THE BEHAVIOURAL INSIGHTS TEAM.

Moments of Choice

Behavioural Insights Team
Final Report

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Executive Summary

Young people today face increasingly complex pathways from education to work. In many ways it is positive that there are so many options and opportunities earlier generations could not have imagined. However, this wealth of choice comes with challenges. As educational opportunity extends, and the employment market is transformed, it becomes more important to support young people in making the right study and career decisions for them.

Despite the proliferation of new careers and growing industries, young people continue to aspire to jobs that were desirable when their parents and teachers were entering the workforce, and vary greatly in the extent to which they understand what these jobs entail, or the pathways that will get them there.

When policy makers observe that someone is not doing something they believe is in that individual's interest, it is common to assume that this has been brought about by lack of information. This reflects the model of human behaviour that has traditionally guided policy-making, and it provides a clear policy prescription. Market failure is arising from a lack of information about the utility of different options, and we can fix this by providing more information about likelihoods and payoffs.

However, the reality is that the information available to young people has grown over recent decades, with the spread of the internet and its application to increasingly sophisticated and niche purposes. And this change has not translated into a generation of young people who are more knowledgeable than their predecessors about the job market.

The behavioural science literature proposes a number of thinking patterns that may influence the extent to which young people seek and use data in making career decisions. These range from confirmation bias – our tendency to privilege information that supports our preconceptions – to retreating from decisions when we feel overwhelmed by the array of choices available.

Following our literature review, we undertook fieldwork with young people, teachers and careers guidance professionals. We sought to build an understanding of young people's knowledge with respect to careers, and to understand the career decision journey navigated by young people. In addition, we explored young people's knowledge of career options more broadly and the context of their decisions. From this, we have several key findings:

- ◆ **Career information on the internet is dispersed across multiple sites, difficult to evaluate and difficult to contextualise.** This contributes to young people switching off from using the full range of information available to make decisions about their future.

- ◆ **Young people have varying levels of understanding about their study and career options.** However, the breadth of knowledge shown was generally low, with even open and engaged young people demonstrating low awareness of the jobs actually available in the economy.

- ◆ **However, young people say they have access to the information they want.** This is despite the fact that they often demonstrated a lack of knowledge and research about their options, or even about their preferred career.

◆ **Further insight was available from what the young people implied, but did not explicitly say, they would want to know.** Overall, the young people we spoke to seemed to have essentially based, or were seeking to base, the decision of their overarching career ambition on whether they had an image of themselves doing the job that they found appealing. This image often came from a variety of sources, including family and friends, personal exposure, and the media. What seemed to vary across young people is the number of different jobs they tried to imagine themselves doing and the number of inputs they sought in order to develop that image.

◆ **Young people consistently named the social media networks and Google as the most common websites they visited.** However, they rarely reported using social media networks beyond socialising and entertainment, and were sceptical of receiving careers information, advice and guidance through Facebook in particular.

We also developed a stylised decision journey outlining the formative career experiences and key "moments" in young people's career decision-making:

◆ **Contextual factors** sit in the background throughout young people's lives, informing a sense of what is achievable and creating a "running hypothesis" of career or post-16 destinations on the young person's radar.

◆ **Moments of inspiration can occur throughout young people's lives,** informing their longer-term aspiration through sparking or slowly introducing interest in a career.

◆ **Moments of choice are events where young people must make a choice with consequences for their future career.** These moments are often the focus of research and policy, and reach beyond the standard GCSE and post-16 choices.

Building on past careers decision research, our behavioural literature review and fieldwork with young people, teachers and Careers Guidance Professionals (CGPs), we developed a behavioural segmentation of information-search behaviours among young people. This segmentation runs across two axes: information-seeking and openness of option-set. It links directly to young people's search behaviour and support needs, and characterises behaviours observed in specific interactions. It therefore acknowledges that young people may shift behaviours over time and also acknowledges the crucial role of context and psychology in influencing decision-making.

This enables the segmentation of young people facing moments of choice or inspiration into the following:

◆ **Gathering**: "I want to explore everything to figure out what is the right choice for me,"

◆ **Validating**: "I know what I'm going to do and I want to confirm this choice is the right one,"

◆ **Satisficing**: "I don't know what I'm going to do and I just need to pick something as quickly as possible,"

◆ **Fixed**: "I know what I'm going to do and I don't need any information," and,

◆ **Disengaged**: "This decision doesn't matter and I'm not going to bother with it."

We designed this segmentation to allow young people to move segments within and across moments, and to give a framework for adult influencers and supporters to help them do so.

Cognitive biases and mental shortcuts can move young people away from the more informed decisions they would have reached with reflection and contemplation. A better approach may be to thoughtfully design the context in which young people seek careers information and make decisions to work with the grain of our intuitive thinking. Our research suggests that capitalising on this opportunity depends more on the *how* of data provision than the *what* of information provided.

In light of this, we propose that **informed choice is best supported by information provision that:**

1. Understands where young people are coming from and their context in the moment that they are accessing the information;

2. Is trustworthy;

3. Personalises to the individual and what is meaningful to them;

4. Gives young people agency and is transparent about how their input preferences have led to outputs or advice;

5. Structures information provision so big decisions are broken down into smaller choice sets;

6. Provides information when needed, rather than overloading young people with information that isn't salient, relevant or useful to them at that time;

7. Helps influencers (teachers, parents or carers, CGPs) give meaningful advice to young people; and

8. Signposts actions.

This highlights the importance of good careers information, advice and guidance (IAG), to ensure that this data is presented in a context that is usable for young people. Although not a focus of the present research, the importance of encounters with employers and the workplace in contextualising data arose repeatedly in our analysis of both the primary and secondary research.

This research sits alongside the substantial body of knowledge that already exists, both in academia and in the long experience of CGPs and sector bodies. We look forward to doing further work to build on the preliminary insights in this report, in partnership with the sector.

I. Introduction

What do young people know about work?

We live in a data-rich world and we have information at our fingertips to help us choose where to live and where to eat, what to buy, and how to get from place to place. Today's young people have grown up in this world and use the internet for just about everything, including gathering information to facilitate the maturing process from teenager to adult.[1] This includes the opportunity to source information about possible study and career options.

We might expect that in this environment the people graduating from education and into the job market now might have unprecedented levels of knowledge about the jobs that are available and would suit them, but in practice we have seen continuing mismatches between the careers and jobs that young people aspire to, and the emerging profile of demand in the labour market.[2,3] Young people are also under-informed about the costs and benefits of career decisions.[4]

So, although there is plenty of information available on the internet about career options and pathways, this information is not translating into a cohort that has a greater breadth or depth of knowledge about the workforce than those that preceded it. This is concerning because we might consider informed decisions to be a normative good, but also because research using the British Cohort Study (BCS) suggests that career uncertainty and misalignment of aspirations with academic attainment are both associated with increased likelihood of a period not engaged in employment, education or training.[5]

However, surveys suggest that while some young people consider themselves under-informed, the majority believe they have adequate information to enable them to make informed choices about their future.[6] This means that young people are not making full use of the information and resources that could inform their decisions, but may not consider this an issue.

There are a few possible reasons for this. First, it is possible that the information available is not the information young people want or need. However, both previous work and the research reported here suggest that this is not the case. Except at the margins, young people do not identify that they face an information deficit.

[1] Agosto, D.E., and Hughes-Hassell, S., 2006, *Toward a Model of Everyday Life Information Needs of Urban Teenagers, Part 1: Theoretical Model*

[2] City & Guilds Centre for Skills Development, 2011, *New Directions: Young people's and parents' views of vocational education and careers guidance* [online] Available: http://www.skillsdevelopment.org/pdf/New%20Directions.pdf

[3] Association of Colleges, 2014, *Careers Guidance: Guaranteed* [online] Available: https://www.aoc.co.uk/sites/default/files/Freshminds%20Summary%20Report.pdf

[4] McGuigan, M., McNally, S., and Wyness, G., 2012, *Student Awareness of Costs and Benefits of Educational Decisions: Effects of An Awareness Campaign*, Centre for the Economics of Education

[5] Yates, S., Harris, A., Sabates, R., & Staff, J. (2011). Early occupational aspirations and fractured transitions: a study of entry into 'NEET' status in the UK. Journal of Social Policy, 40(03), 513–534.

[6] Slack, K., Hughes, A., and Rout, A., 2013, *Supporting Informed Decision Making: Developing Effective Information, Advice and Guidance for Students in the West Midlands,* Centre for Lifelong Learning

The second possible explanation, which is related to the above, is that not all young people are equally effective at using the web as a resource.[7] Young people who are ineffective at searching for information online may not only struggle to find information, but even struggle to identify what information they need. We think this is likely the case, and note that it also may require a relatively high level of skill to effectively navigate the information that is out there. Further, young people's preference for peer-to-peer social media over other websites (which are often expert-to-individual) presents challenges and opportunities for careers information, advice and guidance (IAG).[8]

The third explanation is that young people do not perceive that they need to draw on these resources to make what they consider to be an informed decision. Young people prefer jobs that were desirable when the previous generation were entering the workforce; this is not a coincidence. That generation and the one preceding it are actively involved in shaping young people's understanding of work: as parents, teachers, CGPs; and indirectly as the writers and directors of their favourite shows, and as the professionals that they may have encountered in their lives.

We need to understand whether and how information channels like the internet can be used to increase young people's knowledge of their options, and how to avoid excluding young people who are less engaged or less skilled in using this channel.

The importance of good careers information, advice and guidance

The above highlights the necessity of good careers IAG in helping clarify the choices available to young people and helping them to navigate these effectively. Indeed, academic research has drawn links between good careers provision and improved outcomes for the labour market, the education system, and social equity.[9] A quantity of high-quality work has been done on what good careers guidance in schools looks like. Most notably, the Gatsby Foundation has identified eight principles of good careers guidance,[10] which reflect the importance of structuring and broadening the information available to young people in decision-making, and supporting the reflective evaluation of choices:

1. A stable careers programme;
2. Learning from career and labour market information;
3. Addressing the needs of each pupil;

[7] Shayne, L., Gore, P.A., Bobek, B.L., Robbins, S.B., 2006, *Computer-Based Career Exploration: Usage Patterns and a Typology of Users,* Journal of Career Assessment 14 (4)
[8] Vuorinen, R., Sampson, J.P., and Kettunen, J. 2011, *The Perceived Role of Technology in Career Guidance among Practitioners among people who are experience Internet Users,* Australian Journal of Career Development 20 (3), pp. 39 - 48
[9] Hooley, T. & Dodd, V. (2015). *The economic benefits of career guidance.* Careers England.
[10] Holman, J. (2014). *Good Career Guidance – The Report.* The Gatsby Foundation. Available at:
http://www.gatsby.org.uk/uploads/education/reports/pdf/gatsby-sir-john-holman-good-career-guidance-2014.pdf

4. Linking curriculum learning to careers;

5. Encounters with employers and employees;

6. Experiences of workplaces;

7. Encounters with further and higher education; and

8. Personal guidance.

In addition, the Education Endowment Foundation recently published a literature review[11] that suggested evidence of careers education providing modest improvements in academic attainment, a counter to the concern that these activities might take time away from curriculum teaching and hence worsen outcomes. Likewise, the review found evidence of positive impacts on both employment and social outcomes.

Evidence also suggests that young people with wider experience of exploring careers are more confident and positive about their post-16 choices, as well as being more likely to transition successfully from post-16.[12] Research suggests that a higher level of employer contact is associated with being less likely to be sceptical that current activity is useful for future job ambitions; having double the odds of being in education, employment or training; and, if in full-time employment, earning 10–25 per cent more. The Education and Employment Taskforce has also highlighted estimates that improved links help employer recruitment too, with an estimated 22 per cent of employers taking on young people directly after some work experience and a further 15 per cent of employers offering young people a job after they have finished their course.[13]

A more student-centred and supportive approach to information, advice and guidance appears to be linked to students relying more on CGPs and teachers, and less on family and friends, in making decisions. In turn, one qualitative study suggested that students with access to good IAG are more confident in their decisions and less likely to regret them six months later.[14]

This points to the importance of a good careers advice system in giving young people useful information about careers. Despite this, most schools do not provide advice that meets the Gatsby benchmarks. Rather, careers advice can reflect the ethos of the school (e.g. "All our students go to university.") rather than student need[15] and not optimally promote all possible career avenues. The reason is partly schools' and parents' or carers' lack of current information about options. This makes known environments, such as a school's own sixth form, or the pathways taken by relatives and peers, more attractive to young people. Schools' tight budgets,

[11] Hughes, D., Mann, A., Barnes, S., Baldauf, B., & McKeown, R. (2016). *Careers education: International literature review.* Education Endowment Fund. Retrieved from https://educationendowmentfoundation.org.uk/public/files/Publications/Careers_review.pdf
[12] Morris, M., et al., 1999, *The Impact of Enhanced Careers Education and Guidance on Transition at 16*, RD 21, Sheffield: DfEE
[13] Ibid.
[14] McCrone, T., Wade, P., & Morris, M., 2006, *How do young people make choices at 14 and 16?.* Nottingham, England: Department for Education and Skills.
[15] Ofsted, 2013, *Going in the right direction? Careers guidance in schools from September 2012* [online] Available at: https://www.gov.uk/government/publications/careers-guidance-in-schools-going-in-the-right-direction

incentive structures (in terms of funding and reporting) and the many demands on teachers' and school leaders' time, are likely to also be factors.[16] Good careers provision can help to bridge this familiarity gap and enable young people to make better decisions.

[16] Demos, 2015, *Commission on Apprenticeships Report* [online] Available:
http://www.demos.co.uk/files/476_1504_CoA_WEB_2_.pdf?1425489134

II.   Research and theoretical frameworks on career influences

A large volume of research has been done on careers advice and career decision-making. Below, we provide a summary of some salient points from this literature, which have informed our consideration of the cognitive elements of decision-making and how the structure of information-provision can support good decision-making.

Theoretical frameworks for thinking about career choice

A range of theoretical frameworks exist for thinking about young people's career choices. The human capital model has been immensely influential and useful. Building on the economic construct of the rationally self-interested individual, it conceptualises education and training as investment decisions arising from the calculation of different returns to different study options.[17] This is expanded upon by the work of Tomlinson, who sees study being ever more commoditised, with learners becoming "consumers".[18] In this context, one explanation of non-optimal decisions is a lack of information on the part of decision-makers to help them optimise successfully. In its base form, human capital theory is vulnerable to criticisms from a psychological viewpoint as it does not take into account predictable "failures" of rational decision-making; however, a number of recent developments on the model have the potential to remedy this limitation.[19] Bimrose and Brown, off the back of a longitudinal study into adult career choices, created a typology around how adults approach career decisions. This is based upon personality traits and attitudes towards the self but is difficult to apply to a young person who is in preparation for a career.[20]

Careership Theory develops a sociological framework for career decisions that takes account of the positons and dispositions of the individual, but also context of the decision and the forces acting on the individual at that time, and the path-dependence that developed over time. This theory outlines why some young people do not engage with careers advice when the advice does not fit with their existing schematic view of themselves or their perceptions of appropriate careers opportunities (in Careership Theory terms, it lies beyond their 'horizon').[21] This theory captures a key challenge for the current research, which is how to encourage young people to either shift their position or broaden their view so that more options come into view on this horizon.

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[17] Becker, G.S., 1975, *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, National Bureau of Economic Research, Washington D.C.
[18] Tomlinson, M., 2016, *Student perceptions of themselves as 'consumers' of higher education, British Journal of Sociology of Education, pp. 1 – 20*
[19] For example, Huxley, G. and Peacey, M. 2014, An Economic Model of Learning Styles. Centre for Market and Public Organisation Working Paper No. 14/319.
[20] Bimrose, J., & Brown, A. (2015). *Career decision making and career adaptability.* In Exploring New Horizons in Career Counselling (pp. 249–261). Sense Publishers.
[21] *Hodkinson, P & Sparkes, A.C. (1997) Careership: A sociological theory of career decision making, British Journal of Sociology of Education, 18:1, 29-44.*

Another influential theoretical framework is the constructivist theory developed primarily by Savickas.[22] This framework arose from the insight that even where young people do not lack information about careers, they do not put the information to use, either because of lack of self-efficacy or lack of motivation. Conceptually, this approach is consistent with our own framework (outlined in subsequent chapters). However, it focuses on disengaged and disempowered young people, and the prescriptions focus on person-to-person interventions rather than data-structure interventions. This framework therefore informs our own approach, but we shift the focus more towards how young people seek and take in information, across the engagement spectrum.

In addition, Bright and Pryor's chaos theory of careers characterises individuals and their influences as complex, with events coming about as a result of chance.[23] Again, this conception has informed our thinking about how information and data provision can support young people's career decision-making, but we seek to develop a more practice- and solution-oriented framework for thinking about ways to positively influence decisions in the context of complexity and uncertainty.

Background and demographic factors

A young person's background and demography have a well-documented impact on their career decisions. Participation has risen more rapidly for those from more deprived backgrounds.

There are gender differences in both information searching behaviour and subject/career preferences.[24] Girls are likely to do more research and exploration into their career options than boys.[25] There are also gender differences in the options considered: girls are more likely to underestimate their mathematical ability at school.[26] It has been shown that this can occur at an age as young as seven.[27,28] This can have serious effects, both on earnings for individuals, and the overall set skills available in the labour market.

Though ethnic inequalities in labour market participation persist, motivation in young people from black and ethnic minorities is much higher than in their white counterparts, and especially

[22] Savickas, M., 2002, *Career Construction: A Developmental Theory of Vocational Behaviour,* In *Career Choice and Development,* ed. D.A. Brown, 149-205. San Francisco, CA
[23] Pryor, R., and Bright, J., 2011, *The Chaos Theory of Careers,* London: Routledge
[24] Lauermann, F., Chow, A., and Eccles, J.S., 2014, *Differential Effects of Adolescents' Expectancy and Value Beliefs about Math and English on Math/Science-Related and Human-Services-Related Career Plans*, 2nd Network Gender & STEM Conference, Berlin, Germany
[25] Negru-Subtirica, O., Pop, E.i., Crocetti, E., *Developmental Career Trajectories and reciprocal associations between career adaptability and vocational identity: A three-wave longitudinal study with adolescents,* Journal of Vocational Behavior 88, pp. 131-142
[26] Bornholt, J. J., Goodnow, J. J., & Cooney, G. H. 1994. *Influences of gender stereotypes on adolescents' perceptions of their own achievement.* American Educational Research Journal, 31, 675-692.
[27] Eccles, J. S.,Wigfield, A., Harold, R. D., & Blumenfeld, P. 1993. *Age and gender differences in children's self and task perceptions during elementary school.* Child Development, 64, 830-847.
[28] Jacobs, J. E., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A., 2002. *Changes in children's self-competence and values: Gender and domain differences across grades one through twelve.* Child Development, 73, 509-527

that of young white males, as are rates of university attendance.[29,30] On the other hand pupils from ethnic minorities and pupils who are at risk of not achieving positive post-school destinations do not use website-based IAG as much as their other peers.[31] This points to the need for careful research and possible targeted intervention to support these groups.

In addition, research suggests that low-income students may overestimate tuition fees, and underestimating the gap in earnings between those with secondary education compared to university graduates.[32] The research is ambivalent on whether attempts to correct these misperceptions increase application rates. Contrary to findings from the US, a trial conducted by BIT found that students aged 15-16 who received information cards about the costs and benefits of university were 4.9 percentage points less likely to state their intention as being to go to university.[33] There is some research that suggests that young people from less well-off backgrounds tend towards relying on informal (or "hot") information from their social networks to formal (or "cold") information.[34] It is unclear whether this is a function of preference or access, or that other demands on cognitive capital limit the ability to process and evaluate formal information.

This makes the next section, on career choice influencers, particularly important for disadvantaged young people. The lack of people in a young person's social network who can provide informal information about what a particular post-compulsory option is like, or good advice on choices, may limit their ability to make good choices.

Personality factors

A review of 34 studies suggests that the effect of personality on occupational outcomes is almost as great as the effect of standard measures of IQ, and greater than the effects of parental income and socio-economic status. In particular, this meta-analysis found that adolescent ratings of neuroticism, extraversion, agreeableness, and conscientiousness correlated to occupational status up to 46 years later.[35] Another meta-analysis found a small statistically significant relationship between neuroticism, in which anxiety may present, and

[29] ESRC Centre for Population Change, 2014, *Educational aspirations among UK young teenagers: exploring the role of gender, class and ethnicity*
[30] Crawford, C. & Greaves, E. 2015. *Socio-economic, ethnic and gender differences in HE participation*, Department for Business Innovation and Skills
[31] Howieson, C. and Temple, S., 2013, *The impact of careers websites: What's the evidence?* British Journal of Guidance and Counselling 41(3), pp. 287 - 301
[32] Usher, A. (1998). Income-Related Barriers to Post-Secondary Education, *Council of Ministers of Education. Canada Working Paper*, as part of Post-Secondary Education Project, Learner Pathways and Transitions.
[33] Silva, A., Sanders, M., & Ni Chonaire, A., 2016. *Does the heart rule the head? Economic and emotional incentives for university attendance*, The Behavioural Insights Team.
[34] Greenbank, P. and Hepworth, S., 2008. *Working Class Students and the Career Decision-making Process: a qualitative study*, Report for the Higher Education Careers Service Unit (HECSU), Manchester, forthcoming.
[35] Roberts, B.W. (2007), The Power of Personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives in Psychological Science 2* (4), 313-345.

ability to make decisions.[36, 37] Finally, research also suggests that being more indecisive about careers is associated with lower emotional intelligence and emotional stability.[38,39] Prevalence of these personality traits in childhood and early adulthood have been suggested to link closely with preferences in middle adulthood, and therefore job satisfaction.[40]

Influential work on self-efficacy suggests that children's view of their influences the types and occupational activities on their horizon, both directly, and through their academic aspirations.[41,42] Research suggests that this perceived efficacy may be a stronger determinant than academic achievement in their occupational preferences.[43] Further, longitudinal studies have found links between adolescent aspirations and adult occupational outcomes.[44]

The research suggests that these personality factors are likely to be key in understanding differential responses to information products, openness to learning about alternative careers, and attitude towards options that are perceived as more risky or unknown.

