

Review of the Allocation Model for Funding Higher Education Institutions

Working Paper 10: Funding Teaching & Learning Activity

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1) Introduction

This paper sets out to study the factors that need to be taken into consideration to ensure the new model will support higher education institutions to deliver a high quality teaching and learning experience for students. It starts by looking at the relationship between funding and quality and how the current model has influenced the development of the sector.

It then explores how a new model could ensure diversity in teaching and learning and skills development while also supporting excellence in teaching and learning. This leads to considering how technology can be used to further improve the teaching and learning experience for students.

The paper concludes by mapping out the future capacity of teaching and learning before outlining the possible options for potential development.

2) The relationship between funding and quality

Relationship between funding and quality

The relationship between quality, funding and participation is a major focus of this review of the HEA funding allocation model. In the *National Strategy for Higher Education to 2030* the HEA was charged with reviewing institutions plans for growth to ensure that the financial resources were available to underpin their plans for expansion.

As set out in Bahram Bekradnia's report¹ there is a clear relationship between student numbers, cost and quality. This report flags that if student numbers are not controlled the result will be either the cost to Government will increase, student fees will increase or the unit funding will decline and quality with be threatened.

The consultation process has confirmed that there is broad agreement that the future model should be driven based on student numbers, but there is concern regarding the sustainability of such an approach with without significant additional investment. Even with the uncertainty surrounding additional funding, there was little enthusiasm for a cap on student numbers, with all stakeholders acknowledging the pivotal role that higher education has played, and must continue to play, in driving economic growth, and the demographic challenge that must be met by the system over the next 15-20 years.

There is both a funding and an allocation dimension to under-funded expansion of student numbers. The Cassells report² identified the scale of the future funding challenge at system level and the need for increased investment. It highlighted the consequences for quality, access and participation of failure to address this and identified a range of options to government for sourcing the investment required.

The need now is to identify a reformed funding model that is capable of distributing current funds in an effective, equitable and transparent manner and that also has the capacity to efficiently distribute additional funding from new sources as they become available. As highlighted in the Interim Report such a funding model will need to be capable of incentivising and promoting innovation and high performance and potentially penalising inefficiency and ensuring that increased investment from

¹ Funding Higher Education in Ireland – Lessons from International Experience

 $^{^2}$ Investing in National Ambition: A Strategy for funding Higher Education. Report of the Expert Group on the Future Funding for Higher Education 2016

whatever source is complemented by ongoing reforms, resulting in a more flexible and responsive higher education system.

The Cassells report acknowledged the significant efficiencies that have been generated across higher education during a period of constrained funding, and the ability of the system to continue to accommodate increased student demand at a time of decreased resources provides further such evidence. However, there is concern about the continuing ability of HEIs to maintain quality, particularly with an academic staff-student ratio of 1:19.2, well outside the OECD norm which has varied between 1:14 and 1:15.8 between 2008 and 2014. There is a need to understand what features in the current grant allocation model may be acting as an incentive that is too strong for institutions to ignore, to expand student numbers on a basis that could threaten institutional sustainability and quality of qualifications.

Overall the Cassells report praised the current funding allocation and the role it played in supporting the expansion of third level provision over the last ten years. The recommendation to review the RGAM was to address the following three issues:

- 1. To stop the inbuilt structural ongoing erosion of teaching and learning quality
- 2. To correct the disincentive to STEM and technological education, caused by not weighting all elements of regulated funding
- 3. The disincentive to expansion of lifelong learning

Impact of reduction of funding & current model on sector

A number of factors have influenced the way in which the sector has developed over the last decade including the growth in student numbers, the contraction in public funding and the operation of the grant allocation model.

While the current system has supported the expansion of the number of students attaining third level qualifications, as was intended, the fact that this happened over a period when state funding was depleting has resulted in this expansion being underfunded. It has also impacted the way in which third level provision has developed and the quality of provision in certain disciplines.

The allocation of the core grant is determined on a formula basis - based on a standard per capita amount in respect of weighted EU student numbers (and non-EU research) in four broad subject price groups. Student numbers in the four groups are weighted to reflect the relative cost of the subject groups. The three main subject price groups by which undergraduate students are weighted are: Non-laboratory based subjects (weighting of 1), subjects with an element of laboratory, studio or fieldwork (1.3) and laboratory based subjects (1.7), which relate to the areas of study. In the universities, there are further price groups for Clinical Medicine (2.3), Dentistry and Veterinary Medicine (4). The standard per capita amount depends on the total level of funding received each year. It is calculated by taking the total available funding divided by total weighted student numbers to determine the standard per capita amount.

Postgraduate students receive further weightings for research (in the universities usually a research weighting of three times the undergraduate weighting and in the IOTs usually a weighting of twice the undergraduate weighting) and in respect of programmes based on 12-month attendance in the year.

As the block grant is allocated based on an institution's percentage share of weighted student numbers, in a situation of static grant funding and growing demand, when some institutions grow their student numbers, others must either match that growth or lose percentage share of grant, leading to a downward spiral in the overall resource per student.

The existing recurrent grant allocation model (RGAM) had intentionally incentivised the expansion of undergraduate provision, in a number of ways outlined below.

Block Grant & the Moderator

The current block grant allocation model has a moderator which allows each HEI to get a funding increase of the sectoral funding of plus or minus 2% each year. If one HEI increases their share of student numbers, they do this at the expense of other HEIs. This means in the context where the number of students going into third level education is growing and there is no cap on student numbers, institutions have had to continue to grow in order to stand still.

The existing model also incentivised expansion of undergraduate provision by not having any built-in level of disregard of movements in student numbers from one year to the next, in allocating grants. The older HEFCE grant allocation model, for example, disregarded changes in student numbers of plus or minus 5% on the previous year, in its grant allocations. The HEA model instead of a disregard had a 'moderator' which moderated or limited the speed at which changes in institutions' share of total student numbers were taken into account in determining share of grant funding. The moderator affected how quickly grant share responded to student number share, not the extent to which grant share responded to student number share. The aim over time was to take account of all changes in student number share.

The moderator allows each HEI to get a funding increase or decrease over last year, of 'the sectoral increase in RGAM funding, plus or minus 2%'. Thus if an institution was shown to warrant an increase in grant this year of 10% over the previous year, based on an increase in its student numbers, and if the sectoral increase in funding was only 3%, that institution's grant would be allowed to increase by 5% (3% + 2%), this year. But further increases of +2% beyond the sectoral increase would be allowed in subsequent years also, until the full increase in its student numbers had washed through.

