

**C3QA: PROMOTING INTERNATIONALIZATION OF RESEARCH THROUGH
ESTABLISHMENT AND OPERATIONALIZATION OF CYCLE 3 QUALITY ASSURANCE
SYSTEM IN LINE WITH THE EUROPEAN INTEGRATION**



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**EXPERT PANEL REPORT
PILOT EXTERNAL REVIEW OF
YEREVAN STATE UNIVERSITY**

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INTRODUCTION

The external assessment of the Doctoral Programme in Biology, Yerevan State University (hereinafter, YSU) was executed within the framework of the Erasmus+ C3QA project: Promoting Internationalization of Research through Establishment and Operationalization of Cycle 3 Quality Assurance System in Line with the European Integration. The external assessment was organized and coordinated by the National Centre for Professional Education Quality Assurance Foundation (ANQA), Armenia.

The evaluation was carried out by an expert panel consisted of three international experts and one local doctoral student:

1. Daniel Martin Vega: (University of Alcalá, chair of the panel)
2. Sarangerel Davaasambuu: (National University of Mongolia, expert)
3. Bakhytkul Abdizhapparova: (Auezov South Kazakhstan State University, expert)
4. Tungalag Jamts: (Mangolian National Council for education accreditation, expert)
5. Anastas Aghazaryan: (French University in Armenia local, expert)
6. Sosi Demirchyan: (French University in Armenia local, student expert)

The composition of the expert panel was agreed with the YSU representatives.

The process of external assessment was observed by Tungalag Jamts from Mangolian National Council for education accreditation.

The process was coordinated by Gayane Ananyan from the ANQA.

All the members of the expert panel as well as the observer, translator and coordinator signed the commitment on confidentiality.

This external assessment aimed to pilot the new doctoral program and developed quality assurance (QA) criteria and standards for doctoral education.

The timetable of the activities was prepared by the ANQA coordinator, agreed with the YSU, international partners and the grant holder. The YSU has implemented an internal self-assessment of the program the report on which was submitted to the ANQA. The members of the expert panel conducted the desk review based on the self-assessment report, doctoral program and attached documents provided by the YSU.

The preliminary site visit agenda was drafted by the ANQA coordinator and was circulated among the members of the expert panel for the feedback. The intended meetings with all the target groups, close meetings, documents and resource review were foreseen in the agenda.

The agenda of the expert panel site visit was discussed and agreed with the YSU representatives. Discussions were held and mutual decisions were reached referring to the organizational and technical questions of the site visit. Questions related to the conduct and the norms of ethics of meeting participants were also touched upon. The room prepared for

focus group meetings were also discussed, the issues related to the equipment and facilities were clarified.

The preliminary meeting of the expert panel took place on April 29, 2019 at the ANQA premises. During the close panel meeting the expert panel agreed upon the framework of assessment, strong and weak points of the YSU, issues to be discussed with the target groups as well as clarified further steps. The site visit of the expert panel was conducted on April 30, 2019. According to the agenda¹ the site visit was launched with the meeting with the Vice-Rector for Educational Affairs of the YSU. During the site visit the expert panel conducted focus group meetings (participants of the focus group meetings were selected beforehand), resource observation and document review (the list of the documents to be observed by the expert panel was submitted to the YSU a week prior to the site visit). The site visit was summarized by outlining feedback of the panel to the HEI leadership.

The expert panel has conducted preliminary evaluation according to the self-assessment report of the YSU, the documents attached to it and the observations during the site visit. The Chair of the panel drafted the preliminary report which was circulated among the members of the expert panel. The report has been finalized by the Chair of the panel based on the feedback of the experts. The final report agreed upon with the panel members and the ANQA coordinator. The report was handed over to the YSU on 06.06.2019.

This report is the result of the external assessment. It comprises findings and considerations according to quality assessment criteria as well as recommendations for improvements.

¹ Appendix 1: Site visit agenda

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I. Institutional strategies

Findings and considerations:

The content and structure of the strategy generally correspond to the university's development mission, the goals, and objectives of the doctoral education. At the same time, the strategy does not take into account the peculiarities of different fields of science and different professions. Allow communication with the country's socio-economic, environmental, and demographic development programs. There are also some discrepancies between the measures outlined in the strategy and the SWOT analysis results. In the context of the strategy, there are no developmental action plans, and the purpose and outcome formulations are very common and difficult to measure.

