

The Australian Institute of Physics
National Executive
www.aip.org.au



8 September 2020

Submission by the Australian Institute of Physics in relation to the Higher Education Support Amendment (Job-Ready Graduates and Supporting Regional and Remote Students) Bill 2020

Dear Members of the Senate Education and Employment Committee,

The National Executive of Australia's main professional association for physicists, the Australian Institute of Physics (AIP), wishes to make the following submission to the Senate Education and Employment Committees in relation to the Higher Education Support Amendment (Job-Ready Graduates and Supporting Regional and Remote Students) Bill 2020.

The AIP is the principal body representing professional physicists in Australia and is the accrediting body for undergraduate physics degrees at Australian Universities.

This submission has the endorsement of the National Executive of the AIP and it incorporates member feedback.

We wish to submit the following comments for consideration in relation to the draft legislation:

- 1. Decrease in education funding for 'science' threatens high-quality science degrees:**
Under the new funding arrangement, the sum of the Commonwealth contribution and of the Student contribution will decrease by \$4,758 per student per year. This corresponds to a reduction of over 16%, relative to the current funding arrangement. Physics departments across the country will not be able to absorb this decrease without a substantial loss of quality of the physics education. *This reduction in education funding, if not compensated otherwise, threatens the quality of STEM education in Australia and will make Australian STEM degrees of secondary quality when compared with international standards.*
- 2. Conjoint nature of teaching and research is a defining feature of universities that is weakened by a separation of the funding for research from the funding for teaching:**
The draft legislation, and the Deloitte Access Economics study which it refers to, are based on the notion that the cost of delivery of physics education can be differentiated from the cost of the research activities in the respective physics department. While some differentiation is possible and desirable (such as specific project-based grant funds) there is a substantial conceptual problem: The government (e.g. through TEQSA standard B1.1.4 or through the Coaldrake Review) recognises that teaching staff need to be or should be active in research; the government thereby, in effect, mandates a mixed employment model with teaching and research components for the teaching staff. Then, one should expect that the education income should cover, at least in parts, the research component of the teaching staff's employment. This is clearly a topic that requires nuanced consideration (e.g. as the public and/or fee-paying students are likely to not fully appreciate the centrality of the issue and object to tuition fees being diverted to research activities). However, in essence, a complete separation of the funding of teaching activities and research activities (as proposed by the draft legislation) is contrary to the government's recognition of the conjoint nature of teaching and research and thereby of the need for joint teaching/research

employment roles. This problem is particularly pertinent for fundamental disciplines (including physics) where the combining of teaching and research leads to better outcomes in both areas. Students taught by active researchers are intimately connected and thus inspired by the forefront of the scientific discoveries. Researchers who teach are not only grounded by the daily reality of the student experience and motivated to make their research more accessible; teaching and the students taught also provide inspiration for research. We consider that, for physics, the cost of delivery of the education needs to cover the research component of the employment of the staff who teach the physics courses (at least in significant parts). *The traditional academic employment model as the principal form of employment with a mixed teaching/research role is instrumental for the success of our physics degrees; a separation of the funding into separate sources for the research component and the teaching component (especially if part of separate legislation) is artificial and is contrary to the teaching-research nexus.*

- 3. Reform to education funding cannot be treated independently of potential reform to research (block) funding:** The draft legislation process separates the cost of teaching delivery from the cost of maintaining a research environment, despite the recognition that the conjoint nature of research and teaching is a defining feature of universities. As reported by Andrew Norton, the Deloitte Access Economics study estimates that universities make a 1.3 billion dollar ‘surplus’ on domestic student education (presumably relative to ‘reasonable cost of delivery’)¹ and that this surplus is in large parts used to subsidise research.² It should be recognised that this cross-funding has been integral for significant parts of the research success (and its reflection in rankings) of Australian Universities. It is clear that, unless compensated through reforms of research (block) funding, the draft legislation will have a damaging effect on either the education or the research at our universities or both. Without any information of the proposed reforms to the research funding schemes (beyond knowledge of the existence of two working groups on related topics²), it is impossible to assess the implications of the proposed changes. We therefore recommend adjourning the draft legislation until such time when the changes to the education funding and the changes to research block funding arrangements can be considered together.
- 4. Lack of clarity and breadth of evidence base and need for in-depth consultation with academic stake holders and accrediting bodies:** The drastic adjustments to funding appear to be based largely on the analysis of a single study by Deloitte Access Economics “Cost of delivery of higher education” of a relatively modest number of universities. The results of that study are largely related to the concept and measurement of ‘reasonable cost’ for delivery of education. In our view, before the results of such a study can be turned into legislation with severe funding implications, the results and validity should be broadly scrutinised. It is currently not clear that the cost of degrees which have been averaged are really like-for-like. We risk penalising institutions that currently invest more in student education. A review process should include substantive engagement with the accrediting bodies for degrees which, for physics undergraduate degrees in Australia, is the Australian Institute of Physics. The shortness of this submission process for the Senate Education and Employment Committee and the shortness of the earlier legislation consultation process have not allowed us to perform an in-depth analysis of the Deloitte study and its validity in