The moderator is overall a zero sum. Increases above the sectoral increase in funding to one institution, can only possibly be funded by decreases to other institutions. Because the model allows this expansionary behaviour, it almost requires each institution to aim continue to grow, in order to be on the right side of the zero sum. The moderator works to both expand student numbers and to contain costs per student when overall RGAM funding is increasing, so long as the sectoral increase in funding available for distribution through the RGAM represents only a proportion of the funding increases that the sector had received from all other areas combined – including other public funding increases for strategic innovation, for capital maintenance, for targeted programmes and from other sources. However, if the pace of increase in student numbers outstrips the pace of increase in total funding, erosion in levels of funding per student arise and the model becomes unsustainable.

The consultation process revealed a range of views on the moderator. While many recognised the need for some mechanism to mitigate the risk of a major year-on-year decline in funding, institutions who have grown their student numbers strongly in recent years felt that moderating their funding growth effectively penalised them for success.

The rationale for a tight moderator is strongest in a declining funding environment. There is an argument that as funding begins to increase, and if the significant projected growth in student demand emerges, there needs to be more scope to continue to incentivise HEIs to grow to meet this demand.

If a moderator remains part of a reformed funding model, there is a case for explicitly recasting it as an efficiency factor, and for determining the level of this factor from time to time on a negotiated basis related to what could reasonably be expected in this regard.

Free Fees

The way in which the funding for free fees has been allocated has also encouraged institutions to focus on growing undergraduate provision. The current model treats the amount needed to pay the grant in lieu of undergraduate tuition fees as a first call on the total grant allocation. As this is allocated based on a per student basis, the amount of money required for free fees has been increasing in line with increasing student numbers. The model was not designed to operate in the context which subsequently prevailed of static or declining overall grant funding with expanding undergraduate student numbers.

There is a case now for taking more account of free fees funding received in the allocation of block grants. This could be done by abolishing the concept of free fees but there would be accounting and cash flow issues to be addressed in the transition from 'old regime' Free Fees funding based on an academic year, to 'new regime' increased block grant funding based on the calendar year. Also, some HEIs argue for the retention of a level of EU tuition fee as a benchmark for setting Non-EU fees, repeat fees and for charging fees to EU nationals who are not entitled to free fees (i.e. repeat attenders who already have higher education). If a reformed allocation model retains the concept of free fees, a further option would be to determine an amount of funding including free fees that an institution should merit on the basis of weighted student numbers, and deduct from this the free fees already received, to arrive at the block grant entitlement.

The effect of any move to take account of free fees in grant allocations would be to end the fallacy of treating undergraduate expansion as a demand-led funding scheme within a fixed block grant, and distributing available funding over all activities equally – teaching, research, access etc.

Student Contribution Charge outside the Model

The other factor which has impacted the way in which the sector has developed in terms of the focus on the undergraduate provision is the increase in the student contribution charge. The increase in the student contribution charge has not been built into the funding model and therefore has had some unintended consequences. The main impact is the on the weightings originally built into the model to ensure more funding was going to the more expensive provision.

Over the period from 2006 to 2016, the funding generated by the flat student contribution fee, which is unrelated to the cost of provision, rose from €775 in 2006, to €3,000 in 2016. This represented 46% of the cost of non-laboratory based students and provided an incentive for some HEIs to expand student numbers in these disciplines in what appears to be marginal cost expansion. However, this marginal cost expansion only works for these HEIs as long as they also get compensated the following year with free fees funding provided from the existing pot of grant funding which reduces the amount remaining to be distributed through the RGAM, and also on the basis that the increased student numbers will be included in the reckoning for RGAM grant allocation, thus possibly further reducing the RGAM amount per weighted student overall.

This issue is recognised within the sector and discussions in the consultation process revealed there is support for considering applying the weightings to the free fees component of the HEA allocation. The possibility of also applying an adjustment to effectively weight the student contribution within the model was also discussed.

The option to deal with this is to take account of income received by HEIs from student contributions in the allocation of grants which is explored further in section 8.

Level 6 & 7

The RGAM was designed before the responsibility for institutes of technology was transferred from the DES to the HEA, and therefore it was not specifically devised with the existing IoT structure of fees relating to their ladder system in mind. The IOTs were incorporated into an adapted university model in 2009 with work-arounds for fee adjustments put in place to remove disincentives to engage in Level 6 & 7 programmes. These programmes have reduced levels of Free Fees, dating back to a time when these fees were charged to students. An adjustment to incentivise Level 6 and Level 7 provision which effectively aligns the free fee allocation received with that for Level 8 provision continues to be applied.

Despite an apparent institutional desire to offer Level 6 and Level 7 provision within IoTs, and an industry demand for this level of skills, student demand at these levels has been in decline. During the consultation process the introduction of demand-side supports (e.g. no student contribution) was proposed to stimulate demand for these courses. A structured treatment of free fees within the allocation of grants as set out above would clearly remove any disincentive to engage in Level 6 & 7 provision.

Part-time & Online Learning

Part-time and remote learning has not grown at the same rate as full-time undergraduate provision and this is an area of relative weakness. Through the consultation process it became clear that there is a perception that lifelong learning is not supported within the current mode, which is not the case.

In the current university model, part-time students are be weighted by credits as a proportion of full-time credits. In the IoT sector, part-time students are supported on a credits basis. Online learning in the IoTs is also funded on a credits basis whereas in the universities it is funded at 20%. Consideration will need to given to how to align these two different modes of funding part-time provision if moving to a one pot model.

The consultation process has also shown there is a willingness to look at how part-time provision can be incorporated into the model. It is important to note the blurring of lines between part-time and full-time provision. They are not separated in the same way as in the past and there is increased demand for more flexible provision.

Efficiencies

While the increases in student numbers at the same time as the block grant standing still has driven efficiencies in the system it has also resulted in this expansion not being aligned to the cost of provision. There is some anecdotal evidence from institutions that as a result of cost cutting measures there has been reduced laboratory exposure or practice-based teaching which are a critical part of the learning experience in certain disciplines.

It is critical to acknowledge the argument for the need to continue to achieve efficiencies within the higher education sector. There may still be areas where there is genuine scope for marginal cost expansion and further consideration needs to be given to how this capacity could be unlocked in particular institutions without eroding the sustainability of the system as a whole.