Career choice influencers

Parents or carers, relatives and friends of the family

Parental interactions help to form children's early understanding of what the shape of their career will be. Parents and carers are involved both explicitly and implicitly in forming their children's career paths. Research suggests that parental characteristics such as motivation and self-efficacy are as, if not more, influential in a child's characteristics than family's financial circumstances or the level of parental engagement.[45,46]

In addition, family attitudes set a strong precedent for decisions.[47] Polling conducted by Demos to study parents' or carers' perceptions of apprenticeships found that nearly all (92 per cent of)

[36] Martincin, K. M., & Stead, G. B. (2015). *Five-Factor Model and Difficulties in Career Decision Making A Meta-Analysis.* Journal of Career Assessment, 23(1), 3-19.
[37] Gati, I., Gadassi, R., Saka, N., Hadadi, Y., Ansenberg, N., Friedmann, R., and Ansulin-Peretz, L., 2011, *Emotional and Personality-Related Aspects of Career Decision-Making Difficulties: Facets of Career Indecisiveness,* Journal of Career Assessment 19 (1) pp. 3 – 20
[38] Di Fabio, A., et al, 2013, *Career Indecision versus Indecisiveness: Associations with Personality Traits and Emotional Intelligence,* Journal of Career Assessment 21(4), pp. 42 – 56
[39] Saka, N., Gati, I., Kelly, K.R., (2008), *Emotional and Personality-Related Aspects of Career-Decision-Making Difficulties,* Journal of Career Assessment 16: 403
[40] Judge, T.A., Bono, J.E., Joyce, E.A., 2000, *Personality and job satisfaction: The mediating role of job characteristics,* Journal of Applied Psychology 85 (2) pp. 237 – 249
[41] Bandura, A. (1994). *Self-efficacy.* John Wiley & Sons, Inc..
[42] Garcia, P. R. J. M., Restubog, S. L. D., Bordia, P., Bordia, S., & Roxas, R. E. O. (2015). Career optimism: The roles of contextual support and career decision-making self-efficacy. Journal of Vocational Behavior, 88, 10-18.
[43] Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child development,* 72(1), 187-206.
[44] Ashby, J. S., & Schoon, I. (2010). Career success: The role of teenage career aspirations, ambition value and gender in predicting adult social status and earnings. *Journal of Vocational Behavior,* 77(3), 350-360.
[45] Bandura, A. (1994). *Self-efficacy.* John Wiley & Sons, Inc..
[46] Lazarides, R., Harackiewicz, J. M., Canning, E., Pesu, L., & Viljaranta, J. (2015). The role of parents in students' motivational beliefs and values. In C. M. Rubie-Davies, J. M. Stephens & P. Watson (Eds.), *The Routledge International Handbook of Social Psychology of the Classroom.* London, UK: Routledge.
[47] McCrone, T., Wade, P., & Morris, M. (2006). *How do young people make choices at 14 and 16?* Nottingham, England: Department for Education and Skills.

parents or carers think apprenticeships are a good option for young people in general; however, only one-third (32 per cent) of parents or carers think that an apprenticeship would be the best option for their son or daughter.[48] Further, this polling unsurprisingly suggests a split based on the educational background of the parents or carers. 66 per cent of parents or carers who went to university believe that to be the best option for their child, while only 21 per cent think an apprenticeship would be. In contrast, 47 per cent of parents or carers who completed an apprenticeship believe university would be the best option for their child, compared with 55 per cent who think this of an apprenticeship. It is plausible that this dynamic also applies to parents' and carers' views of other forms of vocational education.

Only 37 per cent of parents and carers surveyed were confident giving their children information and advice about vocational qualifications, and young people on a general qualifications route were more likely to get information and advice from parents and carers than those on vocational routes (71 per cent vs 62 per cent).[49] This suggests that parents and carers also offer advice about such routes less frequently and effectively than for other options. Tellingly, young people's views of vocational qualifications closely matched those of their parents or carers.[50] In this way parents and carers both explicitly and implicitly shape their children's career decisions.

Parents and carers are more likely to intervene when their children are younger, where the student's own agency over the decisions being made remains relatively low.[51] In particular, choice of school frames many of the subsequent choices, in establishing the peer group, teacher and school attitude, and the salience of sixth-form. In addition, parents or carers may intervene to shape their child's choice of GCSE subjects and further study, but this intervention appears more likely at earlier ages.

Peers

Peers are the most obvious social norm reference group for a young person. Both the perception and the reality of peer norming are complex and tied up with adolescent identity formation. Teachers have reported that less academic and more insecure pupils are particularly influenced by their peers, and often copy the choices made by their friends.[52] However, it is methodologically difficult to disentangle peer-copying from peer-group selection effects (i.e. that people tend to form groups with others like them).[53] Another small-scale qualitative study found that the "fashionability" (peer acceptance) of a course of study, as part of the

[48] Demos, 2015, *Commission on Apprenticeships Report* [online] Available:
http://www.demos.co.uk/files/476_1504_CoA_WEB_2_.pdf?1425489134
[49] City & Guilds Centre for Skills Development, 2011, *New Directions: Young people's and parents' views of vocational education and careers guidance* [online] Available: http://www.skillsdevelopment.org/pdf/New%20Directions.pdf
[50] Ibid
[51] Vincent, C., 2001, *Social class and parental agency,* Journal of Education Policy, 16(4), 347–364.
[52] Ibid.
[53] Carrell, S. E., Sacerdote, B. I., & West, J. E. (2013). From natural variation to optimal policy? The importance of endogenous peer group formation. Econometrica, 81(3), 855–882.

constitution of adolescent identity and place among one's peers, was a powerful driver in the young people's study preferences at the age 16 decision-point.[54]

Of course, peers can have a positive influence too: individuals from a lower-income background have a tendency to extend their academic and career aspirations if friends with someone from a high-income family.[55] The expectations of low-income children to continue in full-time education are higher by 15.2 percentage points when they have at least one friend from a high-income family. Their desire to stay in full-time education is also higher.[56]

It is worth noting, however, that young people tend to identify the influence of their peers on subject, study and career preferences as being relatively low. For example, City & Guilds found a low proportion of young people reported choosing the subjects or jobs their friends were doing (3 per cent and 4 per cent respectively). [57]

Teachers

Teachers are a key authoritative source for young people. Teachers' personalities are an enormous influence on subject choice and appeal, and they have a powerful potential to shape young people's career decisions. At both Year 9 and Year 11, qualitative interviews conducted on behalf of the Department for Education found that children who enjoy a subject and like a teacher are more inclined to choose that subject at a further level.[58] City & Guilds research also highlighted the role exposure to curriculum content and teachers has on shaping young people's career choices, particularly for older (17-18) students.[59] Finally, meta-analyses have shown that strong affective relationships between students and teachers have medium to large associations with classroom engagement, and small to medium associations with achievement, and that the effects are particularly strong for at-risk young people.[60]

Classroom teachers are often not as well-equipped as they could be to provide good, impartial advice to students about future study options, or even to compellingly demonstrate how skills being learned can be applied to careers outside the education sector. For example, the DfE study cited above found a disjunct, where teachers in 11-16 schools tended to be more supportive but less able to provide advice about post-16 options, whereas teachers in 11-18 schools were more informed about options, but more likely to promote the school's post-16 provision.[61]

[54] Foskett, N., Maringe, F., & Lumby, J., 2003, *Pathways and progression at 16+-'fashion', peer influence and college choice*, University of Southampton
[55] Burgess, S., 2012, *Friendship networks and young people's aspirations*, Centre for Market and Public Organisation
[56] Ibid.
[57] City & Guilds Centre for Skills Development, 2011, *New Directions: Young people's and parents' views of vocational education and careers guidance* [online] Available: http://www.skillsdevelopment.org/pdf/New%20Directions.pdf
[58] Ibid.
[59] City & Guilds Centre for Skills Development, 2011, *New Directions: Young people's and parents' views of vocational education and careers guidance* [online] Available: http://www.skillsdevelopment.org/pdf/New%20Directions.pdf
[60] Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement a meta-analytic approach. *Review of Educational Research*, *81*(4), 493-529.
[61] McCrone, T., Wade, P., & Morris, M. (2006). *How do young people make choices at 14 and 16?*. Nottingham, England: Department for Education and Skills.

Careers Guidance Professionals

We have discussed earlier the importance of go0od, impartial careers advice provision on young people's career decision-making and occupational outcomes. However, there are few empirical studies relating specifically to the impact of CGPs on young people's decisions.[62] Like teachers, CGPs are have the potential to be considered authoritative sources, but are constrained by lack of time and support. They may also struggle with a lack of a general relationship with the young person, particularly where the young person does not perceive that they require support on career decisions.

Segmentation models

It is unsurprising, given the complexity of factors at play in the literature, that a number of scholars have sought to formalise these factors into segmentations aimed at understanding idiosyncratic differences in young people's career decision-making. For example, Greenhaus and colleagues, studying adult career goal-setting, developed a segmentation based on levels of career decisiveness.[63] However, this model is focused on adult decision-making, and focuses on one particular "moment", whereas we are interested in the range of moments, from the development and negotiation of career ambition right through to the micro-decision of how hard to study for a particular exam.

DfE commissioned exploratory research to understand the different mindsets young people bring to the career decision-making process. This research was based on twelve workshops with 58 (total) young people split across Year 9 and Year 11.[64] This segmentation describes young people based on characteristics of personality and outlook, and therefore implies a certain amount of stasis: shifting segments is unlikely and generally in response to intervention. McCrone et al. applied the above segmentation to narrative interviews with 85 young people (Wave 1) and a further 70 six months later (Wave 2). They found that it was not possible to categorise a substantial minority of young people at Wave 1, or across both waves, and that this was in part because of overlap between mindset categories. Another reason for this challenge may be that the model assumes a certain amount of consistency both within and across proximate career-linked decisions, whereas in their narratives, the young people showed tendencies that would group them across mindsets. In the present research we seek to develop a model that explicitly enables young people to shift across segments depending on context.

Finally, another relevant piece of segmentation was conducted by Gati and colleagues in 2010.[65] This work sought to develop decision-making "profiles", as distinct from "styles". Gati and colleagues define a "style" as an approach to making decisions and the way the decision maker engages with the process, while a "profile" was seen to be a multidimensional model of styles

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[62] Hughes, D., Mann, A., Barnes, S. A., Baldauf, B., & McKeown, R. (2016). *Careers education: international literature review.* Available at: http://wrap.warwick.ac.uk/80474/

[63] Greenhaus, J., Callanan, G. & Kaplan, E. (1995). The role of goal setting in career management International Journal of Career Management, 7(5), 3-12. DOI: 10.1108/09556219510093285

[64] http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/RW67.pdf

[65] Gati, I., Landman, S., Davidovitch, S., Asulin-Peretz, L., & Gadassi, R. (2010). From career decision-making styles to career decision-making profiles: A multidimensional approach. *Journal of Vocational Behavior*, 76(2), 277-291.

that aggregates up to a pattern of engagement and behaviour. This in turn leads to 11 factors that aim to comprehensively describe individual differences in career decision-making. Overall this typology brings continuity and consistency, aims to be comprehensive and provides a valuable basis for studying career decision-making. However, it is complex and may be difficult to base judgements on, which in turn may not make it useful for careers guidance professionals in their ongoing interactions with young people.

III.   Behavioural factors relevant to decisions about careers

Two Thinking Systems (Intuitive and Reflective)

Much of the psychological literature on decision-making has converged on a dual-process model of how the brain processes information and makes decisions.[66] The two systems are:

◆ **System 1** (the intuitive system), which is characterised by fast, contextual and effortless processing of information; and

◆ **System 2** (the reflective system), which is characterised by logical, general and effortful processing.

When we face a choice, System 1 quickly makes a judgement about what we should do. This is instinctive, immediate, and doesn't feel like "thinking". This judgement is passed to System 2 to either endorse or amend. Because using System 2 is slow and cognitively depleting, we have a preference to endorse and rationalise the judgement of System 1.

There is physiological, chemical and psychological evidence that the function of System 2 is still developing over the course of adolescence and young adulthood.[67] The implication is that young people are relatively more inclined to rely on System 1 in making decisions, and relatively less likely to effectively use System 2 to interrogate the decisions which may arise.

Making decisions with System 1

As described above, System 1 relies on fast and effortless decision-making based on contextual stimuli. Psychologists have documented stable characteristics of intuitive system decision-making, which can be categorised as heuristics and biases:[68]

◆ **Heuristics:** efficient rules-of-thumb that System 1 uses to form judgments and make decisions. These mental shortcuts usually involve focusing on one aspect of a complex problem and ignoring others.

◆ **Biases:** patterns in behaviour that arise when System 1 deviates systematically from a standard of rationality or good decision-making.

We can encourage young people to make the right decisions for themselves and their careers by ensuring that IAG is presented in ways that work with the grain of System 1.

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[66] Kahneman, D., 2011, *Thinking, fast and slow*. Macmillan.
[67] Sunstein, C. R., 2008, *Adolescent risk-taking and social meaning: A commentary*, Developmental Review, 28(1), 145–152.
[68] Tversky, A., & Kahneman, D. (1975). Judgment under uncertainty: Heuristics and biases. In *Utility, probability, and human decision making* (pp. 141–162). Springer Netherlands.

Making decisions with System 2

In contrast to System 1, System 2 relies on conscious and considered analysis of a given topic. Like System 1 there are particular hallmarks of decision-making with System 2:

◆ **Cognitive depletion:** making decisions with System 2, particularly complex or stressful decisions, is mentally tiring.[69]

◆ **Cognitive laziness:** System 2 has a preference to endorse the judgement of System 1, to conserve mental resources.[70]

◆ **Bounded rationality:** people's ability to make rational decisions is limited not only by holding the correct information, but also by having sufficient time and cognitive and emotional capacity to consider the subject at hand.[71]

It is important that the information, advice and guidance framework is mindful of these characteristics of System 2, to help support young people to make good, considered decisions about their options. Yates counsels that practitioners could improve conversations about careers through exploring emotive and intuitive reasons which sit behind seemingly logical reasoning.[72]

Choice Architecture

No decision is free of context – both relevant and irrelevant. System 1 provides a stream of judgements and conclusions to System 2. "Choice architecture" refers to the designed or intentional structures placed around a particular choice, as distinct from the unintentional and contextual dimensions of the choice for the individual.[73] This choice architecture can profoundly influence the choices people make, both where the choice architecture biases towards particular intuitive processes, and when it facilitates or forces the engagement of System 2.

The Department for Education commissioned the Institute for Fiscal Studies (IFS) in 2010, to conduct a rapid evidence review into the applicability of behavioural economics to young people's choices at ages 14 and 16.[74] Below, we provide a brief survey of some relevant behavioural effects (some of which were covered by the IFS), but we do not seek to duplicate

[69] Vohs, K. D., Baumeister, R. F., Schmeichel, B. J., Twenge, J. M., Nelson, N. M., & Tice, D. M., 2014, *Making choices impairs subsequent self-control: a limited-resource account of decision making, self-regulation, and active initiative,* Motivation Science, 1(S), 19–42.
[70] Kool, W., McGuire, J.T., Rozen, Z.B., and Botvinick, M. M., 2010, *Decision making and the avoidance of cognitive demand,* Journal of General Experimental Psychology, 139 (4): 665 – 682.
[71] Kaufman, B. E., *Integrating Emotions into Economic Theory,* in ed. Altmann, M., 2015, *Handbook of Contemporary Behavioural Economics,* Routledge, pp. 78 – 98.
[72] Yates, J. (2015*). 'The heart has its reasons that reason knows nothing of':* the role of the unconscious in career decision making. Journal of the National Institute for Career Education and Counselling, 35(1), 28–35.
[73] Thaler, R., and Sunstein, C., 2008, *Nudge: Improving Decisions about Health, Wealth and Happiness.* New Haven, Conn.: Yale University Press.
[74] Jin, W., Muriel, A., & Sibieta, L. (2011). *Subject and course choices at ages 14 and 16 amongst young people in England: insights from behavioural economics.* Available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182677/DFE-RR160.pdf

that work. Our focus is more on how behavioural insights interact with the provision and use of information, which is a more narrow scope than the IFS; and, conversely, we look more broadly than the IFS, as we are not focused on the age 14 and age 16 decisions in particular.

Education as a signal

The psychological literature proposes the existence of an effort heuristic[75], where value is assigned to an object or product based on the perceived effort that went into it. This is consistent with a large body of the economic literature, which discusses the extent to which education equips people for the sector they enter, versus the extent to which it instead functions as a more general "costly signal" of their ability level.[76] The theory is that rational actors will only consume education to the extent that the "cost" (in mental struggle) of acquiring it outweighs the anticipated benefits. For students with lower abilities, the "cost" thus construed of a qualification will be higher, and they will opt for lower levels of education. Therefore students who undertake higher levels of education, or courses that are perceived by the job market to be more difficult to enter and complete, signal to employers that they have a higher level of ability. This heuristic also signals to young people the value of qualifications on offer: those that are perceived as easier can appear to be less desirable.

Choice overload

Choice overload (or "overchoice") arises when the demands of optimising over a choice set exceed the processing power of System 2. In these instances, one is likely either to make an intuitive, unconsidered choice or to avoid making the decision at all. This has been shown in a US study investigating employee enrolment in pension plans.[77] If a plan offered more funds to choose from, the probability of employee participation actually decreased. Typically, adding ten fund options was associated with a 1.5 – 2 per cent drop in participation rate.

Marketing research has found that offering more products is expected to increase market share only where these products can be compared and ranked along a single dimension.[78] Research suggests that "traditional" higher education-bound students have a fairly clear rule-of-thumb: they have one main qualification option (a bachelor's degree) and they tend to focus on the institution of study more than the course.[79] In other words, they are ranking "products" primarily on one dimension, institutional quality, where there is good information with which to rank options. Other considerations are relevant, but secondary. Further, with complex choice sets, System 1 will discard choices for which it feels it does not have complete information about benefits (this is known as the ambiguity heuristic).[80]

[75] Kruger, J., Wirtz, D., Boven, L., & Altermatt, T. (2004). The effort heuristic. *Journal of Experimental Social Psychology*, 40, 91-98.
[76] Spence, M., 1973, *Job market signalling*, The Quarterly Journal of Economics, 355-374.
[77] Iyengar, S. S., Jiang, W. and Huberman, G., 2010, *How much choice is too much?: Contributions to 401(k) Retirement Plans*, Wharton School Pension Research Council Working Paper
[78] Gourville, J. T., & Soman, D., 2005, *Overchoice and assortment type: When and why variety backfires,* Marketing science, 24(3), 382-395.
[79] Department of Business, Innovation and Skills, 2012, *Tracking the decision making of high achieving HE applicants*, RR 86
[80] Frisch, D., & Baron, J., 1988, *Ambiguity and rationality,* Journal of Behavioral Decision Making, 1(3), 149-157.

If we wish young people to make a reflective decision across a range of options, we expect them to simultaneously choose qualification type, institution and subject area, and navigate the noise of a wide range of careers products and advisors, with varying levels of reliability. This poses a significant strain for System 2.

Present bias

Behavioural science has demonstrated that we like what we have now more than what we could have in the future. As a result, we tend to systematically underweight future costs and benefits in our decisions. This is called present bias[81] and can, for example, explain why reducing relatively minor frictions can increase US college application rates.[82] It can also explain why young people might opt to enter the workforce too soon: the benefits of study are ambiguous, distributed into the future and difficult to imagine, whereas the opportunity for immediate financial gain from employment is highly salient.[83] An ability to look to the future and conceive of a future "work self" has also been proved to correlate highly with how proactive an individual is in managing and exploring their career.[84] Therefore the case to enable young people draw the link from present day situations to future possibilities becomes even stronger.

Seeking confirmation

A cognitive bias that helps us feel confident about our beliefs and decisions is confirmation bias.[85] It can be defined as the "unwitting selectivity in the acquisition and use of evidence"[86], and affects our reasoning and decision-making in many ways.[87] It is well-established that people have a general tendency to retain a currently favoured belief (such as: "choosing Subject A will help me get a job") and search only for the information that confirms this belief. Any evidence that is unexpected and disconfirming will be viewed as dubious, whereas the confirming evidence is seen as trustworthy.[88]

These processes may lead young people to make decisions that are in fact not well-founded in the available data, even when the individual thinks they have done a thorough search. For example, a young person who believes that choosing to study Psychology will help them to get a job in Marketing might not attend to the information that many recent graduates are struggling to find degree-level jobs. Instead, she might seek out positive reports of graduate students, or

[81] Kahneman, D., 2012, *Thinking, Fast and Slow*, Macmillan.
[82] Bettinger, E. P., Long, B. T., Oreopoulos, P. & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions: Results from the H&R block FAFSA experiment, The Quarterly Journal of Economics, 127(3), 1205–1242.
[83] Service et al., 2014, *EAST: Four Simple Ways to Apply Behavioural Insights.* The Behavioural Insights Team. Available at: http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf
[84] Taber, B.J., and Blankemeyer, M., 2015, *Future Work Self and Career Adaptability in the Prediction of Proactive Career Behaviours,* Journal of Vocational Behaviour 86, pp. 20 - 27
[85] Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. Review of general psychology, 2(2), 175–220.
[86] Ibid., p. 175.
[87] Klayman, J. (1995). Varieties of confirmation bias. Psychology of learning and motivation, 32, 385–418.
[88] Ibid.

decide that the newspaper article discussing the lack of graduate opportunities was not based on adequate data.

