Performance-based University Funding

Exposition

Ministry of Higher Education, Science and Innovation December 2024



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Definitions

Academic man-year: The equivalent of one full year of work by a member of staff with academic credentials employed in an academic capacity (as a teacher or researcher).

Academic year: Extending from 1 July to the same date the following year.

Attempted credits: Defined in previous legislation as "credits associated with courses in which the student attempts examination". This definition is not used in the new higher education funding model.

Bachelor's degree: Higher education qualification where the student has completed all credits belonging to a structured first-cycle programme, *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time.

Completed credits: Standardised course credits where a student enrolled in the course has received a 'Pass'.

Credits: Standardised units of study, reflecting the expected student workload necessary to meet the requirements of a particular course.

Cycle 1 (also 'first cycle'): Includes two levels: 'diploma' and 'bachelor's degree', *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time.

Cycle 2 (also 'second cycle'): Includes two levels: 'master's level certificate and other postgraduate qualifications', and 'master's degree', *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time.

Cycle 3 (also 'third cycle'): Includes two levels: 'master of philosophy' and 'doctorate', *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time.

Diploma: Higher education qualification where the student has completed all credits belonging to a structured first-cycle programme, *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time.

Doctorate: Higher education qualification where the student has completed all credits belonging to a structured third-cycle programme, *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time. Studies toward a doctorate must include a research project which meets international criteria for doctoral theses.

Field-weighted citation impact: A metric indicating how many citations a publication has received as a proportion of the expected number for comparable publications in the field concerned, as indexed in the international Scopus database.

Funding formula: A mathematical formula taking predefined variables as inputs and outputting a numerical vector.

Funding model: A set of assumptions and a methodology to decide on the allocation and distribution of funding between higher education institutions, in this case in Iceland. The funding model described in this document is built on a mathematical funding formula supplemented with policy-based funding.

Graduate: A student who has met all the requirements of a programme, and who has thereby been awarded a higher education qualification, such as a degree or another formal credential.

Impact factor (of a journal): A metric measuring the impact of academic journals. The impact factor is calculated based on the number of citations received by journals indexed in the international Scopus database, as recorded in that database.

Master's degree: Higher education qualification where the student has completed all credits belonging to a structured second-cycle programme, *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time. A master's degree must include a research project worth at least 30 credits.

Master's level certificate: Higher education qualification where the student has completed all credits belonging to a structured second-cycle programme, *cf.* the Criteria for Higher Education Programmes and Degrees in force at each time. Master's level certificates are awarded for studies that either do not include a research project or only research projects worth 30 credits or less.

Policy-based funding: Funding allocated based on a subjective assessment rather than the results of the funding formula. That assessment is carried out by the public authorities.

Private higher education institution: A higher education institution having obtained ministerial accreditation in accordance with Article 3 of the Higher Education Act, No 63/2006. Private higher education institutions may operate as non-profit foundations ('self-owned organisations') or under any other recognised corporate form.

Programme: A specific combination of higher education studies with a unique name, corresponding to a fixed number of credits which students must complete to be awarded a degree or other qualification at the end of their higher education studies.

Public higher education institution: A higher education institution operating as an independent government-funded organisation under the authority of the relevant Minister. Public higher education institutions are listed exhaustively in Article 1 of the Act on Public Higher Education Institutions, No 85/2008. Public higher education institutions must obtain ministerial accreditation in accordance with Article 3 of the Higher Education Act, No 63/2006.

Publication statistics: Statistics on research activities by an Icelandic higher education institution, as measured by peer-reviewed publications indexed in the international Scopus database.

Student year: The equivalent of one full year of student work – 60 completed credits.

Top 1% of peer-reviewed publications: A publication belongs in this category if it places in the top 1% of all publications by the number of citations, corrected for year of publication and field of study, in the international Scopus database.

Top 10% of peer-reviewed publications: A publication belongs in this category if it places in the top 10% of all publications by the number of citations, corrected for year of publication and field of study, in the international Scopus database.

Tuition fees: Tuition fees are the student's contribution toward teaching and administration costs, to which may be added service fees comparable to those which public higher education institutions are authorised to charge under Article 24 of the Act on Public Higher Education Institutions, No 85/2008.

Variable: A metric having an impact on funding.

1. Introduction

Iceland has seven higher education institutions ('HEIs' in what follows). Four of these are public HEIs: the University of Iceland, the University of Akureyri, Hólar University, and the Agricultural University of Iceland. The three private HEIs are Reykjavík University, Bifröst University, and the Iceland University of the Arts.

Funding for HEIs is subject to annual appropriation by the Althing. Following the appropriation decision, the Ministry responsible for higher education decides on the allocation of the funding between all HEIs operating in Iceland. The funding model presented here under the name of "Performance-based Funding of Higher Education" is a public-policy tool to determine that allocation in a transparent and fair manner, while at the same time creating an incentive for HEIs to improve their performance. The purpose of this memorandum is to elucidate the principles underlying the funding formula and the different components that together make up the new funding model for higher education.

A special mathematical formula to support decisions on HEI funding was first introduced in 1999, and was seen as a major improvement. However, in the quarter century that has passed since then, the formula has remained virtually unchanged, while both the higher education system and society as a whole have been transformed. The model has attracted criticism for this, and plans to update it have been in the making for a long time. In a report published in 2007, "Cost, efficiency and quality of tertiary teaching"1, the National Audit Office issued recommendations for the revision of the system, with the aim of providing better support for quality assurance and efficiency in higher education. Likewise, the Science and Technology Policy Council, in its policy for the period 2017 to 2019², underlined the necessity of updating the funding system in order to improve its efficiency and reduce drop-out rates. A "Green Book on Higher Education Funding"³ was issued in 2019, and was followed up by the appointment of a working group on quality and efficiency in higher education by then Minister for Culture and Education, Lilja Dögg Alfredsdóttir. The group was given the task of creating proposals on how to ensure that public funding of higher education supports public goals regarding quality and performance in teaching and research, and the maintenance of strong ties between HEIs and society. In July 2021, the working group delivered a report⁴ on higher education funding, which proposed to base allocations on a broader range of metrics than before, to be grouped under three headings: 'Teaching', 'Research' and 'Societal Role'. The report also recommended a reduction in the number of cost categories used in the funding formula. The proposals and reports mentioned above served as important preliminaries to the policy work carried out by the Ministry of Higher Education, Science and Innovation in creating a new funding model for higher education.

