Written evidence submitted by the Nuffield Foundation to the Review of Post-18 Education and Funding: 4 April 2018

Q1. This review will look at how Government can ensure that the post-18 education system is joined up and supported by a funding system that works for students and taxpayers. The panel would like to understand your priorities. What, if any, are your principal concerns with the current post-18 education and funding system?

The Nuffield Foundation funds research, analysis, and student programmes that advance educational opportunity and social well-being across the United Kingdom. We want to improve people's lives, and their ability to participate in society, by understanding the social and economic factors that affect their chances in life. The research we fund aims to improve the design and operation of social policy, particularly in Education, Welfare, and Justice.

Our student programmes - Nuffield Research Placements and Q-Step - provide opportunities for individual students, particularly those from disadvantaged backgrounds, to develop their skills and confidence in quantitative and scientific methods.

We are the founder and co-funder of the Nuffield Council on Bioethics, which examines and reports on ethical issues in biology and medicine. We have recently established the Ada Lovelace Institute to examine the ethical and social issues arising from the use of data, algorithms and artificial intelligence, and to ensure they are harnessed for social well-being. We are financially and politically independent, but we often work in partnership with other organisations that share our aims and interests.

Within our research portfolio, education represents by far our largest domain and within that we have a significant focus on post-compulsory education pathways. We welcome the review's focus on the post-18 education system as a whole and are supportive of efforts to better join up, and support tertiary provision to provide better outcomes for learners, and the taxpayer.

Our key concerns with the current system are:

1. Inequalities in entry, progression, educational and labour market outcomes, and financial support across different post-18 routes and between different types of institution, including the continued stratification of Higher Education (HE) by social class.
2. Provision and take up of mathematics qualifications, other qualifications using or requiring mathematics and quantitative skills more generally across subjects and different post-18 routes.
3. Further Education (FE), vocational and technical routes have for too long been the poor relation of HE in tertiary education – in terms of funding, efforts to understand issues of access, quality and outcomes, effectively implement, embed and evaluate policies.
4. There is a lack of robust data and evidence to inform decision making on key challenges faced by the post-18 sector. These issues extend across the sector with particular gaps relating to the learners, and study paths of those who do not enter full-time undergraduate study at age 18/19 – for example, there are quite basic gaps in the data (and therefore our knowledge) about those who study at an older age,

part-time, and across different pathways, particularly vocational and technical routes. Whilst relatively speaking data on HE is better in many respects, as Crawford et al (2017[1]) argue, there is still scope for greater collaboration to evaluate the different activities undertaken to improve access, retention and progression under Widening Participation strategies. To understand the way the whole post-18 system is working we expect there is also a need for greater consistency in the data collected across tertiary education to effectively evaluate interventions.

Our response focuses on areas where Nuffield Foundation funded work can contribute evidence to the review, including highlighting relevant work currently underway. As highlighted in points three and four above, much of the research evidence focuses on the experiences of HE students. This also applies to our research portfolio, and we are currently considering how we can support more research in the areas of post-16 education, beyond HE to help address this.

Part 1: Choice and competition across a joined-up post-18 education and training sector

Q2. How do people make choices about what to study after 18? What information do they use and how do they choose one route over another: for instance, between academic, technical and vocational routes?

It is important to acknowledge the role of earlier qualification choices and constraints in post-18 study choices. Issues relating to this were addressed in detail in the Nuffield-sponsored review of 14-19 Education and Training (Pring et al 2009[2]). In the current system, study routes tend to be labelled as choices but the options available to young people vary, both at the national and local levels through accountability regimes, school and college policy, provision and funding. More recent work funded by the Nuffield Foundation has explored this in detail.

There are particular variations in participation and opportunity between young people from different backgrounds. For example, pupils from lower socioeconomic backgrounds are less likely than their more privileged peers to choose GCSE subjects that would enable them to go to university, even when they have similar previous attainment (Anders et al 2017[3]). These differences are partly associated with the prior attainment, gender and socio-economic status of pupils attending the school (Anders et al 2018[4]).