Risks as feelings

Although it might be assumed that a decision that feels high-risk or important would be more likely to engage reflective thinking, this is not always the case. The importance and complexity of a decision can make it so cognitively depleting that System 2 is more inclined to avoid interrogating judgements made by System 1. High-risk or important choices can also elicit strong emotional reactions, and research suggests that people underestimate the effect of their emotional state on their preferences.[89] In addition, research suggests that people underestimate the benefits and overestimate the risks of options that elicit negative feelings.[90] This particularly matters when we are considering how to influence the cohort of young people who are unsure or uncommitted to a particular career, or who have just experienced a shock to their plans.

Familiarity principle

The familiarity principle describes the behavioural effect that we tend to develop a preference for things simply because they are familiar.[91] This highlights the need for young people to be exposed to a wide range of different jobs so that they are not limited in their careers simply because of a limited exposure to labour market opportunities. The familiarity principle could explain young people expressing a desire for "1984" jobs: these are the roles occupied by their parents or carers, or that they have seen on TV or encountered in their lives. This reasoning underscores the importance of introducing young people to jobs that may be out of their comfort zone, and especially to jobs that have only recently come into existence; for example, because of technological advancement.

Social norms and relatable messengers

When we are faced with a difficult decision, or a decision where the payoffs of different choices are not obvious, one of the most common things we do is to take our cue from those around us.[92] Studies have shown that beyond a certain point, adding more choices to a restaurant menu increases the propensity of diners to order the same thing as each other.[93] When the question of "What should I do?" is too difficult, System 1 finds "What is everyone else doing?" an appealing substitute: this is known as the social proof heuristic.

Social norms are the currents underlying social proof. They are what individuals understand about the rules governing behaviour in their reference group. If most people in a group go to

[89] Loewenstein, G., & Lerner, J. S, 2003, *The role of affect in decision making*, Handbook of affective science, 619(642), 3.
[90] Finucane, M. L., Alhakami, A., Slovic, P., & Johnson, S. M., 2003, *The affect heuristic in judgments of risks and benefits,* Journal of behavioral decision making, 13(1), 1.
[91] Jacoby, Larry L.; Dallas, Mark (1981). On the relationship between autobiographical memory and perceptual learning. *Journal of Experimental Psychology: General* **110** (3): 306–340.
[92] Cialdini, R. B.,2001, *Harnessing the science of persuasion.* Harvard Business Review, 79(9), 72–81
[93] Soman, D., 2015, *The Last Mile: Creating Social and Economic Value from Behavioral Insights.* University of Toronto Press

university, for example, an individual is breaking an unspoken rule in the group by considering an apprenticeship. This also means that information sources (or "messengers") that young people identify as being part of their reference group can be highly influential in shaping young people's understanding of prevailing social norms, including their attitudes towards careers and the process they go through to consider different options.

Authoritative messengers

Relatable messengers communicate something about the norms and expectations of the peer group. However, authoritative messengers provide information about what people should be doing, or what is best for them to do. For example, there is evidence that people are more likely to act on health information if it is provided by a messenger who is considered an expert.[94] It is important to understand which messengers the young person considers authoritative: for some it may be the CGP, but other authoritative messengers may be parents, teachers, celebrities, or the government. Their advice is therefore most likely to be acted upon, which means it is important that they have the information to deliver the right and most useful advice for students.

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[94] Webb and Sheeran, 2006, *Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence,* Psychological Bulletin 13: 249–268.

IV.   Fieldwork Methodology

Research design

The fieldwork drew on 43 semi-structured interviews (35 with young people and eight with CGPs) and five participant observations. The interview-based qualitative study is concerned with how young people construct, understand, experience and make sense of their future career pathways. The participant observations provided us with a contextual understanding of the various ways careers information is exchanged between student and careers guidance professionals and guided the development of the topic guide and journey mapping exercise. The participant observations were carried out as a contextual research exercise, and we have focused on the semi-structured interviews in this document.

The use of semi-structured interviews in understanding young people's motivations and needs has been widely discussed. The semi-structured interview is a systematic research technique that allows the researcher to enter into the other person's perspective.[95] Interviewing in this manner allows us to understand how young people perceive their efforts to navigate the career decision journey, and to probe their thinking when they reference key influencers or events.

A range of theoretical frameworks on young people's career choices informed our interview questions and research design. Firstly, building on the literature review, we started with the assumption that young people's decisions are influenced not only by conscious, reflective processes, but by a myriad of factors that are implicit, and therefore difficult to draw out by direct questioning. The topic guide therefore included a series of indirect questions that aimed to explore how the decision making of young people is influenced by their background context and lived experience. Secondly, the literature indicates that young people struggle with making informed decisions about their future,[96] as they are often under-informed on the costs and benefits of career decisions[97]. We designed a journey mapping exercise, which aimed to elicit a narrative description of what information sources young people used, when they engaged with this information, and how they used it to choose a career path.

In contrast to much of the previous primary and secondary research conducted into young people's career decisions, we look more broadly than the decisions made at ages 14 and 16. These are the most visible decision points, but we wished to understand these points in the context of a string of "moments of inspiration" and "moments of choice", stretching back into early childhood, and onwards into adulthood.

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[95] Patton, M. Q., 2015, Qualitative research and evaluation methods (4th Ed.). Thousand Oaks, CA: Sage.
[96] Slack, K., Hughes, A., and Rout, A., 2013, Supporting Informed Decision Making: Developing Effective Information, Advice and Guidance for Students in the West Midlands, Centre for Lifelong Learning.
[97] McGuigan, M., McNally, S., and Wyness, G., 2012, Student Awareness of Costs and Benefits of Educational Decisions: Effects of An Awareness Campaign. Centre for the Economics of Education.

We therefore wished to allow students the time to give detailed answers. Engaging in self-exploration is key to understanding both how decisions were made, and the relative importance assigned to them. This focus on "meaning" is central to the Interpretive approach to social science, and is a defining characteristic of qualitative research.[98] Hence, the purpose of this fieldwork report is not to assess young people's decisions or statements in terms of truth or falsity, but to understand how they make sense of events, their behaviours, thoughts and feelings, and how these are shaped by the unique contexts in which they occur.

Additionally, the qualitative interview allows for an exploratory analysis of phenomena. Rather than testing predefined hypotheses, qualitative methods are flexible and allow for an inductive derivation of relevant variables.[99] In contrast to quantitative methods, in-depth interviews allow for an understanding of phenomena in context-specific settings.[100]

Sample selection

The fieldwork was conducted at twelve sites, including maintained schools, academies and further education colleges, as well as an employment support programme. Educational institutions were sampled by school type and geographical location, as areas the CEC had identified as "cold spots", including coastal and rural locations, were of special interest. Annex A gives further detail about the characteristics of participating schools and students.

Respondents were recruited through a non-probabilistic purposive sampling procedure, with the aim of securing a broad sample of interviewees. Careers guidance professionals were asked to provide a mix of students with respect to demographics (gender, age), year level, academic ability, and level of career certainty. In advance of a research assistant visiting schools to conduct interviews, careers guidance professionals asked students to present themselves for a 45 minute interview slot on a given day. For all interviewees aged 16 and under, parental consent was obtained prior to the day interviews occurred. Furthermore prior to each interview commencing, student consent was obtained both verbally and in written form. Each respondent was interviewed once, and all interviews were conducted over February 2016 and therefore represent a point-in-time view of respondents.

Data collection

After informed consent was gained, semi-structured interviews using a topic guide were conducted by one of six disclosure and barring service (DBS) cleared interviewers, of whom two were male. The interviewers were not part of the school staff or otherwise connected to the participating schools. Interviews were audio-recorded, transcribed, and anonymised, with a reference ID to enable linking back to consent documentation and a pseudonym, by which they are referred to throughout this report.

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98 Maxwell, J. A. (2008). Designing a qualitative study. The Sage handbook of applied social research methods, 214-253.
99 Merriam, S. B., & Tisdell, E. J. (2015). Qualitative research: A guide to design and implementation. San Francisco: John Wiley & Sons.
100 Golafshani, N. (2003). Understanding reliability and validity in qualitative research. The qualitative report, 8(4), 597-606.

Validity and reliability

The interviewees were purposively sampled based on geographical spread, school type, age, gender, and post-school trajectory (i.e. university or vocationally orientated). The sampling strategy allowed us to maximise sample coverage and seek deviant cases. Nevertheless, it is important to note that qualitative studies aspire to reflect the diversity within a given population rather than achieving statistical generalisability.[101] The generalisability of qualitative studies is achieved through the development of a theory that can be extended to other situations.[102] Ideally, the psychographic segmentation and "moments of choice" mapping derived from this fieldwork will be transferable to a broader student population. The roundtables with career guidance professionals, teaching staff, and employers provided an opportunity to test the models created with groups of knowledgeable staff from locations beyond those covered in the fieldwork stage. However, we are mindful that these frameworks have been developed from a limited, non-randomly sampled group, and therefore further testing would be required to be confident of generalisability.

Strategies to promote reliability are less well-defined in qualitative studies compared to quantitative studies.[103] By triangulating multiple methods of data collection into the final report, including from the roundtables and workshops, we aim to maximise the internal validity and reliability of the fieldwork.

Limitations

This fieldwork study used a small sample of students, careers guidance professionals and teachers drawn from several regions of the country. The cold spots and prioritisation indicators analysis by the Careers & Enterprise Company indicates that the geographic areas where students are in most need of career guidance provision are well represented in our sample. Nevertheless, as limited fieldwork was conducted in the South East as well as more metropolitan areas, caution is advised when attempting to generalise the findings of this report to these areas. Although we spoke to young people from a broad range of backgrounds, the very disengaged or hard to reach student group is underrepresented in our fieldwork.

Due to the way education institutions were approached and voluntarily offered to participate, we are mindful of potential self-selection bias in that the more engaged schools and colleges would step forward, and within those schools, more engaged young people were more likely to volunteer. Any careers guidance professional or education authority worried that their level of careers support does not meet the students' needs may understandably fear the insights offered by the project. High achieving institutions on the other hand routinely seek out new pathways to confirm much of what they already know.

[101] Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: a case of the tail wagging the dog?. British medical journal, 322(7294), 1115.
[102] Maxwell, J. A. (2008). Designing a qualitative study. The Sage handbook of applied social research methods, 214-253.
[103] Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. Qualitative inquiry, 16(10), 837–851, p. 843.

V.   General Fieldwork Findings

How much do young people know about study and career options?

The level of understanding young people have over the career and study options available to them varies substantially. Of the more engaged young people interviewed, some demonstrated active consideration of several career paths – usually within a theme, i.e. health or social care – while others fixated upon a certain career. Information seeking behaviour was accordingly quite mixed.

Further discussions with careers guidance professionals provided evidence that there was also a large share of students disengaged from the career decision process entirely. CGPs identified these young people as having low self-worth, being apathetic about their future, and being generally more occupied with more short-term considerations. Accordingly, they don't have careers in mind, and nor do they possess knowledge about the kinds of careers they could be suited to.

Among other more engaged young people, perceptions of careers were relatively superficial. One student interviewed (Raj, in Year 12) had chosen medicine over business as he believed "you can't be a nice business man".

When young people had a career in mind, they often invested most of their time in ascertaining the qualifications needed, and often gained accurate information on this matter. At a broader level, the young people we interviewed appear to have picked up a general preference for university, with around two thirds stating they expected to go on to higher education, and a number of the others indicating that at least one of their influencers would like them to go to university.

Some young people were not committed to a specific career, but thought that university would be a valuable experience in its own right:
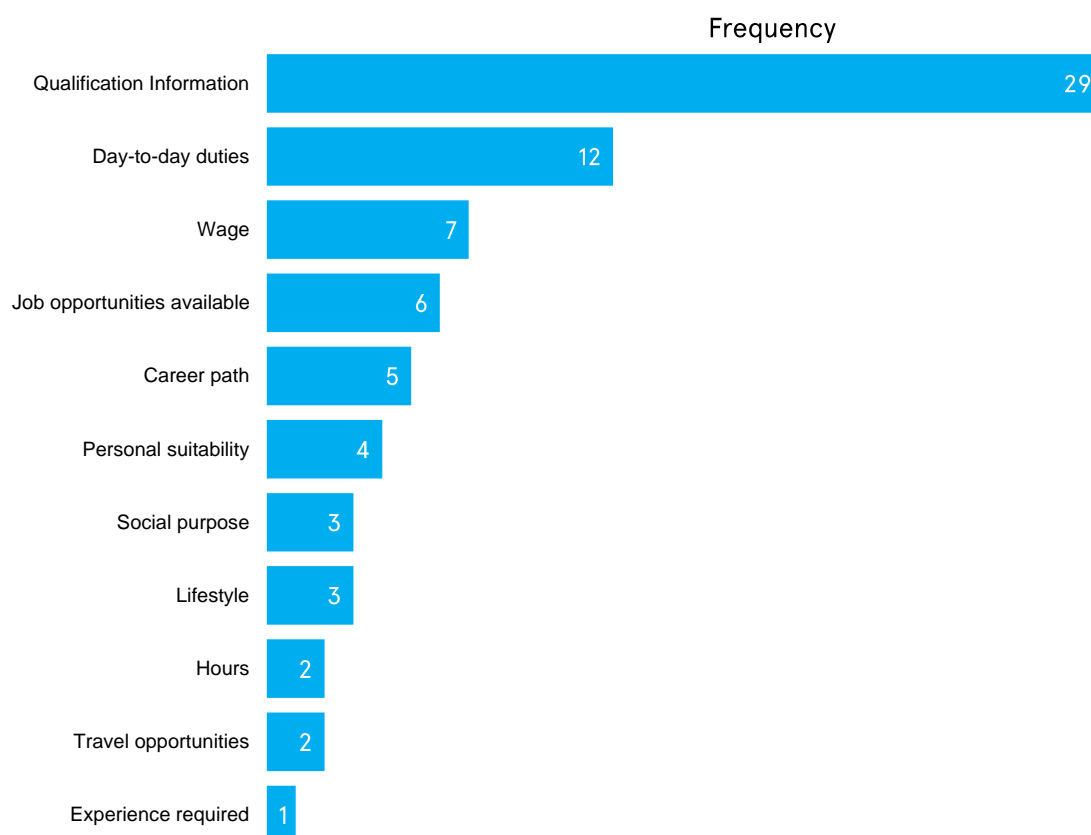
> "It's best to go to Uni and get the most out of life so even then, even if there's no jobs available then at least you can say to yourself you've been to Uni and you graduated you know?" Mo, Year 12

What data do young people say they want?

Consistent with other research, most young people said that there was no information they wanted but could not find. Young people in our interviews did not generally identify lack of information as a problem (just over two-thirds answered "no" when asked "Is there information you'd like to find out, but cannot locate?"). As per Figure 1, the main information young people reported looking for was information about qualification requirements for their desired job.

This highlights the importance of considering both perceived and actual needs when designing and developing information tools, and the challenge of providing a breadth of information to someone who feels like they know enough already.

Figure 1: Information young people reported searching for, by frequency mentioned

Frequency

Category	Frequency
Qualification Information	29
Day-to-day duties	12
Wage	7
Job opportunities available	6
Career path	5
Personal suitability	4
Social purpose	3
Lifestyle	3
Hours	2
Travel opportunities	2
Experience required	1

However when one student interested in studying medicine tried to dig deeper into the grades that are attached to typical candidates, various institutions were unable to provide the necessary data:

> "I ask them what grades they look for at GCSE, so I tried to ask them what's the average number of A*s at GCSE that candidates get, but yeah, they all sort of tried to avoid the question." Raj, Year 12

Kelly, a Year 12 college student, cited the reality of day-to-day duties as a factor more likely to propel her to consider careers beyond oncology nursing:

> "Money, no. If I found that I was dealing with terminally ill people rather than treating people with chemo for the first few weeks, then I might change."

The primacy of day-to-day activity considerations over salary was standard among those interviewees who discussed these points. In turn, many young people identified a desire to gain an insight into these "softer" career elements, including day-to-day duties, personal suitability and social purpose.

These young people appreciated websites that allowed them to gain insight into the skills and qualities needed to pursue a particular career. Students from schools that have free school meal eligibility above 40 percent more often cited locality as a factor when looking at careers and courses and potentially saw moving beyond the local community as a considerable barrier.

When asked what they aim to do with careers guidance, one CGP explained:

"To look wider than [town]. We still have students that have never left [town] ever. "Look at the bigger picture. Where do you want to go? Why do you want to go there? Talk to people and get advice, yet think about yourself." CGP

Despite salary being only explicitly cited by only one-fifth of the number of young people; when prompted over half of respondents identified salary as very or somewhat important in their career decisions (see Figure 2). However, students also suggested that while salary was something they sought to find out, it was not material to their career decision.

Figure 2: How important is salary to you in choosing a job or career?

Frequency

Very important	5
Somewhat important	14
Not important	12
Not discussed	4
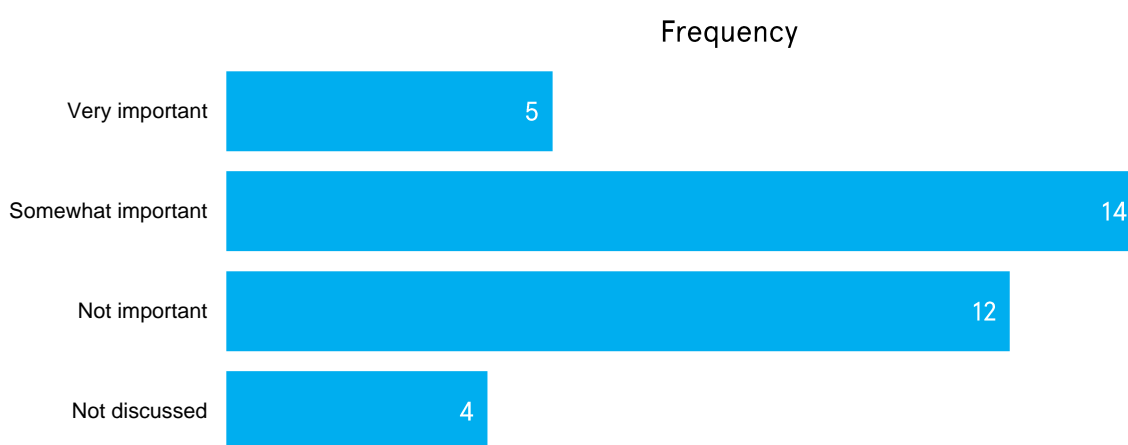
Careers guidance professionals suggested that young people are not able to picture the lifestyle available to different salary levels, as to them a full-time income figure is such a large number relative to their current expenses.

"Money. That's the number one. Number one is about how much money they will earn. That's what they want to know, but they're very short-sighted with, "Oh, that job earns £15,000, it is a lot of money." CGP

What data do young people imply they want?

In our sample, young people had essentially based, or were seeking to base, the decision of their overarching career ambition on whether they had an image that they found appealing of themselves doing the job. This suggests that the most compelling (positive or negative) information young people get is through encounters that tell them "what this job would be like for me". The number of different jobs they tried to imagine themselves doing varied, as did the number of inputs they sought in order to develop that image. The media, family and adult influencers were key inputs to this.

When a young person changes their mind, or pathways begin to close down, knowing how many other options are feasible (rather than simply available) appears to be an important factor:
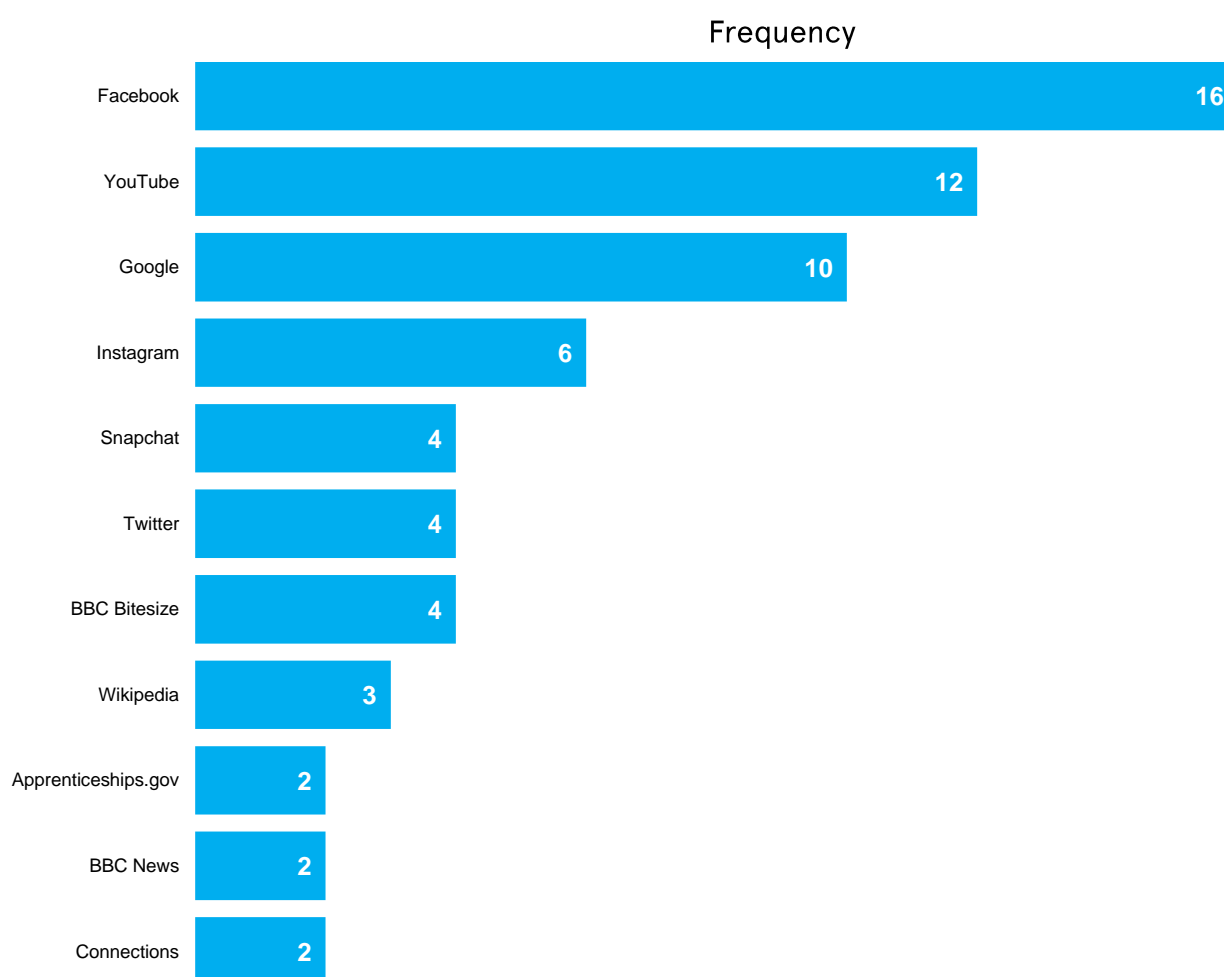
"Like a range of apprenticeships and then colleges and courses, 'cause I wanted to do childcare but I couldn't do it, they don't have it, cause they used to have it but now, but no one did it, they don't have it so I just had to do health and social care." Fatimah, Year 11

CGPs in our research tended to argue that young people need more information, but this was rarely echoed by young people.