In 2022, Minister of Higher Education, Science and Innovation Áslaug Arna Sigurbjörnsdóttir launched the work on a new funding model, in accordance with a motion for a parliamentary resolution on strategic measures to strengthen the knowledge society in Iceland until 2025.⁵ That work began with an information gathering and analytical phase within the Ministry, and concluded in October 2023 with the publication of a proposed new funding model in the Government Consultation Portal. The new model was developed in consultation with interested parties in academia, including through workshops with the participation of rectors, students and other repre-

¹ Icelandic National Audit Office, "Cost, efficiency and quality of tertiary teaching" (in Icelandic), 2007.

² Ministry of Culture and Education, "Policy and action plan 2017–2019 – The Science and Technology Policy Council", 2017.

³ Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019.

⁴ Ministry of Culture and Education, "Higher Education Funding. Report of the working group on quality and efficiency in higher education" (in Icelandic), 2021.

⁵ Parliamentary document 237/154. The motion was passed, becoming a resolution of the Althing.

sentatives of the academic community. Preparations also included conversations with representatives of ministries responsible for higher education in the other Nordic countries, as well as other experts, to gather viewpoints on the operation and needs of higher education institutions. When finalising the new funding model, the Ministry took into account a number of comments received through the Government Consultation Portal.

The premises used in the application of the funding model are published annually in the annex to the State budget, following the provisions of Article 19, first paragraph, item 4 of the Public Finance Act. This purpose of this memorandum is to further explain the structure of the new funding model and the rationale of that structure. Taken together, the information contained in the annex to the State budget and in this memorandum should provide a clear account of how funding is allocated between higher education institutions in a given year.

It should be noted that the Public Finance Act does not place HEIs under the obligation to allocate the funding provided to them based strictly on the premises laid down by the government. HEIs are free to decide how the funding they receive is allocated between departments, and may in that respect use such criteria as are deemed appropriate in each instance.

Given that the new rules entail considerable changes in the ideology and implementation of higher education funding, it is important to gather information about and analyse the consequences of those changes for HEIs, as well as their impact on student performance, teaching, research and society at large. The Ministry of Higher Education, Science and Innovation intends to carry out a consequence analysis during the autumn of 2024.

For the above reasons, the rules contain provisions on their regular revision, in order to ensure that public funding of higher education produces the intended results, for the benefit of universities and society.

1.1 Description of the previous funding system

The previous funding model for higher education was based on Rules No 656/1999 on Higher Education Funding (the 'Funding Rules'), *cf.* Article 20 of Act No 136/1997. As outlined in the *"Green Book on Higher Education Funding"* from 2019, the purpose of the Funding Rules was:

among other things to increase transparency in the allocation of funding for tertiary teaching; to ensure that all costs of providing services to students are taken into account; to place HEIs offering the same types of programmes on equal footing as regards public funding; to align the operating conditions of Icelandic HEIs with those of comparable institutions in the other Nordic countries; and to set up clear channels for formal contacts between HEIs and public authorities on finances and services.⁶

For the first few years of the funding model only one variable was used, namely the number of students undergoing examinations in the year concerned, weighted for discipline. A graduate-based funding component was introduced in 2011, increasing the number of variables to two. However, the number of graduates had low weighting in the model, with funding provided on that basis amounting to less than 5% of teaching-based funding. In recent years, these two variables have provided the basis for around 70% of all public funding for HEIs.⁷

⁶ Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019.

⁷ Ministry of Culture and Education, Higher Education Funding. Report of the working group on quality and efficiency in higher education" (in Icelandic), 2021.

The Funding Rules provided for the use of seven cost categories, defined according to mode of teaching. Over time new HEIs were added to the funding model, eventually leading to an increase in the number of cost categories to fifteen. The value of each cost category was determined in the annex to the annual State budget. In the 2023 budget, those values ranged between ISK 900,000 and ISK 4,900,000.

Soon after the Funding Rules came into force in 1999, work started on the development of a separate funding model for research. No consensus was reached on the arrangements for such a model, but over the years a new funding component, referred to as 'Research etc.', was developed as a supplement to the teaching-based funding provided for in the Funding Rules. Being at first only a small part of the funding provided to HEIs, this funding component grew in importance and has in recent years amounted to around 30% of the total funding. Funding under the component 'Research etc.' was based on subjective considerations such as the necessity to support regional development and provide support to low-enrolment disciplines, but the underlying premises were not defined explicitly. The *"Green Book on Higher Education Funding"* of 2019 pointed out that these contributions were based neither on a funding formula nor on performance with regard to research or other activities, and that they were allocated unequally between HEIs. In addition, the National Audit Office repeatedly pointed to a lack of transparency and overview with regard to the provision of research funding and its use by HEIs.⁸

Under the previous model, the funding regime for HEIs differed from that used in the other Nordic countries. Private HEIs received government funding while also being allowed to charge tuition fees. No reduction was applied in respect of funding for attempted credits and the number of graduates, but contributions through the 'Research etc.' funding component were not clearly defined. In consequence, the privately operated Reykjavík University and Bifröst University received lower funding, proportionally, than the public HEIs, without any rules having been put in place for such an arrangement. Moreover, funding differed from one private HEI to another.

In Denmark, Sweden and Finland, HEIs receiving public funding are not allowed to charge tuition fees to students from countries within the European Economic Area. In Norway, public research universities operate without tuition fees, but some specialised HEIs charge tuition fees while also receiving public funding. In such cases the public contribution is reduced by between 30 and 70 per cent. One of the goals pursued by the revision of the Icelandic funding model for higher education was to align the rules regarding contributions to private HEIs with the approaches used in the other Nordic countries.