Research strategy in doctoral education is reflected in YSU's Strategic Plan 2016-2020. A separate chapter is devoted to research and improving doctoral education according to Salzburg principles (chapter II, "Quality research and innovations"). In recent years, the number of candidates for doctoral studies has been reduced, the reasons for which have not been studied. The University is aiming to increase the number of PhD students and teaching staff involved in research projects, number of research works, develop research cooperation with the scientific research institutes, HEIs and business/enterprises in the RA, promote internationalization of research activities, bring university standards of the third cycle of higher education into compliance with the Salzburg principles. The description of the measures to achieve those objectives is not sufficient. There are progress evaluation indicators that are identified in the chapter but without their digital meanings.

YSU's is a leader in Armenia in training PhD in Biology that is proved by scientific achievements, high-qualified staff, and talented PhDs. Two professors are members of the National Academy of Science of RA.

Fulfillment of research strategy tasks is confirmed by a list of international projects and scientific publications in peer-reviewed journals. The annual number of scientific publications of the Faculty of Biology achieves 200-300 articles.

Boosting the quality of research is conducted via the implementation of Centers of Excellence, e.g., Center of Excellence of Applied Biology.

As it was discussed during the interview with the Vice-rector on Academic Affairs, doctoral education is based on joining innovation, education, and research, and taking in mind the demands of the labor market. Although Cycle 3 programs education is financed by the state, its amount is not enough for conducting research. In order to solve the issue, PhD students are involved in scientific teams.

As it was revealed during the interview with teaching staff and supervisors, doctoral thesis topics are formed mostly orienting to student's skills and abilities and less according to state priorities in education.

Cooperation with stakeholders is conducted via a partnership of Faculty of Biology with various scientific institutions. Under state funding, the cooperation with state bodies is weak. The state orders are almost absent as research topics. The choice of research topics is not clear and understandable. Connection with the private sector remain unexploited, and it is unclear what the future of the university will do in this direction.

Considerations:

Reflection of YSU's research strategy is tracked in annual plans of chairs and Faculty of Biology.

It seems difficult to evaluate the progress of strategic tasks in research without orienting on annual planned magnitudes of indicators.

YSU has limitations in funding which are solved by the active participation of both teaching staff and doctoral students in projects and scholarship programs like Erasmus+ credit mobility, Young Researchers' Support Program, etc.

Recommendations:

1. To introduce the practice of evaluation of strategic tasks progress in research by setting up magnitudes of indicators for each year.
2. It would be desirable to have developmental strategies for the faculties of the University, as well as elaborate action-oriented plans.
3. The Faculty Strategy should clarify the theoretical and practical significance of research work.

4. It would be desirable to identify the framework and list of stakeholders for research work.
5. In parallel with state funding, it is recommended cooperate with state structures to develop a state order for research topics.
6. It is recommended to include issues critical to public and private sectors in research programs and topics.

II. Doctoral program

Findings and considerations:

The doctoral programme is structured in five modules that are intended to cover different aspects of both research and educational training: a “general preparation” that includes both compulsory and elective courses (20 credits in total), a “professional preparation” that consists of elective courses (22 credits in total), pedagogical practices (10 credits), research work (122 credits) and the final certification (6 credits). The competences that the student should acquire at the completion of the doctoral studies seem to be defined. The purely scientific training component seems to be solid, and it benefits from qualified teaching staff who are generally active in research and involved in different external collaborations. Seminars delivered by visiting researchers are occasionally organized, and doctoral students are also able to develop their abilities to work in a team and to contribute in the supervision of undergraduate and MSc students. On the other hand, several doctoral students and teaching staff members suggested that the theoretical component of the “general preparation” module and the number of qualification exams may be excessive, only of partial relevance and, therefore, potentially detrimental to the scientific productivity of the doctoral student. Whereas educational and pedagogical training is unequivocally positive as it can strengthen the communicative skills and other abilities of the student, it is true that some potential students who do not plan to pursue a teaching career might be discouraged to enrol in the present doctoral programme.

The research module of the doctoral programme also benefits from dynamic supervisors, some well-equipped laboratory facilities (see Criterion V) and productive research staff, with several doctoral students already publishing in international journals by the third year of their studies. At least one publication in an international indexed journal is generally required to complete the studies. Students are also encouraged to present their ongoing research in scientific meetings and conferences and to visit foreign collaborator institutions. Regrettably, the prospects of developing a scientific career in Armenia are generally not good, and doctoral students may consider moving to another country when they complete their PhD thesis. Nonetheless, despite supervisors generally have established international networks of collaborators and doctoral students are encouraged to internationalize their research activity,

there are no evidence of concrete actions to integrate the doctoral programme itself in specific international networks or schemes.

