**	**people**	**4,083**	**2.57%**
teachers			youtube	2,168	1.20%	everyone	4,043	2.54%
Names*			dlvr	1,785	0.98%	society	2,403	1.51%
Examples:	1,048	0.67%	instagram	1,754	0.97%	man	1,626	1.02%
hannah	1,023	0.65%	bbc	1,678	0.92%	group	1,586	0.99%
chloe	1,018	0.65%	@wearemediaro	1,579	0.87%	guys	1,285	0.81%
emily			cks	1,479	0.81%	girls	1,065	0.67%

			telegraph	1,437	0.79%	**graduate**	**3,599**	**2.26%**
			youtu	1,383	0.76%	**Names/users**		
			twitter	1,198	0.66%	Examples:		
			facebook	**2,266**	**1.25%**	@syu	4,029	2.54%
			@alevelresults	**1,784**	**0.98%**	Ramesh	3,509	2.21%
			business	1,667	0.92%	@ramanna7	3,499	2.20%
			getmyfirstjob	1,531	0.84%	@vibskhera	3,303	2.08%
			joblink	1,313	0.72%	@viewandroid	2,813	1.77%
			neuvoo	**1,394**	**0.77%**	angela	2,260	1.42%
			parents	871	0.48%	@athvikaangel	2,208	1.39%
			family	785	0.43%	a	2,036	1.28%
			mum	**1,317**	**0.72%**	james	1,864	1.17%
			@thestudentro	**1,300**	**0.72%**	hannah	1,525	0.96%
			om	**1,193**	**0.66%**	@dear	**2,948**	**1.85%**
			@101studioz	851	0.47%	**team**	**2,893**	**1.82%**
			apprentice	**1,115**	**0.61%**	**engineer**	1,788	1.12%
			apprentices	**1,059**	**0.58%**	engineers	**2,578**	**1.62%**
			@mysexdoctor	**1,027**	**0.56%**	**walkins**	**2,568**	**1.61%**
			friends			**club**	1,584	0.99%
			girls	1,324	0.73%	bar	**1,808**	**1.13%**
			Names	1,273	0.70%	**assistant**	**1,720**	**1.08%**
			Examples:	1,088	0.60%	**centre**	**1,676**	**1.05%**
			Emma	1,046	0.57%	**eventbrite**	**1,485**	**0.93%**
			james			**friends**	**1,402**	**0.88%**
			hannah			**company**	1,396	0.88%
						org	1,343	0.84%
						business	**1,263**	**0.79%**
						trainee	**1,253**	**0.79%**
						speaker	**1,128**	**0.71%**
						library	**1,012**	**0.63%**
						maryam	944	0.59%
						namazie		

* Whilst individually the individual names (e.g. Alice) in their own right were less than 1% (the most popular being the ones listed above). Given that there were 28 of

these names overall in the top 500 most frequently cited words, collectively they could be potentially significant. So they have been included at the bottom of the table here.

* It should be noted that references to individual universities are unlikely to appear on this list as, for instance, ‘Northumbria University’ would be taken as two separate words. Therefore sub-nodes can be created under words like ‘uni’ or ‘university’ to identify specific institutions.

* Percentages have been given to 2 decimal places.

Table A.4. Different actors during the application process

Different actors Terms based on word frequency	Different actors based on the literature review	Different actors
family parents ♯family	**Families** Family OR familys OR families **- Brothers** Brother OR brothers OR bro **- Sisters** Sister OR sisters OR sis **Parents** Parent OR parents **- Mum** Mum OR mums OR mummy OR mummys OR mother OR mothers **- Dad** Dad OR dads OR daddy OR daddys OR father OR fathers	**Families** Family OR familys OR families **- ♯family** **- Brothers** Brother OR brothers OR bro **- Sisters** Sister OR sisters OR sis **Parents** Parent OR parents **- Mum** Mum OR mums OR mummy OR mummys OR mother OR mothers **- Dad** Dad OR dads OR daddy OR daddys OR father OR fathers
school college schools academy	**Schools** Schools OR School **Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies	**Schools** Schools OR School **Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies
teacher tutor teachers	**Teachers** Teachers OR Teacher **Tutors**	**Teachers** Teachers OR Teacher **Tutors**

	Tutors OR tutor	Tutors OR tutor
ucas @ucas ♯ucas	**UCAS** UCAS OR UCASs	**UCAS** UCAS OR UCASs **- @ucas** **- ♯ucas**
uni university universities unis ♯university ♯uni	**Universities** University OR universities Uni OR Unis	**Universities** University OR universities Uni OR Unis **♯university** **♯uni**
@gapyear **Names** hannah chloe emily **people** everyone anyone someone **students** student	**Careers Advisers** Career OR careers + adviser OR advisers **Children's Trusts** Childrens OR children + trusts OR trust **Department for Education** Department + for + education OR educations DfE OR DfEs **Employers** Employers OR employer **Friends** Friend OR friends Mate OR mates Pal OR pals **Jobcentre** Jobcentre ORJobcentres **Local Authorities** Local + authorities OR authority OR authoritys	**Careers Advisers** Career OR careers + adviser OR advisers **Department for Education** Department + for + education OR educations DfE OR DfEs **Employers** Employers OR employer **Friends** Friend OR friends Mate OR mates Pal OR pals **Local Authorities** Local + authorities OR authority OR authoritys **hannah** **chloe** **emily** **National Careers Service**

	National Careers Service National + career OR careers + service OR services @NationalCareers **National Careers Council** National + career OR careers + council OR councils NCC **Ofsted** Ofsted OR Ofsteds	National + career OR careers + service OR services @NationalCareers **Ofsted** Ofsted OR Ofsteds **people** **- everyone** **- anyone** **- someone** **students** student OR students

Table A.5. Different actors present during A level results and the start of clearing

Different actors terms based on word frequency	**Different actors based on the literature review**	**Different actors**
friends	**Friends** Friend OR friends Mate OR mates Pal OR pals	**Friends** Friend OR friends Mate OR mates Pal OR pals
college school schools academy sixth form	**Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies **Schools** Schools OR School	**Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies **- Schools** Schools OR School
parents family mum	**Parents** Parent OR parents **- Mum** Mum OR mums OR mummy OR mummys OR mother OR mothers **- Dad** Dad OR dads OR daddy OR daddys OR father OR fathers **Families** Family OR familys OR families **- Brothers** Brother OR brothers OR bro **- Sisters** Sister OR sisters OR sis	**Families** Family OR familys OR families **Parents** Parent OR parents **- Mum** Mum OR mums OR mummy OR mummys OR mother OR mothers **- Dad** Dad OR dads OR daddy OR daddys OR father OR fathers **- Brothers** Brother OR brothers OR bro **- Sisters** Sister OR sisters OR sis

<table>
<tr><td>ucas
@ucas
#ucas
#ucasclearing</td><td>UCAS
UCAS OR UCASs</td><td>UCAS
UCAS OR UCASs
- @ucas
- #ucas
- #ucasclearing</td></tr>
<tr><td>uni
university
#university
#uni
universities</td><td>Universities
University OR universities
Uni OR Unis</td><td>Universities
University OR universities
Uni OR Unis
- #university
- #uni</td></tr>
<tr><td>@alevelresults
@mysexdoctor
@thestudentroo
m
@101studioz
apprentice
apprentices
business
getmyfirstjob
joblink
neuvoo
everyone
people
anyone
world
team
group
girls
media
youtube
dlvr
instagram
bbc</td><td>Careers Advisers
Career OR careers + adviser OR advisers
Children’s Trusts
Childrens OR children + trusts OR trust
Department for Education
Department + for + education OR educations
DfE OR DfEs
Employers
Employers OR employer
Jobcentre
Jobcentre ORJobcentres
Local Authorities
Local + authorities OR authority OR authoritys
National Careers Service
National + career OR careers + service OR services
@NationalCareers
National Careers Council
National + career OR careers +</td><td>Apprentices
Apprentice OR apprentices
Business
- getmyfirstjob
- joblink
- neuvoo
Careers Advisers
Career OR careers + adviser OR advisers
Department for Education
Department + for + education OR educations
DfE OR DfEs
Employers
Employers OR employer
Everyone
- people
- anyone
- world
- team
- group
Girls
Jobcentre</td></tr>
</table>

@wearemediarocks telegraph youtu twitter facebook **students** student freshers ♯students pupils **Names** Examples: Emma james Hannah	council OR councils NCC **Ofsted** Ofsted OR Ofsteds **Teachers** Teachers OR Teacher **Tutors** Tutors OR tutor	Jobcentre ORJobcentres **Local Authorities** Local + authorities OR authority OR authoritys **Media** **- youtube** **- dlvr** **- instagram** **- bbc** **- @wearemediarocks** **- telegraph** **- youtu** **- twitter** **- facebook** Names: **Emma** **James** **Hannah** **National Careers Service** National + career OR careers + service OR services @NationalCareers **Ofsted** Ofsted OR Ofsteds **Students** Student OR students Pupil OR pupils **- ♯students** **- freshers** **Teachers** Teachers OR Teacher **Tutors** Tutors OR tutor

		User names: **@alevelresults** **@mysexdoctor** **@thestudentroom** **@101studioz**

Table A.6. Different actors present during aspiring undergraduates' first semester of university

Different actors terms based on word frequency	Different actors based on the literature review	Different actors
college school	**Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies **Schools** Schools OR School	**Colleges** Colleges OR College **- Sixth Forms** Sixth + form OR forms **- Academies** Academy OR Academies **- Schools** Schools OR School
friends	**Friends** Friend OR friends Mate OR mates Pal OR pals	**Friends** Friend OR friends Mate OR mates Pal OR pals
uni university ♯uni ♯university	**Universities** University OR universities Uni OR Unis	**Universities** University OR universities Uni OR Unis **♯uni** **♯university**
@warwickuni **assistant**	**Careers Advisers** Career OR careers + adviser OR	**assistant** **Careers Advisers**

centre	advisers	Career OR careers +
club	**Children's Trusts**	adviser OR advisers
bar	Childrens OR children + trusts	**Centre**
company	OR trust	**Club**
org	**Department for Education**	**- bar**
business	Department + for + education	**company**
engineer	OR educations	**- org**
engineers	DfE OR DfEs	**- business**
eventbrite	**Employers**	**Department for**
freshers	Employers OR employer	**Education**
freshers'	**Families**	Department + for +
#freshers	Family OR familys OR families	education OR educations
@freshers	**- Brothers**	DfE OR DfEs
freshershome	Brother OR brothers OR bro	**Employers**
fresher	**- Sisters**	Employers OR employer
graduate	Sister OR sisters OR sis	
Jobs/employment	**- Parents**	Employment:
agencies	Parent OR parents	**- @jobsplane**
neuvoo	**- Mum**	**- neuvoo**
@jobsplane	Mum OR mums OR mummy OR	**- walkins**
jobsplane	mummys OR mother OR	
union	mothers	**Engineer**
library	**- Dad**	Engineer OR engineers
maryam	Dad OR dads OR daddy OR	**Families**
namazie	daddys OR father OR fathers	Family OR familys OR
Media	**Jobcentre**	families
instagram	Jobcentre ORJobcentres	**- Brothers**
dlvr	**Local Authorities**	Brother OR brothers OR
facebook	Local + authorities OR authority	bro
youtu	OR authoritys	**- Sisters**
twitter	**National Careers Council**	Sister OR sisters OR sis
Names/users	National + career OR careers +	**- Parents**
Examples:	council OR councils	Parent OR parents
@syu	NCC	**- Mum**