Which websites do young people like to use?

Young people consistently named social network and media sites as the sites they visited most, with little use of them beyond socialising and entertainment. After the "big three" (see Figure 3), sites begin to be influenced by needs at school/college, but these tend not to figure into the career decision-making journey.

Figure 3: Frequently visited websites

Frequency

Website	Frequency
Facebook	16
YouTube	12
Google	10
Instagram	6
Snapchat	4
Twitter	4
BBC Bitesize	4
Wikipedia	3
Apprenticeships.gov	2
BBC News	2
Connections	2

Luke (Year 11), who is set on a career in ICT, identified that he used YouTube to learn new computing skills, while other young people mentioned being open to information received via these channels.

Given the popularity of Facebook it is appealing to consider ways to tie it into information provision. However, the leverage to use these websites to reach young people about careers

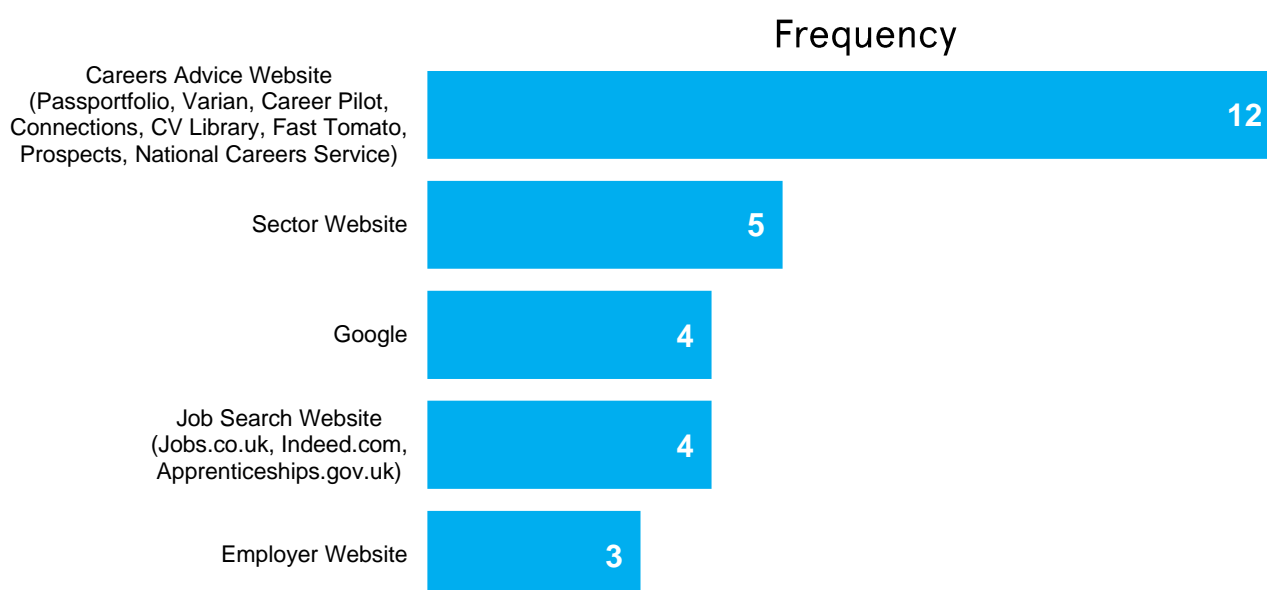(particularly those who are struggling) may be limited, as this exchange with Chloe (Year 10) highlights:

Interviewer: Okay. That's cool. Have you got any information from these three social websites about careers ever? Have you ever seen anything about careers on your newsfeed or come up on– ?

Chloe: Yes. I don't really read it.

Interviewer: No. Just skim straight over it?

Chloe: Yes.

This was corroborated in further workshops we ran with young people, where they noted they didn't really trust Facebook and were more likely to go directly to friends for advice.

When prompted specifically about careers websites, just over 50 per cent stated that they had browsed a careers information website in the last month.

See Figure 4 for the key websites identified. Although careers advice websites came out as most frequently mentioned, this is an aggregation of more than ten different websites, none of which were mentioned by more than two respondents.

Figure 4: Career related websites identified by young people accessed in the past month

Frequency

Website	Frequency
Careers Advice Website (Passportfolio, Varian, Career Pilot, Connections, CV Library, Fast Tomato, Prospects, National Careers Service)	12
Sector Website	5
Google	4
Job Search Website (Jobs.co.uk, Indeed.com, Apprenticeships.gov.uk)	4
Employer Website	3

Websites can be a highly influential source of information and inspiration for young people when making decisions about their futures:

"It was six months ago, I knew I was going to take my options soon and I was thinking 'Well, what should I do when I'm older?'. Lots of people were asking me too. So I looked around a bit and using Careers Pilot I found it." Charlie, Year 8

However, from interviews, it was clear that a young people's typical experience was to come off an internet search into a busy website or page that makes it difficult to find the answers they seek. As a result simplicity was at the core of the design features favoured by young people.

Young people also identified a preference for not having to move across websites to find the information they needed:

> "I think, one of my main issues was like I spent, god, I must have spent an hour on the computer trying to find, or maybe two, trying to like, apprenticeships or colleges that mainly do my course and it's really hard like, when you find it, you're like 'yes!' but then trying to search for them, you've got through website to website to website and that's quite hard." Richard, Year 10

And for clear advice that helps them imagine what the pathway is and what the job will be like:

> "I quite like Prospects – it does say, like, 'This is what you'd be doing, what you'd be expected to do.' Obviously I know they won't list everything but there are some things there. It's like case studies of people who've done it as well, that's helpful."
> Matthew, Year 10

VI.   The Career Journey

Research has shown that turning points in young people's lives occur when a variety of variables come together; spurred on by exposure to new experiences or networks which can validate and support preconceived ideas. It is essential to understand these moments and how they have affected the young person's confidence, conviction and behaviour.[104]

In this section we explore the career decision journeys of the 35 students interviewed. We draw on both interview and journey mapping exercises to sketch the role of contextual factors and formative experiences in shaping the career and education possibilities visible to young people. A graphical representation of the career journey of the young people interviewed follows on Figure 5 overleaf.
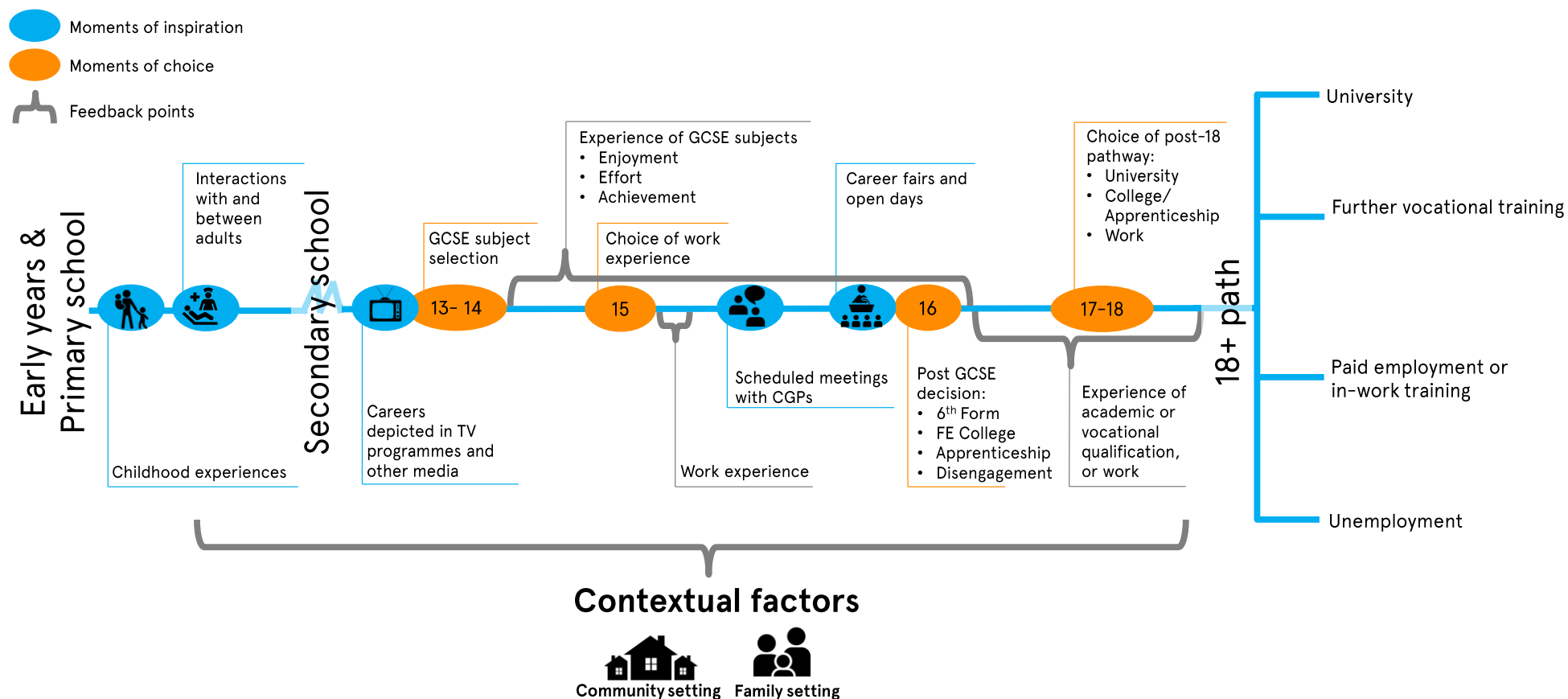
Contextual factors

Both consciously and unconsciously, young people are influenced by contextual factors in terms of the career opportunities they are likely to consider, and the extent to which adult influencers push them in a certain direction.

Community setting

Industries and employers that are prevalent locally enjoy a greater than average influence over how young people consider careers throughout their time at school. This appears to occur as a result of certain careers being more strongly represented in influencers known to young people and work experience with these employers being more easily accessible. For example, Mark, a CGP, noted that the career ambitions of young people at his school were connected to both the presence of a large manufacturing centre nearby, and local social issues students would have encountered in their lives.

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[104] Hodkinson, P., Hodkinson, H., & Sparkes, A. C. (2013). *Triumphs and tears: Young people, markets, and the transition from school to work*. Routledge.

Figure 5: The Career Journey

● Moments of inspiration

● Moments of choice

⌐⌐ Feedback points

Early years & Primary school

Interactions with and between adults

Childhood experiences

Secondary school

Careers depicted in TV programmes and other media

13- 14
GCSE subject selection

15

Experience of GCSE subjects
• Enjoyment
• Effort
• Achievement

Choice of work experience

Work experience

Scheduled meetings with CGPs

Career fairs and open days

16

Post GCSE decision:
• 6th Form
• FE College
• Apprenticeship
• Disengagement

17–18
Choice of post-18 pathway:
• University
• College/ Apprenticeship
• Work

Experience of academic or vocational qualification, or work

18+ path

University

Further vocational training

Paid employment or in-work training

Unemployment

Contextual factors

Community setting   **Family setting**

Family setting

Young people cite numerous sources of information, but family influence was the most ubiquitous. Some students align their career path to expectations placed upon them by their parents, particularly where they believe a high-status career would bring them praise.

Among interviewees who cite a parental expectation to pursue a particular career path as a key factor in their choice of career, knowledge of the career itself appears significantly weaker. Hiruni, in Year 11, whose mother had encouraged her to pursue a legal career, struggled to answer basic questions about why she would find a career in law appealing:

> *"...It's good pay and it's interesting and stuff... I'm just into different things I guess, and in law there's different aspects of being a lawyer. Like solicitor whatever. I just think I'd suit that area quite a lot... I can't explain it."*

Other students were advised by parents to dismiss careers perceived as low-status, even if they felt a match in terms of day-to-day duties and their skillset. Jonny, in Year 10, was told by his father, "If you find a job you like, if you stick to it, there's a high chance that you'll get to that job." So, Jonny told us, from the age of five, he's stuck to his dream of being a train driver "like glue".

Fatimah gravitated towards a career in law rather than social work in this manner, but had subsequently invested little time in ascertaining her suitability for such a career. However, by Year 11 her predicted grades showed that getting into a Sixth Form College was unlikely and, upon discussing the matter with a careers guidance professional, she realised that her skills and interests weren't aligned to a legal career at any rate.

It is interesting to note the difference between the influence of parents versus relatives and family friends. Parents figured more in framing, influencing or pressuring young people's decisions. Here, Ellie in Year 9 explains how she came to want to work in childcare:

> "I decided I wanted to do it because I've always been told how great I am with my little sister and brother.... [a]nd people always tell me I want to be a nursery worker. I've just got into it, I want to be it."

No young people in the sample explicitly stated they wanted to follow in their parents' career footsteps. By contrast, young people identified relatives (siblings, uncles and aunts, cousins) as having careers that the young person found appealing and wished to emulate. The salience of these non-parent family influencers was likely a product of them being both accessible and relatable, making the careers they had appear a feasible

option. Some CGPs also reported how parents' inexperience or biased attitudes may affect their child's career influence:

> "Parents tend to say, 'Oh, we didn't do it like that in my day.' What we remember might have happened when we were at school isn't the same as what it's like now, but, actually, that can cloud their judgement. 'Oh, I wasn't very good at drawing, so why are you doing Art? That's a wasted subject.' Actually, they may be very talented." CGP

However, it is unsurprising to discover that some young people do not have a family structure to rely on for support in selecting a career pathway.

Overall, a third of the students interviewed indicated that they first began to speak to parents or influencers by the first year of secondary school (see Figure 6).

Figure 6: Ages identified as first time young person thought about and spoke to someone about their career, by frequency
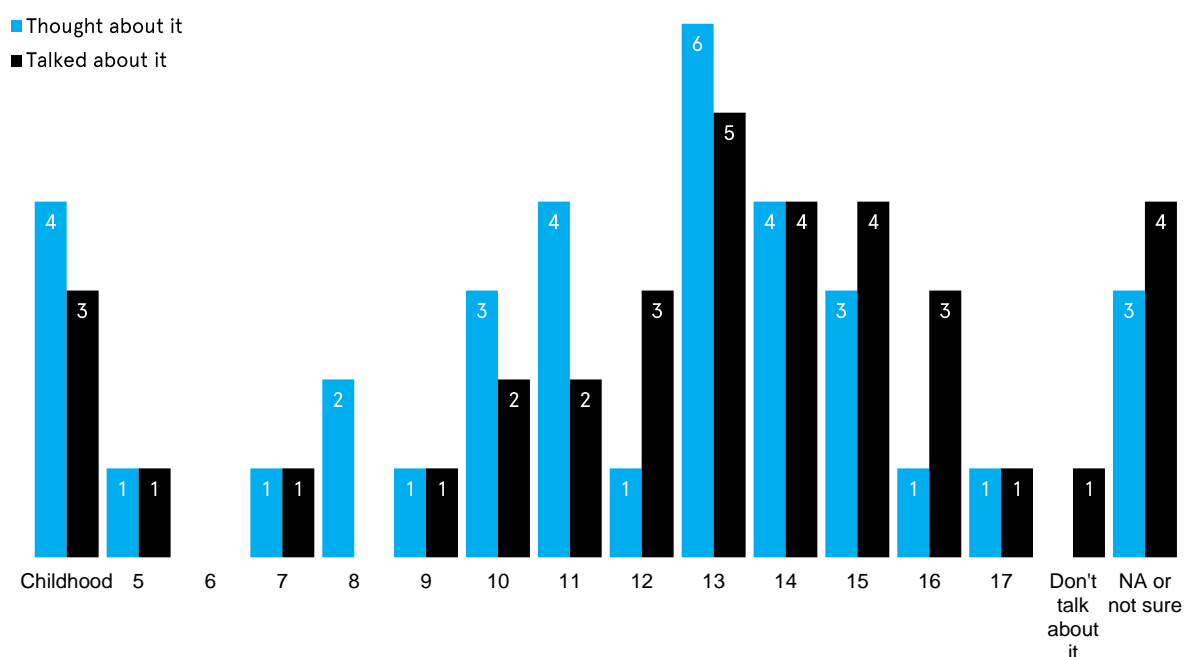
> "We sometimes fulfil the role of parents to a lot of our children." CGP

 Some young people in our sample weren't in contact with parents/carers, while others did not attach much value to advice from family members.

> "Well I don't think my mum really understands a big amount of picking a job. She's not about careers as she's a full time carer, she didn't really have a life before having children, like she didn't really have a choice about a career, she had to do what she had to do" Janine, Year 13

Almost all the young people who cited that they didn't have family career advice had identified a career they were interested in and felt they were on track to achieve it.

However, it is important to be mindful of these young people, ensuring additional scaffolding to support them is available.

Moments of Inspiration

In addition to family and community factors, interviews also showcased the array of events that can lead to a career path being entertained or acted upon by a young person. Into this particular category we fit events that spark, or introduce, the thought of going down a particular career path. We called these "moments of inspiration".

What is striking about these is that many students might be exposed to identical or similar events, and yet only a small fraction might come away from the event with a new career in mind. We separate out these events from the moments of choice, as they usually provide inputs to potential career choices, but do not tend to push students to take proactive steps to research a career or close down their overall options.

Looking at Figure 6 again, we see that there was a general trend of young people thinking about their future career a few years before they started speaking to people about it.

Childhood experiences and interactions with and between adults

For Jonny, in Year 10, it was a visit to a museum which sparked a life-long interest and passion in trains:

> "I want to be a train driver because it's been my main aspiration from, like, the age of five. I think in primary I went to a railway museum. I went there, and I saw everything about them. I was fixed to the job."

Several interviewees reported wanting to follow the career of an adult they observed interacting in a positive way with their parents, or who interacted positively with them. These instances all arose from negative or challenging situations, such as family conflict or illness, where another adult brought relief or assistance to a family member while carrying out their job.

Fatimah, a Year 11 student, was clearly influenced in this manner by interactions she observed in her childhood. She reported wanting to become a social worker after seeing her parents fight and experiencing their separation:

> "In Year 4, my parents went to hell and back with each other and separated, so I was more involved with social workers. So I thought a lot about the job they were doing, helping out, and I just wanted to help people out the way I got helped."

That this phenomenon was particularly relevant to students from deprived areas was picked up on by Mark, a CGP:

"There is trend between experiential learning and the kids that have had some experience of health and social care. That could be from working with a youth worker when they were younger, having a Nana that needed support from a carer, to taking counselling. They tend to drift towards those career paths, so that type of person, they've not taken inspiration from their parents, they've taken it from a professional they've actually dealt with in the past."

For some students, outlets for their curiosity formed the basis of a tentative career path. Luke, in Year 11, reported that he'd begun taking computers apart and reassembling them while eight or nine years old, an activity which kicked off a fascination with IT that saw him specialise in this area at college, and eventually begin a work placement in an NHS IT team.

Some students also traced their desire to pursue a certain career path back to their childhood, but with less of a clear reference to observed interactions, relationships or pastimes. For Raj, Year 12, the appeal of a career in medicine was traced back to a positive feeling he'd had about helping people since childhood:

"Medicine is like, something I've always wanted to do. [...] In my childhood, if anyone in my family would be ill I would just—it's quite silly but I used to go and try to treat them and used to say: 'you need to eat more vegetables'."

Careers depicted in TV programmes and other media

Young people can also develop career ideas from television and other media sources that showcase a job in a flattering light. Meera, Year 10, assembled a short-list of possible careers from what she saw on TV:

"Obviously, I watch the news, and that's obviously based around journalism. I also love watching fashion shows, and I know that there are always journalists sitting there who are, kind of, writing about it. With law, it's all very fictional with law at the moment. I also started watching 'Making a Murderer', which, kind of, got me interested in that. With law, it had to be the programmes that I watch. They just, kind of, have that element of interesting terminology and stuff like that, so that's what I'm interested in."

In the 35 student interviews, two students from separate schools traced a decision to follow a pathway into midwifery back to the television show One Born Every Minute. Jess, Year 13, said:

"I was, my sister always wanted to be [a midwife], and I like, always said to her 'oh you couldn't do that job' and stuff and then I read into it and like, watching One Born Every Minute on the telly it just looks like the experience of a lifetime, just delivering a baby into the world. It's not just one of these easy jobs, it's a challenging job, which makes it more rewarding as well."

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Careers guidance professionals also noted the impact popular television programmes that showcase a job can have:

> "You know, you see themes: a TV programme comes on about something and students might become interested in a career as they see it on TV. That definitely happened with One Born Every Minute." CGP

Using explicit reference to the media as a measure likely underestimates the real impact of seeing jobs or study represented onscreen on young people's career preferences, as young people may not be aware of or may not wish to identify this influence.

Career fairs and open days

Several students also reported that attending a careers, college or university fair had been a decisive moment in their choice of career, or current study pathway.