The research plan and the corresponding doctoral programme are annually assessed by a Scientific Council. In the selection of research topics, the relevance of the project to the country's societal needs and priorities may be taken into account, but purely basic research is also contemplated. Nevertheless, there are no specific mechanisms to assess the quality of research results and their social impact.

Recommendations:

1. To thoroughly revise the current structure of the doctoral programme, ideally taking into account the impressions of teaching staff and students. There might be an overrepresentation of theoretical general course to the detriment of specialty courses. In future self-evaluation reports, it is recommended to detail the structure and contents of the doctoral programme.
2. It is recommended to track the performance and professional activities of the students after the completion of their PhD thesis, in order to strengthen those aspects of the doctoral programme that may maximize their future professional opportunities.
3. In further self-evaluation reports, it is recommended to specify any concrete action focused on the integration of the doctoral programme in relevant and/or specific international networks and schemes. It is also recommended to clearly specify any collaboration agreement between YSU and external (foreign and national) institutions that may be relevant to this doctoral programme.
4. It is recommended to plan and develop a set of mechanisms to assess the quality of research results and their social impact. In future self-evaluation reports, it is recommended to specify the status of those plans.

III. Admission Policy

Findings and considerations:

Division on PhD and Doctoral Studies coordinates the work with PhD students. The division jointly with the faculties approves the themes, and academic supervisors approve the admission commissions' staffs and hold the examination process in each specialty.

RA Minister of Education and Science has approved general regulatory, normative documents that are obligatory for all HEIs, such as student admission in various educational levels. YSU has published Admission Policy and Candidate Recruitment Policies and Procedures in Armenian on the website. International students can apply for the doctoral program at YSU by taking an interview, and an examination of the English language is necessary. However, admission requirements are not outlined on the subject-specific websites at all; in terms of transparency, this information should be made available on the respective websites as the peers underlined.

Recommendations:

1. The admission requirement and selection criteria to be binding and transparent as well as appropriate for the achievement of the intended learning outcomes.
2. In further self-evaluation reports, it is recommended to include figures on the rate of admissions vs. number of applicants, as well as details on the number of student positions offered vs. number of students finally admitted.

IV. Supervisor

Findings and considerations:

There is a tripartite written agreement between supervisors, students, and the university. The agreement regulates the rights and responsibilities of the supervisor and the doctoral students. The Supreme Certifying committee defines the eligibility of a supervisor. However, those requirements are defined as limited opportunities for active and creative younger researchers to be a supervisor. The researcher is appointed as a supervisor who meets those requirements, and the Dean of the Faculty approves it. The supervisor provides the opportunities to publish scientific articles, expand the range of scientific interests, and create new scientific international contacts. The University has a regulation of rewards and bonuses to encourage publication activity, participation in conferences, and defense of the doctoral thesis for academic staff. Supervisors can participate in various research activities such as business trip, conferences, and seminars. The problems are that 1) some supervisors do not fulfill their obligations, and there are no mechanisms to evaluate supervision periodically, 2) highly qualified researchers, as well as supervisors, tend to work abroad.

Although there is no particular program for the supervisor's development, the supervisors can join in seminars and workshops such as innovative methods of teaching among the University.

Recommendations:

1. The support and regulation of relationships between candidates and supervisors could be improved with new procedures in order for the University to be aligned with international standards.
2. Formulation of specific policies regarding supervision, engaging all stakeholders through discussions and meetings is highly recommended.
3. Training for supervisors should be considered as a continuous development activity including courses in the professional development program, sharing good practice, experience, and peer-learning among the University. In future self-evaluation reports, it is recommended to detail the specific actions taken by YSU to improve the quality of teaching staff and activities.
4. Young researchers engagement in the professional development program.