Ramesh	**National Careers Service**	Mum OR mums OR
@ramanna7	National + career OR careers +	mummy OR mummys OR
@vibskhera	service OR services	mother OR mothers
@viewandroid	@NationalCareers	**- Dad**
angela	**Ofsted**	Dad OR dads OR daddy
@athvikaangela	Ofsted OR Ofsteds	OR daddys OR father OR
james	**Teachers**	fathers
hannah	Teachers OR Teacher	**Freshers**
@dear	**Tutors**	Fresher OR freshers
people	Tutors OR tutor	**- #freshers**
everyone	**UCAS**	**- @freshers**
society	UCAS OR UCASs	**- freshershome**
man		
group		**Graduate**
guys		**Library**
girls		**Local Authorities**
speaker		Local + authorities OR
students		authority OR authoritys
student		Media:
#students		**- instagram**
team		**- dlvr**
trainee		**- eventbrite**
union		**- facebook**
walkins		**- youtu**
		- twitter
		Names:
		- alex
		- alice
		- amy
		- angela
		- beth
		- boya
		- charlotte
		- david

		- ellie - emily - emma - hannah - jack - james - jess - katie - laura - lauren - lucy - mahindra - maryam - ramesh - sam - sarah - sophie - tom people - everyone - society - man - group - guys - team - girls girls OR girl Speaker students student OR students - ♯students Teachers Teachers OR Teacher Trainee

		Tutors Tutors OR tutor **UCAS** UCAS OR UCASs **Union** Users: **@athvikaangela** **@beverlytimmons** **@dear** **@ramanna7** **@sethbobby1** **@syu** **@vibskhera** **@viewandroid** **@warwickuni**

Table A.7. Different actors during all data collection stages

Before		During		After	
Universities	11745	Universities	19109	Universities	19609
#university	533	#university	5479	#uni	1521
#uni	460	#uni	2293	#university	1172
UCAS	9897	Students	16073	Students	17471
@ucas	9462	freshers	1773	#students	1393
#ucas	6336	#students	1465	Freshers	14101
Students	4932	Everyone	9997	#freshers	9983
Colleges	4257	people	4176	@freshers	6964
Schools	4843	anyone	1963	freshershom e	6613
Sixth Forms	946	world	1818	Colleges	6412
Academies	406	team	1756	Schools	2350
@gapyear	3054	group	1103	Academies	581
people	2466	UCAS	9972	Sixth Forms	117
everyone	882	@ucas	9986	Union	5451
anyone	791	#ucas	3592	Engineers	4660
someone	747	#ucasclearing	760	People	4083
Families	2298	Colleges	7479	everyone	4043
Parents	697	Schools	7768	team	2948
Mum	421	Academies	1280	society	2403
Dad	325	Sixth forms	970	girls	1764
#family	490	Media	2816	man	1626
Brothers	189	youtube	2168	group	1586
Sisters	89	dlvr	1785	guys	1285
Teachers	2101	instagram	1754	Graduate	3599
Tutors	868	bbc	1678	Friends	3303
Friends	883	@wearemediar ocks	1579	Club	2568
Employer	151	telegraph	1479	bar	1584
Careers Advisers	80	youtu	1437	Assistant	1808

DfE	6	twitter	1383	Centre	1720
National Careers Service	5	facebook	1198	Company	1402
National Careers	3	Friends	1987	org	1396
Local Authorities	1	Apprentices	1937	business	1343
Ofsted	1	Business	1784	Trainee	1263
Childrens Trusts	0	getmyfirstjob	1667	Speaker	1253
Jobcentre	0	joblink	1531	Library	1128
National Careers Council	0	neuvoo	1313	Parents	402
Names		Teachers	1449	Mum	1023
hannah	1048	Girls	1027	Dad	417
chloe	1023	Family	956	Family	347
emily	1018	Parents	1816	Brother	593
		Mum	1020	Sister	231
		Dad	450	Teachers	228
		Sister	754	Tutors	153
		Brother	586	UCAS	151
		Tutor	483	Employers	61
		Employers	305	Careers Advisors	21
		National Careers Service	155	Local Authorities	4
		National Careers	69	DfE	2
		Careers Advisers	120	Users	
		DfE	81	@warwickuni	4239
		Jobcentre	37	@syu	4029
		Ofsted	11	@ramanna7	3499
		Local Authority	6	@vibskhera	3303

User names		@viewandroid	2813
@alevelresults	2266	@athvikaangela	2208
@thestudentroom	1317	@dear	1525
@101studioz	1300	@sethbobby1	1516
@mysexdoctor	1115	@beverlytimmons	1483
Names		Names	
emma	1324	ramesh	3509
james	1273	boya	3499
hannah	1046	angela	2260
		james	2036
		hannah	1864
		emma	1657
		emily	1608
		lauren	1507
		jack	1496
		tom	1489
		sarah	1479
		alex	1473
		amy	1413
		sophie	1412
		mahindra	1385
		laura	1374
		sam	1344
		david	1302
		katie	1298
		charlotte	1291
		lucy	1228

jess	1166
beth	1137
ellie	1015
alice	1014
maryam	1012
namazie	944
Media	
instagram	7251
dlvr	5722
facebook	2652
eventbrite	1676
youtu	1370
twitter	1007
Employment	
neuvoo	5973
@jobsplane	4312
walkins	2578

Table A.8. The most prevalent different actors during each data collection period

During the application process	**During the release of A level results and the start of clearing**	**During the first semester of university**
Universities - 11,745 references	Universities – 19,109 references	Universities – 19,609 references
UCAS - 9,897 references	Students – 16,073 references	Students – 17,471 references
@ucas – 9,462 references	Freshers – 1,773 references	Freshers – 14,101 references
#ucas – 6,336 references	Everyone – 9,997 references	#freshers – 9,983 references
Students – 4,932 references	UCAS – 9,972 references	Instagram – 7,251 references
Colleges – 4,257 references	@ucas – 9,986 references	@freshers – 6,964 references
Schools – 4,843 references	Colleges – 7,479 references	freshershome – 6,613 references
@gapyear – 3,054 references	Schools – 7,768 references	Colleges – 6,412 references
People – 2,466 references	#university – 5,479 references	dlvr – 5,722 references
Families – 2,298 references	People – 4,176 references	neuvoo – 5,973 references

Table A.9. Kinds of information: tokens identified in literature

Tokens/themes
Location and size (Moogan et al. 1999).
Academic reputation (Moogan et al. 1999)
The course and it's content (Moogan et al. 1999)
Financial (Moogan et al. 1999)
Progression and career prospects (Moogan et al. 1999)
Grades needed (Moogan et al. 1999)
Social reasons (Moogan et al. 1999. p.220)
University facilities (Moogan et al. 1999)
Accommodation (Moogan et al. 1999)

Table A.10. Subjects with the top 100 word frequency counts during all three data collection stages

Before		**During**		**After**	
Term	Number of references	Term	Number of references	Term	Number of references
gap	8,918	tomorrow	9,996	week	10,000
application	8,596	good	9,993	night	9,997
year	8,584	luck	9,992	apply	9,995
sent	8,360	year	9,990	job	9,994
need	5,729	#resultsday	9,989	now	9,991
Personal*	5,539	day	9,985	come	9,988
#gapyear	5,232	today	9,985	today	9,988
help	5,174	#alevelresults	9,982	jobs	9,987
statement	4,867	#clearing	9,975	new	9,987
want	4,426	results	9,965	fair	9,984
Deadline	4,407	level	9,965	warwick	9,949

like	4,258	clearing	9,349	day	9,577
send	4,205	#alevels	8,943	hiring	9,482
good	4,119	#apprenticeship	7,376	year	9,461
please	4,027	know	6,846	home	9,370
luck	3,827	want	6,233	drive	8,394
applications	3,639	best	6,153	#jobs	8,390
time	3,602	need	6,108	going	8,206
apply	3,581	levels	6,088	tonight	8,198
form	3,538	gap	5,725	link	8,133
done	3,503	week	5,522	like	8,062
best	3,474	time	5,484	see	8,026
know	3,385	#apprenticeships	5,333	last	7,665
track	2,872	night	5,212	campus	7,539
travel	2,649	going	5,077	tomorrow	7,447
#bloodlionsglo	2,641	#clearing2015	5,017	walk	7,317
bal	2,641	congratulations	4,976	interview	7,295
check	2,634	call	4,805	time	7,270
volunteering	2,610	take	4,765	good	7,015
thanks	2,580	one	4,739	got	6,964
life	2,557	done	4,692	looking	6,772
thank	2,502	new	4,609	free	6,678
applying	2,457	like	4,544	great	6,555
day	2,253	help	4,424	vacancy	6,273
work	2,210	looking	4,380	next	6,244
#travel	2,184	receiving	4,380	events	6,104
points	2,173	check	4,353	welcome	6,017
reference	2,164	great	4,211	party	6,001
plan	2,142	education	4,173	walkin	5,538
course	2,089	apply	4,162	tickets	5,482
finally	2,076	grades	4,106	view	4,660
welcome	2,069	exam	4,029	know	4,622
think	2,050	available	3,903	india	4,480
cub	2,005	hope	3,864	need	4,125
lions	1,993	live	3,761	still	4,034

start	1,983	open	3,723	work	3,944
days	1,946	place	3,682	wait	3,925
choices	1,937	years	3,670	think	3,912
sending	1,836	life	3,640	life	3,898
new	1,824	work	3,577	best	3,869
right	1,465	#alevel	3,570	want	3,847
view	1,230	thursday	3,462	start	3,835
conversation	47	advice	3,424	love	3,641
offer	38	remember	3,375	days	3,610
offers		places	3,290	much	3,119
		job	3,189	android	2,992
		top	2,893	miss	2,990
		#resultsdayexcus	2,677	first	2,945
		es	2,014	leave	1,432
		free	1,934	conversati	999
		sex	1,879	on	839
		tiger	1,514	drop	723
		find	741	leaving	
		view	208		
		conversation			

** Please note: The spelling and case of the listed terms are provided verbatim as they appear in the Tweets.*

Table A.11. Subjects during the UCAS application period

Theme	**Terms – Sub nodes**	**References**
Location and size	Travel	2,649
Academic reputation*	-	0
The course and it's content	Course	2,142
Financial*	-	0
Progression and career prospects	Work	2,253
Grades needed	Offer OR offers Points	85 2,184
Social reasons	Conversation	1,230
University facilities*	-	0
Accommodation*	-	0
Application forms and personal statements	Application OR applications Apply OR applying Deadline Form Personal + statement Reference Send OR sending OR sent	12,180 5,990 4,407 3,538 4,405 2,173 14,391
Decision making process	Choices Done Help Know Need Plan Think Want	1,946 3,503 5,174 3,385 5,729 2,164 2,069 4,426
Emotion	Finally Good Like Luck	2,089 4,119 4,258 3,827

Gap Year	#bloodlionsglobal OR cub OR lions	4,052
	#gapyear	5,232
	#travel	2,210
	volunteering	2,634
	Gap + Year	6,576
Other - Terms that were reviewed and were of stop words or that were of little note by themselves.	Best	3,474
	Check	2,641
	Day OR days	4,389
	Life	2,580
	New	1,836
	Please	4,027
	Right	1,824
	Start	1,993
	Thank OR thanks	5,150
	Time	3,602
	Track	2,872
	View	1,465
	Welcome	2,076

* There were no obvious terms connected with these themes.