These choices and subsequent attainment have an influential role in the pathways open to young people making post-18 decisions. As Asbury and Plomin (2017[5]) note, quite small grade differences at GCSE can also have very different impacts for young people's paths and later outcomes. Recent reforms to A Levels and the new T levels have the potential to help address, or exacerbate the impact of earlier 'choices' so it will be important to evaluate the impact of these changes.

Careers information also plays an influential part in decisions. For example, when Year 11 pupils were given data on potential graduate earnings for different subject choices they were 39% more likely to study maths than those who were not (Davies and Qiu 2016[6]). This raises a question about what information should be provided to young people to guide them, and the relative value attributed to different learning and wider outcomes (e.g. labour market returns, well-being, participation in society).

Overall, the evidence above suggests there is scope for education providers to work more closely with schools, young people and families to support decision-making. Alternatively, if it

is not feasible to avoid these highly stratified choices then efforts could be made to mitigate the way these limit access to later routes.

On-going Nuffield funded projects:

- Professor Adeline Delavande's project aims to better understand the role of information and expectations in the decisions young people make to stay on in full-time post-compulsory education, and apply to university. Project findings will be available in September 2018, more details are available at http://www.nuffieldfoundation.org/information-expectations-and-transition-higher-education
- Professor Dan Anderberg's project examines the expectations of students who attend HE with respect to study performance, career choices and labour market outcome. This project is due to be completed soon, details are available at http://www.nuffieldfoundation.org/understanding-success-expectations-heterogeneity-and-inputs-higher-education
- Professor Ruth Lupton's project is investigating the opportunities and trajectories for 16 to 18 year olds who have not achieved grade C or above in English and Maths at GCSE. The project is due to be completed in October 2019, more details available at http://www.nuffieldfoundation.org/students-who-do-not-achieve-grade-c-or-above-english-and-maths.

Q3: How do people make choices later in life about what further study to undertake?
The Nuffield Foundation funded a body of work focussed on 'student parents', that is those undertaking study combined with childcare responsibilities. From this work (which tended to focus on student mothers), we highlight the role of five factors in decision making about further study.

1. Learning/qualification aims – Lyonette et al (2015[7]) describe the explanations given by students mothers about why they chose to go to university, highlighting that whilst full-time undergraduate students of all ages commonly said that this was part of their longer-term career plan, or to get a better job, student mothers and other females aged over 21 were more likely to focus on these aspects, and have considered the qualifications they needed to enter a particular profession, or follow a specific pathway. This is in contrast to younger students who tended to have been encouraged to apply by their friends, families, teachers or career advisors, and felt that it was 'the normal thing to do' – as the researchers emphasise, there seems to be a lack of outside influence on these decisions for learners aged 21 or over, regardless of parental status.

2. Proximity to home – student mothers were much more likely to choose a HEI which allowed them to continue living at home (76%), than similarly aged non-mothers (51%) and younger students (22%; Lyonette et al 2015[8]).

3. Fit with existing family or other caring responsibilities – as Moreau and Kerner (2012[9]) emphasise, parental status is a key dimension of a student's experience. Therefore, the 'fit' with these responsibilities is a key consideration when making decisions about future study. Indeed, Callender et al (2014[10]) report that mothers cited the availability of childcare, courses scheduled during school hours, and other convenient features as particularly attractive.

4. Financial and other support available – financial issues were reported to be a particular worry amongst student parents transitioning from FE to HE (Brightside 2015[11]). Concerns about potential financial strains, and the realisation of these are a reoccurring theme in the literature on student parents so the decision to study can be a significant

risk, with short- and long-term consequences for their families (e.g. Moreau and Kerner 2012[12]).

5. Fit with work commitments, and support available from employers – while Moreau and Kerner (2012[13]) highlight the potential for continued employment to alleviate some financial strains, the scope to juggle existing or new employment with study is more likely to be an important factor for those considering study later in life.