V. Research Environment

Findings and considerations:

The research environment at the HEI benefits from talented and dynamic staff members who show above-average scientific productivity and are involved in multiple international collaborations. According to the published key performance indicators of YSU for the period 2010–2015, about 75% of the teaching staff who are involved in funded research projects belongs to the field of natural sciences. The HEI also counts with complete and modern facilities in some laboratories through the financial support of international grant schemes (e.g., EC-funded TEMPUS programme, World Bank), including the Centre of Excellence for Applied Biosciences, which counts on state-in-the-art laboratory equipment. Basic science is pivotal at the HEI, but research at some of those laboratories (e.g., laboratory of Biochemistry and Microbiology) is particularly industry-oriented, although they do not provide external services to private companies that could revert to additional funding. On the other hand, the facilities in other laboratories at the HEI are severely limited and, in some cases, there is a lack of essential equipment. Nevertheless, researchers and students may access to the necessary equipment in other laboratories within and outside the HEI, which, in the latter case, may result in a dependence on external institutions and facilities to fulfil some research activities.

Access to library resources is key to research activity. Although it was not possible to visit the main library at the HEI, it seems that it counts on a substantial physical stock of basic publications. However, there is no direct access, neither for researchers nor for doctoral students, to online scientific platforms and databases, so they generally depend on external collaborators and/or unofficial online platforms in order to access to necessary scientific articles. There is also a lack of licences to specific software packages that may be needed for eventual analyses of research data, resulting again on dependence on external collaborators and/or open source software packages that might not fulfil the research necessities.

As mentioned above, there is active participation among staff members in international projects and research collaborations. As a result, doctoral students are generally encouraged to do short scientific visits to international partner institutions that could strengthen their research profile and help them to develop a network of collaborations. There are, however,

limited financial opportunities and grant schemes for those scientific visits, although the doctoral students seem to be aware of which schemes they could potentially apply to.

The HEI does not count yet on mechanisms or procedures for the evaluation of effectiveness, applicability, and availability of resources.

Recommendations:

1. It is recommended to keep strengthening the research facilities and infrastructures, which will directly benefit the doctoral students and thus the research performance at the HEI. It is recommended to also strengthen the links to external collaborations, both in the public and private sectors, which could widen the prospects and opportunities for doctoral students.
2. It is highly recommended to improve access to library resources, either within the YSU or through collaboration agreements with external libraries and institutions.
3. It would be desirable to increase the funding opportunities for doctoral students to participate in collaborative research projects with foreign partners through short visits. Similarly, it would be desirable to provide those who have completed their PhD studies with postdoctoral grant schemes which could facilitate their temporal stays in external institutions and their future return to Armenia. It is recommended to develop at the YSU level tools and resources that could support both researchers and doctoral students in the seeking for research funding; not only providing information on the available grant opportunities but also providing logistical support in the preparation of grant applications.
4. It is recommended to develop a set of mechanisms and procedures for the evaluation of applicability and availability of resources.
5. In further self-evaluation reports, it is recommended to include more details on the infrastructures and facilities available, as well as key performance indicators of the research activity and information on the degree of involvement of Institutes of Research and Centres of Excellence.

VI. Doctoral Candidates

Findings and considerations:

According to the self-evaluation report of YSU Biology faculty, the institution has formal mechanisms to regulate relations between candidate, supervisors, and institution where the rights and responsibilities of doctoral candidates are clearly formulated. The mechanisms could be found in the tripartite agreement; however, the candidates were not aware of those mechanisms. According to the report, Doctoral candidates are engaged in governance at the university and participate in decision-making. The on-site visit and the meeting with candidates showed that the students were not participating in any kind of governance related activities and were not members of student councils. Moreover, no feedback was given by the candidates on their doctoral program or other services of the university in order to improve the quality of the program.

The candidates had no access to online platforms for scientific research, which was making their research more difficult and out-of-date.

Recommendations:

1. It is of high recommendation to organize continuous meetings with the candidates in order to be aware of their problems and issues.
2. It is recommended creating a partnership with other international institutions that will provide access to online resources in order to avoid the reliance on unofficial websites and open resources to maintain quality scientific research.

VII. Internationalization

Findings and considerations:

The University pays attention to the internationalization of research activities that are reflected in the task of the Strategic Plan 2016-2020 directed on promoting internationalization via an increasing number of publications in journals included in international scientific databases, number of YSU's periodicals published in foreign languages, number of staff participating in international conferences, and number of international grants and scientific projects. International Cooperation Office functions for conducting cooperation with foreign partners.

YSU currently has agreements with 270 Universities and research centres of 50 countries. Cooperation in the field of Biology is conducted with Berlin Technical University, Cadis University, Friedrich-Schiller University, Tartu University, etc.

During the site visit meetings, the active participation in international projects and programs.

of students and teaching staff was mentioned.