The new model

The Expert Panel recognises the importance of addressing the unintended consequences of the operation of the model in changed circumstances on the quality of teaching and learning, and on institutional sustainability. The welcome publication of the Cassells report and its consideration by government, the recent move by DPER/DES to include provision for demographic increase in the

Estimates, and reform of the HEA funding allocation model assist in maintaining a more sustainable balance between the growth in student numbers and the quality of provision.

3) Ensuring Diversity in Teaching and Learning

Mission Diversity

While there is a need for a more universal system, it is vital that the unique contributions of institutions are protected. The importance of safeguarding the mission diversity of the institutions is set out in the core principles underpinning the future funding approach. The importance of recognising the distinct missions of universities and IoTs was reinforced during the consultation process. There is also an acknowledged need to protect the difference between the two sectors while at the same time, to recognise that the structure of the HE system itself is evolving with further consolidation of institutions planned, and the prospect of the creation of Technological Universities.

Two Sectors & Two Pots

One of the protections for mission diversity within the existing system is to allocate funding from two main funding pots – one to universities and colleges, and the other institutes of technology. In the past the relative size of these two pots has been quite fixed (60/40) and while they are broadly reflective of the student numbers in the sectors at present, this is more by chance than design. Nevertheless, the discrete allocation provides more scope to use some different and some common metrics in each model that are relevant to mission. If the 'two pots' system is continued in the reformed funding allocation model, greater transparency needs to be given to the system as to how the funding levels compare across the system. Greater transparency will also be critical if moving to a fluid two pot' and then a one pot model.

It also needs to reflect the difference between teaching and learning strategies in the IoTs versus the universities. For example, there are generally higher student contact loads in the institutes which has cost implications which were highlighted in Working Paper 6.

Weightings

The appropriateness of cost weightings was discussed in Working Paper 6 and the need for them to be applied across a wider base of funding. The funding allocation model aims to fairly reflect cost differences at a very high level, and to recognise that there are general differences related to nature of the academic subject areas that drive different levels of cost per student. To take account of these differences, weightings are applied to the student numbers that are used to calculate the grant for each institution. The weightings relate to the general pattern of resource requirements of broad groups of subjects, some of which need laboratories and workshops while others are taught wholly in lecture theatres and seminar rooms. The aim is to provide similar levels of resource for similar activities across institutions, not to provide the same level of resource for the same activities at any given point in time. The model uses four broad groups of subjects (price groups) for funding, and has set relative cost weights for each group based on expenditure per student data that have emerged from Irish costing models and from the older HEFCE grant allocation model³.

As outlined above the weightings have been diluted as a result of reduction of state funding and its partial replacement by a fixed student contribution. This has resulted in a greater need for subsidisation for undergraduate laboratory provision (and indeed for other provision in higher price groups). The cost data indicates that the 1.7 weighting is above the actual estimated additional cost of lab-based provision (a multiplier of 1.5), but that its lack of application across the full funding base means that the effective weighting is only 1.3, which is below this estimated cost threshold. It is this

³http://webarchive.nationalarchives.gov.uk/20100202100434/http://www.hefce.ac.uk/pubs/hefce/2008/08_33/08_33.pdf

type of unintended consequence which prompted a recent HEA decision to address the disincentive for STEM provision by applying an adjustment equivalent to the diluted impact from the increase in student contribution in recent years. This underscores the importance of maintaining a regular review of the weightings underpinning the funding allocation model to ensure alignment between costs and funding.

The dilution of the weightings means that they are not supporting diversity as intended and therefore there needs to be a review of the weightings to ensure appropriate weightings are applied across a wider base of funding to embed this diversity. In all situations weightings need to be reviewed from time to time against the outputs of the costing system to ensure that the model reflects cost weightings. When funding weightings differ significantly from cost weightings, unintended incentives can be set up to reduce provision of relatively under-funded areas and to increase relatively overfunded areas – looking at cost relativities rather than absolute costs.

The weightings used were designed not only to support diversity of provision and strategically important STEM programmes, but also ensure that vulnerable areas such as music practice and apprenticeships are adequately funded so that institutions continue to deliver this provision, even though it is more expensive than courses in other areas. These funding streams are also top sliced and ring fenced to protect these critical areas.

Preservation of the National Framework of Qualifications,

The type of teaching and learning strategies adopted by different HEIs need to match the profile of their students, but they also need to match available funding. Less academically prepared students with lower Leaving Certificate points on entry are at higher risk of non-progression from first year and are more likely to need additional academic support in their first year. Programmes which generally have a higher proportion of low points entrants such as Level 6 programmes, do not appear to have the relatively higher unit costs that might be expected.

Balancing Participation & Successful Completion

The focus of public funding models is increasingly moving to balance participation as represented by student enrolment, with successful student completion, as represented by degrees awarded or by progression and completion rates. The question arises as to whether the HEA model is at present striking the correct balance in this regard. The model seeks to balance these at present by the following:

- 1. Core Funding HEIs receive limited funding in respect of students who do not progress. There is a perception that it reflects numbers of students and so does not reward retention but this is not the case. Funding is based on a student audit at March 1st each year, ensuring HEIs are funded for only those students remaining for the majority of the academic year and therefore likely to complete the year, while removing any incentive to 'pass' borderline students at year end (a potential risk of a credits based funding system).
- 2. **Free Fees** HEIs do however receive half of the Free Fees grant for students if they withdraw after October 31 but before 1 February. Most HEIs also apply these rules to the Student Contribution so they are receiving 50% of the overall fee even if the student does not complete the year.
- 3. **Performance funding** HEA regularly publishes analysis of non-progression at a system level, by discipline, NFQ level and institution. Individual HEIs are required to report on their targets in this area under the National Objective 3 on Teaching and Learning. While there is a

⁴ http://www.hea.ie/sites/default/files/hea-study-of-progression-in-irish-higher-education-2013 14 to 2014 15.pdf

statistical correlation between non-progression and student characteristics, such as points attained, much of non-progression is due to poorly informed programme choice, health & welfare and student finance. These issues can be targeted at HEI level – once HEI has set about identifying and targeting them.

4. **Targeted funding** – The Strategic Innovation Fund programme, which was discontinued in 2008, had an access and retention funding stream to support and improve retention and completion. This was discontinued due to funding cuts and the case for its reinstatement should be considered.