Table A.12. Subjects during A level results and the start of clearing

Theme	Terms – Sub nodes	References
Location and size	Place OR places	6,865
Academic reputation*	-	0
The course and it's content*	-	0
Financial	Free	2,014
Progression and career prospects	#apprenticeship OR #apprenticeships Job Work	12,637 3,189 3,577
Grades needed	#alevelresults #alevels OR #alevel OR level OR levels #clearing OR #clearing2015 OR clearing #resultsday #resultsdayexcuses Available Exam Grades Results	9,982 27,411 21,082 9,989 2,677 3,903 4,029 4,106 9,965
Social reasons	Conversation Sex	208 1,934
University facilities*	-	0
Accommodation*	-	0
Applying	Apply Going	4,162 5,077
Congratulations	Congratulations Good Great Luck	4,976 9,993 4,211 9,992

Decision making - Advice	Advice Help Remember	3,424 4,424 3,375
Emotional	Hope	3,864
Gap year	Gap AND year tiger	4,706 1,879
Information seeking	Call Check Find Know Looking Need Open Receiving Want	4,805 4,353 1,514 6,846 4,380 6,108 3,723 4,380 6,233
Life	Life Live	3,640 3,761
Timescale	Day Night Thursday Time Today Tomorrow Week Years	9,985 5,212 3,462 5,484 9,985 9,996 5,522 3,670
Other - Terms that were reviewed and were of stop words or that were of little note by themselves.	Best Done Education Like New One Take Top	6,153 4,692 4,273 4,544 4,609 4,739 4,765 2,893

	View	741

* There were no obvious terms connected with these themes.

Table A.13. Subjects during the first semester at university

Theme	Terms – Sub nodes	References
Location and size	Leaving OR leave	2,151
	Home	9,370
	Warwick	9,949
	Drive	8,394
	Walk	7,317
Academic reputation*	-	0
The course and it's content*	-	0
Financial	Free	6,678
Progression and career prospects	Job OR jobs	
	#jobs	20, 273
	Hiring	9,482
	Interview	7,295
	Apply	9,995
	Vacancy	6,273
	Work	3,944
Grades needed*	-	0
Social reasons	Conversation	999
	Fair	9,984
	Going	8,206
	Night	9,997
	Last	7,665
	Come	9,988
	Tickets	5,482
	Party	6,001
	Events	6,104
	Miss	2,990
University facilities	Campus	7,539

Accommodation*	-	0
Drop out	Drop	839
Emotional	Like	8,062
	Love	3,641
	Good	7,015
	Great	6,555
Information seeking	Want	3,847
	Looking	6,772
	Need	4,125
Timescale	Today	9,988
	Week	10,000
	Year	9,461
	Now	9,991
	Days	3,610
	Time	7,270
	Tomorrow	7,447
	Tonight	8,198
	Day	9,577
Other - Terms that were reviewed and were of stop words or that were of little note by themselves.	Android	2,992
	Best	3,869
	India	4,480
	Start	3,835
	View	4,660
	Link	8,133
	First	2,945
	New	9,987
	Next	6,244
	See	8,026
	Know	4,622
	Got	6,964
	Life	3,898
	Much	3,119
	Still	4,034

	Think	3,912
	Wait	3,925
	Walkin	5,538
	Welcome	6,017

* There were no obvious terms connected with this theme.

Table A.14. Resources found in literature

Resource mentioned in literature	**Tokens**
Open days (Moogan et al. 1999)	Open days = open + day OR days
UCAS directory (Moogan et al. 1999)	UCAS directory = ucas + directory
Prospectuses (Moogan et al. 1999)	Prospectuses = prospectus OR prospectuses OR brochure OR brochures OR leaflet OR leaflets OR booklet OR booklets OR catalogue OR catalogues OR directory OR directories OR pamphlet OR pamphlets

Table A.15. Resources identified through word frequency

Before	During	After
online	online	fair
email	news	instagram
track	#uniadvice	online
guide	app	news
emails	media	interview
tips	track	campus
website	youtube	party
app	video	events
blog	guide	fayre
programme	email	event
travelguideforeurope	hotline	ball
post	tips	post
statements	twitter	union
interview	post	photo
sites	facebook	facebook
analysis	visit	call
instagram	website	society
documentary	phone	research
research	guardian	tips
video	events	bar
twitter	class	class
#guide	photos	tweets
list	article	video
book	#news	twitter
	story	library
	campus	guide
		independent
		blog
		lectures
		posts
		snapchat

Table A.16. Resources: all terms and tokens

Tokens	Terms
Analysis	analysis
App	app
Article	article
Blog	blog
Book	book
Campus	campus
Documentary	documentary
Email	email OR emails
Guide	guide OR #guide
Hashtags	#uniadvice
Interview	interview
Lectures	lectures OR class
Library	library
List	list
Media	media
News	news OR independent OR guardian OR #news OR story
Online	online
open days	open + day OR days OR visit AND uni OR university
Phone	phone OR call OR hotline
Photo	photo OR photos
Post	post OR posts
Programme	programme
Prospectuses	prospectus OR prospectuses OR brochure OR brochures OR leaflet OR leaflets OR booklet OR booklets OR catalogue OR catalogues OR directory OR directories OR pamphlet OR pamphlets
Research	research

Social events	ball OR bar OR party OR fayre OR fair OR events OR event OR union OR society
Social media*	social + media snapchat OR instagram OR facebook OR twitter OR tweets OR youtube
Statements	statements
Tips	tips
Travelguideforeurope	travelguideforeurope
UCAS directory	ucas + directory
UCAS track	ucas + track
Video	video
Website	website OR sites

* Whilst social media sites can be considered actors more generally it could also be considered a source of information.

Table A.17. Resources across all three data collection periods

Tokens	Terms		
	Before	**During**	**After**
Analysis	383	440	60
App	802	2,573	393
Article	270	897	730
Blog	842	2,410	1,282
Book	411	483	746
Campus	323	766	7,539
Documentary	560	3	22
Email	5,012	2,405	1,059
Guide	1,945	2,238	1,686
Hashtags*	5	6,904	36
Interview	711	227	7,295
Lectures	32	1,302	1,669
Library	115	301	1,128
List	444	671	781
Media	698	5,163	898
News	2,014	13,159	6,709
Online	9,017	16,508	9,925
Open days	304	1,190	1,044
Phone	1,199	7,082	2,693
Photo	209	8,253	2,104
Post	756	1,796	4,088
Programme	837	347	496
Prospectuses			
- prospectus OR prospectuses	46	54	0
- brochure OR brochures	23	3	4
- leaflet OR leaflets	0	0	1
- booklet OR booklets	17	5	27
- catalogue OR catalogues	2	0	6
- directory OR directories	5	46	2
- pamphlet OR pamphlets	0	1	0
Research	532	428	2,532

Social events	1,571	6,245	24,108
Social media*	2,007	10,411	6,264
Statements	725	71	21
Tips	1,058	1,829	1,853
Travelguideforeurope	843	0	0
UCAS directory	3	3	0
UCAS track	2,302	2,672	2
Video	487	2,248	1,133
Website	1,092	1,237	467

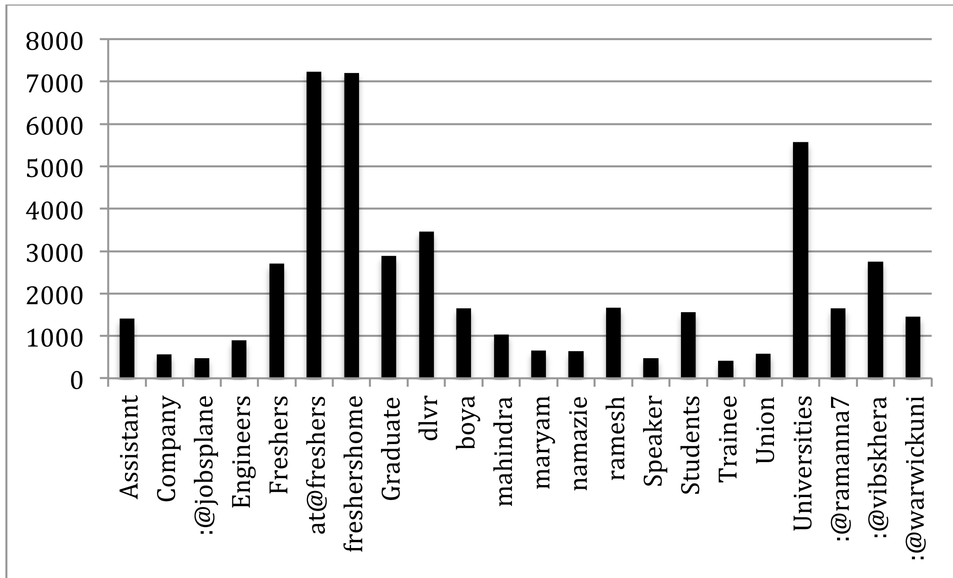
** The number of hashtags is illustrative only and is not intended to be in any way indicative of all hashtags.*

Table A.18. Applications: term frequency

Term	Number of references
nov	587
sep	506
@ucas	496
oct	467
sent	417
dec	385
jan	237
help	156
luck	156
just	146
need	134
please	102
now	98
send	97
good	93
uni	91
best	87
finally	80
deadline	73
personal	70
college	67
know	65
statement	65
done	62
teacher	61
questions	59
ask	58
university	58
today	54
advice	52