A number of these considerations are also influential for 'traditional' students when making choices post-16/-18, while others, such as existing work or family commitments, and proximity to home are more influential in choice of course and institution in later life. For students under 21, the reasons for choosing an institution tended towards considerations about reputation and attractiveness of the HEI with moving away from home being a particular motivation for a significant proportion of this group (Lyonette et al 2015[14]).

Q4: In recent years we have seen continued growth in three-year degrees for 18 year olds. Does the system offer a comprehensive range of high quality alternative routes for young people who wish to pursue a different path at this age? How can Government encourage provision across a wider range of high quality pathways to advanced academic, technical and vocational qualifications?

Fuller et al (2015[15]) identified a lack of consistency in the quality and substance of apprenticeship provision for those aged over 25 years. Under current policy, a high risk remains that funding allocated to apprenticeship training is used to accredit existing skills, or provide training under this branding which does not properly meet the needs of employees, rather than developing adult education and training, as well as apprenticeships for younger people.

Q5: The majority of universities charge the maximum possible fees for most of their courses and three-year courses remain the norm. How can Government create a more dynamic market in price and provision between universities and across the post-18 education landscape?

Since the 1990s we have seen considerable changes in the balance of public spending across phases of education (Belfield, Crawford and Sibieta 2017[16]). Whilst most stages (including HE) have seen significant real-term increases, the 16-18 phase is the exception – this unequal distribution of funding between HE and other post-16 provision, including technical and vocational training will need to be addressed to provide a range of attractive pathways.

The Nuffield Foundation is funding more analysis to compare spending across all phases of education, including more in depth focus on FE and HE over the next three years (http://www.nuffieldfoundation.org/education-spending-pressures-and-challenges).

Q6: What barriers do current and new education and training providers face in developing innovative or diversified provision?

In 2013/14, the Nuffield Foundation (with the ESRC and HEFCE) launched the £19.5m Q-Step Programme. Now in the fifth of six funded years, the programme aimed to bring about a step-change in the teaching and learning of quantitative skills for social science undergraduates in 18 UK universities.

The initiative has faced challenges in three areas:

- Recruitment and deployment of sufficient appropriately qualified and able teaching staff in: education; geography; international relations; law; linguistics; political science; population health; PPE and sociology.
- Curriculum reform to 'embed' and make relevant quantitative skills across these disciplines.
- Recruiting students to new and innovative programmes that require them to overcome their anxieties about handling and interpreting data and quantitative information.

Q-Step Centres and Affiliates have tackled these issues in different ways and are making notable progress. Students (and employers) are increasingly aware of the employability benefits that accrue from developing data skills as part of social science undergraduate degrees. This has involved very innovative teaching approaches from HE staff. They have successfully found ways of developing excellent quantitative skills amongst students who may have very low numerical abilities and/or have not worked with data since they were obliged to at school. The Foundation is increasingly of the view that Q-Step is actively generating students with 'STEM skills' albeit through non-STEM degrees.

The experience of reforming degree content and developing new teaching skills offers many insights to others wishing to better integrate data skills into academic study. Sir Adrian Smith[17] noted that the Q-Step lessons could be applied to other disciplines. We will be sharing this learning more widely as the Programme progresses.

Q-Step and the post-16 Nuffield Research Placements programme[18], both benefit from the involvement of employers in delivering innovating and challenging learning experiences. Each programme blends structured and meaningful workplace-based research experiences with school/university teaching and learning. This commitment to forge coherent links between employers and educators at all levels requires regular refreshing and financial incentives, but offers a valid and high quality experience that mirrors best practice (Mann et al 2018[19]).

Q7: How can Government further encourage high-quality further education and higher education provision that is more flexible: for example, part-time, distance learning and commuter study options?

It is well recognised that the majority of post-18 provision is designed with a 'traditional' student in mind - a young person, enrolling at age 18/19 and geographically mobile. This dominates across the tertiary sector, in promotional materials, and the design and delivery of provision and support for applicants and students. However, providing flexible, high quality provision demands a different approach to improve access, retention and success in tertiary education.