The current approach avoids effectively penalising HEIs for the profile of their student intake, or risk of inserting a disincentive to recruiting lower points students, as completion rates are strongly correlated with Leaving Certificate points on entry. At the same time institutions are held accountable for their performance in improving their retention rates as part of the strategic dialogue process. They are also required to demonstrate that their teaching and learning strategies have taken account of the profile of their student intake. Publishing regular reports on progression by HEI, by NFQ Level, by Field of Study, by socio-economic background etc. enables the HEA to continue to examine how they are performing in this area.

If it was decided to further alter the balance of funding away from enrolment and more towards completion, notwithstanding the balance that is currently being achieved by the combination of block grant and performance funding, it could be possible to further weight enrolled student numbers by for example, first year non-progression rates, as a proxy for completion, within comparable discipline areas, and within each of the two separate funding pots. Applying a progression factor within each pot would in effect be comparing like institutions for the award of funding but it is not clear that such a move would improve system performance on completion.

If it was decided instead to reserve a proportion of funding to be distributed based on awards made rather than enrolments, this would require a formula to build in graduating numbers in a fair way taking account of the ladder system with exit awards made after each of first, second, third and fourth year to many IOT students.

It is not possible to treat this exercise as a technical financial allocation issue alone. The type of teaching and learning strategies adopted by different HEIs need to match the profile of their students, but they also need to match available funding. Less academically prepared students from lower points backgrounds will likely need more academic support particularly in their first year, and so are likely to have associated higher unit costs.

Two pots, with link to student numbers, answers different teaching strategies. Work to be done on costing model, with input from QQI and others, on the extent to which the higher staff student ratio in the IOT sector which drives higher costs, ought to be recognised in the funding allocation model. This is the main area driving higher costs in the IOTs and is reflected in Academic Department costs at 60%+ in IOT accounts as opposed to 45% in University Accounts.

Access

The Access plan acknowledges that the strategic dialogue process is the primary mechanism for review of access performance. Moreover, it implies a need for continuation of the additional cost-based weighting for access students contained in the existing funding allocation model, but also for some earmarked or ring-fenced funding for pilot initiatives to target communities with very low participation. Furthermore, it points towards an enhanced focus on access outcomes by examining problem areas of non-completion. This needs to be sensitively handled in funding allocations, taking

into account the risk of reducing access. Additionally, it points to a need for improved data gathering which the funding model must somehow support.

Postgraduate Taught

Taught postgraduate provision is incredibly important to meet the needs of the knowledge economy. Taught postgraduate student numbers are included within the total weighted student numbers on which grant allocations are calculated in the Irish allocation model but not in UK. A case exists both for and against grant funding to support institution costs of postgraduate provision. There is a strong case for student support at postgraduate level but this is outside the remit of this review.

Postgraduate Research

The major portion of core grant support for research is provided through the research student numbers that are included in each institution's overall student numbers and in the allocation formula. Typically, research students attract a multiple of the funding provided for undergraduate students – roughly 3 times an undergraduate student in the universities and 2 times an undergraduate in the IoTs. Approximately 20% of the universities weighted student numbers are research student numbers, against 3% in the IoTs. The lower weighting for research students in the IoTs as compared to the universities is intended to reflect the actual cost differentials in the two sectors and is based on the general approach that the core grant reflects costs rather than incentives. To provide a weighting of 3 (times the undergraduate cost) for research students to the IoTs, when the actual cost differential is less than 2, would incentivise research for the IoTs, raising policy questions about the respective missions of universities and IoTs. However, it should be noted that many of the IoTs with more intensive research activity challenge the existing arrangements and note the funding disadvantage in comparison to universities with whom they must compete for competitive external research funding.

There is also some concern that resources have been deployed in some cases to build research numbers in response to Technological University criteria at the expense of the teaching mission.

4) Higher education and skills development

Rationale

There is a clear and urgent need for a pipeline of highly educated people in STEM disciplines to respond to skills needs and to drive the economy. The National Skills Strategy calls for an enhancement of STEM provision and the development of programmes in response to identified skills needs. A review of the National Skills Bulletin for each of the four years 2012-2015 highlighted that there are continuing skills shortages for professionals and associate professionals in the areas of ICT, Science and Engineering.⁵ During 2015, employers continued to source skills from outside the EEA. Over 6,000 new employment permits were issued in 2015, an increase of 25% on 2014, with the ICT sector accounted for 44% of all new employment permits issued that year.⁶

As set out in the interim report there is a commitment to ensuring the future funding approach supports continued and enhanced targeting of skills development needs. The consultation process found that the need for funding to address identified skills shortages is understood and targeted allocations are generally considered to represent an appropriate response.

Transparency of skills funding

There is a perception that the current model does not recognise or encourage sufficient responsiveness to regional and national skills needs. While it is acknowledged that there is some support for skills development, there is a desire for more transparency about how it is funded. If

⁵ Department of Education & Skills (2016); Ireland's National Skills Strategy 2025

⁶ Expert Group on Future Skills Needs (2016); National Skills Bulletin 2016

additional investment can be secured from industry or other relevant sources, the new model must provide the assurance that this investment can be channelled towards meeting identified skills requirements.

Current skills development

Skills development are supported through the block grant and also from top splices such as Springboard and Nursing. Analysis carried out as part of the funding review shows that the current model has a strong role in supporting skills development, with 33% of core funding channelled towards identified private or public sector skills needs.

Part-time

The National Skills Strategy calls for an expansion of part-time and flexible provision as it is critical for workforce upskilling in order to meet the future skills needs. Ireland is significantly behind the European norms in terms of the delivery and participation in lifelong learning. As outlined in Working Paper 2 part-time and remote learning in higher education has not grown at the same rate as full-time undergraduate provision. Current enrolment figures show that 81% are full-time, 17% part-time and 3% remote.

There are a range of types of part-time and lifelong learning students and how they are defined is changing. In this context it is important to distinguish part-time undergraduates from other part-time students such as part-time postgraduate executive education students.

With regard to first-time undergraduate part-time students, ideally the model should be blind to mode of attendance. However, at present part-time students are ineligible for the award of Free Fees funding. If the concept of Free Fees were removed and if this funding were subsumed into a larger core grant, it would be straightforward to fund institutions for all FTE students, regardless of their mode of attendance. If free fees remain as part of the model, but are taken into account in the formula for the allocation of core grants as proposed above, the same outcome can be achieved, but in a somewhat less transparent way.

