

Written evidence submitted by The Institute of Physics

Education Select Committee inquiry submission: The impact of COVID-19 on education and children's services

Introduction

The Institute of Physics (IOP) welcomes the inquiry launched by the Education Select Committee into the impact of COVID-19 on education and children's services, and the opportunity to provide its views and experience.

The IOP has been consulting a wide cross-section of the physics community to understand their needs and priorities during the current lockdown period caused by the COVID-19 outbreak. We have highlighted the key themes emerging from our consultation with teachers, students, higher education workers and other education professionals below.

Exacerbation of the attainment gap

Students from disadvantaged families are already less likely to take physics post-16¹, and we are concerned that any widening of the attainment gap arising from the shortened in-school year is likely to further limit the number of young people pursuing further study of STEM subjects and accessing the associated benefits. Teachers report that some students' limited access to the internet and/or ICT equipment, in particular, has meant they are unable to access effective remote learning, and this is more likely to be the case for disadvantaged students (as low income households are less likely to have an internet connection in the home²). The Department for Education should consider temporarily increasing pupil premium rates in 2020/21 to enable schools to mitigate any negative impacts of the shortened in-school year on disadvantaged students.

Students currently in Years 10 and 12 are particularly likely to be adversely affected, and a reduction in examinable content or a short (i.e. weeks) postponement of next year's exams should be considered to ensure students aren't disadvantaged due to lost in-school teaching time. In addition, data for next year's exam results should be analysed for pupil premium students as well as other students.

Lack of support for transition year students

There is currently sporadic support available for students in Year 11 and Year 13 from either schools or universities, and the prolonged period without any meaningful teaching or learning for these students may make the transitions from GCSE to A-level and from A-level to higher education particularly challenging. This could lead to increased drop-out rates next

¹ IOP (2014); Raising Aspirations in Physics: https://www.iop.org/publications/iop/2014/file_64466.pdf

² ONS (2019); Exploring the UK's digital divide: <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>

year, and any continuation of the requirement for online teaching into the start of next year is likely to exacerbate this problem.

While some universities have taken steps to address this (for example by providing transition modules for incoming Year 13 students), it still remains a challenge to provide quality solutions within a short space of time. More support is likely to be available by the end of June for Year 13 students who are preparing for university, but such support will need to be ensured for new undergraduate students.

Similarly, students who change schools when progressing to A-levels (e.g. if their previous schools only cover the ages of 11-16, or if they transfer to a college) are also less likely to be provided with support than would a student progressing from Year 11 to Year 12 in the same school. Steps will need to be taken to guard against a further drop-out rate of students who do not receive such required support.

Lack of quality-assured resources

There is a lack of appropriate online resources, and where they do exist, it can be difficult for teachers to judge and have confidence in their quality. Non-specialist teachers, who are likely to be more dependent on online resources to support remote teaching, find it particularly hard to identify high-quality resources.

They can also find it more difficult than a specialist teacher would to identify which elements of the curriculum are most important in terms of prioritising for reduced contact time. As schools serving disadvantaged communities make greater use on non-specialist teachers³, this may also contribute to disparities in access to high-quality education. There is a particularly acute lack of resources to support remote delivery of practical work in the sciences, which is essential to deepening students' understanding of concepts and skills development.

Adverse impact of alternative assessment arrangements

The IOP was pleased to see the confidence that has rightly been placed in teachers' professional judgment in the proposals for centre assessment grades, following the cancellation of this year's examinations. We were also pleased to see the guidance from the Department for Education that Ofqual "will make every effort to ensure that the process does not disadvantage any particular group of students", Ofqual's own commitment to ensure the fair allocation of grades in this summer's exams.

We are however concerned about the potential impacts of unconscious bias for specific groups of students, and in particular that centre assessment grades for physics are likely to under-reward girls and students from lower socio-economic groups⁴. Similar concerns have also been raised at the predicted grades awarded to children from ethnic minorities⁵. To mitigate the potential impact of bias, we have recommended to Ofqual⁶ and Qualifications

³ Social Market Foundation (2016); Social inequalities in access to teachers, at: <http://www.smf.co.uk/wp-content/uploads/2016/04/Social-Market-Foundation-Social-inequalities-in-access-to-teachers-Embargoed-0001-280416.pdf>

⁴ For grading in physics, see: <https://www.tandfonline.com/doi/abs/10.1080/09500693.2015.1114190>; and for other subjects, see: https://www.ucu.org.uk/media/8409/Predicted-grades-accuracy-and-impact-Dec-16/pdf/Predicted_grades_report_Dec2016.pdf

⁵ <https://www.telegraph.co.uk/news/2020/04/30/teachers-warned-unconscious-bias-amid-fears-ethnic-minority/>

Wales⁷ that, for physics, centres be asked to check rank orders at GCSE level before submission to ensure there is a representative distribution of boys and girls at each grade. We also recommend that outcomes are checked at the national level to ensure the proportion of girls and boys achieving each grade match that in previous years, with any discrepancies being addressed, and that this second, national comparison is used as a check on the final distribution of awarded grades by socio-economic status.