A more thorough discussion of higher education funding in the Nordic countries can be found in the *"Green Book on Higher Education Funding"*, and the *report on higher education funding* from 2021 contains a more detailed description of the previous funding model.⁹

⁸ Icelandic National Audit Office, "Follow-up: Research Funding to Higher Education Institutions" (in Icelandic), 2018.

⁹ Ministry of Culture and Education, "Higher Education Funding. Report of the working group on quality and efficiency in higher education" (in Icelandic), 2021.

2. Performance-based funding of higher education – Main changes

The objective behind the new performance-based funding regime for higher education is to increase the transparency, quality, measurability and consistency of funding provided to tertiary institutions. The new model is also intended to provide incentive and reward to HEIs for nurturing their students and supporting them to succeed in their studies. The main changes brought by the performance-based model for higher education funding are as follows:

- Increased transparency and setting up of clear incentives.
- Reduction of the number of cost categories from fifteen to four.
- Metric of "attempted credits" replaced by metric of "completed credits".
- Increased emphasis on the number of annual graduates.
- New metrics to measure research activity.
- Better definition of the societal role of HEIs.
- Clearer exposition of policy-based funding.

The performance-based model for higher education funding has three main components: a teaching component representing in the new model 60% of total contributions; a research component representing 15% of the contributions; and a societal role component representing 25% of the contributions. This division is in accordance with the proposals of the working group on higher education funding.¹⁰ See Figure 1.

¹⁰ Ministry of Culture and Education, "Higher Education Funding. Report of the working group on quality and efficiency in higher education" (in Icelandic), 2021.

Teaching	Completed credits 42%	Allocated according to the number of credits completed in each HEI. Each credit of a particular programme is multiplied by the coefficient of the relevant cost category. Calculations are based on a 3-year average.
60%	Graduates (undergraduate and master's level) 18%	Allocated based on the number of students graduating from each HEI, weighted by qualification category. Calculations are based on a 2-year average.
	Publication 8% statistics	Allocated based on the number of publications and citations, including in open access; international collaboration.
Research 15%	Graduates 2%	Calculations are based on a 2-year average.
	Foreign grants 5%	Allocated based on amounts of foreign research grants obtained by each institution. Calculations are based on a 5-year average.
	Regional development and 3% distance learning	Support for regional HEIs
	STEAM initiative 3%	
	HEI strategy 5%	
Societal Role 25%	Support for low-enrolment disciplines considered 1% essential	
	Teaching supplement 5%	Allocated based on enrolment figures
	Research supplement 5%	
	Implementation 3%	Equalising contribution, to be phased out

Figure 1. Funding model for higher education – Summary of categories and variables. Percentages rounded to the nearest whole number.

The number of funding metrics increases significantly in the new model. In the model's teaching component, "attempted credits" are replaced by "completed credits", the number of cost categories is reduced from fifteen to four, and the number of annual graduates receives greater weight. Seven new variables are added in the research component of the funding formula, including six that relate to publication statistics. Special funding is awarded for foreign grants and for the number of doctoral graduates. With these changes, metrics for research activity are included in the funding model for the first time.

Policy-based contributions are grouped under the heading 'Societal Role'. Contributions in this component are based on more subjective considerations than those decided based on the variables of the funding formula. This component considers both each HEI's vision for its future and public priorities such as regional development, the expansion of distance learning, and a special initiative to boost STEAM education. This component also covers contributions for teaching and research, as well as temporary contributions to aid implementation.

Another new aspect introduced in the funding formula is that contributions to private HEIs are defined more clearly than before. Under the new performance-based funding regime, allocations in the teaching and research components are reduced by 25 per cent in the case of institutions that charge tuition fees. Policy-based funding, allocated under 'Societal Role', is not subject to reduction in the same way. This is in alignment with the arrangements for the funding of privately operated schools at the compulsory (primary and lower-secondary) level. Privately run compulsory schools may charge tuition fees, but are then subject to a 25 per cent reduction of the public funding allocated to them, *cf.* Article 43b of the Compulsory School Act, No 91/2008.

In the spring of 2024, the Minister made private HEIs an offer to receive full performance-based funding in exchange for waiving their tuition fees. Bifröst University and the Iceland University of the Arts accepted the offer and will therefore receive full funding beginning in 2025. Currently, Reykjavík University is therefore the only HEI with tuition fees, and accordingly receives 75 per cent of the calculated contribution from the teaching and research components of the performance-based funding model.

Public contributions to the operation of HEIs, as laid down in the annex to the State budget, will as a whole be allocated through the model for performance-based funding. Increasing the number of variables used in the funding formula is intended to minimise fluctuations between years, helped by the fact that most variables are based on 2- to 5-year averages. Policy-based funding thus serves the purpose of maintaining a level of stability in annual allocations.

3. Teaching component

This section contains a more detailed discussion of the funding model's teaching component.

The "Green Book on Higher Education Funding" from 2019 pointed out that the funding regime for teaching was disadvantaged by the narrow focus on the number of student years and by the high number of cost categories.¹¹ Later analysis by the Ministry of Higher Education, Science and Innovation confirmed this. When developing the new funding regime, a priority was therefore to give less weight to the number of student years, and to reduce the number of cost categories.

In the performance-based regime for higher education funding, 60 per cent of the funding is allocated on the basis of metrics relating to teaching, with a total of 42 per cent being allocated for "completed credits". By comparison, the proportion of "attempted credits" was around 65 per cent in the previous system. An increased emphasis is placed on the number of annual graduates, with funding allocated based on that metric having been increased from about 5 per cent to 18 per cent. The proportion between funding awarded for completed credits and funding awarded for the number of graduates was decided upon by reference to the funding regimes used in the other Nordic countries.¹² In the new system, programmes are placed in one of four cost categories, which replace the fifteen categories used in the previous model.