Ideally the funding model should aim to support HEIs to flexibly respond to the need of undergraduates who wish to vary the pace of their progression, to something other than 60 credits per year (the definition of full-time) in order to improve their chance of successful completion. It should support those who must work to support themselves, those who have a disability and for whom full-time study may not be the most appropriate option, those experiencing academic challenges, those wishing to upskill by taking some credits rather than a major award, those with carer duties. The best option to deliver for these students would be for the Free fees scheme and the access supports to be extended to equally to part-time students. The system urgently needs to find ways to facilitate progression by certain students on a part-time basis as this has been recognised as a deficit in the system for almost two decades.

Role for competitive funding

The success of the Springboard provides the basis to make the case for competitive funding to address the future skills needs. The Springboard programme has made a significant contribution to producing graduates with employability skills. A recent survey of all Springboard graduates 2011-15 indicates that within three to six months of completion of a Springboard course 54% of respondents are employed or self-employed.

Springboard is a part-time scheme and covers the cost of fees for all participants, while also allowing for the continuation of certain pre-existing social welfare entitlements. While there is a case for this scheme to be expanded, the funding for this programme currently comes from the Department of Jobs, Enterprise and Innovation and therefore is beyond the remit of this group. The panel should

consider how the learnings from this scheme could be used to develop a competitive funding call for skills development within the new model.

5) Supporting excellence and innovation in teaching and learning

The *National Strategy for Higher Education to 2030* sets out a number of high-level objectives, including that it should promote excellence in teaching and learning to underpin a high-quality student experience and produce high-quality qualifications.⁷

Current situation/National Forum

The National Forum is the key system-level infrastructure for the enhancement of teaching and learning in Irish higher education, and for the implementation of the recommendations of the *National Strategy for Higher Education to 2030* in this area. This Forum was announced by the Minister for Education and Skills in November 2012.⁸ The Forum engages in a range of activities aimed at:

- Championing all those who contribute to great teaching and learning in higher education
- Inspiring great practice, by celebrating examples of teaching that have a strong and positive impact on learning
- Developing teachers and learners
- Identifying and promoting best practice in professional development
- Building digital capacity
- Promoting key enhancement themes
- Enabling innovation in a fast-changing educational environment.

The National Forum is funded from ring-fenced funding from the HEA funding allocation. The Forum received a cumulative investment of €8.598 from 2012-2016 and a further €2.958 million in 2017. An international strategy consultant specialising in educational, skills and quality assurance policies, has been appointed to undertake a review of the forum and investment in subsequent years will be contingent upon the outcome of this review.

Top Slices

As outlined Working Paper 4, top-sliced, ring-fenced allocations for specific strategic or important purposes are earmarked from time to time by either the Department of Education and Skills or by the HEA. Top-sliced funding is generally used to steer rapidly required systemic change, to support issues that better addressed on a collective or sector level, or to handle urgent ad-hoc issues. Very often, top-sliced funding is allocated through competitive processes based on submission and panel evaluation. One of the most successful funds of this type was the Strategic investment fund.

Strategic Investment Fund

The Strategic Investment Fund for National Priorities (SFI) was established in 2005 in response to the OECD's review of higher education in 2005 which presented a suite of recommendations for the modernisation and development of a higher education sector on the front-line of the country's socioeconomic repositioning within the global landscape. ⁹ Two four-year cycles of the SIF were initiated in 2006 and 2008, with funding allocations to higher education institutions determined through competitive processes overseen by independent, international expert panels.

⁷ http://www.hea.ie/sites/default/files/national strategy for higher education 2030.pdf

⁸ http://www.teachingandlearning.ie/about/

⁹ http://www.hea.ie/sites/default/files/strategic innovation fund - outputs outcomes report 2013 final.pdf

The SIF was a capacity building fund aimed at building not only core institutional capacity but also system capacity.¹⁰ This fund was used to provide targeted investment in teaching and learning and was the first significant competitive funding available to the institutes of technology to support innovation in teaching and learning. The enhancement of teaching and learning is considered to be one of the biggest achievements of the SIF. Unfortunately, due to the cut in public funding in 2008, the fund was closed.

Top slices for Competitive Funding

Top slices and competitive funding are accepted as the best mechanisms to deliver on system strategic objectives and to improve system wide capacity. They are an essential part of any allocation model. The question is what proportion of funding should be top sliced for competitive funding as opposed to allocated through the block grant.

Ireland appears to have a high proportion of 'top-sliced' funding¹¹ in comparison to other OECD countries. This is due to the way in which top slices are currently used as directed funding that is operationally ring-fenced for a period of time, as opposed to targeted funding for new strategic reasons. As noted in Working Paper 4, a general principle of funding that is top-sliced and earmarked for new developments is that funding should progress through stages of being ring-fenced, then reviewed, and finally being either mainstreamed or discontinued. The question is the length of time for which the funding should remain protected before being brought back into the central pot through review processes, and be replaced by targeted funding for new strategic reasons.

The other question is where the funding for these top slices comes from. In the past, only funding provided additionally by the Department of Education and Skills was top-sliced for running competitive programmes or other strategic initiatives. However, in recent years, there has been some top-slicing from existing core grants. This has become an issue in the sector and calls have been made that any strategic initiatives should be funded form new or additional funding and not taken from core funding.

During the consultation process it was proposed that the incentivised collaboration approach via competitive funding programmes such as the Strategic Innovation Fund was the most appropriate means of ensuring further progress, rather than a rigid prescriptive approach requiring action across the current fixed regional clusters. While this was broadly accepted as the best approach, the issue of source of funding and transparency of its allocation was also raised.

The Innovations in Tertiary Education Financing: A Comparative Evaluation of Allocation Mechanisms Report found that competitive funds are well suited for stimulating innovation and quality improvement. However, they also note the importance of using a combination of resource mobilisation and allocation mechanisms to deliver policy objectives, given the growing diversity of funding sources.¹²

Generic vs Targeted Skills

The new model needs to not only find the balance between the block and competitive funding, but also to recognise both generic and targeted skills within both these funding streams.