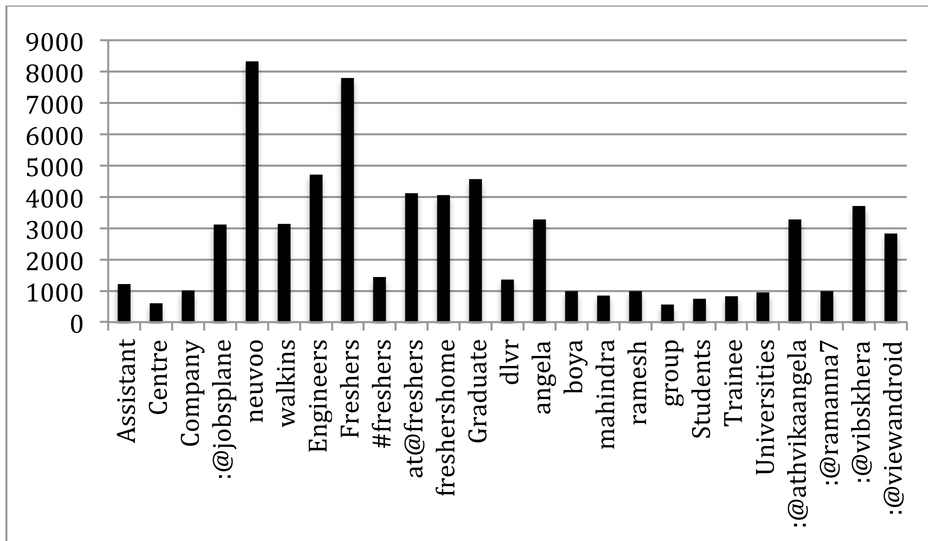
** Please note stop words have been removed.*

Figure A.19. After: different actors and the location/size of universities



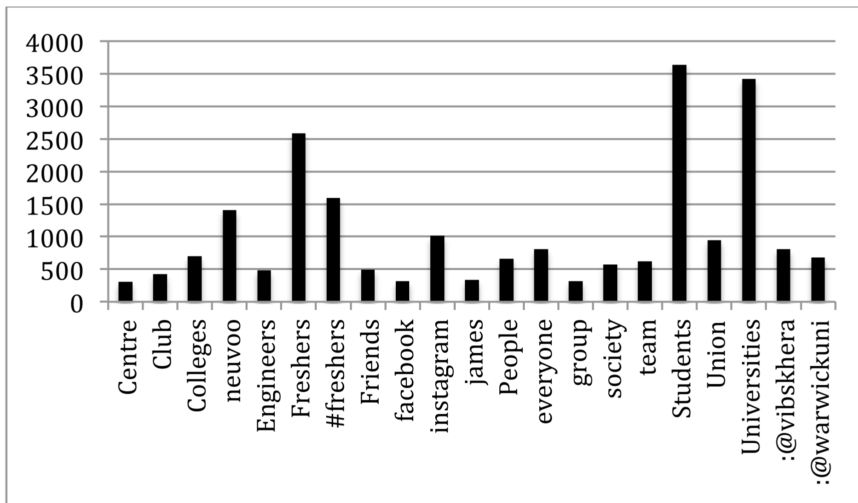
*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 400 references have not been included.

Figure A.20. After: different actors and progression/career prospects



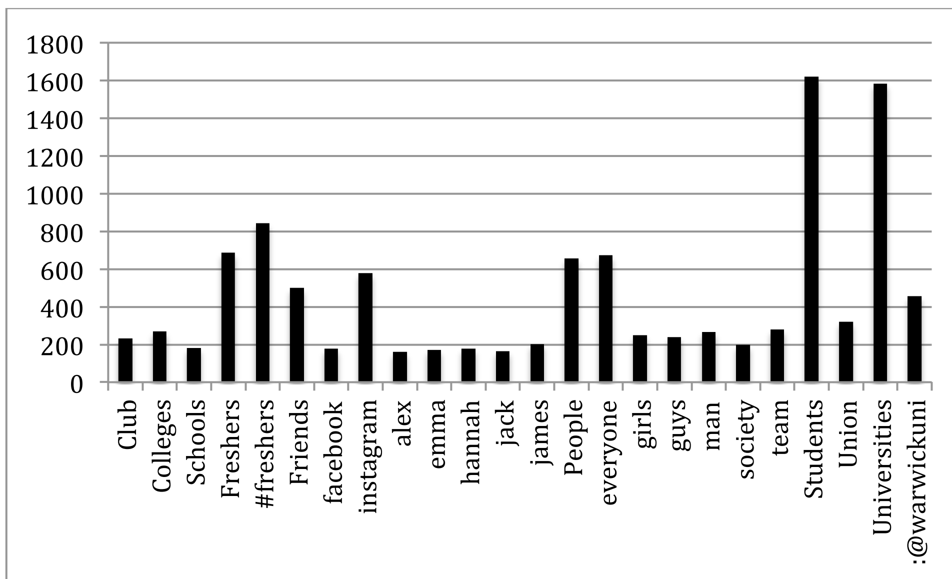
*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 500 references have not been included.

Figure A.21. After: different actors and university facilities



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 300 references have not been included.

Figure A.22. After: different actors and emotion



*The above figure does not list all of the different actors (see section 5.3.1). Different actors with less than 160 references have not been included.

GLOSSARY

ABBREVIATIONS

Abbreviation	Definition
CBI	Confederation of British Industry
HE	Higher Education
HESA	Higher Education Statistics Agency
IAG	Advice and Guidance
ICT	Information and Communications Technology
IT	Information Technology
UCAS	The Universities and Colleges Admissions Service

COMMONLY USED DEFINITIONS

Terms	Definition
Aspiring undergraduate	Individuals that are considering or are in the process of entering Higher Education.
Digital literacy	Understood as information literacy in a modern digital environment (Lankshear and Knobel, 2008).
Information behaviour	*'By information behaviour is meant those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information'* (Wilson, 1999, p.249).

Information discernment	
Information literacy	Defined as '*knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner*' (CILIP, 2015).
Information need	Nicholas and Martin defined 'information need' as the following set of characteristics; '*subject, nature, function, viewpoint, authority, quantity, quality, place of origin, speed of delivery, and processing/packaging'* (Nicolas and Martin, 1997, p43).
Information seeking	Defined as '*a conscious effort to acquire information in response to a need or gap in your knowledge*' (Case, 2012, p.5).
Millennial	An individuals born between 1980 and 1995 (Williams, 2015).
Social media	Defined as being an online application with user-generated content where people and organisations can create profiles, which can be linked to other profiles via the service (Obar and Wildman, 2015).
Twitter	A micro-blogging social media site.

REFERENCES

Agarwal, N. (2012) *Making sense of sense-making: tracing the history and development of Dervin's Sense-Making Methodology.*

Aggarwal, C. C. (2011) *Social network data analytics*. New York; London: Springer.

Ahmad, M., Aftab, S., Ali, I. and Hameed, N. (2017) Hybrid Tools and Techniques for Sentiment Analysis: A Review. *Int. J. Multidiscip. Sci. Eng*, *8*(3).

Ahmed, W. (2017) Using Twitter as a data source: an overview of social media research tools (updated for 2017). [Online] Available from: http://blogs.lse.ac.uk/impactofsocialsciences/2017/05/08/using-twitter-as-a-data-source-an-overview-of-social-media-research-tools-updated-for-2017/ [Accessed: 14th September 2018]

Andretta, A. Pope, A. & Walton, G. (2008) *Information literacy in the UK; Reflections on perspectives and practical approaches of curricular integration*. [Online] Communications in Information Literacy, Vol 2, No 1, 36-51. Available from: http://www.comminfolit.org/index.php?journal=cil&page=article&op=view&path%5B%5D=Spring2008AR3&path%5B%5D=68 [Accessed: 24th October 2014]

Andrews, D. (2016) *New strategy to transform the quality of careers education, advice and guidance for young people*.

Aswani, R., Kar, A.K. and Ilavarasan, P.V. (2018) Detection of spammers in twitter marketing: A hybrid approach using social media analytics and bio inspired computing. *Information Systems Frontiers*, *20*(3), pp.515-530.

Atkinson, R. D. and McKay, A. S. (2007) *Understanding the economic benefits of the information technology revolution*. The Information Technology & Innovation Foundation.

Attride-Stirling, J. (2001) *Thematic networks: an analytic tool for qualitative research*. Qualiative Research. [Online] Available from: http://qrj.sagepub.com/content/1/3/385.short [Accessed: 23rd April 2016]

Bandura, A. (1977) Self-efficacy: toward a unifying theory of behaviour change. *Psychological Review*, Vol.84, p.191-215.

Bandura, A. (1986) *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bartlett, J. and Miller, C. (2011) *Truth, lies and the Internet a report into young people's digital fluency*. [Online] Available from: http://www.demos.co.uk/files/Truth_-_web.pdf [Accessed: 28th March 2015]

Bates, M. J. (2002) Toward an integrated model of information seeking and searching. *Keynote of the 4th International Conference on Information Needs, Seeking and Use*. [Online] Available from: http://www.gseis.ucla.edu/faculty/bates/articles/info_SeekSearch-i-030329.html. [Accessed: 26th May 2015].

Bawden, D. (2001) *Information and digital literacies: a review of concepts*. Journal of Documentation, Vol. 57 Issue: 2, pp.218 – 259.

Bawden, D. and Robinson, L. (2009) The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of information science*, *35*(2), pp.180-191.

BBC News. (2014) *Full economic recovery 'will not solve youth unemployment'.* [Online] Available from: http://www.bbc.co.uk/news/business-28765465 [Accessed: 20th October 2014].

BBC News. (2018) *Education Secretary calls for tuition fee 'variety'*. [Online] Available from: http://www.bbc.co.uk/news/education-43075769 [Accessed: 27th March 2018].

Berson, I. and Berson, M. (2003) *Digital literacy for effective citizenship* [Online] Social Education 67(3), p.164-167. Available from: http://www.netsafe.org.nz/Doc_Library/Berson_article.pdf [Accessed: 27th January 2015].

Bloom, B. S. (1972) *Taxonomy of educational objectives: Book 1 cognitive domain*. London: Longman Group Ltd.

Briggs, A. & Burke, P. (2010) *Social history of the media: From Gutenburg to the Internet*. Polity.

Brim, O.G.JJr. (1966) *Socialization through the life cycle*. In Brim O.G.Jr,, & Wheeler, S.(Eds.) Socialization after childhood: Two essays. New York, Wiley, 1 – 19.

British Council. (2018) *UK study options. How to apply*. [Online] Available from: https://study-uk.britishcouncil.org/options/apply [Accessed: 31st July 2018]

Brooks, M. and Lasser, J. (2018) *Tech Generation: Raising Balanced Kids in a Hyper-Connected World*. Oxford University Press.

Bryman, A. (2008) *Social research methods.* 3rd Ed. OUP Oxford.