3.1 Completed credits in the teaching component (42%)

The previous funding model had an emphasis on "attempted credits" when deciding on funding allocations to higher education institutions. The term "attempted credits" refers to credits for courses in which a student attempts examination, without consideration of whether the student otherwise meets the requirements of that course. At the time when the principles underlying the previous funding formula were decided on, final exams were the most widely used form of assessment. Since then other types of assessment have become widespread, obscuring the meaning of the term "attempted credits". The other Nordic countries have not made use of "attempted credits" or a similar concept, and Icelandic upper-secondary schools abandoned it in 2019.

In the new funding model, the metric "attempted credits" has been replaced by "completed credits". The term completed credits refers to credits for courses in which a student successfully passes assessment. The number of completed credits can be equal to or lower than the number of attempted credits. Representatives of academia consulted by the Ministry responded positively to the idea of replacing attempted credits with completed credits. Completed credits are a clear metric which is compatible with all types of assessment. Moreover, it is in better alignment with the most commonly used metric in the Nordic countries, which is based on the number of student years.

The number of completed credits is calculated over the three most recent academic years. Funding is allocated to HEIs based on each institution's share in the total number of credits completed during that period. To take an example, the calculations forming the basis for funding allocations in the 2025 budget year take into account credits completed during the academic years 2021/2022, 2022/2023 and 2023/2024.

 $^{^{11}}$ Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019.

¹² Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019.

Micro-credentials, which Icelandic HEIs can start offering from the autumn of 2024, are flexible short-term courses for which ECTS credits are awarded, but which do not lead to formal qualifications within the meaning of the Criteria for Higher Education Programmes and Degrees. However, micro-credentials can contribute to the provision of a more flexible and diverse educational offer at the tertiary level to keep up with rapid societal changes. In the case of micro-credentials, funding is provided for completed credits in the same way as in traditional programmes, but no contributions are allocated for the number of students graduating, since no formal qualification is awarded. However, the credits attained can be used toward a programme leading to a qualification, for which a contribution will then be paid.

During the consultation process for the new funding model, it was pointed out that there were potential downsides to adopting completed credits as the sole metric, and that costs were incurred for all students, also those not meeting assessment requirements. To address these concerns, the model was expanded with a so-called teaching supplement, which accounts for 5 per cent of total funding, and where contributions are allocated based on the number of registered students at each institution, irrespective of whether they meet assessment requirements or not. More information about the teaching supplement is provided in the section on the societal role of HEIs below.

It was also pointed out that the new system risked creating undue incentives for HEIs to lower assessment requirements in individual courses. While this is an important concern, the point can also be made that a similar moral risk was already present in the previous system, namely the temptation to maximise the number of students attempting examination, without considering their performance. In this context it is worth mentioning that higher education institutions are required to establish a strong system of internal and external quality assurance for the purpose of ensuring that the quality of the education they provide conforms to international standards. It is also important to keep in mind that the metric "completed credits" is only one variable of many in the new model, and that it does not dominate the model in the way "attempted credits" did in the previous system.

The changes that now have been implemented are intended to provide better support for students individually, thus helping them to meet requirements and attain the qualification that they aim for.

Each HEI receives funding on the basis of credits completed by each student at that same institution, including foreign exchange students. No contributions are paid for credits completed at other institutions, nor for credits assessed in connection with, for example, recognition of prior learning. As a rule only ECTS credits are eligible for funding. Exceptions include agricultural studies as taught at the Agricultural University of Iceland, despite the fact that they are classified as secondary-level vocational training. Preparatory studies at the secondary level are not financed through the funding model.

3.2 Cost categories in the teaching component

HEIs offer various different study programmes. It goes without saying that each programme generates different costs, for reasons such as differences in modes of teaching and the need for specific facilities. As already mentioned, the previous system had fifteen cost categories in which the different study programmes were placed to determine the funding to be provided to each HEI. The systems used in the other Nordic countries generally have between three and seven such categories, leading to a somewhat cruder classification of costs. For example, only three cost categories are used for Finnish and Danish research universities, even if study programmes offered in those countries run into the hundreds.¹³ Following analysis by the Ministry, as part of which previous consultation with HEIs and students and the report of the working group on higher education funding were taken into consideration, it was decided to include four cost categories in the new funding model. The cost categories are defined roughly based on the need for specific facilities, the proportion of practical work in each programme, and the nature of the teaching. The division is as follows:

- A. General academic studies
- B. General academic studies requiring specific equipment and/or involving practical work
- C. General academic studies requiring specific equipment, involving practical work, and/or calling for the use of specialised facilities
- D. Art; agriculture; medicine; postgraduate studies in the medical sciences generally; dentistry

The classification is for the most part based on the ISCED 2013 standard (*International Standard Classification of Education*), each cost category being associated with specific ISCED codes.¹⁴ Additionally, the content of each programme was analysed to achieve a high level of consistency. A preliminary classification of programmes was published in the Government Consultation Portal when the new rules on higher education funding were presented. Following the comments received, a total of 23 changes were made to that list. A list of programmes and their cost categories is published in the annex to the annual State budget. This guarantees transparency as to the classification of each programme, and visibility as regards possible changes from one year to another.¹⁵ HEIs are not required to take the classification into account when allocating funding between departments and programmes; instead, it serves as a rough classification tool for the Ministry.

Table 1 shows the expected distribution of student years (60 completed credits) between cost categories, based on the number of tertiary students in Iceland between 2021 and 2024.

Cost category	Percentage of students 2021 to 2024
А	34,7%
В	30,6%
С	26,5%
D	8,2%

 Table 1 – Proportional distribution of students by cost category 2021 to 2024

The coefficients 1, 1.5, 2 and 4 are used for the weighting of student years in different cost categories. A student year is defined as the equivalent of 60 completed credits.

Table 2 shows the numerical value of the coefficients used in the new funding model, based on the average number of student years over the past three academic years in each cost category.

¹³ European University Association, Allocating core public funding to universities in Europe: state of play & principles 2022.