¹⁰ http://www.hea.ie/sites/default/files/final 25 jan.pdf pg 30 & 31

¹¹ https://openknowledge.worldbank.org/bitstream/handle/10986/26314/107097-PN-P157679-OUO-9-

PWBPOLICYNOTEInvestingStrategicallyinHigherEducation.pdf?sequence=1&isAllowed=y

¹² http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/Innovations TertiaryEd Financing.pdf

Targeted skills gaps are more visible but how the higher education sector is responding to these skills gaps needs to be clearer within the new model. Skills funding needs to be easily identifiable within both the block grant and also competitive funding streams. If employer funding identified as possible funding source in the Cassells report becomes an integral part of the Department of Education and Skills grant to the HEA, there will be an increased need to show the benefit to the employers contributing.

One way to show the benefit to employers is to introduce metrics based on outputs such as the number of students graduating, as opposed to participating as is currently the case, or the number of graduates in employment within a period of time of graduating. During the consultation process some stakeholders welcomed a wider outcomes based approach incorporating completion and employment rates. Others were concerned at how this might influence institutional behaviour to focus on attracting higher points students who are more likely to progress to graduation and the potential implications for access students, as HEIs might be less willing to take on access students that are at a greater risk of not progressing. This could also impact institutions decisions on the duration of courses, as they could benefit from increasing the number of graduates produced by reducing the length of the course.

The National Framework Qualification shows all awards are comprised of a mix of knowledge, skills and competences, with difference balances of the three depending on the level of award, discipline and type of HEI. There is a need to recognise the contribution of all three elements in our approach to funding teaching and learning and the approach to employer engagement.

There is a trend from a pedagogy progression perspective towards building more generic foundational skills with general rather than highly denominated entry routes. The Transitions Report in 2011 recommended that higher education institutions, individually and collectively, should review their undergraduate portfolio with a view to establishing broader entry to undergraduate programmes and that this change needs to be made at system level.¹³ This should reduce the non-progression rate due to poor programme choices, as students will be less limited in their progression route from first year.

As the HEA considers increasing the funding allocation for activities such as employability skills, it is important to note that if the overall funding allocation does not increase then this money will be taken from teaching and learning. As outlined in Working Paper 6, the area that is in most urgent need of additional funding is academic departments and capital to ensure quality of teaching and learning provision. Even if additional funding is received, the proportion of funding allocated based on teaching and learning metrics is likely to reduce as the proportion based on other metrics increases.

In order to protect teaching and learning funding and ensure that existing teaching and learning funding is not being used for other necessary developments, it is critical that the development of generic and targeted skills is embedded in teaching and learning supports.

6) Embedding technology in teaching and learning

Context

The *National Strategy to Higher Education to 2030* highlights the opportunities provided by new technology to facilitate new ways of delivering higher education.¹⁴ The use of technology has in the past been limited to delivering online provision or using digital tools in learning. The *Teaching and Learning in Irish Higher Education Institutions: A Roadmap for Enhancement in a Digital World* highlights the broader use of technology, stating that 'it is about developing new ways of dealing with

¹³ http://www.transition.ie/files/HEA NCCA Transitions.pdf

¹⁴ http://www.hea.ie/sites/default/files/national strategy for higher education 2030.pdf

information, working and learning in a digital environment, using time and information differently, and developing new versatility when it comes to interaction in learning environments'.¹⁵

Success to date

There have been some examples of success to date in the use of technology both within the IoT and university sector. Institute of Technology Sligo is the field leader in terms of online provision. Developing part-time and online provision has enabled them to grow their student numbers within a region that has a limited demographic growth rate.

Dublin City University has developed an online tool called ePorfolio which allows students keep track of their person, professional and academic development through the course of their study. The university recognised the need to help students to develop key 'graduate attributes' and designed this online tool to provide them with a structured environment to record and reflect on the skills they have attained which can then be used when seeking employment.

Challenges

In order to unlock the full potential of technology it is necessary to change many of the basic structures, assumptions, policies and procedures within higher education. It may even require us to challenge our beliefs and attitudes about the role and nature of higher education itself.

While the potential of technology is widely accepted, there is a challenge to change not only the way we think about it, but also to build our capacity in this area. During the consultation process the technology and expertise costs associated with on-line learning were raised, and it was stressed that this type of provision does not necessarily offer a cheaper way of delivering education.

Developing capacity

As discussed above, a targeted fund to develop capacity in this area may be the best way to achieve this strategic priority. The consultation process revealed that there was support for the use of a Springboard type competitive funding model for the development and delivery of flexible and online provision, with ring fenced resources for this purpose.

A structure should be put in place in order to share learnings across the sector and look for efficiencies. Although the costs of investing in this area are recognised, it is also essential that potential efficiencies that could be achieved through the use of technology are explored.

7) Future capacity for teaching and learning

Response of funding allocation model to demographic growth

To simply maintain rather than increase existing national participation rates in higher education, the higher education system must grow by around 20%-25% between 2015 and 2030. The Department of Education and Skills has considered three scenarios when projecting the estimated increase in demand for full-time third-level education which give a result of between 207,544 and 227,244 expected full-time enrolments by 2029 – up from c170,000 in 2015.16 In addition to full-time enrolments there are currently 38,000 part-time and remote learners in the publicly funded system. The most important consistent finding of all recent DES projections is that whichever scenario is chosen regarding migration or mature and international students, demand is almost certainly going to continue to rise year-on-year between 2015 and 2029, given underlying demographic factors.

¹⁵ http://www.teachingandlearning.ie/wp-content/uploads/2015/03/Digital-Roadmap-web.pdf

¹⁶ DES: *Projections of Demand for Full Time Third Level Education 2015-2029*, November 2015. Note that these are projections for full-time enrolments, which were at 179,354 in 2015/16 (cf. Figure 2.3).

This impacts across many aspects of the funding allocation model, including the core student driven approach which determines the major part of grant allocations to HEIs. The HEA grant allocation model is a funding-follows-the-student model. In the past the HEA did not control, direct or influence the number of fundable students that it would consider for grant allocation. The HEIs exercised their statutory autonomy to admit students in response to demand and the HEA grant allocation took account of the resulting number. Some change to this approach has become necessary to reduce the risk of unsustainability if student demand expands faster than inflation-adjusted funding. While not capping numbers, and while respecting the autonomy of institutions regarding admissions a closer relationship needs to exist between the total funding provided, the average cost of provision, and the three major funding components of student contribution, free fee, and RGAM block grant so as to maintain and restore quality provision, to remove unintended incentives and disincentives that can arise due to mismatches between the structure of costing and funding, and to ensure a more sustainable system level balance between funding, participation and quality.