One student, Matthew, Year 10, rated attending a careers fair as the most important moment in his career decision journey to date, despite having already chosen his preferred career at this point. Attending careers fairs had allowed him to better "see myself doing the job every day and fitting in." He also noted that one College fair was particularly useful:

> "Because it was looking at... specific subjects and you could see: 'This is what this could lead onto if you study it,' and that was really useful."

Other students noted that it was useful to understand the variety of careers available and have their preconceived ideas of jobs challenged:

> "I learnt what people, what their main job is like in woodwork. It's not just cutting wood up and that, it's like making sculptures and everything." Ellie, Year 10

Exposing students to situations which challenge their preconceived ideas was also a benefit of university trips, as Clare in Year 11 relates:

> "A while ago about ten students went to Oxford University. Everyone says that's the one they remember the most. Because they actually got to see the university life, and got to meet students from there, and they said that opened their eyes completely. Also they got like a long journey....I think it's just exciting."

For context, the school which Clare attends is over four hours' drive from Oxford; generating excitement around a visiting beyond the locality may also help students expands their horizons beyond what is around them.

However, there were also young people who did not find these events useful; for example, Nafis, 18, unemployed, described one that he attended as "boring" and "cheesy". He did, though, agree, that he would be more keen to attend a fair put on by the employer he was hoping to work for.

Scheduled meetings with career guidance professionals

In most interviews, scheduled meetings with careers guidance professionals were referenced positively, but tended to focus on either enabling student to settle on an option as quickly as possible, or give assistance in discovering the steps required to

advance an existing career ambition. Rafi, Year 11, describes how his CGP supported him in this manner:

> "He seemed to and then obviously it was just directing me into like, 'Yes, you've got a good plan. Keep on going assuming you work hard and so on then there's no reason you shouldn't be able to.'"

Other students also spoke of how their CGP was a critical factor in securing their career path. For Luke, a Year 11 student, a careers guidance meeting where he disclosed an interest in computers prompted a key moment in his decision to pursue a career in IT:

> "It was careers advisor who said right, NHS IT is upstairs; I think you'll be interested in it. So I got pulled out of break, went up, sat there, yeah, yeah, I'm interested, in the end got held back, spoke to them and next thing you know, I was there."

However, some of the young people we spoke to were not so positive about their careers guidance experiences. Ryan, in Year 11, told us he hated career guidance because the CGP just talked about himself, while Tarik, 17, at the unemployment programme, perceived that the CGP at his previous school didn't give good advice:

> "My friend, he was like, 'I want to do A-level maths,' and she was like, 'You should do physics, that's good with it,' but he was really bad at physics. He was only good at maths and he only passed maths GCSE anyway and now he's messed up, but she didn't know what she was doing. She was making us apply for places like [Sixth Form College], where you need like eight GCSEs or something and most people didn't get that anyway."

When students recollected the involvement of a CGP in helping them decide on a career direction, this tended to be linked to vital moments when students were trying to make decisions about their immediate future which would impact their career. This is likely partly because these are points that trigger information-seeking, and partly because careers advice provision itself is focused on these points. The next section examines such moments.

Moments of Choice

While there are many moments of inspiration that can potentially trigger a student to entertain, however briefly, the idea of pursuing a particular career or education path, the number of events where they must make a choice with immediate consequence to their future career is relatively limited.

These "moments of choice" were more likely to be referenced by students as being points where they more diligently researched a career path, or let go of a longstanding career goal due to a poor experience or lacklustre academic results. Because these are points at which young people are considering, expanding or closing down their options around future careers, they are key leverage points for information provision.

GCSE subject selection

Many students brought up GCSE subject selection as a decisive moment in their career and education trajectory, as the requirement to select subjects prompts a substantial increase in active reflection over a young person's personal skill-set, and the career options available to them. For example, Matthew, a Year 10 student, recalled GCSE subject selection as a key moment in starting to think about becoming a teacher:

> "It was probably around the options process when I started looking into what GCSEs am I going to need to achieve it, and obviously that led on to finding out different things about it as well."

The language Steve, Year 9, used to describe GCSE subject choice demonstrated that GCSE choice had also triggered reflection for him about his post-school future:

> "This year's been a lot about options, and what I'm going to take next year. It has had a massive impact because you've got to sit there and think, 'What am I going to take?' It's made a massive impact because it makes you think, 'This is what I want to do when I'm older'."

This suggests that GCSE choice is a moment where young people are more open to taking in information about careers. Although young people didn't identify this, the more important moment that underlies GCSE choice may be the moment where the young person consciously or unconsciously makes a decision of where to allocate effort: to particular subjects, to school in general, to figuring out a career path, and so on.

Work experience

Though no longer compulsory, several students interviewed had arranged work experience, or were looking to arrange it in the coming years. Students currently undertaking a work placement whilst at college, and those who had previously done work experience, attached significant importance to this event in developing their thinking and triggering choices.

> "I went to work experience at a day centre for people with disabilities. It sounds really cringey but it changed my whole aspect on my own life. It was easily the best week. I got so much positivity out of it, such an amazing experience" Clare, Year 11

For Sunita, a Year 12 student, undertaking work experience validated her career decision. When asked to reference why she was certain about a career in childcare, her enjoyment of work experience was the key factor:

> "Because like—because—I know cause—plus I've done work experience as well in year 10 at a children's centre in Middleborough and I enjoyed that."

Conversely, where young people did not enjoy their work experience, it was a distressing affair. Some reported abandoning long held career ambitions and going through panicked searches for new ideas. Careers guidance professionals reported many students came to them for assistance after such experiences, and it is at this point

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where other career pathways were seriously entertained. For James, a CGP, helping students consider and research alternative options after such an experience was important to both their wellbeing and ability to advance confidently in their education.

Post-16 decision

Post-GCSEs pathway choice is another key decision point, where interviews with students and careers guidance professionals suggest many young people cast away long-held career ambitions.

This is particularly so for students that do not have the grades necessary for getting into a sixth form college. As with a disappointing work experience placement, this presents an opportunity to suggest alternative career pathways, as young people might struggle to search and uncover reasonable options on their own. CGP James stated that sensitivity is required here, as for some students this means giving up a career aspiration held since childhood, or one frequently reinforced by parent approval.

Fatimah, a Year 11 student, recounted at length her experience with a CGP assisting her to find a new career pathway after her grades fell short of that required for her first choice:

> "I wanted to do law, but after speaking with the careers people, I have decided to go into childcare. The careers people were looking at my grades... and my skills and hobbies. It came down that I hated analysing things, and obviously as a barrister you have to analyse things, you have to read through text – it's just not me..."

Though Fatimah recognised that her predicted grades made a legal career unlikely, receiving this advice was still a difficult experience for her:

> "I'm still gutted a little bit, but I know it's for my own benefit... I went with [the decision] when the careers advisor was telling me to, but sometimes I still feel like maybe I shouldn't have..."

For other students, assistance is not required to facilitate switching between career choices, but is needed to navigate the complexity of the post-GCSE pathway choice. Students reported feeling rushed at this point, and that assistance was needed to make sense of the information and avenues available.

Finally, there is another group who needed not just advice over alternative career paths or application processes, but someone to re-engage them in thinking about their career altogether. One student had left college after not enjoying media studies, but through continued contact with the CGP at the college had been encouraged to return after twelve months to study to become a nurse.

One limitation of the body of interviews analysed is the absence of students currently in their last year at a Sixth Form College, and the small number in their last year at a further education college. We expect more interviews of students at this stage in their career journey would show similarly deeper engagement with career decision making by virtue

of an impending choice; whether selection of where to work after a further education course had finished, or choosing a university for sixth form students.

In common to all three moments of choice is the increased likelihood of a student reaching out to a teacher, careers guidance professional or other influencer in order to assist them in making a decision. It is here that destination data stands the best chance of being used to inform decisions, either by students directly, or by those that assist them. However, effective IAG would reach into the moments of inspiration as well, as these frame and contextualise the moments of choice in powerful and under-observed ways.

VII.   Behavioural segmentation

Rationale and approach

Behavioural segmentation refers to segmentation based on behaviours observed in a particular interaction. This form of segmentation offers the most useful lens for the purposes of our analysis as it links directly to search behaviour and support needs, rather than labelling young people with a particular static "type". It also explicitly acknowledges the likelihood that young people's segmentation may shift over time or context, whereas demographic segmentation remains fixed. Similarly, age-related segmentation may ignore the extent to which context and psychology influence the strategies with which different young people approach the same decision.

We are interested in developing a practitioners' model and have therefore aimed to devolve the segmentation to the level of individual interactions between young people and influencers, and other triggers of micro-decisions that add up to form an overall pathway through education and work. To ensure the segmentation links to the remit of this project, we also link it directly to information-seeking behaviour. This enables us to contribute usefully to existing segmentations, rather than replicating or overlaying them. We are also mindful of Bright and Pryor's criticism of decision-making categorisations, that this approach risks over-simplifying and denying the complex intricacy of individual pathways through education and work.[105] The challenge of the approach is that given the constraints on time and information, it is not feasible for careers guidance professionals, other supporters, and information products to be totally responsive to the idiosyncratic context of every young person, and therefore a certain amount of generalisation and abstraction is necessary in practice. We aim to elucidate a particular aspect of decision-making, devolved to a level where we believe it is justifiable to observe the broad commonalities between young people whose pathways may otherwise be distinct.

We conceptualise this aspect of decision-making across two axes: level of information-seeking, and the breadth/openness of the option set under consideration.

Information-seeking

This relates to the extent to which young people are seeking new information to help them make the decision they are facing. Young people who are high on this axis actively engage in researching potential options and seek out further advice or new areas of careers support. Young people who are low broadly consider themselves to know everything they need to know to make their decision. They may consider information brought directly to their attention, or they may be avoiding information as an active strategy to avoid adding complexity to the decision.

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[105] Pryor, R., and Bright, J., 2011, *The Chaos Theory of Careers,* London: Routledge
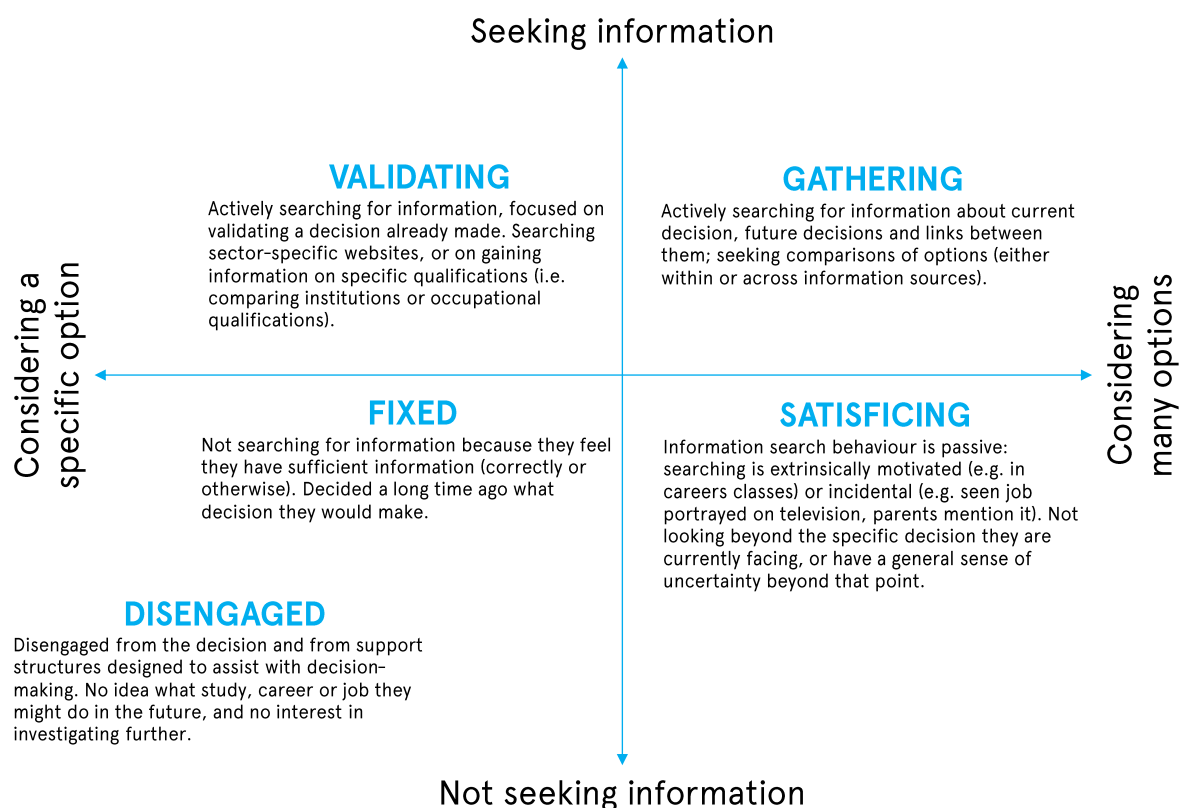
Openness of Option-set

This relates to the extent to which young people already have strong, settled views about what their preferred option is. Young people who are high on this axis are considering a range of choices, and may still be balancing options across multiple decisions (e.g. GCSE choices and preferred career). Those who are low on this axis, by comparison, have a relatively closed option-set and a clear conception of their preferred decision: often based upon personal or familial experience of a particular job or profession, or linked to their being decided about what a subsequent decision will be. As discussed above, our objective in proposing this new segmentation is to provide a simplified approach that we hope practitioners may find useful to conceptualise the way young people approach moments of choice.

Description of Segments

We consider the young people in our sample according to their position on the two segmentation axes: information-seeking and openness of option-set. From their position on these axes, it is possible to categorise young people's information-seeking behaviour as falling into one of five broad behavioural segments, which are summarised in Figure 7.
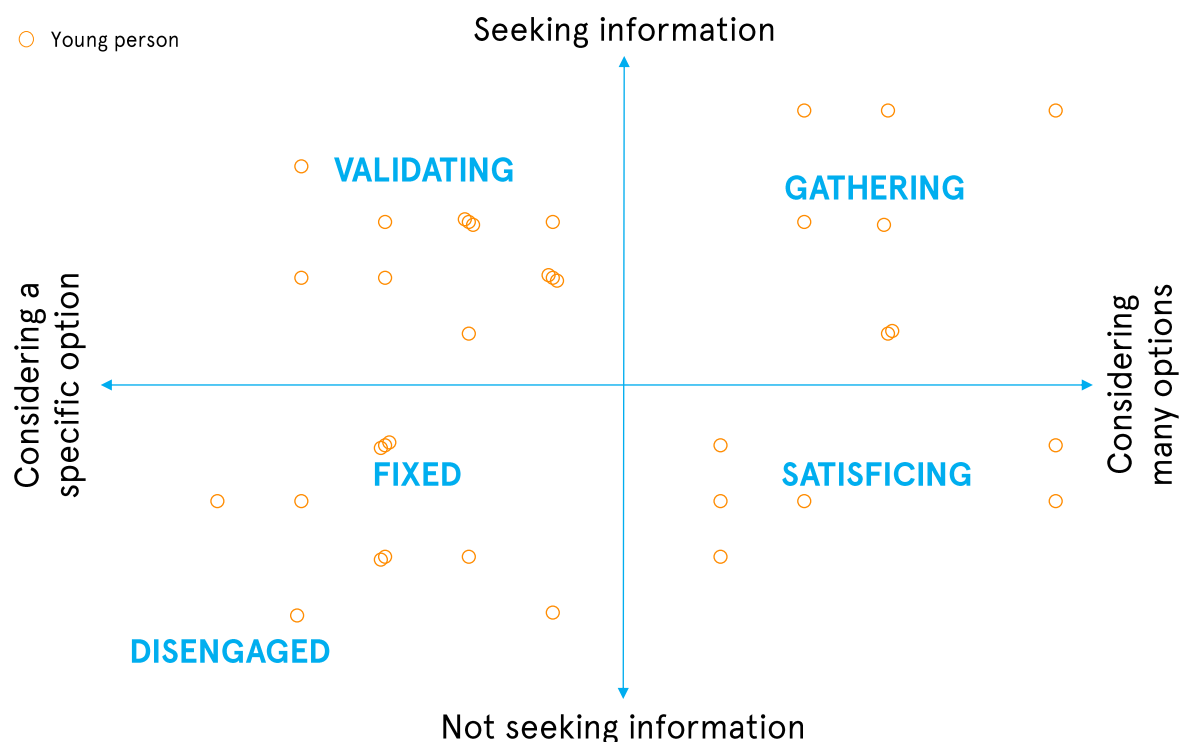
Figure 7: Behavioural segmentation

Seeking information

VALIDATING
Actively searching for information, focused on validating a decision already made. Searching sector-specific websites, or on gaining information on specific qualifications (i.e. comparing institutions or occupational qualifications).

GATHERING
Actively searching for information about current decision, future decisions and links between them; seeking comparisons of options (either within or across information sources).

Considering a specific option

Considering many options

FIXED
Not searching for information because they feel they have sufficient information (correctly or otherwise). Decided a long time ago what decision they would make.

SATISFICING
Information search behaviour is passive: searching is extrinsically motivated (e.g. in careers classes) or incidental (e.g. seen job portrayed on television, parents mention it). Not looking beyond the specific decision they are currently facing, or have a general sense of uncertainty beyond that point.

DISENGAGED
Disengaged from the decision and from support structures designed to assist with decision-making. No idea what study, career or job they might do in the future, and no interest in investigating further.

Not seeking information

All the segments have gradients within them (see Figure 9), and we observed in our sample that young people who otherwise display stable characteristics move between

segments both during a specific decision, and across decisions. For example, it was highlighted in the interviews that a negative work experience placement can jolt young people from the mode of Validating their future career to considering a wide range of potential pathways, shifting them across the grid to the right.

Figure 8: Plot of young people in sample on segmentation axes

The segmentation has been developed with a view to these insights outlined above about the characteristics of intuitive and reflective thinking (see Figure 9).

Figure 9: behavioural segmentation overlaid with thinking systems each decision-type is engaging
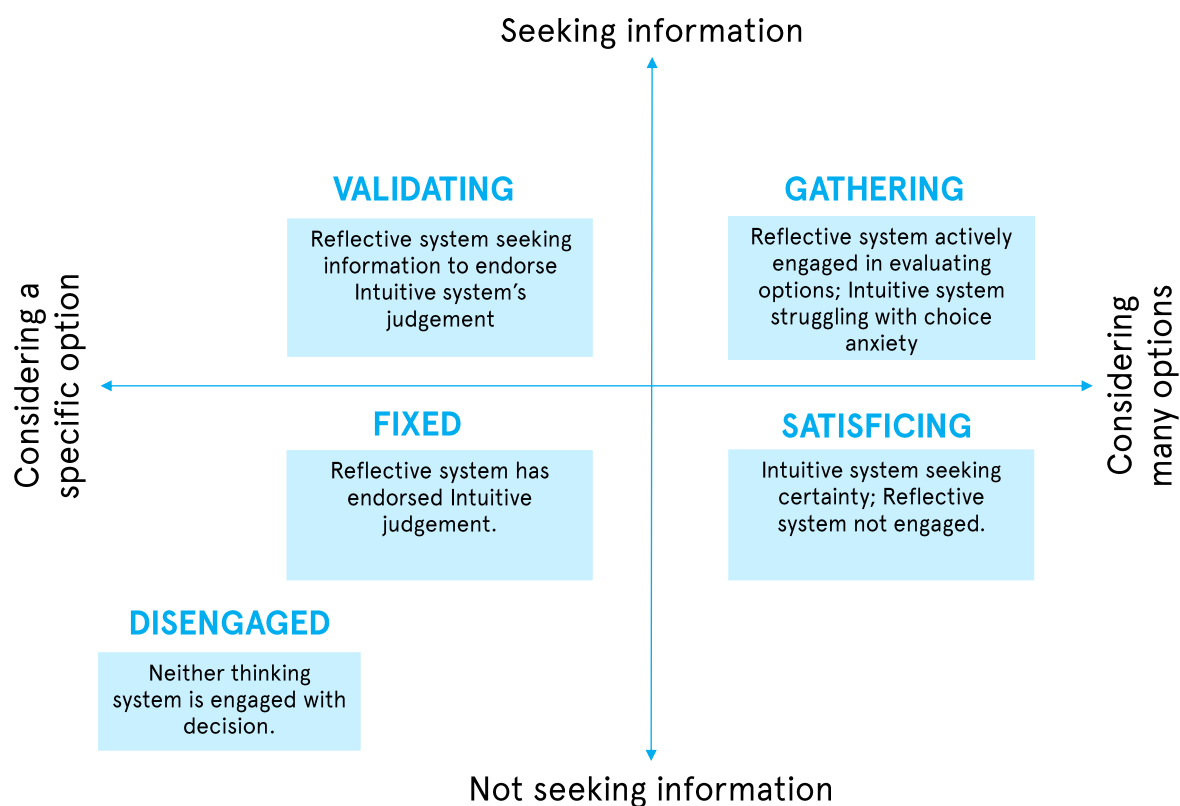
For example:

◆ Young people who remain open to multiple options are likely to struggle to optimise and evaluate those options. When displaying Satisficing behaviour, young people will focus on selecting the first acceptable option to reduce complexity and may neglect a better option; meanwhile, the Gathering desire to optimise over the options risks choice anxiety and cognitive depletion. These challenges suggest different remedies, which we outline in subsequent sections.

◆ Young people who are open to information are actively using System 2, whereas those who are closed have endorsed a judgement from System 1 that the information they already have is sufficient (or, in the case of those exhibiting disengaged behaviour, they are not allocating any effort to the decision at all). As with the above, we discuss potential approaches to increasing openness to information in subsequent sections.

We discuss each segment in turn below.

Gathering

"I want to explore everything to figure out what is the right choice for me."