Doctoral students can take part in short-term or long-term scientific visit programs based on financial support of YSU, State Committee of Science, Young Researchers' Support Program, exchange programs in the framework of the Horizon 2020 projects, Erasmus+, ISTC, OSCE, CRDF, NATO Science for peace, Volkswagen foundation, ANSEF and other programs and foundations. During visiting programs, the doctoral students conduct experimental research, make an analytical review, and publish scientific articles.

Some of the teaching staff have experience in being co-supervisors of foreign PhD students (e.g., from Kazakhstan).

Both teaching staff and doctoral students are highly motivated for participation in international projects and programs. Unfortunately, YSU does not provide access to international scientific databases. Furthermore, there is a lack of financial support from the University for academic mobility and professional upgrade abroad.

Recommendations:

1. It is highly recommended to find alternative funds for annual allocation of academic mobility and professional upgrade abroad of staff and doctoral students.
2. The free access of doctoral students to international scientific databases is recommended.

VIII. PhD awarding

Findings and considerations:

The Supreme Certifying Committee makes all decisions for the selection of members for Specialized Councils and regulation of PhD awarding process. Supreme Certifying Committee confirms the decision of Specialized Council to award the doctoral candidate with the scientific degree diploma. The Supreme Certifying Committee regulates the nomination and selection of the members of Specialized Councils among the professionals of the current research sphere.

The Specialized Council has not any practice for publishing reports on the development of the relevant fields. Also, the university does not have procedures and mechanisms to implement quality assurance procedures of Specialized Councils' activities.

There is no evidence whether PhD awarding criteria consistent with the intended learning outcome of the doctoral program. The program learning outcomes are clearly defined, but the most critical requirement is that each student has to publish research articles in an international journal. The doctoral students are promoting through writing an annual report in order to introduce the articles and research progress.

There appears to be a wide variation in the frequency of contact with the supervisor. Doctorate students can advise and meet with the supervisor every day. There is no conflict management or regulation, but any conflict between the supervisor and the doctoral student has not been addressed yet — however, some cases required to change the supervisor or the research theme under discussion with the supervisor.

Doctoral students can involve in exchange programs, scholarships, research conferences, and international collaborations.

Recommendations:

1. The formulation of specific policies regarding the evaluation of achieved learning outcomes and conflict management is recommended.

IX. Internal quality assurance

Findings and considerations:

YSU was established as QA central unit in 2012. In the Faculty level, QA processes are coordinated and targeted by Academic Council Permanent Quality Assurance Committees (FQAC). This consists of 5 members, including one student representative. The quality assurance processes include surveys by the students, graduates, and the teaching staff, but their reports and are not yet publicly available.

Peers could not find the evidence for internal and external QA processes in any kind program level.

According to the self-evaluation report, YSU does not have an internal quality assurance system of doctoral programs.

Recommendations:

1. The development and establishment of policies and procedures for internal quality assurance of the doctoral programme, regarding improving the doctoral programme.
2. To collect data that are suitable for the purpose and used to continue improving the degree programme, uniquely to identify and resolve weaknesses.
3. In future self-evaluation reports, if internal quality assurance mechanisms have not been developed yet, it is highly recommended to include any information relevant to this section, including if there are plans for creating them.

Appendix 1: Site visit agenda

External assessment of the Doctoral Programme in Biology at Yerevan State University within the framework of the Erasmus+ C3QA project

SITE-VISIT AGENDA

	29.04.2019	Start	End	Duration
	Transfer from the hotel to ANQA	14:30		
	Closed panel meeting	15:00	17:00	120 minutes

	30.04.2019	Start	End	Duration
	Transfer from the hotel	09:30		
1.	Meeting with the Vice-Rector for Scientific Affairs	10:00	10:30	30 minutes
2.	Meeting with doctoral candidates (6-10 persons)	10:40	11:20	40 minutes
3.	Meeting with the academic program management/head of chair and C3QA local management teams (Units for doctoral education included)	11:30	12:30	60 minutes
4.	Break and closed panel meeting	12:40	13:30	50 minutes
5.	Meeting with supervisors/teaching staff (6-10 person) and QA representatives	13:40	14:30	50 minutes
6.	Resources review (auditoriums, libraries, laboratories, cabinets, scientific databases etc.)	14:40	15:30	50 minutes
7.	Document review	15:40	16:40	60 minutes
8.	Closed panel meeting	16:50	17:50	60 minutes
9.	Outline feedback of the panel to the YSU leadership	17:50	18:05	15 minutes