It has been pointed out that the expected demographic growth will not be experienced evenly across every part of the country. Overall regional population projections show the Greater Dublin Region likely to grow strongly, while the West and Border region are projected to grow far more slowly than the State¹⁷. However, critical regional roles beyond the core teaching and learning role, will remain for many institutions in more slowly growing regions, some of which also contain areas of lower than average participation in higher education¹⁸. These roles are about stimulating innovation and entrepreneurship, responding to the up-skilling needs of industry, meeting the lifelong learning requirements of the local population and providing access to higher education for those that would not otherwise participate. The regional dimension will be an important consideration as we look at the different options for the future funding approach, ensuring that the unique regional contribution of institutions is supported and enhanced.

Capital issue – significant investment in infrastructure required

While the recurrent funding situation is a major concern, the lack of capital investment in higher education in recent years is perhaps the biggest risk to sector sustainability. Pressure to accommodate additional demand in the schools sector led to a moratorium on new capital projects in the HE sector in November 2011.¹¹ With a capital stock of €8 billion and a general acceptance that 2.5% to 3.5% of the value of stock needs to be invested each year in order to adequately maintain it, the recent overall investment levels, as set out in Table 7.1, are insufficient to meet these requirements, before considering the need for new buildings to accommodate increased student demand or deal with legacy issues around the quality of stock. These latter issues are important, with major repair or replacement required on 41% of the total space in the sector. Temporary buildings (including prefabs) and rented space account for 6% of stock. Irish students have 25% less physical space than is the norm internationally.

Table 7.1: Capital Investment in Higher Education 2008-2015

¹⁷ Regional Population Projections 2016-2031, CSO statistical release, December 2013

¹⁸ National Plan for Equity of Access to Higher Education 2015-2019 HEA 2015. (A3 Participation by Geographic Region)

¹⁹ Letter from the Department of Education and Skills to the HEA, 10 November 2011.

	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid
	2008	2009	2010	2011	2012	2013	2014	2015
UNIVERSITY	€24.50	€76.54	€116.50	€48.00	€44.00	€41.00	€31.10	€29.58
IOTs	€51.00	€58.50	€51.00	€24.00	€8.00	€15.50	€8.00	€16.78
Grangegorman	€0.00	€0.00	€0.30	€5.00	€2.50	€12.30	€40.00	€5.91
DIAS	€0.00	€1.25	€0.30	€0.25	€0.02	€14.00	€0.10	€0.00
RIAM	€0.00	€0.50	€0.00	€0.20	€0.14	€0.04	€0.00	€0.00
CICE	€0.00	€0.23	€0.30	€0.38	€0.25	€0.20	€0.06	€1.70
Total	€75.50	137.02	€168.40	€77.83	€54.91	€83.04	€79.26	€53.97

Due to the universities' capacity to borrow, and the ability of some institutions to utilise reserves or source philanthropic funding, this Exchequer contribution has been supplemented to produce annual capital investment of €290mn, but most of this funding is channelled towards new bespoke capital development projects.

Role of the private sector

In 2015/16, almost half of the places on the Springboard initiative were provided by the private higher education sector. Demand side subsidies have been very successful in the past in expanding ICT conversion masters programmes, which have retained strong graduate employment rates in good economic times as well as during recession, as they were in the Springboard programme. In all skills shortage response initiatives, it is important to not put in place supply side solutions such as expanding places, to meet demand side problems. Where demand side initiatives are required, this could be more attractive to the private sector, particularly at postgraduate level where fees can often account for a higher proportion of average unit cost, and where consequently fee remission or fee subsidy schemes could be more attractive to the private sector.

Potential for a hybrid model

The most common role for public/private partnerships in higher education internationally has been in the design, build and operation of student accommodation, and in research where funding for public private partnerships was recently stepped up under Horizon 2020 whose funded partnerships were expected to leverage additional investment of three to ten euro for each euro of public investment with the overall aim of giving European industry a leading position in world markets.

Some countries also encourage or allow private institutions to affiliate with public institutions in partnership agreements where the private institutions deliver the education, while public institutions provide quality control, curriculum assistance and award degrees. This can provide a middle road between fully public and fully private provision and can combine some of the strengths of the public and non-state sector, allowing perhaps for more innovation, efficiency, flexible delivery from the private sector, combined with strong academic reputation and staffing expertise from the public sector.

While in Ireland there are many examples of university campus companies providing services outside of the institution and of contracted companies providing non-academic support services inside publicly funded HEIs, there are few examples of partnerships between publicly funded and private HEIs for delivery of academic services either on a publicly funded or on a private campus. One example is BIMM, The British and Irish Modern Music Institute, which has colleges in seven cities London, Berlin, Dublin, Brighton, Manchester, Bristol and Birmingham and is one of the largest providers of contemporary music education in Europe and in Dublin is partnered with DIT. Students are admitted

to and receive their degrees from DIT, but the programmes are delivered by BIMM. This partnership allows BIMM students to qualify for SUSI grants and supports and could serve as a useful template for extension to other HEIs.

The partnership model can represent a solution for the development of online provision for those institutions that do not have the funds or structures in-house to create them. Partnering with established online companies can reduce some of the development and funding risks of online provision and allow HEIs to concentrate on development of high quality content, assessment, student support and awards. Online education companies can often create and take online courses to market very quickly and their structure can sometimes allow them to provide the entire production process from planning to advertising.

Private not-for-profit religious owned institutions with significant public funding support including free fees and student grants are a part of the Irish HE landscape.

8) Options for development of the funding allocation model

Remove incentives to under-funded or unbalanced undergraduate expansion

Announcing the breakdown of the 2017 estimates for higher education the Minister for Education and Skills, said that the 2017 marked the first significant investment in higher education for 9 years²⁰. The total increased allocation was €36.5m, and was spread over student support, research, disadvantage, skills, technological universities, flexible learning and included €14m for demographic increase. The provision for demographic increase marks a new and welcome development in public funding for higher education and signals further public recognition of the need for higher education funding to keep pace with higher education demand. The Minister stated that the increase would allow us for the first time to keep pace with demographic increases and also introduce targeted initiatives in priority areas, in particular disadvantage, skills, research and flexible learning. The Minister signalled his intention to work with the Minister for Public Expenditure and Reform to put in place a sustainable and predictable multi-annual funding model for Higher and Further Education from 2018 in which all beneficiaries of the third level sector can play a role.