◆
◆ Characteristics of learners displaying Gathering behaviour:
◆ May have some thoughts about what they would like to do.
◆ However, are still actively shopping around.
◆ Demonstrate a balanced relationship with influencers around them, asking for advice but weighing it up against other research and their own beliefs.
◆ May feel spoiled for choice, and believe that making a decision isn't very urgent.
◆ Support by:
◆ Providing structure to help them focus; for example, through chunking options or helping them navigate the large amount of careers advice and information available.
◆ May find quizzes and other mechanisms for limiting the "decision space" helpful: while they may not be highly personalised, they do allow for a short-list of possible options to be considered by a person, and therefore help overcome choice overload.

This decision-making mode reflects openness to both information and new suggestions about potential options. An openness to both dimensions was rare in our interviews, with only three of our sample of young people exhibiting this degree of flexibility. Those in Gathering mode draw in information from a range of sources: both information in the traditional sense (qualification requirements, salary, employers) and more broadly. All the young people who displayed Gathering behaviour referenced seeking out advice from relatives, peers and others, and later factored this information into a personal decision that reflected their own research.

Although Gathering behaviour reflects a wider information search, the quality of the decision depends on the quality of information acquired, and the relative priority the young person gives to different sources. For instance, Kelly, 18, at college, told us:

> "Mum and Dad are really supportive. They say, like, 'Either you work or you go to college. You've got two options.'"

This input was clearly valued by Kelly; however it may have caused her to neglect other pathways such as university or an apprenticeship. Working with the CGP at her college, Kelly is now considering other options, including going from college to University.

Meera, 15, is taking her GCSEs. She told us how she had already begun to plot out a potential path involving progression to a research-intensive University. She has also

begun thinking about and researching her options, even going so far as to look at current job vacancies in her areas of interest (Journalism and Law) and taking career personality tests online. In this, she displays both openness to multiple options, and proactive information-gathering to weigh up those options.

Given the limited number of young people displaying this behaviour in our sample, it is difficult to generalise about their information needs. However, a few themes suggest themselves from both comments made by the young people interviewed and broader considerations from the behavioural science literature about decision-making. It is possible to detect a sense that closing down options is stressful; for example, Sophie, 17, said:

> "I think there's loads of things that like change and like from sort of September I think I wanted to do one thing and then being here and having different experiences has changed like what I wanted to do and that's only in like a couple of months."

Faced with a potentially limitless supply of further information and further options this would make sense - young people Gathering information could potentially suffer from information overload without the ability to narrow down their options on at least some measures. When analysis of positivity was conducted on language used in the interviews, gatherers were the least positive across all the questions except those relating to opportunities to gather information.

Charlie, 12, previously displayed gathering traits when methodically reading through each career on a careers advice website after conducting a quiz and basing his decision upon what he felt was most interesting.

As a result of such burdensome exercise, Gatherers could end up following the paths of friends or family members, or norms around how they should make choices, essentially moving from Gathering to Satisficing behaviours as a strategy to reduce the complexity of the decision.

Validating

"I know what I'm going to do and I want to confirm this choice is the right one."

Characteristics of Validating behaviour:

◆ Already have a clear view about what they would like to do but are actively seeking new information to validate this position.

◆ Often pursue narrow search strategies, seeking out advisers from within their desired sector and looking at area-specific websites.

◆ Will tend to disregard or deprioritise information that does not confirm their views.

◆ Career aspiration is often set at an early age.

◆ Equally split by gender and between pre-16 and post-16 education.

◆ The largest group in our analysis, with thirteen of the young people we spoke to falling into this group.

◆ Found in schools across deprivation levels (from those with 0-10% FSM to those with 40%+).

Support by:

◆ Strategies to reduce confirmation bias in information-seeking.

◆ Emphasising that it's all right to be uncertain and still be thinking about options.

◆ Chunking, structure and personalisation to make opening up option-set less cognitively depleting; for example, by understanding the underlying preferences driving career choice, and broadening search to other options that also serve those preferences.

Young people in the Validating mode are, like Gatherers, open to new information and constantly seeking advice, information and experiences to inform their decision. However, unlike Gatherers, Validators already have a clear view of their preferred option. The young people we observed Validating had often set their overarching career aspiration relatively early on, but couldn't always identify the reasons for it, other than "always knowing". This group were also the most positive when asked if their plans were 'on track'.

As such, they engage in search strategies which seek to affirm their pre-existing preferences. Their search strategies were proactive, but narrow in terms of sector or job

role. Like Gatherers, Validators draw in a wide range of sources, both traditional and broader:

> "I know medics so they're the ones I sort of prefer to ask, I feel like they've got a better insight to how it is." Raj, Year 12

In Validating mode, young people will seek out information online and use their networks to try and speak to people already working in their sector of interest. When they had approached a careers guidance professional or other adult it was also often with "how" as opposed to "what" questions: exploring how to get work experience in a particular sector for example, instead of asking for guidance on how to decide between various career options within the sector.

The particular risk in Validating mode is confirmation bias: seeking out information that will support existing beliefs. We believe that this is largely unconscious, with young people unaware of the degree to which they have settled on a relatively narrow search space. Several young people spoke proudly of the amount of research they had done even though it was all focused on one specific area; it felt broad to them in terms of time and number of sources consulted. For example, when asked what websites he'd used to help him, Jonny, 15, only listed specific rail and train websites.

The search strategies of Validating young people present some interesting challenges from an information-provision perspective.

◆ First, careers guidance professionals and other supporters may be reluctant to probe the decision of a young person who presents as confident and well-informed about their chosen career, as questioning their decision may cause them distress or uncertainty. Careers guidance professionals will be in the position to best judge this and it may depend on whether the young person has moved from Gathering to Validating behaviour or from Fixed to Validating.

◆ Second, while open to considering new information, young people in this mode have developed a cognitive blind spot: settling quite early on a broad career path which they do not seem to question.

One interesting avenue for exploration was revealed by the way young people, identified as exhibiting Validating behaviour, answered a specific interview question. We asked young people how many of their peers shared the same career aspiration as them. Young people exhibiting Validating behaviour seemed in this question to over-estimate how many of their friends also had a clear goal. While they sometimes noted that friends had a similar aspiration to them and sometimes that it was different, very few felt their peers might be unsure about their career paths. However, our research showed that across our sample (and within schools) a third of young people were still relatively open to different career options.

With this in mind we suspect that young people face a fair amount of social and cultural pressure to know what they would like to do when they're older. Compounded with a potentially skewed view of how certain their peers are, this could cause young people to unduly narrow their career searches.

Satisficing

"I don't know what I'm going to do and I just need to pick something as quickly as possible."

Characteristics of Satisficing behaviour:

◆ Uncertain about what they want to do and open to options; young people exhibiting this behavioural strategy may have loosely settled on a particular job or jobs, but their commitment to this option isn't firm.

◆ Tend to deal with each decision as it comes up, and often lack a longer term plan.

◆ Generally avoid seeking new information.

◆ Are more likely to be females than males in the sample (7 female vs. 2 male)

◆ Found equally amongst young people in pre- and post-16 education.

◆ Along with those showing Fixed behaviour, Satisficers are skewed toward schools with higher proportions of students on FSM.

Support by:

◆ Reducing the complexity of the decision and giving young person space to make it in their own time.

◆ Personalising to the young person's preferences and reducing the extraneous information provided.

◆ Providing support to move upwards on the information-seeking axis before moving left on the option-set axis, rather than moving straight to Validating once an acceptable option is identified.

◆ Supporting trusted influencers to advise young person on information search strategies, and other possible options.

The term "satisficing" was first introduced by Herbert Simon in 1956,[106] and refers to a decision-making strategy that seeks the first acceptable option, rather than aiming to select the best or optimal option (which takes longer and is more cognitively depleting).

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[106] Simon, H. A. (1956). "Rational Choice and the Structure of the Environment". Psychological Review 63 (2): 129–138.

This can be an appropriate strategy for low-stakes decisions, as it avoids complexity and depletion of cognitive bandwidth. However for important decisions, it can arise from stress, lack of support, or lack of ability to give the decision full consideration.

Young people who were Satisficing were considering a broad option set, had not actively sought additional information to help them make the choice, and were generally dealing with decisions when they received environmental cues that they needed to, rather than looking ahead. Those who were Satisficing often didn't have a fixed overarching ambition, or a concept of how their recent or upcoming decisions played into that. They also seemed to lack a clear sense of *what* they would be looking for if they did do further career research.

Of the young people we observed Satisficing, when asked about an important decision they had to make in the last six months, about half were unable to come up with one without several prompts, and the rest cited immediate proximate decisions about upcoming exams, college decisions or decisions about what to do with their summer holidays.

Jane, an experienced CGP, describes this quite common behaviour:

> "Lots of our students won't necessarily look unless they're told to. It will just be, 'I'm going to college because that's what my brother did,' or, 'I don't want to stay at school because I'm done with school.' They actually have no idea what they want to do."

We also heard from CGPs about the challenges of effectively supporting Satisficers, with current resource constraints; for example,

> "I mean, we have 1,100 students here, and only me doing 30 hours a week, and only half of that time is spent with students, so I just don't have the luxury of being able to see all of the, you know, sort of, 'not sure, career unsure' ones."

Our sample also suggests that Satisficing may be over-represented amongst young people from more deprived areas. Scarcity, of money, time or security, can have a particular impact on people's ability to think broadly and to plan for the long-term.[107] By constantly taxing cognitive bandwidth, poverty can result in people thinking only in the short-term, focusing on critical upcoming deadlines, decisions or goals and neglecting anything "outside the tunnel". This is consistent with the fact that we expect information-seeking to be related to use of cognitive bandwidth, which is only possible where there are no other more salient pressures consuming said bandwidth. The search process may also be more taxing as a result of lower levels of influencer or school support.

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[107] Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much.* Macmillan.

Interestingly, when analysing their language used, those who were Satisficing were the most positive group especially when talking about what their strengths were, and their future careers. This provides tentative support for the idea that Satisficing might be a rational response to complex decisions with information overload; it could also suggest a Dunning-Kruger effect where the less knowledgeable overestimate their abilities,[108] or could suggest that those students who are of a more anxious disposition are more likely to engage in information-search (i.e. would be more likely to Gather than Satisfice).

As we noted above, Satisficing is often the appropriate strategy, where the decision is low-stakes, as it avoids the cognitive depletion and choice anxiety that may come with taking a more information-seeking stance. However, where young people are taking decisions that can alter their future options without seeking out more information, the behavioural literature suggests that encouraging them to increase their information-seeking can be achieved in a few ways.

We would therefore be less concerned about a young person Satisficing in their GCSE choices, where the extent to which young people can close off options is limited, but more concerned about a young person Satisficing when choosing an overarching career ambition. Unfortunately, in our sample of young people, we observed that a substantial proportion appeared to have selected the first acceptable career option, and moved to either a Validating or Fixed stance, essentially closing off the search once this option was identified.

Fixed

"I know what I'm going to do and I don't need information."

Characteristics of Fixed behaviour:
- ◆ Already decided what they want to do and are not seeking any new information.
- ◆ Decisions often based on the advice of strong influencers - for example following in the footsteps of family members, teachers etc.
- ◆ Often locate the overarching career decision early in life.
- ◆ Equally likely to be male as female and found equally across pre- and post-16 education.

Support by:
- ◆ Probing how knowledgeable the young person is about their choice.

108 Dunning, D., Johnson, K., Ehrlinger, J., & Kruger, J. (2003). "Why people fail to recognize their own incompetence". Current Directions in Psychological Science 12 (3): 83–87

◆ Making use of moments of choice as a cue to initiate information search, to shift young person up on the information-seeking axis into Validating, and from there into Gathering.

◆ Support trusted influencers to advise young person on information search strategies, and other possible options.

Young people who display Fixed traits have decided what they would like to do and are not open to, or seeking, new information. Young people displaying this approach were often highly passionate and aspirational about their chosen career, and had either always been Fixed or previously exhibited Satisficing behaviour and were now settled on their career. Indeed, this group were most positive about their subject and career choices compared to other groups.

An example a young person who presented as consistently Fixed is Theo, Year 11:

"After [school], after College, University, I would like to take on the career of becoming a dentist, it's something I've always wanted to do, it's the only career choice I've ever wanted to do."

Young people showing Fixed behaviour are therefore a group more likely to have a basic idea of their desired job and are not seeking or motivated to find more information. For example Jamaal, 17, unemployed, described his plan for becoming a car salesman:

"Hopefully I'll just build up from like small shops like corner shops or Tesco's, just keep building up to like watch shops and then maybe into cars and that's when I'll start moving up the ladder even more, so yeah, I'm getting into it."

Likewise, Hiruni, Year 12, who moved from Satisficing to a Fixed stance once she had settled on law through parental pressure, lacked knowledge of the steps necessary to achieve her career goal:

"Do something in Uni obviously, but I'm not really sure because it is quite far away. Just do a couple years in Uni, get good degrees and stuff."

Ryan, Year 11, aspires to be an aeronautical engineer, because,

"Apparently it's well paid. You'll get a big house and like big cars and all that."

In theory, there is a group of young people who were previously Gathering or Validating and fulfilled their information criterion: highly informed about their career of choice and with a good understanding of the route required to get them there. Though we did not observe any of these in our sample, we identified a number of young people whose search behaviour was close to the borderline between Fixed and Validating.

We observed Fixed behaviour among young people who were determined to become professionals or enter skilled trades and with those who intended to go straight into unskilled labour once they finish compulsory schooling. We could potentially see this behaviour among young people who have decided that their pathway is onto welfare, but that would require further research.

Disengaged

"This decision doesn't matter and I'm not going to bother with it."

The disengaged segment covers the group of young people who fall into the far bottom left corner of our segmentation – showing behaviour in which they are not seeking new information and are closed to multiple career options.

Young people take a Fixed stance because they have decided on an option and do not see value in continuing to engage in the decision. By contrast, Disengaged young people do this because they do not think the decision matters, or do not feel they are in control of it. This means that choices that frame their future pathways are made by default or by inaction.

It is important to note that being disengaged in one particular activity (making a specific decision, or speaking to a CGP) does not necessarily indicate the young person is taking a Disengaged stance toward broader decisions. They may simply not want or value the information from that particular source.

This group was highlighted by a number of CGPs we spoke with.

> "The large majority of students I deal with have no idea what they want to do after they finish school... and many have no interest in thinking about this." CGP

> "Some students are completely apathetic when it comes to thinking about careers: more information is not going to help them." CGP

However, we did not come across any young people who seemed to be explicitly exhibiting this behaviour in our fieldwork. This may have been a sampling issue: those who are completely disconnected from education and careers may not have been within our sampling frame.

We also spoke to a number of unemployed young people. These young people especially talked about friends who seemed to exhibit stances that varied between being Fixed and Disengaged; at least toward most traditional decisions (GCSE options, future career etc). For example Nafis, 17, unemployed, spoke about friends who, whether in work or not, exhibit a completely Disengaged stance toward their broader career trajectory:

> "They're—they're not into careers. They're more like, um, 'We'll drink on Saturday, we'll be hungover on Sunday but we'll still meet, then on the Monday we'll be back to our normal lives.' "

Several CGPs specifically cited a pre-requisite to information was attention:

"The problem with the unmotivated is that they don't even turn up to careers guidance sessions – how can we help them? These pupils need inspiration, not information."

We are aware that a significant amount of work has already been done seeking to understand how to identify and engage young people exhibiting what we have called a Disengaged stance. Methodologically, we consider them a group worth noting in this report but not a group who are a core area of focus. This segmentation and analysis is primarily designed to assist the Company and CGPs to think about how to approach providing information to young people. Such an approach presupposes at least some engagement with the broader decision. Understanding how to engage Disengaged young people in careers decisions is a deeper question and one which we note but put to one side in the remainder of this report.

Comparison of responses by segment

Using textual analysis it was possible to quantitatively compare responses across segments. This led to some useful insights; however it is important to note that because of the small sample size, these findings are indicative only. On the same note, we have omitted the Disengaged segment from these analyses as we were not able to interview any young people displaying this stance. The Methodology section outlines how the textual analysis was conducted, while Annex A contains a full breakdown of demographic and background comparisons across groups.

Figure 10 (overleaf) breaks down the segments by age. Interestingly, in our sample the Fixed segment were slightly skewed younger (by about eight months compared to the average age across the sample), and the modal age for this group was fifteen; this is in contrast to the other segments, which did not have clear modal ages.

This may suggest that those who take a Fixed stance are not as indifferent to additional information as they appear; in fact, as they pass the age 16 transition, we might expect those who had previously been Fixed to adopt a Satisficing stance (if something shakes them out of their certainty), or start Validating (if they receive signals that they need more information).

Figure 11 (overleaf) compares segments by gender; what is striking here is that we observed very few male students who conveyed to us that they were still considering more than one option (two Satisficing; none Gathering). This could add nuance to the finding we referred to in the literature review, that girls may do more research and exploration into their careers than boys. It appears from our interviews that this is reflected in the breadth of options considered. The modal segment for males was Validating, which means that the males in our sample were seeking information, but this information was narrowly focused on their preferred job. For females, there was a wider spread of segments, but the modal segment was Satisficing.
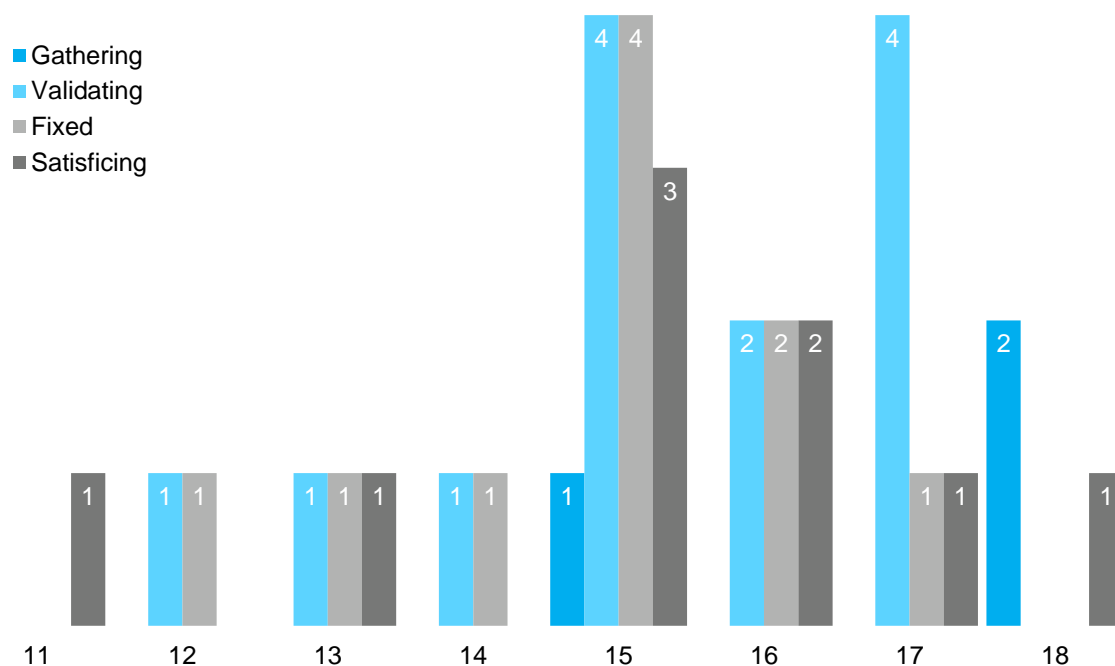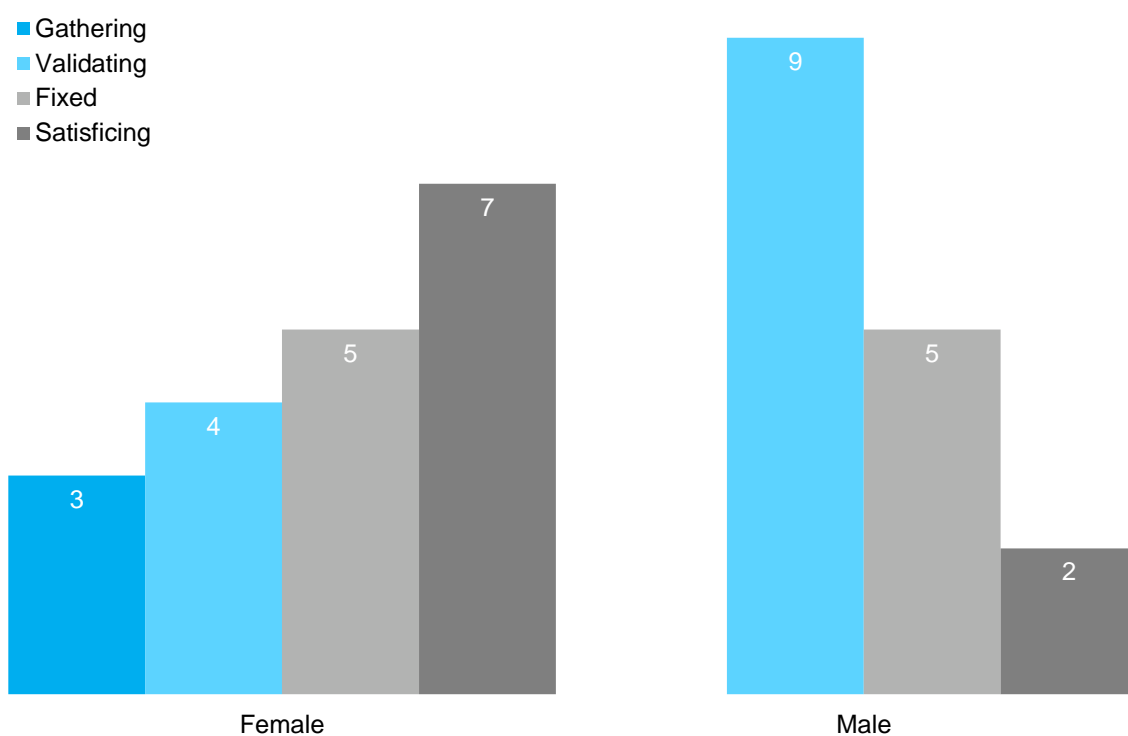
Figure 10: Segments by age

Figure 11: Segments by gender

When we look at segmentation by the percentage of students in the school eligible for free school meals (Figure 12), we see that although the modal segment in the other groups is consistently Validating, in the group with 40% eligibility, the modal segment is Fixed.