¹⁴ UNESCO Institute for Statistics, SCED Fields of Education and Training 2013, 2014

 $^{^{15}}$ Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019

Cost category	Coefficient
Α	1
В	1,5
С	2
D	4

Table 2 – Cost categories: Coefficients, 2025

3.3 Graduates at the undergraduate and master's levels (18%)

Since 2011, higher education funding has been awarded partly on the basis of the number of annual graduates. Such contributions have been used longer in the other Nordic countries, although they vary considerably as a share of total funding. That share is largest in Finland, where the number of annual graduates has completely replaced other metrics of student work, including completed credits.

In the new performance-based model for higher education funding, contributions awarded for the number of students graduating at the undergraduate and master's levels amount to 30 per cent of all funding in the model's teaching component. This corresponds to 18 per cent of the total amount of public funding provided to HEIs. The section on the model's research component contains a description of funding awarded for doctoral graduates. All three cycles considered – undergraduate, master's and doctoral – the share of graduate-based funding amounts to 22.5 per cent of all public funding for higher education.

Graduate category	Coefficient	
Diplomas	0,2	
Undergraduate degrees	1	
Master's level certificates (90 ECTS)	1,125	
Master's level certificates (120 ECTS)	1,5	
Master's degrees (90 ECTS)	1,5	
Master's degrees (120 ECTS)	2	

 Table 3 – Coefficients for each graduate category

As seen in Table 3 above, the new model assigns different weights to different graduate categories. The teaching component awards funding for diplomas, bachelor's degrees, master's degrees, and master's level certificates. This classification of graduates is based on the Criteria for Higher Education Programmes and Degrees, which lists the degrees belonging to each cycle, and where the degrees are defined as follows:¹⁶

• **'Diploma' has the following definition:** Higher education qualification awarded to students who have completed between 60 and 120 ECTS credits while enrolled in a structured first cycle programme.

 $^{^{16}}$ Notice No 530/2011, published in the Law Gazette, Section B.

- **'Bachelor's degree' has the following definition:** Higher education qualification awarded to students who have completed between 180 and 240 ECTS credits while enrolled in a structured first cycle programme.
- 'Master's level certificate and other postgraduate qualifications' has the following definition: Higher education qualification awarded to students who have completed between 60 and 120 ECTS credits while enrolled in a structured second-cycle programme. 'Master's level certificate' includes all studies at the master's level for which between 60 and 89 ECTS credits are awarded. 'Other postgraduate qualifications' includes studies at the master's level for which between 90 and 120 ECTS are awarded, but which do not require the completion of a research or end-of-studies project worth 30 ECTS credits.
- 'Master's degree' has the following definition: Higher education qualification awarded to students who have completed between 90 and 120 ECTS credits while enrolled in a structured second cycle programme. A master's degree includes a research or end-of-studies project worth at least 30 ECTS credits.

In deciding the weighting, a consideration was to give increased weight to graduate degrees while at the same time limiting the changes from the previous model. The weighting of a degree is independent of the field to which it belongs, and only depends on the cycle and, for postgraduate degrees, the number of credits. Although master's level certificates can currently be worth between 60 and 120 ECTS credits, shorter programmes of that type are insufficiently aligned with the criteria of the European Higher Education Area (EHEA) on the minimum number of credits for each qualification, which means that they are not certain to be recognised within the EHEA. According to the EHEA criteria, first cycle diplomas should correspond to between 90 and 120 ECTS credits, and master's level qualifications should correspond to between 90 and 120 ECTS credits.¹⁷ At the time of writing this memorandum, work is ongoing to revise the Criteria for Higher Education Programmes and Degrees to better align the Icelandic framework with the minimum criteria of the EHEA. Increasing the minimum number of ECTS credits to 90 in one step was considered too disruptive. Instead, the Ministry decided to set the minimum at 60 ECTS credits, while also issuing a recommendation to Icelandic HEIs to organise their programmes in a way that respects the EHEA framework. More information can be found in the memorandum on the revision of the Criteria for Higher Education Programmes and Degrees which was published in the Government Consultation Portal.

To this extent, the revision of the funding model is further along than that of the Icelandic criteria, which is the consequence of an approach chosen with a view to better aligning the higher education system with the EHEA criteria.

¹⁷ (QF-EHEA, 2018).

4. Research component

This section contains a more detailed discussion of the funding model's research component.

Research is one of the principal foundations on which the activity of higher education institutions is built, and high-quality research is an important factor in international comparisons. The research component has a weight of 15% in the funding model and is divided into three variables: publication statistics, the number of doctoral graduates, and foreign grants. This component largely conforms to the proposals outlined in the report of the working group¹⁸ on higher education funding, and also has similarities with the Finnish model for research universities, as explained in more detail in the *"Green Book on Higher Education Funding"*.¹⁹

Variable	Percentage of research component funding (15%)	Percentage of total funding (100%)
Publication statistics	55%	8,25%
Doctoral graduates	15%	2,25%
Foreign grants	30%	4,5%
Total	100%	15%

Funding through the research component is distributed as follows:

Table 4 – Variables in the research component: Percentages, 2024

The publication statistics variable covers six new sub-variables, as described below. Under the new model, contributions based on the number of doctoral graduates will rise. In addition to the research component, 5 per cent of the total funding will be spent on a so-called research supplement, which is described further in the section on 'Societal Role'.

As the variables entail the introduction of new incentives in higher education funding, it will be important to evaluate them at regular intervals over the next few years. In that context it is relevant to note that plans are under consideration to expand the model to include grants from a larger number of foreign funding sources. Details of the variables included in the research component follow below.

4.1 Publication statistics (8.25%)

Statistics on academic articles published in internationally recognised journals provide an insight into research activity at HEIs. Therefore, a priority in performance-based funding of higher education is to provide rewards for the publication of academic articles internationally, with the aim of incentivising quality and excellence in research, increased international collaboration and open-access publication of academic articles. Information on such publications is retrieved from the international SciVal²⁰ and Scopus²¹ databases, which bring together internationally recognised data from reliable and impartial sources. Those databases unfortunately have the disadvantage of providing limited information about articles published in Icelandic, which limits their usefulness as sources of statistics on research activity in certain areas. Examples of this include

¹⁸ Ministry of Culture and Education, "Higher Education Funding. Report of the working group on quality and efficiency in higher education" (in Icelandic), 2021.