1 <https://www.gizmodo.com.au/2020/06/coronavirus-and-university-reforms-puts-australias-research-gains-from-the-last-15-years-at-risk/>

2 Research Sustainability Working Group (<https://www.directory.gov.au/portfolios/education-skills-and-employment/department-education-skills-and-employment/research-sustainability-working-group>) and National Priorities and Industry Linkage Fund Working Group (<https://ministers.dese.gov.au/tehan/national-priorities-and-industry-linkage-fund-working-group?page=8>)

the context of physics. However, in our view, the study does not address in sufficient depth the degree to which a research environment is, in physics, crucial for the success of the teaching environment (and hence needs to be co-funded) and the notion of ‘efficiency’ does not appear to be informed by pedagogical evidence in relation to the educational efficacy of the various education delivery modes; it also does not address the broader question of the benefits of maintaining closely conjoint teaching/research environments, such as for efficacy for teaching and research and for research independence. We do not wish to call into question the validity of the Deloitte study *per se*; however, we consider that such drastic funding changes require a broader evidence base than what can be provided by a single commercial study. At least, a scrutiny akin to an academic peer-review process would be advisable and would provide the academic community with an ability to provide in-depth input.

5. **Recognition of the importance of broad-based education:** Beyond the implications specific to physics, we consider that the tight focus on job readiness and short-term economic benefits (and some of the classifications of disciplines into funding clusters that result) is contrary to long-term societal interests. We specifically consider that the study of fundamental disciplines such as humanities, and not just STEM subjects, should be encouraged and incentivised; the long-term benefits of a highly-educated population need clearer recognition, even if they represent a less immediate economic outcome. We do not consider it wise for the government ‘to pick winners’, especially in an environment of uncertainty in relation to the future shape of the society and the economy. Specifically, we consider the disincentives for students to study fundamental humanities disciplines as counterproductive to Australia’s long-term benefits.
6. **Magnitude of proposed change and the magnitude of problems in the Higher Education sector mandate a more in-depth review or enquiry:** We recognise that COVID-19 has exposed unprecedented challenges for Australia’s higher education sector that require changes. However, many of these challenges stem from long-term systemic issues in the Australian Higher Education funding model which require a careful and in-depth assessment of the source of the problems. The Australian Association of University Professors (AAUP)³ has expressed this as “The truth is that this acute crisis in the Australian public university system has been decades in the making – COVID-19 just tipped it over the edge”. The AAUP asks for a “Senate enquiry to explore university governance arrangements, funding models, risk-taking, local and international student experiences, how research is assessed, education infrastructure and employment conditions”³. Irrespective of whether a broader Senate enquiry is the best mechanism, we (as the AIP National Executive) support the request for a detailed and in-depth analysis of the broad situation of Australia’s HE sector, prior to making legislated changes. The proposed draft legislation “Job-ready graduates” is, in our opinion, taking a too narrow and shallow perspective of the breadth and depth of the problem at hand.
7. **Review for funding for students who fail subjects:** Finally we ask for caution in the proposal for restricting Commonwealth Grant Scheme and HELP entitlements for students who fail more than 50% of subjects at any stage in their degree program. Many students entering the typical general science degree intending on majoring in Physics, can only take two physics subjects, out of an average of eight total subjects in their first year. Such student who perform poorly in other subjects would be at risk of falling under this criterion.

³ <http://www.professors.org/2020/04/17/the-australian-association-of-university-professors-invites-support-for-a-senate-enquiry-into-rebuilding-the-australian-university-system/>

We thank the Senate Education and Employment Committee for consideration of the above comments in its inquiry into the bill.

The Australian Institute of Physics, and its National Executive, welcomes any opportunity to work with the Australian Government and Parliament on maintaining and building excellence in Australia's research and education environment, to future proof the careers of Australia's university graduates and the economy and sustainability of our country.

Kind regards,

Prof Jodie Bradby, President

– on behalf of the National Executive of the AIP –