The combination of this move to recognise demographic increase in public funding allocations to HEA, and some changes in the HEA funding allocation model should restore a more sustainable balance between growth and quality of provision.

• There is a need to examine the way in which the funding allocation model responds to increases in student numbers. The existing model includes all student numbers increases over the preceding year in calculating an indicated grant allocation, and then, through the operation of the Moderator, it slows the pace at which actual grant share is adjusted in recognition of changing student number share. This can work well in times of increasing funding to provide stability, cost containment and fair recognition of changing patterns of student demand. But it can lead to and has led to a beggar-my-neighbour scenario when student numbers increase faster than inflation-adjusted funding — increased grant share in one HEI leads not only to decreased grant share in another, but to reduced real funding per student across the system. In theory this acts as an incentive for each HEI to attempt to grow student numbers share faster than other HEIs, although for most HEIs it is more a case of there being no incentive to respond to demand in a more planned and controlled way.

²⁰ DES Press Release 5 January 2017 – Minister Bruton announces breakdown of €36.5m Third Level spend

Options include explicitly disaggregating any sectoral funding increases that is received by HEA, into an agreed inflation component - that required to maintain the real value funding per student in the face of public pay agreements etc. — and a development/growth component. The first step could then be to allocate the inflator to all HEIs, through an inflation-adjusted unit of funding, and the second separate step would be to allocate development/growth funding, if any. The decision as to whether or how much to top-slice for targeted development needs to be made in the context of inescapable inflation cost provision for teaching and learning. And the split any funding increase above inflation as between development and provision for student numbers growth needs to be made as an explicit decision. The system whereby growth in student numbers in some HEIs is paid for by erosion of the unit of funding for all other HEIs would thereby be curtailed. This is not to say that some efficiency factor might not continue to be built into grant allocations — rather, that any reduction in unit funding that is applied as an efficiency factor would be undertaken as a separate conscious step and not as a somewhat hidden by-product of allocating grant based on share of student numbers.

An alternative option would be to disregard small variations in student numbers from year to year in the allocation of annual funding – thus HEIs would themselves bear the full cost of small incremental increases in student numbers, rather than loading them onto to the sector as a whole to bear and to consider how a succession of small unfunded incremental increases might affect the institution's sustainability.

A third option would be to calculate grant share based on student number share every three years instead of annually, while continuing to publish student number share. This would still leave in place an incentive to grow student number share in the hope of eventual increased grant share. But it would require HEIs to bear the cost of their unfunded increases for a period of time.

Allocating funding that had been provided in recognition of student number growth either by the DES or by the HEA, could be undertaken either on the basis of competitive calls in particular areas, or on the basis of distribution between those HEIs that had already increased numbers in response to demand (ie actual student numbers), or on the basis of allocating increases in student numbers that would be taken into account in future allocations.

Allocate the core grant by a single formula that takes account of income from Core grant and
Free Fees. This would effectively end the treatment of Free Fees as a first call as if it were an
unlimited demand-led scheme when in reality free fees are funded from an overall grant that
is limited and intended to fund undergraduate, postgraduate and core research. It would also
effectively apply the subject price group weightings to both core grant and free fees.

There is a strong argument for abolishing the Free Fees scheme altogether. It is a legacy element of funding, its operation is administratively burdensome, it operates on a different year (Sept to June) to the core grant (jan-Dec), fees are not aligned with subject cost group weightings. If it were subsumed into the core grant there would need to be a new repeat fee for students who are not currently entitled to benefit from free fees at present.

However, if the Free Fee concept is maintained as part of the allocation model, at least the amount of Free Fees received should be taken into account, in the allocation of grants based on weighted student numbers. This would make the allocation fairer to Institutions in which

Free Fees represent a smaller portion of total costs, such as HEIS with Level 6/7 provision, and HEIS with higher proportion of programmes in STEM, Medical Education etc.

• Take account of income from Student Contributions in the allocation of core grant. A substantial portion of the student contribution came into existence in substitution for reductions in state grant funding and distortions in the pattern of funding may have arisen as a result – although increases in student contribution were matched by decreases in Free Fees. This income needs to be treated as part of the regulated income base and taken into account in grant allocations. This would effectively apply the subject price group weightings to income from the Student Contribution and would make the total grant allocation more reflective of the cost the providing STEM and Research degrees.

Remove disincentive to part-time and lifelong learning provision

If HEA takes into account the income available to HEIs from Free Fees for full-time students
and from student contributions, those HEIs in receipt of higher levels of income from these
streams, would receive less block grant while HEIs with more provision in areas like part-time
UG education and consequently with lower levels of income from these streams, would count
for towards higher levels of block grant funding.

A further option with regard to the inclusion of part-time student numbers in the funding allocation model would be to consider whether some element of the funding per student should be provided on a head count basis rather than on an FTE basis – e.g. all students must register whether taking 30 (0.5 FTE) or 60 credits (1 FTE). A simpler alternative might be to give a small additional weighting to the FTE of part-time students in recognition of fixed per head costs. In some systems this weighting is of the order of 10% - this could be phased in over time.

Appendix 1: Subject Price Group Weightings

University Sector:

	FTE	Taught	Research	Non-Lab	Fieldwork	Lab	Clinical	Veterinary/
		Masters					Medicine	Dentistry
Undergraduate and Postgraduate Diplomas	1.00			1.00	1.30	1.70	2.30	4.00
Masters Taught (60 credits)	1.00	1.50		1.00	1.30	1.60		
Masters Taught (90 credits)	1.50	1.50		1.00	1.30	1.60*		
Research EU (60 credits)	1.00		3.00	1.00	1.30	1.60*		
Research Non-EU (60 credits)	1.00		2.00	1.00	1.30	1.60*		
Research EU (90 credits)	1.50		2.00	1.00	1.30	1.60*		
Research Non-EU (90 credits)	1.50		1.33	1.00	1.30	1.60*		

^{*}maximum weighting allowed is 4.80

Institute of Technology Sector:

	FTE	Taught	Research	Non-Lab	Fieldwork	Lab
		Masters				
Undergraduate and Postgraduate Diplomas	1.00			1.00	1.30	1.70
Masters Taught (60 credits)	1.00	1.20		1.00	1.30	1.70
Masters Taught (90 credits)	1.50	1.20		1.00	1.30	1.70
Research (60 credits)	1.00		1.80	1.00	1.30	1.70
Research (90 credits)	1.50		1.80	1.00	1.30	1.70