Bryman, A. & Burgess, R. (1994) *Analyzing qualitative data*. Routledge.

Bundy, A. (2004) *One essential direction: information literacy, information technology fluency*. Journal of eLiteracy Vol.1: p.7-22.

Burge, P., Kim, C.W., Rohr, C., Frearson, M. and Guerin, B. (2014) *Understanding the Impact of Differential University Fees in England*. *RAND Europe*.

Bynner, J. and Parsons, S. (2002) Social exclusion and the transition from school to work: The case of young people not in education, employment, or training (NEET). *Journal of vocational behavior*, *60*(2), pp.289-309.

Byrne, M. and Flood, B. (2005) A study of accounting students' motives, expectations and preparedness for higher education. *Journal of Further and Higher Education*, *29*(2), pp.111-124.

Cambridge Assessment. (2012) *How effective are curricula for 16 to 19 year olds as preparation for university? A qualitative investigation of lecturers' views***.** [Online] Available from: http://www.cambridgeassessment.org.uk/images/116015-cambridge-assessment-he-research-qualitative-investigation-executive-summary.pdf [Accessed: 16th January 2016]

Cambridge Assessment. (2012) *What are the impacts of qualifications for 16 to 19 year olds on higher education? A survey of 633 university lecturers***.** [Online] Available from: http://www.cambridgeassessment.org.uk/images/116010-cambridge-assessment-he-research-survey-of-lecturers-executive-summary.pdf [Accessed: 16th January 2016]

Candy, P.C. (2002) Lifelong learning and information literacy. *Retrieved October*, *20*, p.2004.

Case, D. (2012) *Looking for information: a survey of research on information seeking, needs and behaviour.* 3rd Ed. Bingley: Emerald Group Publishing Limited.

Castillo, C., Mendoza, M. and Poblete, B. (2011) Information credibility on twitter. In *Proceedings of the 20th international conference on World wide web* (pp. 675-684). ACM.

Cathcart, R., & Gumpert, G. (1986) Mediated interpersonal communication: Toward a new typology. In G. Gumpert & R. Cathcart (Eds.), *Inter/media: Interpersonal communi- cation in a media world* (3rd ed). New York, NY: Oxford University Press.

Cavazos-Rehg, P., Krauss, M., Grucza, R. and Bierut, L. (2014) Characterizing the followers and tweets of a marijuana-focused Twitter handle. *Journal of medical Internet research*, *16*(6).

CBI. (2013) *Tomorrow's growth; New routes to higher skills*. [Online] Available from: http://news.cbi.org.uk/business-issues/education-and-skills/tomorrow-s-growth-new-routes-to-higher-skills/. [Accessed: 14th January 2016].

CERP. (2010) *Structuring and formatting examination papers, examiners views of good practice*.

CERP. (2011) *Extending the number of grades on a qualification; issues to consider*.

Chandler, D. and Munday, R. (2011) *A dictionary of media and communication*. Oxford: Oxford University Press.

Chatman, E. A. (1996) The impoverished life-world of outsiders. *Journal of the American Society for Information Science*, 47(3), 193-206.

CILIP. (2015) *Information literacy*. [Online] Available from: http://www.informationliteracy.org.uk/information-literacy-definitions/definitions-of-il/ [Accessed: 28th January 2015].

CILIP. (2015) *Make or Break: The UK's Digital Future: Some thoughts from ILG and InformALL*. [Online] Available from: http://www.informationliteracy.org.uk/2015/04/make-or-break/ [Accessed: 6th August 2015].

CILIP. (2015) *Where does information literacy fit within the schools sector?* [Online] Available from: http://www.informationliteracy.org.uk/information-literacy/il-schools/ [Accessed: 16th March 2015].

CILIP. (2017) *Information literacy.* [Online] Available from: https://www.cilip.org.uk/research/topics/information-literacy [Accessed: 30th July 2017].

Civitas. (2005) *Education; better results and declining standards*.

CMRE. (2012) *When qualifications fail; Reforming 14-19 assessment*. [Online] Available from: http://www.cmre.org.uk/uploads/publications/When%20qualifications%20fail%202013.pdf. [Accessed: 14th January 2016].

Cohen, N. S. (2008) The valorization of surveillance: Toward a political economy of Facebook. *Democratic Communiqué* 22, no. 1; 5-22.

Collins. (2017) *Definition of 'freshers' week*'. [Online] Available from: https://www.collinsdictionary.com/dictionary/english/freshers-week [Accessed: 8th August 2017].

Coonan, E. (2011) *A new curriculum for information literacy*. Cambridge: Cambridge University Library.

Coravu, R. (2010) *Library literacy: the step before information literacy*. [Online] Available from: http://eprints.rclis.org/14540/1/library_literacy_vs_information_literacy-comunicare_sibiu2….pdf [Accessed: 16th February].

Cronin, B. (1981) *Assessing user needs*. *Aslib Proceedings* 33(2), pp.37-47.

Cronin, B. and Meho, L. I. (2009) Receiving the French: a bibliometric snapshot of the impact of 'French theory' on information studies. *Journal of Information Science.* [Online] Vol. 35, No.4, pp.398-413. Available from: http://jis.sagepub.com/content/35/4/398.full.pdf+html?hwshib2=authn%3A1470821940%3A20160809%253A8f7b27db-a5bd-474e-81da-

1a930d5856d3%3A0%3A0%3A0%3AtbxMtu2D9p4ll6s3GCkdfg%3D%3D. [Accessed: 9th August 2016].

Curtis, R.L. (1974) The issue of schools as social systems: Socialization effects as inferred from lengths of membership. *Sociology Quarterly*, 15, p.277-293.

Davies et al. (2008) *Knowing where to study? Fees, bursaries and fair access*.

Davies et al. (2010) *Understanding the information needs of users of public information about higher education*.

Davies, M. and Kandel, D.B. (1981) Parental and peer influences on adolescents' educational plans: Some further evidence. *American Journal of Sociology*, *87*(2), pp.363-387

Davies, P. & Qiu, T. (2016) *Labour market expectations, relative performance and subject choice*.

Davis-Kean, P.E. (2005) The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. *Journal of family psychology*, *19*(2), p.294.

DCSF. (2007) *Aiming high for young people: a ten year strategy for positive activities*. [Online] Available from: http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/PU214.pdf. [Accessed: 14th January 2016].

DCSF. (2008) *Delivery 14-19 reform: Next steps*. [Online] Available from: http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/DeliveringReform.pdf. [Accessed: 14th January 2016].

DCSF. (2008) *Delivering 14-19 Reform Next Step Summary.*

DCSF. (2009) *Raising the participation age*.

DCSF. (2011) *14-19 attainment and progression; perspectives from post-16 professionals*.

Delap, M.R., (1994) An investigation into the accuracy of A‐level predicted grades. *Educational Research*, *36*(2), pp.135-148.

Denzin, N.K. and Lincoln, Y. (2000) Qualitative research. *Thousand Oaks ua*, pp.413-427.

Department for Business, Innovation and Skills. (2013) Evaluation of National Careers Service Partnership Delivery. [Online] Available from: http://cfe.org.uk/dl.php?file=13-1136-evaluation-of-national-careers-service-partnership-delivery.pdf. [Accessed: 15th June 2015].

Department for Business, Innovation & Skills (2013) *Investigating the accuracy of predicted A level grades as part of the 2010 UCAS admission process. [Online] Accessed: 12th December 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255060/bis-13-1088-investigating-the-accuracy-of-predicted-A-level-grades.pdf*

Department for Business, Innovation and Skills. (2013) *Statistical first release. Participation rates in higher education: Academic years 2006/2007 – 2011/2012 (Provisional)* [Online] Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/306138/13-p140-HEIPR_PUBLICATION_2011-12_2_.pdf [Accessed: 25th October 2014].

Department for Business, Innovation and Skills. (2014) Getting the job done: The Government's reform plan for vocational qualifications. [Online] Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/286749/bis-14-577-vocational-qualification-reform-plan.pdf [Accessed: 20th July 2016].

Department for Business, Innovation and Skills. (2014) *Taking action: achieving a culture change in careers provision*. [Online] Available from: https://www.gov.uk/government/publications/careers-guidance-provision-national-career-councils-second-report [Accessed: 21st October 2014].

Department for Education. (2005) Youth Matters. [Online] Available from: http://webarchive.nationalarchives.gov.uk/20130401151715/https://www.education.gov.uk/publications/standard/publicationDetail/Page1/Cm6629#downloadableparts. [Accessed: 15th June 2015].

Department for Education. (2010) *Good practice in involving employers in work-related education and training.*

Department for Education. (2011) *Foundation Learning National Evaluation*.

Department for Education. (2013) *A comparison of GCSE results and AS level results as a predictor of getting a 2.1 or above at university*.

Department for Education. (2017) *Revised destinations of key stage 4 and key stage 5 students, England, 2014/2015*. [Online] Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/584187/SFR01_2017_Text.pdf [Accessed: 29th July 2017].

Dervin, B. (1999) On studying information seeking methodologically: The implications of connecting metatheory to method. *Information Processing and Management 35, 727-750*.

Dobrow, S.R. and Tosti-Kharas, J. (2012) Listen to your heart? Calling and receptivity to career advice. *Journal of Career Assessment*, *20*(3), pp.264-280.

Dodd, L., Chowdhury, G., Harvey, M. and Walton, G. (2017) Information Seeking Behaviour of Aspiring Undergraduates on Social Media: Who Are They Interacting with?. In *International Conference on Asian Digital Libraries* (pp. 245-255). Springer, Cham.

Duggan, M. and Brenner, J. (2013) *The demographics of social media users, 2012* (Vol. 14). Washington, DC: Pew Research Center's Internet & American Life Project.

Ebizmba. (2017) *Top 15 most popular social networking sites* | *July 2017*. [Online] Available from: http://www.ebizmba.com/articles/social-networking-websites [Accessed: 20th July 2017]

Efron, M. and Winget, M. (2010) Questions are content: a taxonomy of questions in a microblogging environment. In *Proceedings of the 73rd ASIS&T Annual Meeting on Navigating Streams in an Information Ecosystem-Volume 47* (p. 27). American Society for Information Science.

Ellison, N.B., Steinfield, C. and Lampe, C. (2007) The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer‐Mediated Communication*, *12*(4), pp.1143-1168.

Elliott, M. (2006) *Information seeking behaviour – Adolescents*.

Elo, S. and Kyngäs, H. (2008) The qualitative content analysis process. *Journal of advanced nursing*, *62*(1), pp.107-115.

Elsweiler, D. and Harvey, M. (2015) Engaging and maintaining a sense of being informed: Understanding the tasks motivating twitter search. *Journal of the Association for Information Science and Technology* [Online] 66(2), pp.264-281.

Ettel, D.L., et al. (2017) Teens and Technology Transforming Acne Treatment. *The Permanente journal*, *21*.