¹⁹ Ministry of Culture and Education, "Green Book on Higher Education Funding" (in Icelandic), 2019.

²⁰ SciVal, 2023.

²¹ Elsevier. Scopus: Expertly Curated Abstract and Citation Database, 2023.

research fields without an international dimension, such as academic disciplines within the domain of the arts, and "national" disciplines. To address this, a contribution is paid into a so-called research supplement, which is discussed further in the section on the societal role of higher education institutions.

The publication statistics variable rewards research activity on the basis of six sub-variables, drawn from seven different metrics. First, funding is allocated based on the number of peer-reviewed publications during a specific period, multiplied by a coefficient to obtain the so-called "field-weighted citation impact", which corrects for different publication traditions across disciplines. The next two variables measure whether open-access publication is used and whether there is international collaboration, in keeping with the government's priorities in that regard. Finally, three variables relate to the quality of the journals concerned, and the number of citations received in the field in question. Specifically, these variables indicate whether the published articles rank among the top 1% or top 10% publications in the relevant field during the same period, and to what extent they appear in top 10% journals. All variables used are sourced from data in the Scopus database. Definitions of the variables are found below. The guidebook released by Elsevier contains a more detailed explanation.²²

- 1. Scholarly output: the number of peer-reviewed publications.
- 2. Field-weighted citation index: The ratio between the actual number of citations received and the expected number of citations, taking into account the field of publication and the average number of citations in that field. For example, an index of 1.00 indicates that the number of citations corresponds to the expected average number; an index of 0.87 indicates a number of citations 13% below that expectation; and an index of 2.11 means that the publication has attracted a number of citations which is 111% higher than could be expected. This variable is calculated annually for each HEI as a whole.
- 3. Open access: the number of open-access publications, regardless of the publishing model used ('green', 'gold' or 'diamond' open access).
- 4. International collaboration: the number of publications with two or more authors, with some of them linked to different countries in the Scopus database.
- 5. Top 10% publications: the number of publications ranked among the top 10% of peerreviewed publications in the relevant field during the year considered.
- 6. Top 1% publications: the number of publications ranked among the top 1% of peer-reviewed publications in the relevant field during the year considered.
- 7. Top 10% journals: the number of publications in journals having an impact factor higher than 90% of all indexed journals in the year of the publication concerned.

Publication statistics for the period considered at each time will be updated annually. It should be noted that reward can be allocated for a published article on the basis of more than one variable. An article that ranks among the top 1% publications is also counted among the top 10% publications. Moreover, the same article may be the result of international collaboration and may have

²² Elsevier. *Research Metrics Guidebook* (undated).

been published in open access, in which case it is also covered by those variables. Table 5 shows the publication statistics variables and their weights.

Variable in re- search component	Publication variables	Percentage of publication statistics (8,25%)	Percentage of funding model (100%)
Publication statistics (55% of	Publications* Field-weighted citation impact	55%	4,54%
research	Open access	10%	0,83%
componenty	International collabora- tion	12%	0,99%
	Top 10% publications	12%	0,99%
	Top 1% publications	2%	0,17%
	Top 10% journals	9%	0,74%

 Table 5 – Publication statistics: Variables and percentages

Contributions are paid based on publication statistics calculated as a three-year average, as detailed in the annex to the State budget.

4.2 Doctoral graduates (2.25%)

The number of doctoral graduates is a good indication of the extent of a HEI's research activity. For that reason, several of the other Nordic countries use that metric as a variable in their funding models. This variable has been given a weight of 15% in the research component of the new performance-based funding model, corresponding to 2.25% of the model as whole.

Like other qualifications, 'master of philosophy' and 'doctorate' are defined in accordance with the Criteria for Higher Education Programmes and Degrees, as follows:

Master of philosophy: Higher education qualification awarded to students who have completed at least one-half (between 90 and 180 ECTS credits) of a structured third-cycle programme leading to a doctorate. A master of philosophy degree must include a research project worth at least 90 ECTS credits. The award of a master of philosophy degree will be possible only in exceptional cases, and no option exists to enrol students into this level of studies.

Doctorate: Higher education qualification awarded to students who have completed at least 180 ECTS credits while enrolled in a structured third-cycle programme. Studies toward a doctorate must include a research project which meets international criteria for doctoral theses.

In certain cases, the accreditation of a HEI to offer doctoral programmes in a specific field is contingent on the accreditation of another HEI which assumes responsibility for the programme. Under those conditions the public contribution is allocated to the HEI which is responsible for the programme. Nevertheless, the HEIs concerned are free to agree between themselves on how that contribution is shared.

4.3 Foreign grants (4.5%)

Foreign grants constitute a significant part of the own income of Icelandic HEIs. Such grants vary considerably and may range from payments to cover travel costs for staff attending meetings or conferences to funding for complex, long-term research projects carried out in intricate collaboration between partners inside and outside Iceland.

The research component of the performance-based model for higher education funding places greater emphasis on foreign grants than domestic ones, mainly because the latter are overwhelmingly government-funded. Another priority is participation in international programmes to which Iceland contributes, and HEIs are given special incentive to apply for grants from those programmes. Moreover, foreign research and innovation grants support the government's goal of increasing the international reach and competitiveness of HEIs, and promoting international collaboration on science and innovation. There is fierce competition for grants from the foreign programmes that are taken into account in the funding formula, supporting the conclusion that grants from those programmes would tend increase the quality and competitiveness of HEIs in an international context. In the new model, foreign grants weigh 4.5% of the total amount of funding provided to HEIs. The programmes taken into account are the following:

- <u>Horizon 2020</u>
- <u>Erasmus+</u>
- <u>EUA</u>
- <u>Nordforsk</u>
- <u>LIFE</u>
- Digital Europe

In order for participation in these programmes to be validated, the following conditions must be met:

- An Icelandic HEI must be either the principal grantee or a direct participant in the supported project, or the principal grantee or the project leader in the case of Erasmus+ projects. HEIs must thus be direct recipients of grants and must have signed a contract with the granting organisation. A status as sub-contractor or third party participant is not sufficient.
- For a project to be eligible for contributions awarded under the State budget for 2025, it must have been initiated in the period between 1 January 2019 and 31 December 2023. However, it is not enough for a contract to have been signed between those two dates; instead, the project must have been launched formally within that period. The reason for basing the calculations on a five-year average is primarily that large international grants are frequently awarded for long-term projects, meaning that grant amounts applied for and received can be subject to considerable fluctuations between years.

