GEORGIAN NATIONAL UNIVERSITY SEU

Formulas for Student Capacity Calculation

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TBILISI

The development of the student capacity formula has to be based on the regulatory framework. The most important variables are the maximum teaching workload and the size of a teaching group. The Georgian higher education system is a deregulated system and higher education institutions can decide on teaching workload and size of the teaching group according to their internal quality assurance arrangements, taking into account management of the academic staff, fine tuning of the teaching workload and alignment of the size of teaching groups with the spatial capacity.

The construction of the institutional capacity formula has to be based upon an anchor. The most relevant anchor related to higher education quality is student/teacher ratio. The Georgian National University is an institution with a very low student/teacher in most of its study programmes and it should be preserved as a great asset in the future.

The present enrolment is below the potential capacity maximum according to the engaged teaching staff and available spatial capacity. However, if there would be plans for an increase of the student capacity or opening of the new study programme in the future, the necessary step would be to simulate a formula and assess whether there is need for the engagement of additional academic staff.

The student capacity formula includes only active teaching hours according to international practice and the main purpose of the formula is to provide a clear linkage between the number of students, the number of teachers and available space. Extracurricular activities and additional time spent by students within the university premises do not increase the teachers' workload and hence do not jeopardise education quality. Therefore these are not not taken into account in the formulas.

An inclusion of additional formulas or components of formulas regarding the number of non-teaching staff is not applicable. Services provided by non-teaching staff are a subsidiary section of the higher education process. Some of these services might be outsourced (e.g. cleaning; facility maintenance; information system maintenance; software development) if outsourcing would improve efficiency of services.

The Georgian National Universit developed an appropriate monitoring framework through surveys ensuring adequacy of services provided. Students are obliged to fill three surveys on their satisfaction with the provided services. The surveys provide empirical results for active decision-making and suitable adaptations and follow-up measures to be taken.

Based on those introductory remarks the Georgian National University is enabled to develop a coherent student capacity calculation framework that consists of four formulas.

The first formula "Spatial capacity" has a control function. The formula is supposed to ensure the adequacy of buildings and premises in terms of classrooms both for the current state and for any future developments.

The second formula generally addresses to an adequate balance between teachers and students, thus ensuring an adequate student/staff ratio. Thereby it seeks to ensure an equilibrium of the supply of teaching and the demand for teaching.

The third formula enables the calculation of the student capacity for a concrete study programme. Finally, the fourth formula allows for the calculation of student capacity for all programmes.

Formula No. 1: Spatial Capacity Calculation

Formula 1. presents institutional spatial capacity as a product of number of auditoriums and sum of the all auditoriums active teaching hours and has to be higher or than a product of number of teaching groups and average teaching workload for all study programmes.

$$\alpha R_h \geq N_a \times W_a$$

$$\alpha = 72 = 6 \; working \; days \; x \; 12 \; hours \; per \; day$$

Formula No. 2: Equilibrium between teaching supply and demand

Formula 2 illustrates that there has to be equilibrium of the supply of teaching and demand for teaching:

$$N_t \times T_l \geq N_g \times W_w$$

The product of the engaged number of teachers per study programme and average teacher's workload per study programme has to be higher or equal to the product of the number of teaching groups per study programme and the weekly active teaching workload per study programme.

Number of teaching groups per study programme (Ng) can be presented in following way:

$$N_g = \frac{N_t \times T_l}{W_w}$$

Formula No. 3: Student capacity per study programme

This leads to the student capacity calculation per study programme, which is Formula 3:

$$S_p = N_g \times S_g = \frac{N_t \times T_l}{W_w} \times S_g$$

Student capacity per study programme (S_p) is a product of:

a) number of teaching groups per study programme;

b) size of the teaching group for selected study programme.

The final version of the student capacity per study programme (N_g is converted to: $N_t \times T_l$) is the following – Student capacity per study programme is a product of number of engaged teachers per study programme multiplied with the average teacher's workload; divided by the weekly active teaching workload per study programme; and multiplied with the size of teaching groups.

Formula No. 4: Institutional student capacity

Formula 4 presents, finally, the maximum institutional student capacity S_a represents the sum of all individual student capacities per study programmes:

$$S_a = \sum^{n} S_p = S_{p(1)} + S_{p(2)} + S_{p(3)} + \ldots + S_{p(n-1)} + S_{p(n)}$$

Glossary

α – factor that represents available teaching hours per week;

R_h – number of auditorims;

N_a-overall number of teaching groups at the level of institution.

N_g - number of teaching groups per study programme;

W_a – average active teaching workload for all study programmes;

N_t – number of engaged teachers per study programme;

T_l – average teacher's workload per study programme;

W_w – weekly active teaching workload per study programme (number of courses X average number of lessons per course);

S_g – size of the teaching group for selected study programme;

S_p – student capacity per study programme;

S_a – maximum institutional student capacity