Fisher, K. E., Erdelez, S. & McKechie, L. E. F. (eds.) (2005) *Theories of information behaviour.* New Jersey: Information Today, Inc.

Fiske, S., & Depret, E. (1996) Control, interdependence & power: Understanding social cognition in its social context. *European Review of Social Psychology*, 7, 31–61. doi:10.1080/14792779443000094.

Flanagin, A. J. and Metzger. (2000) *Perceptions of internet information credibility*. Journal & Mass Communciation Quarterly. Vol 77, No.3: p.515-540.

Ford, N. (2015) *Introduction to information behaviour*. Facet Publishing.

For Skills. (2015) *The home of functional skills learning*. [Online] Available from: http://www.forskills.co.uk/index.php?page=what-are-fs [Accessed: 8th February 2015].

Fox, M and Reece, A. (2013) The impossible decision: Social tagging and Derrida's deconstructed hospitality. *Knowledge Organization*. [Online] Vol: 40, Issue: 4, pp.260-265.

Friedkin, N. E. & Johnsen, E. C. (2011) *Social influence network theory: A Sociological examination of small group dynamics*. [Online] Cambrdige University Press. Available from: http://lib.myilibrary.com/ProductDetail.aspx?id=311264. [Accessed: 28th May 2015].

Giachanou, A., Harvey, M. and Crestani, F. (2016) Topic-Specific Stylistic Variations for Opinion Retrieval on Twitter. *Advances in Information Retrieval, 38th European Conference on IR Research, ECIR 2016. Padua, Italy.*

Gil de Zúñiga, H., Jung, N. and Valenzuela, S. (2012) Social media use for news and individuals' social capital, civic engagement and political participation. *Journal of Computer‐Mediated Communication*, *17*(3), pp.319-336.

Gleason, B. (2016) New literacies practices of teenage Twitter users. *Learning, Media and Technology*, *41*(1), pp.31-54.

Gleason, B. (2018) Thinking in hashtags: exploring teenagers' new literacies practices on Twitter. *Learning, Media and Technology*, pp.1-16.

Gofen, A. (2009) Family capital: How first-generation higher education students break the intergenerational cycle. *Family Relations*, *58*(1), pp.104-120.

Government. (2018) *School leaving age.* [Online] Available from: https://www.gov.uk/know-when-you-can-leave-school [Accessed 14th September 2018]

Harvey, L., & Drew, S. (2006) *The first year experience: briefing on induction*. York: Higher Education Academy.

Hasler, L., Ruthven, I. and Buchanan, S. (2014) Using internet groups in situations of information poverty: Topics and information needs. *Journal of the Association for Information Science and Technology, 65(1), pp.25-36.*

Higher Education Statistics Agency. (2017) *Destinations of Leavers from Higher Education in the United Kingdom for the academic year 2015/16*. [Online] Available from: https://www.hesa.ac.uk/news/29-06-2017/sfr245-destinations-of-leavers [Accessed: 29th July 2017].

Hobsons. (2007) *School and college leaver perceptions and behaviours, attitudes to, and impact of, studying engineering.*

Holman, J. (2014) *Good Career Guidance.* [Online] The Gatsby Charitable Foundation. Available from: http://www.gatsby.org.uk/~/media/Files/Education/Gatsby%20Sir%20John%20Holman%20Good%20Career%20Guidance%202014.ashx [Accessed: 20th October 2014].

House of Lords. (2015) *Select committee on digital skills. Make or break: the UK's digital future.* [Online] Available from:

http://www.publications.parliament.uk/pa/ld201415/ldselect/lddigital/111/111.pdf [Accessed: 5th March 2015].

House of Lords. (2015) *Select committee on digital skills, oral and written evidence*. [Online] Available from: http://www.parliament.uk/business/committees/committees-a-z/lords-select/digital-skills-committee/publications/ [Accessed: 5th March 2015]

Hsieh, H.F. and Shannon, S.E., (2005) Three approaches to qualitative content analysis. *Qualitative health research*, *15*(9), pp.1277-1288.

Huberman, B. A., Romero, D. M. and Wu, F. (2008) *Social networks that matter: Twitter under the microscope*. [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1313405. [Accessed: 8th May 2015].

Hughes, A. & Davies, P. (2009) *Critical thinking and undergraduates' epistemological beliefs*. [Online] Available from: http://www.srhe.ac.uk/conference2009/abstracts/0104.pdf. [Accessed: 17th May 2015].

Hurlock, J. and Wilson, M.L. (2011) Searching Twitter: Separating the Tweet from the Chaff. In *ICWSM* (pp. 161-168).

Hurrelmann, K. and Engel, U. (1989) The social world of adolescents. *Hurrelmann, K.*

IoE. (2010) *What's happening with GCSEs and A levels*. [Online] Available from: https://www.ioe.ac.uk/GCSE_and_A-level_Conference_Notes.pdf [Accessed: 16th January 2016].

Ipsos MediaCT for the BBC. (2014) *Media Literacy: Understanding Digital Capabilities follow up September 2013 and March 2014*. [Online] Available from: http://www.bbc.co.uk/learning/overview/assets/digital_capabilities_2014.pdf [Accessed: 8th March 2015]

Jackson, A. (2018) *Validity evidence for the general engineering self-efficacy and engineering skills self-efficacy scales with secondary students*.

Jansen, B. J. & Spink, A. (2006) How are we searching the world wide web? A comparison of nine search engine transaction logs. *Information Processing and Management* 42(1):pp. 248-263.

Jansen, I. (2008) Discourse analysis and Foucault's "Archaeology of Knowledge". *International Journal of Caring Sciences*, 1 (3), pp107-111. [Online] http://internationaljournalofcaringsciences.org/docs/Vol1_Issue3_01_Jansen.pdf (Accessed 15 August 2013).

Java, A., Song, X., Finin, T. and Tseng, B. (2007) Why we twitter: understanding microblogging usage and communities. In *Proceedings of the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis* (pp. 56-65). ACM.

Jiang, T. (2010) *Characterizing and evaluating users' information seeking behavior in social tagging systems*. Doctoral dissertation. University of Pittsburg.

Johnston, B. Heath, S. & Fuller, A. (2011) *Rethinking widening participation in higher education: the role of social networks.* Oxon: Routledge.

Jones, M. and Harvey, M. (2016) Library 2.0: The effectiveness of social media as a marketing tool for libraries in educational institutions. *Journal of Librarianship and Information Science* (JOLIS). Sage.

Jørgensen, M.W. and Phillips, L.J. (2002) *Discourse analysis as theory and method*. Sage.

Kelly, D, & Ruthven, I (2013) *Interactive Information Seeking Behaviour and Retrieval*, Facet Publishing, London. [Online] Available from: ProQuest Ebook Central. [Accessed: 20 July 2017].

Kim, K.S., Sin, S.C.J. and Tsai, T.I. (2014) Individual differences in social media use for information seeking. *The Journal of Academic Librarianship*, *40*(2), pp.171-178.

Kim, K. & Sin, S. J. (2015) Use of social media in different contexts of information seeking: effects of sex and problem-solving style. *Information Research*. [Online] Vol.20, No. 1. Available from: http://www.informationr.net/ir/20-1/isic2/isic24.html#.VWdF90IbCu4. [Accessed: 28th May 2015].

Kinzer, C., Leu, D. and Peters, M.A. (2016) New literacies and new literacies within changing digital environments. *The encyclopedia of educational philosophy and theory, Springer, London*.

Kirman, B., Lineham, C. and Lawson, S. (2012) May. Exploring mischief and mayhem in social computing or: how we learned to stop worrying and love the trolls. In *CHI'12 Extended Abstracts on Human Factors in Computing Systems* (pp. 121-130). ACM.

Koroleva, K., Brecht, F., Goebel, L. and Malinova, M. (2011) 'Generation Facebook'-A Cognitive Calculus Model of Teenage User Behavior on Social Network Sites. In *AMCIS*.

Kumar, S. and Edwards, M. E. (2013) *Information literacy skills and embedded librarianship in an online graduate programme*. [Online] Journal of Information Literacy, 7(1), pp. 3-17. Available from:
http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V7-I1-2013-1
[Accessed:16th March 2015]

Kurbanoglu, S. S., Akkoyunlu, B. and Umay, A. (2006) Developing the information literacy self-efficacy scale. *Journal of Documentation*, 62(6), p730-743.

Kwak, H., Lee, C., Park, H. and Moon, S. (2010) What is Twitter, a social network or a news media?. In *Proceedings of the 19th international conference on World wide web* (pp. 591-600). AcM.

Lahuerta-Otero, E. and Cordero-Gutiérrez, R. (2016) Looking for the perfect tweet. The use of data mining techniques to find influencers on twitter. *Computers in Human Behavior*, *64*, pp.575-583.

Lankshear, C. and Knobel, K. (2008) *Digital literacies: Concepts, policies and practises*. New York: Peter Lang Publishing.

Lazer, D.M. et al. (2018) The science of fake news. *Science*, *359*(6380), pp.1094-1096.

Lee, U., Kang, H., Yi, E., Yi, M. and Kantola, J. (2012) Understanding mobile Q&A usage: an exploratory study. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 3215-3224). ACM.

Lenhart, A. et al. (2001) *Teens, kindness and cruelty on social networking sites: How American teens navigate the new world of digital citizenship*. Pew Internet & American Life Project.

Lenhart, A. et al. (2010) Social media and young adults: social media and mobile internet use among teens and young adults. *Pew Internet & American Life Project*. [Online] Available from: http://missourikidsfirst.org/mosaferonline/wp-content/uploads/2010/06/Social-Media-and-Young-Adults.pdf. [Accessed: 17th December 2014]

Lewandowsky, S. et al. (2012) Misinformation and its correction, continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3) p.106-131

Lewandowsky, S., Ecker, U.K. and Cook, J., (2017) Beyond Misinformation: Understanding and Coping with the "Post-Truth" Era. *Journal of Applied Research in Memory and Cognition*, *6*(4), pp.353-369.

Limberg, L. Sundin, O. & Talja, S. (2012) Three theoretical perspectives on information literacy. *Human IT*, 11 (2), pp93-130.

Lin, J. and Ryaboy, D. (2013) Scaling big data mining infrastructure: the twitter experience. *ACM SIGKDD Explorations Newsletter*, *14*(2), pp.6-19.

Line, M. (1974) *Draft definitions: information and library needs, wants, demands and uses*. *Aslib Proceedings* 26(2), p.87.

Line, M.B. (1969) *Information requirements in the social sciences: some considerations*. *Journal of Librarianship* 1(1) January, pp.1-19.