4.4 Summary of the research component

Table 6 contains a summary of the research component of the funding model as described above. Publication statistics are based on three-year averages, the number of annual graduates on twoyear averages, and foreign grants on five-year averages.

	Percentage of total		Percentage of total
Variable	funding	Sub-variable	funding
	on 8,25%	Publications* Field-weighted citation impact	4,54%
D 1111		Open access	0,83%
Publication		International collaboration	0,99%
statistics		Top 10% publications	0,99%
		Top 1% publications	0,17%
		Top 10% journals	0,74%

Graduates	2,25%	Doctorates	2,25%
Foreign grants	4,5%	Horizon grant/Erasmus+ grants/European Universities in- itiative	4,5%

Table 6 – Summary of the research component: Variables and percentages

5. Societal role of higher education institutions

This section contains a further description of the funding model's third component, 'Societal Role'.

The role of HEIs is not limited to teaching and research activities; they also have an important societal role. Article 2 of the Higher Education Act, No 63/2006, contains provisions regarding the societal role played by HEIs. According to the first paragraph of that article, the role of higher education institutions is, among other things, to contribute to the creation and dissemination of knowledge and skills for the benefit of students and of society in general. The paragraph further states that the activities of higher education institutions are aimed at strengthening the fabric of Icelandic society and its position in an international context. The second paragraph states that HEIs prepare students for responsible participation in a democratic society, and that the education provided by HEIs takes into account the needs of society at each time, and can have an academic, as well as a professional, focus.

In the previous Rules on Higher Education Funding, No 646/1999, no reference was made to the societal role of HEIs. Nevertheless, it was common practice in the previous system to pay contributions designed to support HEIs in performing that role. This included contributions to regional HEIs to compensate for their higher costs related to their locations, as well as contributions for the teaching of "low-enrolment disciplines with a national dimension". Such contributions were generally made through the component 'Research etc.' in the previous funding model. The third component of the new funding model is dedicated to the societal role of HEIs.

Policy-based contributions related to this societal role of HEIs are based on seven sub-variables as shown in Figure 1. Contributions classified under 'Teaching supplement' and 'Research supplement' are intended to compensate for the limitations present in the model's teaching and research components. The same applies to contributions awarded for 'Low-enrolment disciplines considered essential'. The sub-variable 'Regional development and distance learning' specifically concerns regional funding, and is as such a matter of public policy in the same way as 'STEAM initiative'. The sub-variable 'HEI strategy' is intended to provide HEI administrators with resources to develop and implement strategy.

Funding in this component thus covers a wide range of contributions supplementing the teaching and research components. Taken together they constitute funding which addresses multiple objectives, and which aims to increase the quality of education in Iceland, enhance each HEI's specificities, and ensure that these institutions are better placed to fulfil their important role in times of rapid technological change and global societal challenges. A more detailed account of each subvariable in the 'Societal Role' component is given below.

5.1 Regional development and distance learning (3.2%)

In keeping with regional policy and priorities relating to the importance of maintaining an educational offer in all parts of the country, and in accordance with the government's welfare priorities, special funding is provided to HEIs that offer teaching in regions around the country. The vast majority of this, corresponding to 3.1 per cent of total funding for higher education, is divided between HEIs offering on-campus education in different regions – the University of Akureyri, the Agricultural University of Iceland, Hólar University, and Reykjavík University – with 0.1 per cent being allocated to Bifröst University on grounds of its location outside the capital area. This component of policy-based funding is expected to grow over the next few years, including through the addition of metrics related to distance learning.

5.2 STEAM initiative (3%)

The proportion of students graduating with a degree in science, technology, engineering, arts or mathematics ('STEAM' disciplines) is lower in Iceland than in the other Nordic countries. There are clear signs that demand for people with those types of education will increase in the near future with the growing digitalisation and automatisation of society. The goal to increase the number of people with tertiary degrees in STEAM disciplines aligns with the government's focus, as outlined in the coalition agreement, on preparing Icelandic society for increased technological advances, increasing the number of people with varied technological, artistic and scientific backgrounds, and improving competitiveness by fostering creative thinking, knowledge and science.

5.3 HEI strategy (5%)

Following the example of Finland, separate funding is provided to HEIs for developing and implementing strategy. This is in keeping with Article 2 of the Higher Education Act, No 63/2006, which states that the activities of higher education institutions are aimed at strengthening the fabric of Icelandic society and its position in an international context, an endeavour guided by the interest of future generations. Accordingly, funding arrangements must support a diverse higher education system, and it is important for HEIs to have the resources to form strategies outlining their specificities.

The sub-variable 'HEI strategy' creates room for strategic work and for dialogue between the Ministry and HEIs, and the contributions are intended to aid implementation and help HEIs to fulfil the role assigned to them in Article 2, first paragraph, of the Higher Education Act. Contributions under this sub-variable will at first be allocated based on each HEI's share of funding under the teaching and research components, while future allocations will depend on how implementation progresses over the next few years.

5.4 Support for low-enrolment disciplines considered essential (1%)

The model's teaching component is student-driven and therefore quite naturally favours highenrolment subjects over those with fewer students, despite the fact that some programmes with low enrolment numbers can share facilities with other programmes. It is important for the funding model to accommodate societally important programmes, also where, as is sometimes the case, student numbers are low. Examples include theology and certain programmes in the Icelandic language which have a low number of students and which can only be studied outside Iceland to a very limited extent. To this can be added programmes in the Danish language and certain other subjects which are taught in compulsory and/or secondary schools and for which tertiarylevel programmes must therefore be available.