Student parents challenge this stereotype by nature of their caring responsibilities. Lyonette et al (2015[20]) focus on student mothers who are studying full-time undergraduate courses, finding that they tend to be older (aged 26 or over), from lower socio-economic backgrounds, attend lower tariff HEIs close to home and choose female dominated subjects allied to medicine and education.

National policies promoting flexibility and provision for groups such as student parents can encourage institutions to adopt different approaches. For example, Brooks (2011[21]) highlights the right to parental leave for students in Denmark, while others note that extending wider employment rights, for example the Equality Act 2010 to student parents could support this (Lyonette et al 2015[22], Moreau and Kerner 2012[23]). Whilst this legislative approach is unlikely to be feasible in England at the current time, as Callender et al (2014[24])

recommend, there would be value in joining up post-18 policies with other policy initiatives led by the DfE (e.g. early years education and childcare) and other government departments, to support the larger goals of improving social mobility and reducing inequalities.

As a matter of routine, policies and provision at national and institutional levels should be planned and reviewed with the principle of encouraging entry and progression for groups that could benefit, underpinned by data about the characteristics and needs of (potential) learners. At institutional level, studies of student parents suggests the following steps could help improve flexibility of provision and improve access, retention and success:

- Routinely reviewing policies to properly consider how they impact on different groups, in consultation with stakeholder representatives e.g. student unions (Lyonette et al 2015[25], Moreau and Kerner 2012[26])
- Assign clear ownership within an institution for considering these issues (Moreau and Kerner 2012[27])
- Adopt an inclusive pedagogic approach, provide training to staff and plan courses which this is mind to address different learning needs (Lyonette et al 2015[28]; Callender et al 2014[29])
- Embed support services by making additional support services a normal part of the student experience to help students identify sources of support, and take up these services (Moreau and Kerner 2012[30])
- Other practical suggestions include providing a range of timetable options, earlier timetable circulation, flexibility for emergencies and absences, and opportunities to develop support networks away from traditional study or social activities (Moreau and Kerner 2012[31], Lyonette et al 2015[32]).

Encouragingly, Lyonette and colleagues highlight that the courses or institutions with higher numbers of student parents had given more thought to these practicalities, pointing to the potential for other institutions to adopt more flexible approaches.

More generally, students from disadvantaged backgrounds are more likely to drop out of their studies (e.g. see Crawford et al 2017 for a summary on full-time undergraduates). This suggests that more flexible options which make it easier to transfer credits to a different institution, or 'bridge' between vocational and academic routes are likely to be more important for this group.

Another important point to consider is the extent to which all institutions are expected to provide a range of flexible provision, what should be considered as the 'standard' offer of flexibility? Should all institutions provide a more diverse range of flexible study options? If only a subgroup of institutions are expected to do so how would this be managed given that we know that certain groups are less geographically mobile? It is also worth considering the other benefits from these changes - the wider student population would surely welcome a more flexible approach to learning, so these need not be considered the preserve of the older, or more vulnerable groups, and instead could be for the benefit of all students.

Overall, we know that learner characteristics and desired outcomes vary, and these aspects intersect in different ways to influence drivers and experiences of provision. Most of the work summarised above relates to student parents because the Foundation supported a programme of work focused on that group, but even within this group there is still a great deal of diversity. To realise the aim of providing high quality education provision for all groups, it is important to better understand the needs of different stakeholders, including employers, links with other education and training routes, and how best to meet these needs. This should be underpinned by robust data about learners, available provision, and

outcomes, coupled with high quality evaluations to understand 'what works' to effectively achieve this goal.

Q8: To what extent do funding arrangements for higher education and further education and other post-18 education and training act as incentives or barriers to choice or provision: both at the individual and provider level? How does this impact on the choices made by prospective students and learners? What can Government do to improve incentives and reduce barriers?