Livewire. (2017) *The top social networking sites people are using*. [Online] Available from: https://www.lifewire.com/top-social-networking-sites-people-are-using-3486554 [Accessed: 20th July 2017]

London, M., & Smither, J. W. (2002) Feedback orientation, feedback culture, and the longitudinal performance management process. *Human Resource Management Review*, 12, 81–100. doi:10.1016/S1053-4822(01) 00043-2.

Lovejoy, K. and Saxton, G.D. (2012) Information, community, and action: How nonprofit organizations use social media. *Journal of Computer‐Mediated Communication*, *17*(3), pp.337-353.

LSC. (2008) *Impact of learning of employability*.

Macskassy, S.A. (2012) On the Study of Social Interactions in Twitter. In *ICWSM*.

Mai, J.E. (2016) *Looking for information: A survey of research on information seeking, needs, and behavior*. Emerald Group Publishing.

Mascherini, M., Salvatore, L., Meierkord, A. and Jungblut, J.M. (2012) *NEETs: Young people not in employment, education or training: Characteristics, costs and policy responses in Europe*. Luxembourg: Publications Office of the European Union.

McAfee. (2013) *Digital deception: The online behaviour of teens.*

Meraz, S. (2009) Is there an elite hold? Traditional media to social media agenda setting influence in blog networks. *Journal of Computer-Mediated Communication*. Vol.14, Issue 3, p.682-707.

Merchant, G. (2012) Unravelling the social network: theory and research. *Learning, Media and Technology*. Vol.37, Issue 1, p.4-19.

Merton, R.K. (1968) *Social theory and social structure*. New York: Free Press

Miles, M. B. & Huberman, A.M. (1994) *Qualitative data analysis*: *an expanded sourcebook.* (2nd edn.). Thousand Oakes: Sage.

Mirza-Davies, J. (2014) NEET: young people not in education, employment or training. *House of Commons Briefing Paper*, *6705*.

Moogan, Y., Baron. S. & Harris. K. (1999) Decision-making behaviour of potential Higher Education students. *Higher Education Quarterly*, 0951-5224 Volume 53, No. 3, p.211-228.

Morena, M. A. et al. (2012) Older adolescents' views regarding participation in Facebook research. *Journal of Adolescent Health*. [Online] Research Gate. Available from: http://www.researchgate.net/publication/232529129_Older_adolescents'_views_regarding_participation_in_facebook_research. [Accessed: 26th November 2014].

Moreno, M.A., Goniu, N., Moreno, P.S. and Diekema, D. (2013) Ethics of social media research: common concerns and practical considerations. *Cyberpsychology, Behavior, and Social Networking*, *16*(9), pp.708-713.

National Careers Service. (2015) *Careers advice*. [Online] Available from: https://nationalcareersservice.direct.gov.uk/advice/Pages/default.aspx. [Accessed: 15th June 2015].

National Forum On Information Literacy. (2015) *October, national information literacy awareness month!* [Online] Available from: http://infolit.org/national-information-literacy-awareness-month-is-october/ [Accessed: 27th March 2015]

Newhagen, J. E., & Rafaeli, S. (1996) Why communication researchers should study the Internet: A dialogue. *Journal of Communication, 46*, 4–13.

NFER. (2010) *Information, Advice and guidance for young people.*

Nicholas, D. (1996) *Assessing information needs: tools and techniques.* Aslib.

Nicholas, D., and Martin, H. (1997) "Assessing information needs: a case study of journalists", Aslib Proceedings, Vol. 49 Iss 2 pp. 43 – 52. [Online] Available from: http://dx.doi.org/10.1108/eb051447 [Accessed: 23rd April].

Nicholas, D., Rowlands, I. and Huntington, P. (2008) *Information behaviour of the researcher of the future – Executive summary*. [Online] Available from: http://www.webarchive.org.uk/wayback/archive/20140614002331/http://www.jisc.ac.uk/whatwedo/programmes/resourcediscovery/googlegen.aspx [Accessed: 28th March 2015]

Obama, B. (2009) *National information literacy awareness month, 2009*. [Online] Available from:
https://www.whitehouse.gov/assets/documents/2009literacy_prc_rel.pdf [Accessed: 27th March 2015]

Office for Students. (2017) *Equality and diversity data*. [Online] Available from: https://www.officeforstudents.org.uk/media/055a27b3-f72b-47b9-a8b1-3da534a1b430/equality-and-diversity-data-summary1309.pdf [Accessed: 14th September 2018]

Obar, J.A. and Wildman, S.S. (2015) *Social media definition and the governance challenge: An introduction to the special issue*.

Ochs, E., and Capps, L. (1996) Narrating the self. *Annual Review of Anthropology, 25, 19-43*.

Official Journal of the European Union. (2013) *EU Regulation No 1304/2013 of the European Parliament and Council, European Social Fund 2014-2020*.

Ofqual. (2009) *A level. The official student guide to the system*.

Ofsted. (2008) *Developing young peoples economic and business understanding.*

Ofsted. (2013) *Going in the right direction? Careers guidance in schools from September 2012*. [Online] Available from: http://www.ofsted.gov.uk/resources/going-right-direction-careers-guidance-schools-september-2012 [Accessed: 9th November 2014]

Olsson, M. (2010) *Michel Foucault: discourse, power/knowledge and the battle for truth*. In Leckie, G. J., Given, L. M. and Buschamen, J. (eds) *Critical theory for library and information science: exploring the social from across the disciplines*. Santa Barbara: Libraries Unlimited, pp63-74.

Oppewal, H., Poria, Y., Ravenscroft, N. and Speller, G. (2005) Student preferences for university accommodation: an application of the stated preference approach. *Housing, space and quality of life*, pp.113-124.

O'Sullivan, P. B. (1999) Bridging mass and interpersonal communication: Synthesis scholarship in HCR. *Human Communication Research, 25*, 569–588.

Pak, A. and Paroubek, P. (2010) Twitter as a corpus for sentiment analysis and opinion mining. In *LREc* (Vol. 10, No. 2010).

Paltridge, B. (2006) *Discourse analysis: an introduction.* London: Continuum.

Pandey, A.C., Rajpoot, D.S. and Saraswat, M. (2017) Twitter sentiment analysis using hybrid cuckoo search method. *Information Processing & Management*, *53*(4), pp.764-779.

Papacharissi, Z. (Ed.). (2010) *A networked self: Identity, community, and culture on social network sites*. Routledge.

Paracharissi, Z. (2010) *A private sphere: Democracy in a digital age*. Polity.

Pardhan, S., 2018. Breaking the glass ceiling in academia. *Ophthalmic and Physiological Optics*, *38*(4), pp.359-362.

Paul, S.A., Hong, L. and Chi, E.H. (2011) Is Twitter a good place for asking questions. *A Characterization Study. ICWSM*.

Perryman, J., Ball, S., Maguire, M. and Braun, A. (2011) Life in the pressure cooker–School league tables and English and mathematics teachers' responses to accountability in a results-driven era. *British Journal of Educational Studies*, *59*(2), pp.179-195.

Prensky, M (2001) *'Digital natives, digital immigrants'.* On the horizon. Vol. 9 No. 5. MCB. University Press.

Prospects. (2018) *How to apply for university*. [Online] Available from: https://www.prospects.ac.uk/applying-for-university/getting-into-university/how-to-apply-for-university [Accessed: 31st July 2018].

Punj, G.N. & Staelin, R. (1978) The Choice Process for Graduate Business Schools, *Journal of Marketing Research,* p. 588–598.

Qazvinian, V., Rosengren, E., Radev, D.R. and Mei, Q. (2011) Rumor has it: Identifying misinformation in microblogs. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing* (pp. 1589-1599). Association for Computational Linguistics.

QCA. (2006) *The specialist Diploma level 1 modelling, executive summary and recommendations.*

Ranganath, S., Wang, S., Hu, X., Tang, J. and Liu, H. (2017) Facilitating time critical information seeking in social media. *IEEE Transactions on Knowledge & Data Engineering*, (1), pp.1-1.

Reardon, K. K., & Rogers, E. M. (1988) Interpersonal versus mass media communication: A false dichotomy. *Human Communication Research, 15*, 284–303.

Renfrew, K., Baird, H., Green, H., Davies, P., Hughes, A., Mangan, J. and Slack, K., (2010) *Understanding the information needs of users of public information about higher education*.

Research Digest. (2015) *The psychology of Facebook, digested*. [Online] Available from: http://digest.bps.org.uk/2015/01/the-psychology-of-facebook-digested.html?utm_source=BPS_Lyris_email&utm_medium=email&utm_campaign=Newsletter. [Accessed: 8th May 2015].

Roberts, D. & Allen, A. (1997) Young Applicants Perceptions of Higher Education, *HEIST Research Publications,* p. 1–111.

Roberts, L. M., Dutton, J. E., Spreitzer, G. M., Heaphy, E. D., & Quinn, R. E. (2005) Composing the reflected best-self portrait: Building pathways for becoming extraordinary in work organizations. *Academy of Management Review*, 30, 712–736.

Robson, C. (1994) *Real world research. A resource for social science.* Oxford: Blackwell Publishers.

Romero, D. M., et al. (2011) Influence and passivity in social media. *Machine learning and knowledge discovery in databases*. Springer Berlin Heidelberg. P.18-33.

Royal Society. (2012) *Shut down or restart: the way forward for computing in UK schools*. [Online] Available from: https://royalsociety.org/~/media/education/computing-in-schools/2012-01-12-summary.pdf [Accessed: 8th March 2015]

Russell Group. (2013) *Informed choices. A Russell Group guide to making decisions about post-16 education*. [Online] Available from: http://www.russellgroup.org/InformedChoices-latest.pdf. [Accessed: 15th June 2015].

Russell, M. (2013) *Mining the social web: Data mining Facebook, Twitter, LinkedIn, Google+, GitHub, and more.* 2nd Ed. Sebastopol, CA: O'Reilly Media.

Ruthven, I. (2012) Grieving online: the use of search engines in times of grief and bereavement. *4th Information Interaction in Context Symposium (pp. 120-128). ACM.*

Scifleet, P., Henninger, M. & Albright, K. H. (2013) When social media are your source. *Information Research*. [Online] Vol.18, No. 3. Available from: http://www.informationr.net/ir/18-3/colis/paperC41.html#.VWdDh0IbB-U. [Accessed: 28th May 2015].

Scott, J. (1987) Social network analysis. *Sociology*, *22*(1), pp.109-127.

Scottish Library and Information Council. (2015) *The right information: Information skills for a 21st century Scotland.* [Online] Available from: http://www.therightinformation.org/about/ [Accessed: 27th March 2015]

Segaran, T. (2007) *Programming collective intelligence. Sebastopol*: O'Reilly Media, Inc.

Serrat, O. (2009) Social network analysis.

Shenton, A. K.and Pickard, A. J. (2014) *Evaluating online information sources*. Minibook 42. Leicester: The United Kingdom Literary Association.