One per cent of total funding for higher education will therefore be spent on supporting important programmes with low enrolment. Prerequisites for awarding support for this to a HEI are that a comparable programme is not being taught at another Icelandic HEI, that the low number of students is an enduring situation, and that the HEI concerned is not already the beneficiary of special regional support under the funding model.

5.5 Teaching supplement (5%)

Contributions falling under the teaching supplement are awarded in recognition of the fact that costs are incurred for all students, not only those who meet assessment requirements. The teaching supplement has an emphasis on improving services for students and addressing comments regarding the importance of using HEI funding to enhance the social dimension of the academic setting and ensure good access to education. Contributions provided through the teaching supplement correspond to 5 per cent of total funding, and are allocated based on statistics on enrolled students as published by Statistics Iceland. For more detailed information on the calculation of the teacher supplement see the annex to the annual State budget.

5.6 Research supplement (5%)

As mentioned previously, the Scopus and SciVal databases only contain partial metrics for research activity in certain fields, including a number of artistic disciplines and disciplines where most publications are in Icelandic. To address this, 5 per cent of total funding is allocated in the form of a research supplement which is intended to support research conducted in the Icelandic language and in fields that are only covered to a limited extent by the Scopus and SciVal databases. Contributions through the research supplement are also intended to mitigate other flaws of the model's research component, such as the fact that only grants from the specified foreign programmes are eligible.

A little over half of the research supplement, about 3 per cent of total funding, is allocated based on the number of academic man-years over a two-year period. The remainder, 2 per cent, is allocated using criteria related to publications in Icelandic journals over the same period. More detailed information about the calculations and eligible Icelandic journals is published in the annex to the annual State budget.

There are expectations that over the next few years databases such as the Icelandic Research Information System (IRIS) will start covering research activity in Iceland better than the databases currently used.

5.7 Implementation (2.8%)

The new funding model needs to be implemented taking into account the importance of ensuring predictability for the operation of HEIs and avoiding sharp fluctuations in public funding to each institution. It is necessary for HEIs to have the resources to adapt to a new regime for allocating public funding for higher education, and to the new incentives of the model's teaching and research components. Therefore, a certain percentage of policy-based contributions to HEIs will temporarily be directed to smoothing the transition between the previous system and the new regime of performance-based funding. This implementation contribution amounts to 2.8 per cent of the total public funding, but there are hopes that this percentage can be lowered over the next few years and that this part of the funding can then be transferred to policy-based components such as innovation and practical application of research, distance learning, and satisfaction surveys among students.

Efforts are underway to evaluate the best ways to incorporate micro-credentials into the funding model. At the moment, allocations for micro-credentials are based on completed credits in the same way as for other studies. Contributions for joint degrees, where different HEIs share the teaching burden, are also being evaluated.

Work will continue to modify and improve the funding formula – adjusting cost categories, improving coverage of research activity in different fields, etc. – in order to ensure that higher education funding provides incentive and reward to HEIs in accordance with the important role played by those institutions in Icelandic society.

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Annex I: Adjustments following comments received through the Government Consultation Portal

The draft Rules on Higher Education Funding were published in the Government Consultation Portal in October 2023 and were open for consultation for five weeks. The number of comments received was 50. While most aspects of the funding model were touched upon, most of the comments concerned the need to move individual disciplines between cost categories.

Ministry staff reviewed every comment, evaluated the likely impact of any change, and presented their proposals to the Minister. In the end, 23 programmes were moved to a new cost category, three sources of foreign funding were added in the research component, and a clearer definition was given of the model's third component – 'Societal Role'.

Certain humanities programmes were transferred from category A to category B based on the practical training involved. In the case of certain health sciences programmes, postgraduate studies were transferred to a higher category while undergraduate studies remained unchanged. A number of education sciences disciplines were moved from category A to category B, where most such disciplines are already. The programme entitled 'Speech pathology, prerequisites' was transferred from category C to category B considering that it is a combination of courses belonging to different programmes in categories A and B. Following these changes, the percentages of programmes belonging to the different categories are as follows: 35% in A, 30% in B, 27% in C and 8% in D, for the period 2021 to 2024.

Programme title	Category in draft version	Category after consultation
Physical Therapy, MS	С	D
Nursing, MS	С	D
Midwifery	С	D
Sports Science	А	В
Theology	А	В
Diaconia Studies	А	В
Archaeology	А	В
Practical Editorship and Theory of Publication	А	В
Creative Writing	А	В
Sign Language Studies	А	В
Applied Studies in Culture and Communication	А	В
Language and Literacy	А	В
Evaluation Studies	А	В
Educational leadership and evaluation studies	А	В
Educational Policy and Curriculum Studies	А	В
Leisure Studies	А	В
Inclusive Education	А	В
Mentoring and educational consultancy	А	В
Vocational studies for people with disabilities	А	В
Teaching studies for certified master tradesmen	А	В
Pedagogy and Schooling	A	В
Teaching Studies for Higher Education	A	В
Speech pathology, prerequisites	С	В

Three sources of foreign funding were added to the research component:

- Digital Europe Programme
- LIFE
- Nordforsk

The societal role of higher education institutions has been defined more clearly. The sub-variable 'Regional development' is now called 'Regional development and distance learning', and both Reykjavík University and Bifröst University are participants. The sub-variable 'HEI initiatives' has been split into 'STEAM initiative' and 'HEI strategy'. 'Support for low-enrolment disciplines considered essential' is a new sub-variable. 'Research supplement', previously a function of the teaching and research components, is now calculated based on the number of academic staff and publications in Icelandic journals. Finally, contributions under 'Implementation' have been reduced as a percentage of total funding.



Government of Iceland Ministry of Higher Education, Science and Innovation