Impacts on teachers

The impacts of COVID-19 on the teaching workforce will inevitably have an impact on pupils' education, and these must be considered and addressed alongside the above.

Teachers, particularly those in the early stage of their career and non-specialists, need access to professional development support more than ever during this time to cope with the unprecedented challenges they currently face. The lack of remotely accessible support and face-to-face contact with other teachers are likely to have a negative impact on teachers' wellbeing and could worsen teacher retention rates. The IOP would like to see more Continuous Professional Development (CPD) and online development and mentoring sessions to support teachers at this time (and beyond).

Those currently in initial teacher training have missed a significant amount of training time and their second placement, meaning they will be expected to join the teaching workforce with significantly less experience than previous cohorts. This is likely to have a negative impact on newly qualified teachers' (NQTs) confidence and stress levels, and could lead to a greater attrition rate in the autumn term of 2020 and in 2021. The Department for Education should work with schools to assess and support capacity for a reduction in 2020/21 NQTs' timetables that go beyond the 20% reduction usually given to NQTs. Recruitment and training of next year's trainees will also be affected due to the closure of schools and higher education institutions. The continuation of online training delivery into next year, and lack of peer support, may adversely affect new trainees' experience (particularly of practical work) and increase attrition rates. A reduction in the number of new teachers entering the profession, due to the disruption to both the current and upcoming year's cohort, would be particularly damaging to physics, for which there is already a severe shortage of specialist teachers. Subject-specific mentoring, offered as part of the Education Endowment Foundation programme, would be beneficial in addressing these concerns.

Impact on teachers' employment

A further concern that has been raised is that due to the uncertainty around when schools will return, schools may limit recruitment for the remainder of the year. This is likely to impact newly qualified teachers, a situation which may be further exacerbated by overseas teachers returning to the UK, and private school teachers losing their jobs.

The effects of this would be particularly regrettable if newly qualified teachers with specialisms in shortage subjects (e.g. STEM subjects) were unable to find positions.

⁶ IOP submission to Ofqual consultation on exceptional arrangements for exam grading and assessment in 2020: http://www.iop.org/policy/consultations/file_73978.pdf

⁷ IOP submission to Qualifications Wales consultation on arrangements for summer 2020 exam series: http://www.iop.org/policy/consultations/file_73987.pdf

The IOP urges the Education Select Committee to consider means of overcoming these concerns. One proposal the Committee may wish to consider is for incentives to be provided for schools to employ a shortage-subject teacher over non-shortage subject teachers, in the event of similar applications from both.

The IOP also proposes that a Mentoring programme is instituted for newly qualified teachers, especially those who are unable to find positions in time for the upcoming year, so as to keep them in the system and ready to apply for jobs when these become available.

Higher education funding gap

The IOP is concerned at the potential effects on universities as a result of students choosing to defer entry to 2021/22, which is likely to cause an immediate financial impact and increasing pressure on student numbers next year. In particular, international students choosing to either defer or transfer their places to institutions in their home countries will result in a significant loss of income for universities.

This can be partially addressed, with several universities introducing January start dates in addition to the traditional September/October entry, in particular for international and master's students. In addition, many institutions are considering virtual inductions, as well as virtual open and taster days for prospective students. However, this approach relies on the assumption that the COVID-19 will have been contained by the following year, and that applicants are confident that there will not be a further lockdown or other measures which could impact their studies.

Even in this scenario, there is the further concern that if large numbers of students do defer their places for the upcoming academic year, this could place an unmanageable burden on university admissions in 2021. In addition to the administrative burden this may have on universities, this would also risk talented students missing out on the chance to study at university as a result of fewer available places.

About the Institute of Physics

The Institute of Physics (IOP) is the professional body and learned society for physics in the UK and Ireland. The IOP's mission is to raise public awareness and understanding of physics, inspire people to develop their knowledge, understanding and enjoyment of physics and support the development of a diverse and inclusive physics community. As a charity, the IOP seeks to ensure that physics delivers on its exceptional potential to benefit society.

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