Savolainen, R. (1995) Everyday life information seeking: Approaching information seeking in the context of "way of life." *Libraries & Information Science Research, 17, 259-294*.

Smith, E.M. and Beggs, B.J. (2003) A new paradigm for maximizing student retention in higher education. In *IEE Engineering Education Conference, Southampton, January*.

Smith, L.M., Zhu, L., Lerman, K. and Kozareva, Z. (2013) The role of social media in the discussion of controversial topics. In *Social Computing (SocialCom), 2013 International Conference on* (pp. 236-243). IEEE.

Sowa, J. (1983) *Conceptual structures: Information processing in mind and machine*. New York: Longman Higher Education

Streeter, C.L. and Gillespie, D.F. (1993) Social network analysis. *Journal of Social Service Research*, *16*(1-2), pp.201-222.

Study In UK. (2018) *Applying to a UK university*. [Online] Available from: http://www.studyin-uk.in/uk-study-info/application-process/ [Accessed: 31st July 2018]

Suto, I. (2012) *What are the impacts of qualifications for 16 to 19 year olds on higher education? A survey of 633 university lecturers*. Cambridge Assessment. [Online] Available from: http://www.cambridgeassessment.org.uk/Images/116010-cambridge-assessment-he-research-survey-of-lecturers-executive-summary.pdf. [Accessed: 15th June 2015]

TES. (2009) *College degree students leave owing less than university peers.*

The Guardian. (2014) *Facebook reveals news feed experiment to control emotions.* [Online] Available from: http://www.theguardian.com/technology/2014/jun/29/facebook-users-emotions-news-feeds [Accessed: 9th November 2014]

The Office for National Statistics. (2014) Monitoring ecommerce, 2014. [Online] Available from: http://www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2014/sty-digital-day-2014.html [Accessed: 15th March 2015]

The Office for National Statistics. (2014) Statistical bulletin: Internet access – Households and individuals 2014. [Online] Available from: http://www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2014/stb-ia-2014.html [Accessed: 7th March 2015]

The Office for National Statistics. (2014) *Statistical bulletin: Internet access quarterly update, Q1 2014*. [Online] Available from: http://www.ons.gov.uk/ons/rel/rdit2/internet-access-quarterly-update/q1-2014/stb-ia-q1-2014.html [Accessed: 7th March 2015]

The Office for National Statistics. (2016) *Statistical bulletin: Internet access – households and individuals: 2016*. [Online] Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2016 [Accessed: 10th July 2017]

The Office for National Statistics. (2017) *Statistical bulletin: Internet access – households and individuals: 2017*. [Online] Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2017 [Accessed: 14th February 2018].

The Prince's Trust. (2013) *Digital Literacy Survey: Executive Summary*. London: The Prince's Trust.

The Russell Group. (2012) *Informed Choices; A Russell Group guide to making decisions about post-16 education.*

Thomas, L. (2013) What works? Facilitating an effective transition into higher education. *Widening Participation and Lifelong Learning*, *14*(1), pp.4-24.

Thompson, L., Rivara, F.P. and Whitehill, J.M. (2015) Prevalence of marijuana-related traffic on Twitter, 2012–2013: a content analysis. *Cyberpsychology, Behavior, and Social Networking*, *18*(6), pp.311-319.

Todd, R.J. (2003) Theme section: adolescents of the information age: patterns of information seeking and use, and implications for information professionals. *School libraries worldwide*, *9* (2), p.27.

Tomlinson, M. (2016) *Access to Higher Education in England-a report on the social, educational and institutional dimensions of demand for and supply of higher education in England*.

Tribal. (2011) *Evaluation of the Functional Skills pilot.* [Online] Available from: http://www.great-learning.co.uk/wp-content/uploads/2011/03/Evaluation_of_the_Functional_Skills_Pilot_Summative_Report-feb-11.pdf [Accessed: 8th February 2015].

Tuominen, K., Talja, S. & Savolainen, R. (2005) *The social constructionist viewpoint of information practices*. **In** Fisher, K. E., Erdelez, S. & McKechie, L. E. F.

(eds.) (2005). *Theories of information behavior*. Assist Monograph Series. Medford: Information Today, Inc. pp328-333.

Twitter. (2015) *About Twitter, Inc*. [Online] Available from: https://about.twitter.com/company. [Accessed: 28th May 2015].

Twitter. (2017) *Twitter usage/ company facts*. [Online] Available from: https://about.twitter.com/company [Accessed: 20th July 2017].

UCAS. (2014) *Four per cent rise in UK and EU students starting university and college courses*. [Online] Available from: http://www.ucas.com/news-events/news/2014/four-cent-rise-uk-and-eu-students-starting-university-and-college-courses [Accessed: 21st October 2014].

UCAS. (2016) *Choosing a course*. [Online] Available from: https://www.ucas.com/ucas/undergraduate/choosing-course [Accessed: 25th April 2016].

UCAS. (2017) *No offers? Learn how Clearing works*. [Online] Available from: https://www.ucas.com/ucas/undergraduate/apply-and-track/results/no-offers-learn-how-clearing-works [Accessed: 8th August 2017].

UCAS. (2017) *UK application rates by the January deadline*. [Online] Available from: https://www.ucas.com/file/92746/download?token=4lj-BMlr [Accessed: 8th August 2017].

UCAS. (2017) *Applicants for UK higher education down: 5% for UK students and 7% for EU students*. [Online] Available from: https://www.ucas.com/corporate/news-and-key-documents/news/applicants-uk-higher-education-down-5-uk-students-and-7-eu-students [Accessed: 29th July 2017].

UCAS. (2018) *UCAS Undergraduate: when to apply*. [Online] Available from: https://www.ucas.com/undergraduate/applying-university/ucas-undergraduate-when-apply [Accessed: 31st July 2018].

UCAS. (2018) *Contact us*. [Online] Available from: https://www.ucas.com/contact-us [Accessed: 14th September 2019=8].

UKCES. (2012) *Businesses and schools building the world of work together.*

UKCES. (2011) *The role of career adaptability in skills supply*. [Online] Available from: http://wrap.warwick.ac.uk/42878/1/WRAP_Brown_evidence-report-35-role-of-career-adaptability.pdf [Accessed: 15th June 2015].

UNESCO. (2011) *Declaration on media and information literacy adopted by Fez International Forum*. [Online] Available from: http://portal.unesco.org/ci/en/ev.php-URL_ID=31456&URL_DO=DO_TOPIC&URL_SECTION=201.html [Accessed: 8th February 2015].

Universities UK. (2009) *Business and the public sector; why do we need to partner*.

Van Dijck, J. (2013) *The culture of connectivity: A critical history of social media*. Oxford University Press.

Van Leeuwen, T. (2005) *Introducing social semiotics*. New York: Routledge.

Walton, G. (2013) Online conversation: information literacy as discourse between peers. *Communications in Computer and Information Science* 397, pp373-379.

Walton, G. (2017) Information discernment: from theory to practice, paper presented to Librarians' information literacy annual conference. Swansea University (Bay Campus), 10-12th April 2017, viewed 6th August 2017 http://www.lilacconference.com/events/2017/information-discernment-from-theory-to-practice

Walton, G. & Cleland, J. (2016) Information literacy – empowerment or reproduction in practice? A discourse analysis approach. *Journal of Documentation.* Vol. 72. Part 5.

Walton, G. and Hepworth, M. (2011) A longitudinal study of changes in learners' cognitive states during and following an information literacy teaching intervention. *Journal of Documentation* 67 (3), pp449-479.

Walton, G. & Hepworth, M. (2013) Using assignment data to analyse a blended information literacy intervention: a quantitative approach. *Journal of Librarianship and Information Science*, 45 (1) pp53-63

Walton, G. and Pickard, A. (2015) Proactive and Passive Scepticism; A Methodology for Extending Digital Literacy to Survive Misinformation and Support Empowered Citizenship?. In *The Third European Conference on Information Literacy (ECIL) October 19-22, 2015, Tallinn, Estonia* (p. 201).

Walton, G. and Hepworth, M. (2011) A longitudinal study of changes in learners' cognitive states during and following and following an information literacy teaching intervention. *Journal of Documentation*, 67 (3), pp449-479.

Walton, G. and Hepworth, M. (2012) Using assignment data to analyse a blended information literacy invervention: a quantitative approach. *Journal of Librarianship and Information Science* 0(0), p.1-11.

Walton, G. (2017) Information literacy is a subversive activity: developing a research-based theory of information discernment. *Journal of Information Literacy*, *11*(1), pp.137-155.

Walton, G., Pickard, A.J. and Dodd, L. (2018) Information discernment, mis-information and pro-active scepticism. *Journal of Librarianship and Information Science*, p.0961000618769980.

White, S. and Carr, L. (2005) Brave new world: Can we engineer a better start for freshers?. In *Frontiers in Education, 2005. FIE'05. Proceedings 35th Annual Conference* (pp. T3H-26). IEEE.

Williams, A. (2015) Move over, millennials, here comes Generation Z. *New York Times*.

Wilson, T. (1981) *Review: Assessing information needs: tools and technique*s. [Online] Available from: http://www.informationr.net/ir/reviews/revs010.html. [Accessed: 23rd April 2016].

Wilson, T.D. (1981) On user studies and information needs. *Journal of documentation*, *37*(1), pp.3-15.

Wilson, T. D. (1999) Models in information behaviour research. *Journal of Documentation*, 55 (3) pp249-270. Available from: http://informationr.net/tdw/publ/papers/1999JDoc.html [Accessed: 17th December 2014]

Wilson, T.D. (2000) Human information behavior. *Informing science*, *3*(2), pp.49-56.

Wilson, T.D. (2006) On user studies and information needs. *Journal of documentation*, *62*(6), pp.658-670.

Wood, D. (1992) *Derrida: A critical reader.* Oxford: Blackwell Publishers.

Yang, J., Morris, M.R., Teevan, J., Adamic, L.A. and Ackerman, M.S., 2011. Culture Matters: A Survey Study of Social Q&A Behavior. *Icwsm*, *11*(11), pp.409-416.

Yelland, L. (2007) *Shift to the future: rethinking learning with new technologies in education*. New York: Routledge.

Yorke, M. (2000) The quality of the student experience: what can institutions learn from data relating to non-completion? *Quality in Higher Education*, *6*(1), 61- 75.

Zimmerman, B. J. (2000) *Self-efficacy: an essential motive to learn*. [Online] Available from:

http://www.sciencedirect.com/science/article/pii/S0361476X99910160 [Accessed: 17th February 2015].

Zollers, A. (2007) *Emerging motivations for tagging: Expression, performance, and activism*. Workshop on Tagging and Metadata for Social Information Organisation, held at the 16th International World Wide Web Conference.

Zurkowski, P. G. (1974) *The information service environment relationships and priorities*. [Online] Available from: http://eric.ed.gov/?id=ED100391 [Accessed: 16th February 2015].