Figure 12: Segments by percentage of students in school eligible for Free School Meals
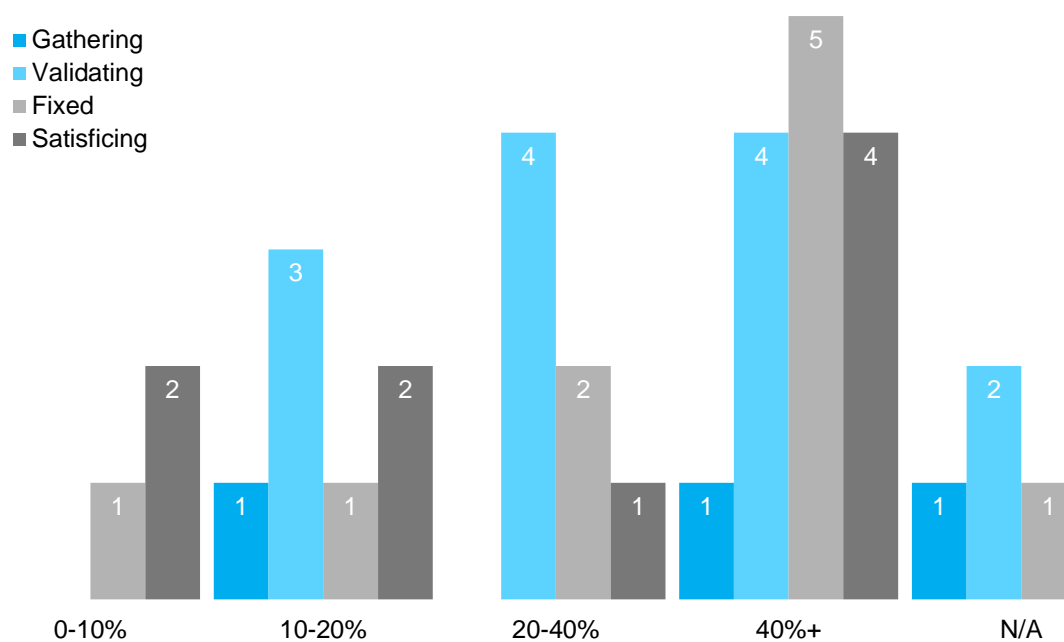

Figure 13: Respondents' overall length of interview, and ratio of positive to negative words used, by segment
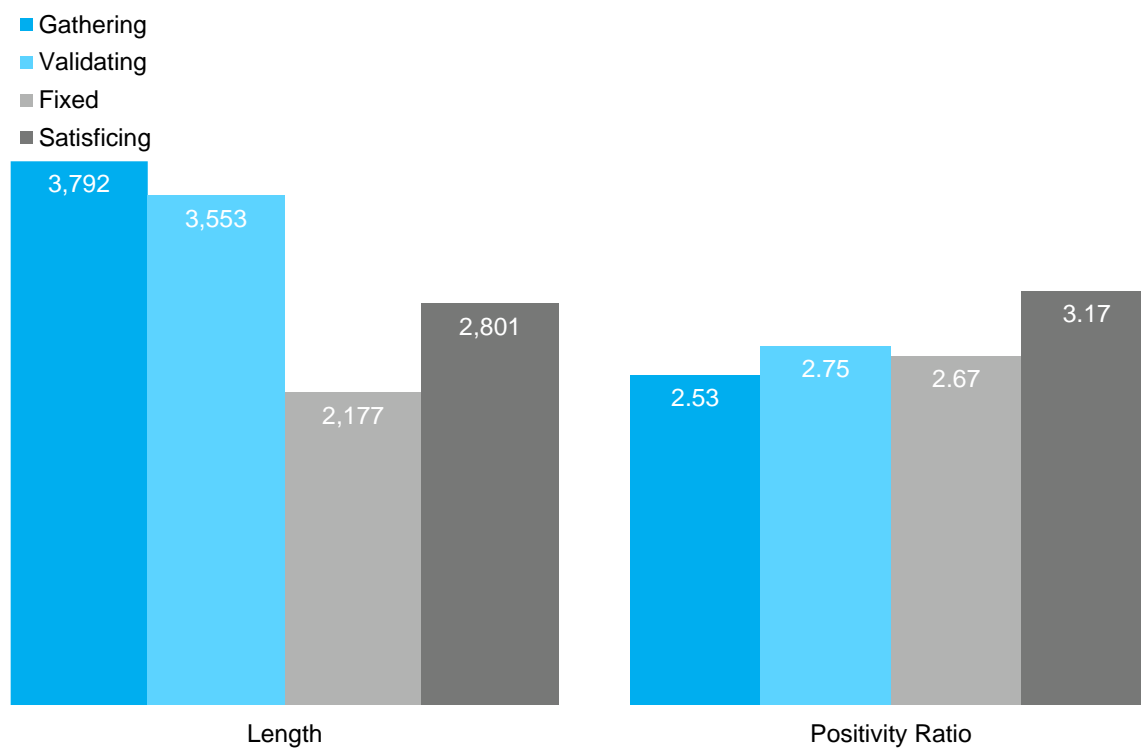

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Figure 13 analyses the overall length of the interviews, by segment. This shows that those who displayed Fixed traits typically had shorter interviews, while those in Gathering mode had the longest. Evidently, those who were seeking information had more to say to us in the interviews. This perhaps suggests that we are correct in suspecting that those in the Fixed segment have not moved there from Validating (in which case we might expect them to have more to say). Figure 12 also gives the ratio of positive-toned to negative-toned words used. From this we see that while those in Gathering mode use the lowest ratio of positive to negative words, those in Satisficing stance used the most.

Figure 14 gives frequent words used by segments. The following key is used:
V = Validating, G = Gathering, F = Fixed, and S = Satisficing. The size of the word reflects how much more often that segment used that word than the average frequency across the sample. So, for example, those in the Validating segment used the words "help" and "work experience" substantially more than average.

Figure 14: Word cloud of interviews overall, by segment

Moving between segments

Because the interviews were undertaken at a specific point in time, we were limited in the extent to which we could evaluate how individual young people may have moved through the segments. The two most common pathways we were able to identify were:

◆ A number of the interviews suggested that a common pathway was to move from Satisficing to Validating behaviour. This suggests that once the complexity of the choice of career is reduced, young people become more willing to search for information within a career category. One student, Charlie, 12, previously displayed satisficing behaviour until he engaged with a careers website, methodically gathering information on careers and then, once he chose, now displayed validating behaviour.

◆ Young people displaying Fixed traits may shift either to Satisficing if they experience a disruption such as poor work experience or low grades, or to Validating if they receive environmental cues that more information is needed.

In addition, the comparison of ages and segments suggests that young people may adopt a Fixed stance when they are younger, shifting towards a more information-seeking or open stance around age 16. This is consistent with other qualitative research that suggests that young people may not be as sure about their decisions as they appear (or even as they themselves think they are).

It is also noteworthy that some young people may talk like a certain type of segment but in reality are behaving like another. Clare, 16, used language similar to Validating, but in reality had not really engaged in careers events or information gathering, could not define her career clearly and did not know the path needed to achieve it, placing her clearly closer to the Fixed segment.

If we believe informed choice is normatively desirable, the segmentation suggests a tension. In many cases, the best way to support young people to make more informed choices may not necessarily be to directly respond to what they are asking for.

◆ Gatherers appear to be displaying positive behaviour in seeking as much information as possible about a broad range of options. However since this may be producing (or a product of) anxiety we might seek to help them to narrow down their option-space. Likewise, since in Gathering they may have picked up views from not very useful sources (such as television) we might want to help them narrow their search and shift to more trustworthy or helpful sources of information.

◆ Validators seek affirmation of their choice and signposting on the pathway, but supporting informed choice might mean helping them to avoid confirmation bias and potentially re-open their option set, even if this produces some short-term anxiety in the young person.

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◆ Young people who are Satisficing are seeking the minimal amount of information to enable them to close their search and focus. Instead, we might seek to encourage them to keep their search open, take their time, and seek more information about their options.

◆ Finally, young people who are in a Fixed stance may present as confident and comfortable in their decisions. However, this is often based on experiences early in childhood, and insufficient information about the daily life, qualification requirements, and suitability of that career. Therefore we might seek opportunities to inspire these young people with other careers, or challenge their preconceptions about their chosen option.

This segmentation is preliminary, based on a survey of the literature and a small set of exploratory, semi-structured interviews. However, we believe it has potential to be of use particularly to practitioners in recognising a key element of the psychological context of young people they are supporting, and adopting appropriate strategies to increase informed choice.

VIII.   Employer views

We worked with the Cabinet Office's Policy Lab to run two roundtables. Through these we consulted a small group of employers, and their views on how richer data could inform careers guidance and their own recruitment processes were quite consistent. Key points raised were:

◆ Employers cannot currently access information that would allow them to design programmes that might attract more young people;

◆ Improved careers and education data could help employers tailor their attraction strategy by better understanding student achievement, skills and goals;

◆ More information about what young people want to know about careers could allow for more useful job descriptions, thus promoting better alignment of young people and company positions;

◆ It is often hard to connect with schools: many staff are too busy to engage with businesses when they offer to conduct outreach activities. It is also often not clear who should be contacted. In turn this prompts many businesses to rely on informal connections to schools (i.e. staff contacting their former teachers), which can disadvantage schools without a track record of graduates going on to work in high-status jobs. Making clear which staff member is responsible for external engagement in this area would make delivering career information to schools via talks and presentations simpler; and

◆ LinkedIn-style student accounts could be useful for students, as it familiarises them with presenting themselves professionally while allowing them to investigate potential employers and industries.

IX. Career guidance professional views

The careers guidance professionals BIT and the Policy Lab spoke to as part of our roundtable exercises had several strong points with respect to the data currently available to them (and students), the utility of additional data, and how additional information could be best delivered. In their practice many drew on careers data to keep their knowledge of the labour market up-to-date, prompt a discussion about trends and employability with students, and, where the information was packaged in an accessible way (i.e. a case study), inspire students with success stories.

Current career information outlook

CGPs saw the current landscape of websites as quite good, with many using a range of sources depending on whether they were looking to inform themselves or recommend a site to a student.

The problems CGPs identified with career information sources as they stand are:

◆ The large number of sources available can confuse students, and even CGPs;

◆ The range of new apprenticeship options and other alternate routes into work and training had not yet been catalogued into one easily accessible source; and

◆ It is often not clear where the information was collected from geographically, or when it was compiled, raising concerns over the data's relevance to students.

Utility of additional career data

Career guidance professionals saw the Disengaged segment of the student cohort as the group most in need of additional support. However, they did not see increased data access or availability as helpful in engaging this group.

Many CGPs saw the larger issue with respect to careers data as not being how sophisticated or granular it is, but in how to encourage young people to engage with it. They also believed young people needed to be exposed earlier and more often to careers information (and accordingly data) in order for more informed career choices to be made.

Additionally, CGPs felt that it was the research and decision making skills of young people that needed to be developed in order for them to make better use of careers data.

How additional career data could work best to support students

Additional data could assist CGPs if it were able to:

◆ Provide more localised labour market and qualification data, particularly in terms of showing trends over time;

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◆ Link local labour market information with opportunities available in local businesses;

◆ Allow for more specific categorisation of jobs. At present, CGPs reported some categories (i.e. 'human services') were too broad, and that the salary and employability information that came with them was therefore not useful;

◆ Compare opportunities between apprenticeship, further education and higher education routes on a standardised basis;

◆ Be rapidly updated so that the information used in careers guidance was not out-of-date;

◆ Link to the soft-skills used in different career paths;

◆ Clearly show what share of people go on to work in the area they obtain a qualification in, and show the destinations of those who do not;

◆ Be contextualised with compelling case studies, so that students can get a sense of what a career would entail; and

◆ Sign-post the salary and employability of a certain job or career path, or a qualification, by comparing it to some other representative sample, as raw £ figures and percentages do not have any context to a young person in school.

X.   Workshops with young people

The Policy Lab, on behalf of BIT, conducted two design workshops with 20 learners from colleges in Sheffield and London. There was a mix of year 10, 11, 12 and 13 students, and there was a considerable range of ability and interest. In the sessions we focused on gauging the student's experiences and expectations when searching for careers options, what sites the student's visited to make such choices, what aided the students in their search and how, and their ideas on what would make a good design for a new service presenting destination data.

Reflections on existing career and education websites

The conversation focused on considering university options, and the young people in the workshop were generally positive about the main website portals covering this topic, especially in terms of presenting information about the likelihood of getting a job in a field after graduation and starting salaries in their chosen field. However, they also mentioned user frictions in navigating them – a common theme across the interviews as well. Referring to one major website, they noted that only after 18 months gaining familiarity with the site were they now comfortable navigating it. They found the breadth of information quite difficult to sift through, especially at some points in the year where new information was posted to the home page.

Young people found the tools available for narrowing down potential study and career options were lacking in several ways:

◆ Too many options were usually presented when searching (especially science options);

◆ The ability to narrow down options required too much input; and

◆ Options couldn't be taken off the table by indicating which A-levels you were doing. For example, some science courses required maths A-level, and if you were not taking that subject, seeing these courses was not useful.

Reflections on potential career and education websites

There was a general feeling that in wider careers and education searches students were looking for inspiration. They thought that automated suggestions of careers or courses that could suit them would be a useful way of alerting them to new career paths. The "suggestions" feature on Pinterest, and the "customers who bought this item also bought" feature of Amazon were the two examples given by students of presenting new career choices that still related to their interests and ambitions.

Another idea put forward by a student and strongly endorsed by their peers was having the information service "find you" rather than wait to have you find it. This could potentially be facilitated using the social media channels they currently make use of

regularly, i.e. something similar to Twitter's traffic information alerts, or tagging features that alert you to new content in Tumblr. Interestingly, Facebook was viewed as not being trustworthy, with young people saying they would not use career information displayed on it.

Reflections on designing a new service

When discussing how the students would design a new service to deliver destination data one student was particularly insistent that it should not be an app. He claimed that as it would take up valuable memory on student's phones, they would be unlikely to download it, especially if they weren't going to use it very often. Instead he and others suggested it be a mobile friendly site.

There was a general consensus that the product should be simple and clear, and the information be easy to search for and concise. They also talked of using a check-box system for areas of interests – both in and out of school – and subject choices to help learners filter out any professions not viable given the subjects they were studying, unsuited to them given their interests, and to highlight professions they hadn't yet thought about.

Most felt it would be useful to have testimonials and personal stories on the site. Students intimated that if testimonials were used for them not to be too personal (i.e. being purely relevant to subject choices and careers decisions) and there was a noted interest in hearing from people who had failed to achieve their career aspirations, as well as those who had succeeded. They also said they would be interested to hear what activities successful students had undertaken outside of school. However, one student disagreed with the idea of personal stories, feeling that every person's experience was so different that there wasn't much you could learn from them. There was also discussion as to whether input from a teacher who had experience of a wider variety of students and their experience might be valuable.

XI.   Behavioural principles for informed choice

The EAST Framework

Based on our work and the wider academic literature, BIT has found that if you wish to encourage a behaviour, you should make it Easy, Attractive, Social and Timely (EAST)[109]:

- ◆ **EASY:** make a behaviour easier by making it the default, reducing the hassle factor of taking the action, and by simplifying messages.

- ◆ **ATTRACTIVE:** attract attention to the message or behaviour through use of images, colour, personalisation and salient messages; and design rewards and sanctions for maximum effect.

- ◆ **SOCIAL:** show that the majority perform the desired behaviour, and tap into people's social networks and social commitments.

- ◆ **TIMELY:** prompt people when they are most likely to be receptive, consider immediate costs and benefits, and help people plan their response to barriers to the behaviour.

Below, we provide some directions, grounded in this framework and in the preceding research, for designing the choice architecture of career and employment information.

The importance of testing

An overarching principle that guides all of BIT's work is the importance of testing. Although the principles and practicalities suggested below are strongly grounded in academic and practitioner research, and informed by our own knowledge, we note that the powerful contextual influences on decision-making are such that the best way to know whether something works is to test it in situ.

BIT have conducted more Randomised-Controlled Trials (RCTs) than the rest of the UK Government in its history, and have published a practitioners' manual for RCT design: *Test, Learn, Adapt.*[110] In the website design arena, A/B testing is a widespread, pragmatic method of quickly testing two approaches to design or information-provision against each other.

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[109] Service et al. (2014). *EAST: Four Simple Ways to Apply Behavioural Insights.* The Behavioural Insights Team. Available at: http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf.
[110] Haynes, L., Goldacre, B. and Torgerson, D., 2012. *Test, learn, adapt: developing public policy with randomised controlled trials.* Cabinet Office-Behavioural Insights Team.

Principle 1: Understand where young people are coming from and their context in the moment that they are accessing the information

It's important to understand what the career decision "journey" looks like for young people, including the small, apparently trivial pivot points, where their receptiveness is maximised. At what stage are young people encountering this information, and how are they coming upon it? Are they seeking them out, or being referred by others? Are they in class, in their lunch hour, or at home?

This principle focuses on understanding the cognitive context of the decision, and making sure information-provision is generally behaviourally-informed. The same offer or choice, posed at different times, can have dramatically different results. For example, in the context of medical treatment, invasive treatment options such as surgery are often excessively selected by patients who have just been diagnosed. Those whose decision is delayed are more conservative.[111] This is in part because the different mental state makes different information more salient, and makes the decision more likely to be made by the intuitive versus reflective system.

More generally careers provision should seek to work both with the grain of System 1, support good reflective-system decision-making, and should be cognisant of the different decision-making context of viewing information through a webpage compared to other interventions such as careers classes, inspirational talks and work experience. Different information provision styles and content are likely to be effective in these different contexts.

Fieldwork research suggests that young people are most likely to seek information about careers options when they encounter a moment of choice that is beyond their expertise to navigate without more information. Selecting GCSE subjects, choosing an organisation for work experience, and deciding on post-16 study or work options all fit into this category. Young people may also re-commence searching for information after a negative post-decision experience. However, at these moments we believe young people may transition rapidly from Satisficing to Validating, and are most likely to seek information after they've moved into the Validating segment.

Young people seeking to Satisfice or Gather have different needs than those seeking to Validate: they are more likely to be overwhelmed by information available, whereas Validators ignore that which isn't relevant. Conversely, Validators are at risk of confirmation bias and neglecting better options. A short set of questions, or dual pathways through the information, would enable a website to adapt to these cognitive contexts; for example, by focusing on simplifying and de-risking for Satisficers so they don't drop out of the search, and on pivoting Validators towards inspiration for other careers that might appeal to them.

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[111] Loewenstein, G., 2005, *Hot-cold empathy gaps and medical decision making,* Health Psychology, 24(4S), S49.

Tailoring the display of information for students who have recently completed work experience would be another example of this principle. After collecting user information, a careers website could ask follow-up questions of work experience completers (i.e. on the role and sector this was undertaken in), and whether they are now more or less committed to a career in this area. For those who indicate they are more committed, potential routes to securing jobs in this field could be displayed, each with a clear step-by-step guide. For those for whom work experience been less positive, alternative options with varying levels of commonality to the sector of work experience could be displayed. By signposting the next steps in the career journey young people can be encouraged to assume a Gathering behaviour, preventing disengagement. Other moments of choice can inform similarly adaptive presentations of career paths and information, encouraging the adoption of the stance most suited to the stage in the career journey a young person is at.

Adapting career information to the circumstance and context of the young person not only supports them in making more deliberate choices, but also lowers the risk of irrelevant material being shown to them. However, the potential to tailor content must be traded off against the time required to progress through the fact-finding questions that allow tailoring to occur, as too onerous a process can risk creating undue user friction.

Principle 2: Provide trustworthy information

Good careers information is trustworthy, and has the interests of the young person at its centre. This has two elements:

1. It makes use of trusted messengers (these could be either peer/reference group messengers or authoritative messengers); and

2. It does not adjust the choice architecture to put others' interests above the young person's.

On the first, it is important to consider who appears to be the messenger delivering the information. Much information appears either through an anonymous website or flyer, or from the government. In some contexts, the government may be a trusted messenger; in others, other messengers are more effective. These could be messengers with less social distance (friends and family) or more authoritative messengers such as CEOs, recruitment specialists, or public figures. Which of these is most effective is highly dependent on the context.

During workshops, young people reported that peer referrals were particularly valued, and that paid advertising was viewed sceptically. This aligns with research suggesting that more relatable messengers (such as friends) can be more impactful when it comes to encouraging action. Enabling friends and other influencers to suggest career information pages or sites in a low-friction manner could promote greater engagement. However, creating a means of facilitating these referrals in an organic manner that is actually used

by young people is likely to be difficult in practice, and would require significant testing. However, one such way to incorporate this kind of messaging is to make use of Amazon style "people who started in this career often transitioned into these" lists of alternative career options that could prompt consideration of alternate pathways.

Another option could be to include vignettes or talks from relatable role models to enable young people to project themselves into those positions. Websites may also draw on authoritative messengers, focusing on giving young people the sense that this advice is from someone who knows about the field, such as CEOs or recruitment specialists from high-profile firms. This approach has the strength of potentially transforming the information search into a moment of inspiration as well. For this to work, it is important that these messengers are considered authorities on the topic by young people (for example, they may not consider the government an authority on what they should study next). Further research or empirical testing could help to elucidate which messengers young people consider authoritative in this context.

On the second element of trustworthiness, information products should not obscure particular non-preferred pathways, or preference options put forward by sponsors or financial partners. Although information products may have multiple objectives (for example, be partly funded by advertising, or seek to promote particular post-school options), they should be transparent about this, and this should be secondary to facilitating good, informed choice overall.