To date, evidence suggests that changes in funding have not negatively affected participation rates amongst 18/19 year old full-time undergraduate entrants. Since 2012, young people have become less adverse to debt (Callender and Mason, 2017[33]), but how much this actually goes on to influence decisions about applying to, and attending HE is unknown. Therefore, it is challenging to successfully predict the outcomes of potential alternative funding models.

However, the situation for other learners is different – for example in recent years the decline in part-time enrolments in HE have largely been attributed to changes in student finance support in England in 2012 (HEPI 2015[34], Callender and Thompson 2018[35], Million Plus 2018[36]). We support the recommendations from this body of work that it should be a priority for the post-18 review to investigate these issues further, and prioritise reducing the barriers for entry, and progression in HE for these groups of (prospective) learners.

It seems important that any new/revised funding arrangements in the post-18 system avoids the need for students to have to pay significant upfront costs (Crawford et al 2017), and takes into consideration the level of day to day costs to support study (e.g. books) and basic living costs (e.g. food, housing etc). This should include clear explanations about the underlying assumptions, for example about other expected sources of student financial support (e.g. families), repayment arrangements and be transparent for the taxpayer.

Part 2: A system that is accessible to all

Q9: What particular barriers (including financial barriers) do people from disadvantaged backgrounds face in progressing to and succeeding in post-18 education and training?

Early findings from Dr Gill Wyness' Nuffield-funded project shows that:

- Students from lower socio-economic backgrounds are more likely to 'undermatch' - that is attend less selective universities than their academic attainment should allow - in comparison to their more advantaged counterparts
- Female students, and those from lower socio-economic backgrounds are more likely to study on courses associated with lower average earnings returns.

This suggests that those from more advantaged backgrounds are better at navigating through the admissions processes and making the most of their exam grades to secure places. This points to the potential benefits of providing more information and guidance to those from disadvantaged backgrounds on the types of courses, and universities they could attend, and the likely employment outcomes. (Unpublished findings, more details available on request. Project information at http://www.nuffieldfoundation.org/fair-admission-universities-england-improving-policy-practice)

There is a wide body of work describing the differences in HE access and success by socio-economic background, prior attainment and school type (e.g. Croxford and Raffe 2013[37]; Crawford et al 2017[38]). As advocated by Crawford et al, there is strong evidence to support the use of contextualised admissions as one component of a package of support to encourage access, retention and success in HE. It would be helpful to know more about where this approach is already used, and evidence to assess the effectiveness of these approaches. However, to achieve their potential, these groups are likely to need additional support throughout their studies (Crawford et al 2017).

Aside from financial disadvantage, there are other inequalities in application and attendance at university, particularly high tariff institutions, such as ethnicity. Amongst state schools pupils, those from ethnic minorities are more likely to go to university than White British students , but there seems to be less agreement concerning the inequalities observed relating to access, how this might vary across subjects and institutions, and the underlying reasons (e.g. Noden, Shiner and Modood 2014[39], Crawford and Greaves 2015[40] Boliver 2016[41]).

We also note that some groups are likely to need additional help, regardless of the post-18 route they follow and when, such as care leavers, those with special educational needs and disabilities and those returning to study after a break. In some cases this may require a more inclusive approach to teaching (Lyonette et al 2015, Callender et al 2014), for others this might be about practical support at the point of transition between stages to meet particular needs (e.g. as highlighted by Hewett, Douglas and Keil 2017[42], regarding blind and partially sighted young people) or signposting to other service provision as emphasised in the case of student parents, or indeed a combined approach.

Dr Vikki Boliver's Nuffield-funded project is exploring admissions policies and practices to highly selective degree programmes in England, and is due to be completed by May 2019. More details available at http://www.nuffieldfoundation.org/fair-admission-universities-england-improving-policy-practice

Q10: How should students and learners from disadvantaged backgrounds best receive maintenance support, both from Government and from universities and colleges?

Two IFS projects funded by the Foundation several years ago (Dearden et al 2005[43], Dearden et al 2010[44]) examined different models of HE funding, with the former also considering the impacts of different maintenance and tuition arrangements by income and background.

Part 3: Delivering the skills the UK needs

Q11: What challenges do post-18 education and training providers face in understanding and responding to the skills needs of the economy: at national, regional and local levels? Which skills, in your view, are in shortest supply across the economy? And which, if any, are in oversupply?

We agree with the UK Commission on Employment and Skills[45] that there is an economic need for more STEM skills, but would emphasise that the gaps tend to be in quite specific occupational areas. There is also an increasing body of research highlighting the notable proportions of STEM graduates who progress to non-STEM occupations. For example, Professor Emma Smith's Nuffield project[46] reinforces previous work (BIS 2011[47], NAO 2018[48]), in finding that only a minority of STEM graduates enter high-skilled STEM occupations, even in science, engineering and ICT which are commonly cited shortage

areas. This suggests that STEM graduates are either being attracted to other occupation areas or failing to find work in high skilled STEM roles.

We also question the common assumption that STEM skills are only the preserve of STEM disciplines. The British Academy[49] has highlighted the way in which quantitative skills are increasingly seen as central to many disciplines beyond the traditional suite of STEM subjects. The Foundation has also been a strong advocate for increased uptake and use of mathematics throughout education (and certainly beyond 16)[50] . Indeed, it seems clear that the UK needs to improve the numeracy levels of its graduates[51] and citizens more generally[52]. Therefore, to respond to the skills needs of the economy, education and training providers need to have a more detailed understanding of the different skills and their use in the workplace, rather than simply grouping STEM subjects as is often the case.

It is widely acknowledged that digital skills are increasingly important but to meet the needs of the economy these skills need to be more clearly defined. Equally, the OECD have recently noted the role of combining strengthened quantitative or cognitive skills with non-cognitive or socio-emotional skills for a 'digital era'[53]. We must not lose sight of the need to guard against these skills becoming outdated rapidly – a common criticism of vocational training.

There is likely to be a need for more collaborative working at local and regional levels to deliver these skills, and meet the wider challenges set out in the Government's Industrial Strategy. This is particularly the case for the DfE's Opportunity Areas[54]. However, competition between institutions for students and funding (as we are now seeing at a local level on our Nuffield Research Placements programme) has the potential to undermine efforts for more partnership working.

Q12: How far does the post-18 education system deliver the advanced technical skills the economy needs? How can Government ensure there is world-class provision of technical education across the country?
N/A

Part 4: Value for money for graduates and taxpayers

Q13: How should students and graduates contribute to the cost of their studies, while maintaining the link that those who benefit from post-18 education contribute to its costs? What represents the right balance between students, graduates, employers and the taxpayer?

We agree with the general premise that those who benefit should contribute significantly to the costs of their studies.

We acknowledge that it is difficult to achieve the right balance, and encourage the Review to consider the following points:

- It is important to be transparent about the levels of support available to students, the level of government subsidy and how this is accounted for.
- It is difficult the predict the demand and supply responses that will occur as a result of changes to funding arrangements which makes particular proposals (e.g. variable fees) especially risky.
- Current discussions about value for money tend to focus on students/graduates and the taxpayer, and not enough on the employer perspective and their potential contribution and returns.

Q14: What are the most effective ways for the Government and institutions to communicate with students and graduates on the nature and terms of student support?

Whilst much effort has already been made to clearly communicate the Government support available to students and their families, this has tended to focus on those likely to enter HE at age 18/19. Other potential learners would benefit from more attention. There would also be value in trying to better understand what information prospective students receive, how they understand this (including language used in relation to debt), how this translates into take up, and varies across groups.

As Crawford et al (2017) emphasise, universities and other educational institutions also have an important role to provide clear information about what financial support is available to potential applicants. Therefore, more effort could be made to ensure that prospective students have this information when making decisions about where to study, as opposed to waiting until students have enrolled or been accepted on to courses.

Q15: What are the best examples of education and training providers ensuring efficiency in the method of course provision while maintaining quality? And what are the challenges in doing this?

N/A

Q16: What are the ways that Government can increase the value for money of post-18 education?

N/A

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