Though only one student interviewed expressed concern about the trustworthiness of the careers websites they accessed, several CGPs had complaints that went to this point. Many found career information to be dated and inapplicable to their local context. These criticisms may erode trust in the career information available, potentially making some CGPs less likely to recommend them to young people, and more likely to rely on anecdotal evidence on job availability and salaries. More granular location and job data may foster greater trust in career websites among CGPs, enhancing both their engagement and their students'.

Principle 3: Personalise to the individual and what is meaningful for them

Research into communications strategies consistently shows that the more personal a communication feels the more effective it is. Personalisation appeals to both the intuitive and reflective system: it draws System 1's attention (hearing our own name

causes a unique reaction in the brain[112]), while it reduces the complexity of the decision for System 2 by limiting irrelevant stimuli.

Personalisation of the communication to the respondent increases response rates. BIT worked with the UK Courts and Tribunals Service to demonstrate the effect of a personalised text message aimed at collecting delinquent payments, and increased payment rates by 41 per cent versus an impersonal generic text message.[113] Another study we conducted tested variants of text messages inviting Jobseekers Allowance claimants to a recruitment event and found the inclusion of a first name increased attendance by four percentage points (on a baseline of 10.5 per cent).[114]

When it comes to being inspired by a particular career path, our research suggests that young people seek to develop an image of themselves in a career that they find appealing. However, what generates this appealing image (social impact, financial security, lifestyle) will vary by the young person, and so websites that either elicit these preferences or provide a range of possible inspirations are likely to be more effective.

CGPs suggested that inspirational case studies could be augmented to incorporate more up-to-date careers information on salary, employability and other practical considerations. The personalisation of these case studies may also help those segments focused on one career pathway (Validating and Fixed) entertain alternatives. For instance, if personalised user accounts are possible, a function that adds a user's name into outlines of the day-to-day activities of a job could increase the relatability of a career to them. Additionally, websites could allow for a wider variety of factors to be weighted by students when informing a career search. For instance, social impact, work-life balance, and opportunity for travel could be assessed for a wide variety of careers, and allow young people to refine the career options presented to them on the basis of scores in these areas. Though these domains are more difficult to assess, groups such as 80,000 Hours have made substantial progress in this space[115].

For young people living in areas where the range of post-school destinations or careers is particularly narrow, using case studies of people they can readily identify with to highlight less well-trodden pathways could promote consideration of a more diverse range of career options. For example, in schools or areas with relatively low proportions of young people attending Russel Group universities, data-augmented (i.e. with post-graduation employment statistics) case studies on the success of graduates from

[112] Carmody, D. P., & Lewis, M., 2006, *Brain activation when hearing one's own and others' names,* Brain research, 1116(1), 153-158.
[113] Haynes, L. C., Green, D. P., Gallagher, R., John, P. & Torgerson, D. J., 2013, *Collection of delinquent fines: An adaptive randomized trial to assess the effectiveness of alternative text messages,* Journal of Policy Analysis and Management, 32(4): 718-730.
[114] Sanders, M. & Kirkman, E., 2014, *I've booked you a place. Good luck: A field experiment applying behavioural science to improve attendance at high-impact recruitment events*, Working Paper, No. 14/334, Centre for Market and Public Organisation.
[115] 80000hours.org/career-reviews/

these institutions with similar backgrounds could be promoted in order to emphasise that these are not alien or unattainable pathways.

Another option for making the careers information search more tractable is to allow for certain skills or subject areas to be ruled out. This form of narrowing can provide those experiencing choice overload an alternative means of refining down the set of options presented to them. As Gathering behaviour is unlikely to occur in the face of too many choices, this could reduce the share of young people who disengage from searching for career information. This also has the support of young people: during a workshop discussion over university course searches, young people noted that the absence of an option to rule out all paths associated with one skill-area or pre-requisite (i.e. maths A-levels) made getting the number of options presented to a manageable level of complexity harder.

Principle 4: Give young people agency and be transparent in how preferences link to advice

Research has shown that giving individuals more agency in their choices means that the desired behaviour is more likely to persist and generates greater psychological well-being.[116] Asking students to identify their own intrinsic reasons for studying has been shown to increase engagement and attainment at college in the US, particularly among marginalised groups.[117] BIT has also had early positive results applying this approach to adult learners in the UK.

In addition, studies have shown that increased transparency about a service increases user satisfaction.[118] Harvard University conducted two field and two laboratory experiments in food service settings which demonstrated that both customer perception and service quality and efficiency were improved if:

◆ Customers observed operational processes (process transparency); and

◆ Employees observed customers (customer transparency).

The introduction of this transparency contributed to a 22.2 per cent increase in customer-reported quality and reduced food service times by 19.2 per cent.

If young people are able to understand why they are being given certain advice, it is likely they will ascribe more value to that guidance, even if it is unexpected.

[116] Moller, A. C., Ryan, R. M., and Deci, E. L., 2006, *Self-determination theory and public policy: Improving the quality of consumer decisions without using coercion*, Journal of Public Policy & Marketing 25, pp. 104-116.
[117] Yeager, D. S., Henderson, M. D., Paunesku, D., Walton, G. M., D'Mello, S., Spitzer, B. J., & Duckworth, A. L. (2014). *Boring but important: A self-transcendent purpose for learning fosters academic self-regulation,* Journal of personality and social psychology, 107(4), 559.
[118] Buell, R.W., Kim, T., and Tsay, C-J., 2015, *Creating Reciprocal Value Through Operational Transparency*, Harvard Business School Working Paper 14-115

During both co-design sessions and interviews, young people frequently expressed irritation with the career options presented to them when completing interest or skill based quizzes. There was a sense that the lists produced did not reflect their preferences, which may in part be a product of the opaque way in which some generate results. Especially where the result is unexpected, transparency (e.g. "You told us social impact matters and this career has high social impact because...") can help close the gap between the young person's expectations and the careers they would consider. This would come with more legitimacy as the method for curating the list is clear. This principle particularly applies to Validators, as young people in this mode of thinking have a strong sense of agency over their preferences and decisions, and want to see websites that reflect this. However, this approach could also help structure the informed narrowing-down of options for those who are Gathering and Satisficing.

Principle 5: Break big decisions down into smaller choice sets

A common implication of decision research is that you can improve decisions by reducing the number of options in the choice-set. However, we may not wish to restrict young people's choices, nor to limit the information available to them. A number of strategies can also be employed to enable people to effectively handle large choice sets:

- ◆ "Chunking" is a psychological technique where complexity is broken down into smaller chunks, requiring less to be held in working memory at any given time, and thus reducing the cognitive depletion caused by a decision.

- ◆ A more sophisticated form of chunking is a tournament-style choice process. A study compared simultaneous choice over sixteen options to sequential choice where four options were displayed, the preferred one chosen, and then three more added until a single preferred option was found. A tournament, where the preferred options from four sets of four options were compared in a fifth round, was found to yield the best quality decision-making.[119]

- ◆ Finally, tools like decision matrices can be used to condense a decision occurring over a range of dimensions into rankings over a single summary dimension, thus improving System 2's ability to choose.

We have discussed above the importance of using information about preferences to customise website experience and remove extraneous detail. This principle reflects the importance of doing this in a structured manner, focusing on presenting young people with one small set of meaningful choices at a time, instead of requiring them to choose from a large choice set or make multiple trade-offs simultaneously. This also harks back to the behavioural segmentation: to account for those in a Gathering stance, a limited

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[119] Besedes, T., Deck, C. A., Sarangi, S., & Shor, M. (2014). *Reducing choice overload without reducing choices*. Available at SSRN 2041512.

range of options should first be presented when career searches are performed, with an "expand" functionality available for users who are able to navigate a larger list. We observed that those who were in this segment appeared to be less positive about their career hunt, consistent with our hypothesis about choice overload.

Principle 6: Only provide information when needed

As is implied by the principles outlined above, information flows should be limited to what is relevant for that young person at that time. Information that is given when it's not needed or salient is likely to either be forgotten or cause cognitive depletion. This is because it has to be held in working memory until needed, or sought out again when it becomes relevant.[120] This can even happen at a very granular level, where information given higher up on a webpage but needed lower down can cause a drop-off in engagement. Reducing the amount of extraneous information provided also enables respondents to engage more with the information that is provided, both visually, because important elements stand out more, and in terms of content.

Research and discussions with young people and CGPs corroborated findings from the academic and behavioural literature. Young people do find navigating career websites difficult, and this is partly because they have to evaluate a lot of information that is not relevant to them because of their preferences, decisions-faced, grades or aspirations. In addition, the large quantities of information presented can make it difficult to navigate through to the relevant bits. This can lead to disengagement, and young people dropping down the information-seeking axis of our segmentation as a strategy to manage information overload by avoiding information.

On a related note, young people often need assistance in finding meaning in numbers and statistics. When career or qualification websites compare numbers (i.e. salary figures) there should be sign-posting as to what is a low, medium, and high amount (relative to averages or benchmarks) so that a young person can make use of the information provided, or the information should be broken down to a level that is meaningful. For example, instead of comparing annual salary figures five years out of education, it may be more meaningful to compare weekly disposable income, as young people may be more able to conceptualise a difference of £100 a week after bills than a difference of £10,000 a year before tax. Otherwise, these statistics become more white noise that young people have to deal with to extract the information they want.

Principle 7: Help influencers give meaningful advice to young people

Although we can't directly influence the rapport that students have with parents, subject teachers, and CGPs, data products have the potential to facilitate conversations

[120] Malamed, C. (2011). *Visual language for designers: principles for creating graphics that people understand.* Rockport Pub.

between influencers and young people and improve the relevance of careers advice adult influencers are providing. BIT is undertaking a study with a large number of FE colleges to see whether the nomination of two "study supporters" – friends or family who they trust and see regularly – helps to maintain attendance at functional skills courses. The learners provide their supporters' mobile phone numbers, and these supporters are contacted on a weekly basis to inform them of relevant news about the learner and their learning journey, e.g. "Andy has an algebra test in his Maths class next week. Why not talk to him about it and give him some encouragement?" We now have promising evidence that this approach works to increase the students' engagement with what they are learning.

A similar approach, where young people nominate contact details for trusted advisors, could be effective in ensuring young people get good careers advice and also engaging influencers and improving the information that they have about options. In the past, individuals have indicated that the most successful careers advice from other individuals has "challenged ideas and understanding, inspired self-confidence, and increased self-awareness".[121] Indeed, these skills have been directly linked to increased educational attainment and career aspirations.[122] This kind of guidance is best given by someone who is known well and trusted by a person – so could work especially well in conjunction with a "study supporter" system.

We believe that there would be immense value in careers websites (particularly those funded by school subscriptions) having a second interface where parents or carers, teachers and CGPs could log on, review what young people have marked as mattering to them in choosing a career, and access advice about supporting young people on the tracks they have identified. In addition, young people could have the option of indicating which adults in particular they would like to help them.

This approach could also prompt CGPs to engage in an active discussion with young people over the different pieces of information they use to make their career decisions, and to probe possible instances of confirmation bias or other cognitive pitfalls. Helping individuals to ask themselves whether they have explored dissenting opinions or disconfirming information could potentially reduce the risks of confirmation bias,[123] as well as mitigating the tendency to rely on information sources such as parents or television, which may provide a limited view of the options.

As many students indicated career pathways became familiar to them after watching certain programmes, the opportunity to tap into interest in the occupations profiled

[121] Bimrose, J., and Barnes, S., 2007, *Navigating the Labour Market: Career Decision Making and the Role of Guidance,* Institute for Employment Research, University of Warwick

[122] Guo, J., March, H.J., Morin, A.J.S., Parker, P.D, and Kaur, G., 2015, *Directionality of the Associations of High School Expectancy-Value, Aspirations and Attainment: A Longitudinal Study,* American Educational Research Journal 52 (2) pp. 371 – 402

[123] Kahneman, D., Lovallo, D., & Sibony, O. (2011). Before you make that big decision. Harvard business review, 89(6), 50–60.

during prime time should be seized. Websites could alert CGPs and teachers to television series that spend time exploring the workplaces of protagonists, and provide supporting information for adult influencers to spark career related conversations. This could take the form of email updates to students linking programmes to careers, with short, punchy summaries of the reality of working in that industry and the path to entering that career.

Principle 8: Signpost actions

Giving people a clear call to action increases the likelihood of their progressing through a process. For example, BIT is working with the New South Wales' Department of the Premier and Cabinet, and Office of State Revenue, to run trials to improve payment rates across a range of fines, debts and taxes.[124] A number of fines trials involved testing the use of a "stamp" to provide a clear call to action for recipients. A red "Pay Now" stamp printed in a prominent position on a traffic fine increased payment rates by 3.1 percentage points.

In the context of careers advice information provision, this means providing detail about next steps as specifically as possible at the end of a decision-process. Things like direct links to application forms, submission deadlines, and the like are preferable, but even simply outlining the steps in the process in a clear, salient manner is likely to be useful.

Young people and careers guidance professionals find the array of websites offering advice on career matters difficult to navigate, and may struggle to find information about next steps, if they are presented. This is particularly so for young people considering entering a sector that has several possible qualification routes (i.e. via university or FE College). Each route is likely to have its own school subject requirements, application dates and processes, and overall time horizons, but these are not consolidated into one place. Clearly mapping actions to be taken for those looking across qualification pathways to a career within a given sector would assist such students.

In some cases, it may be possible to connect young people directly to an application portal (e.g. UCAS). Where this is not possible, websites could enable users to ask a training provider in their local area to contact them about registration.

[124] Service et al. (2014). *EAST: Four Simple Ways to Apply Behavioural Insights.* The Behavioural Insights Team. Available at: http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf

XII.   Concluding Comments

Quality careers advice, which has been written about extensively elsewhere, is central to a well-functioning education system and a future-proofed British economy. We reviewed literature related to a specific element of the overall picture of careers provision by focusing on the intersection of information provision and the psychology of decision-making.

There is great opportunity for good careers information provision to improve young people's ability to make good decisions about future study and career options. Overall, it is our view that these products will work best when they are thoughtfully designed to understand the context and manage the complexity of career decision-making, respect the agency of young people, and improve the quality of advice flowing between adult influencers and young people.

The development of datasets that can give young people a better, more consistent and more trustworthy idea of how their current choices link up to future careers has potential to support good decisions. Our research suggests that capitalising on this opportunity depends more on the *how* of data provision than the *what* of information provided. This highlights the importance of good careers information, advice and guidance, to ensure that this data is presented in a context that is usable for young people. Although not a focus of the present research, the importance of encounters with employers and the workplace in contextualising data arose repeatedly in our analysis of both the primary and secondary research.

In this report, we have provided a survey of existing research of the practitioner, academic and behavioural science literature that can help to explain why young people are not using information and data to expand both their horizon and depth of knowledge of career options. From this, we developed eight principles for how website data provision can be targeted to more effectively support young people's informed decision-making.

Informed choice is supported by information provision that:

1. Understands where young people are coming from and their context in the moment that they are accessing the information;

2. Is trustworthy;

3. Personalises to the individual and what is meaningful to them;

4. Gives young people agency and is transparent about how their input preferences have led to outputs or advice;

5. Structures information provision so big decisions are broken down into smaller choice sets;

6. Provides information when needed, rather than overloading young people with information that isn't salient, relevant or useful to them at that time;

7. Helps influencers (teachers, parents or carers, Careers Advisors) give meaningful advice to young people; and

8. Signposts actions.

There is great opportunity for good careers information provision to improve young people's ability to make good decisions about future study and career options. Products that draw on careers data work best when they are thoughtfully designed to understand the context and manage the complexity of career decision-making, respect the agency of young people, and improve the quality of advice flowing between adult influencers and young people. However, it is important to note that contextual influences on behaviour are complex and difficult to predict, and it is important to rigorously test strategies for improving career decision-making to ensure they are having the desired impact.

ANNEX A: Detailed Method for Semi-structured Interviews

Sample school characteristics

The schools were purposively recruited on the basis of geographical location and school type. See Table 1 for a breakdown of characteristics.

Table 1: Characteristics of schools participating in the research

School type	Age Group	Ofsted Rating	Location	Number of interviews
Maintained	11-18	Requires Improvement	Hertfordshire	2
Maintained	11-16	Requires Improvement	South Yorkshire	2
Academy	4-19	Good	Tyne and Wear	3
Academy	11-19	Good	Staffordshire	5
Maintained	11-16	Good	West Yorkshire	2
FE College	16+	Requires Improvement	Kent	2
Academy	11-16	Outstanding	Cornwall	3
Maintained	11-16	Requires Improvement	Cornwall	3
FE College	16+	Good	North Yorkshire	2
Academy	11-16	Good	North Yorkshire	2
Programme for unemployed youth	16+	N/A	London	3
Free School	14-19	N/A	Nottinghamshire	7

Collection of school, demographic and individual characteristics

Alongside interviews, information was collected on the interviewee's age, gender, ethnicity and family background (specifically, whether their parents attended university). Information was also gathered on the schools visited, including school type, size, and the proportion of students eligible for free school meals. This enabled analysis of segments by demography.

Manual coding of question responses into types/categories

A team of BIT staff members read interviews and coded responses to the following:

◆ Job or career aspired to;

◆ Expected pathway (e.g. university, college, apprenticeship);

◆ Age at which interviewee first started thinking about what job they want to do in the future;

◆ Age at which interviewee first talked about choosing a course/subject or career/job with parents/carers;

◆ Whether interviewee has spoken to anyone at school about future job, or study opportunities (and if so, who);

◆ Three most commonly browsed websites;

◆ Whether they desired additional information about jobs/careers;

◆ If they did want additional information, exactly what this information took the form of;

◆ The four most important moments mentioned in the creation of the journey maps;

◆ Whether the interviewee considered themselves to be on track to achieve their aspirations;

◆ Whether their school organises career events;

◆ Whether school activities were useful for them;

◆ Whether they had used a careers quiz, and if so whether they'd found it useful;

◆ The interviewee's view on whether anticipated salary is important in choosing career; and

◆ Whether the interviewee had a positive or negative view on the careers guidance support they received.

Segment development

One objective of the above two analysis methods was to inform the development of behavioural segmentation of young people according to the way they recounted seeking, absorbing and interacting with information while making decisions about careers.

In order to allocate young people to segments, criteria for evaluating young people's openness to information and openness to a range of career options were developed for each domain, young people were allocated a score from –5 (not at all open) to +5 (very open). Each interviewee was reviewed and assigned scores by two reviewers (who were not aware of each other's scores). Where the two assessments diverged, a moderation discussion was held involving at least one reviewer who had not previously examined the interview in question.

Guidelines on information-seeking

1. Does the young person show an active interest in seeking out new information about the options open to them? Alternatively, are they only considering information put in front of them or actively avoiding new information?

2. Are they making unprompted attempts to get further information – perhaps through careers websites, speaking to parents or other influential adults or seeking out work experience?

3. Do they think and plan ahead or do they tend to make decisions only when they become necessary?

4. Were they able to find all the information they looked for? How widely do they seem to have looked?

5. Have they used careers quizzes, careers guidance websites and/or destination data in a more than cursory way?

Guidelines on openness of option-set

1. How many options (careers, subject selections) has the student considered?

2. How long have they been focussed on their current career pathway (if they have one)?

3. When they have explored information (either online or by talking to others), do they only focus on one preferred option, or do they explore careers more generally, either within sectors (i.e. nurse or doctor) or between sectors (i.e. software design or engineering)?

4. Have they tailored their GCSE subject choice or post-16 pathway to a particular career pathway? i.e. Attended a college with a specific focus on mechanical engineering, or doing A level subjects that limit their potential options?

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Comparison of segmentation and demography

The table below contains a summary of the demographic and background characteristics of the 24 students whose interviews have informed this report. We have broken it down according to the primary behavioural stance we identified based on their responses in the interview.

Age	Number
11	1
12	2
13	3
14	2
15	12
16	6
17	6
18	3

Gender	Number
Female	19
Male	16

Ethnicity	Number
Arab British	2
Asian British	9
Black British	1
Gypsy Roma	1
White British	22

Expected pathway	Number
Apprenticeship or College	10
University	20
Don't know	5

Segment	Number
Fixed	10
Gathering	3
Satisficing	9
Validating	13

Textual analysis

Quantitative textual analysis was undertaken to begin to isolate trends from textual data that might be difficult to pick up by simply reading interview transcripts. This functioned as a supplement to the analysis generated through manual coding. The depth of textual analysis was constrained by the delivery time frame of the report, so this analysis is of a preliminary nature.

Before analysis, the interviews were pre-processed. First, the interviewers' questions and prompts were removed, and each student's answer to a single question was combined (so their responses to any prompts and secondary questions were combined with the response to the initial question). This was necessary due to the semi-structured nature of the interviews, and ensured analysis of everything the student said in response to the question.

Question tags were then added for each of the 27 questions, as were the coded responses for each of the 24 students, creating a dataframe in which each observation was a single student answer. In the next stage of pre-processing, relatively uninteresting words such as "bit", "it's", "my", and other such "stopwords" were removed, and interviews were converted to lowercase so that sentence structure did not affect comparison (i.e. so that words are comparable even if they are capitalised at the beginning of a sentence). This also helps deal with any irregularities in the transcriptions of the interviews (such as inconsistent capitalisation of acronyms).

Two types of textual analysis were performed. The first type looked at responsiveness as measured by the length of the responses given, broken down by question number and

student segment. Interviewer questions and prompts were removed in order to allow a fair comparison across interviews and interviewers.

The second type of analysis looked at the content of the responses. Here, an additional pre-processing step was taken. Common bi- and trigrams - words which occur together (such as "work experience" or "social care") - were explicitly joined for the analysis. This is necessary because content analysis breaks text down into a "bag of words" - that is, word order is disregarded. Explicitly including common, informative bi- and trigrams thus lets us retain some of the most important word order combinations. Common, but uninformative bigrams such as 'of the' or 'in the' were excluded.