



PISA

CAPACITY BUILDING PLAN: UKRAINE



PISA

PISA 2018 CAPACITY BUILDING

PLAN: UKRAINE

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Photo credits: ©Jupiterimages/Getty Images

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of the source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Centre (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.

ACKNOWLEDGEMENT

This report has been produced with the support of the Polish Government, through its Ministry of Education and its Ministry of Economic Development.

This report has been prepared by Fernando Cartwright on behalf of the OECD and the Ministry of Education and Science of Ukraine as part of the Programme for International Student Assessment (PISA) programme.

The OECD PISA surveys, which take place every three years, have been designed to collect information about 15-year-old students in participating countries. PISA examines how well students are prepared to meet the challenges of the future, rather than how well they master particular curricula. The data collected during each PISA cycle are an extremely valuable source of information for researchers, policy makers, educators, parents and students. It is now recognised that the future economic and social well-being of countries is closely linked to the knowledge and skills of their populations. The internationally comparable information provided by PISA allows countries to assess how well their 15-year-old students are prepared for life in a larger context and to compare their relative strengths and weaknesses.

PISA for Development (PISA-D) is an initiative of the OECD and its partners that aims to identify how PISA can best support evidence-based policy making in emerging and developing economies – and contribute to the UN-led definition of global learning goals for the Education 2030 agenda. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries. This report and the capacity building initiatives that will be developed for Ukraine in response to it are based on some of the tools and methodologies developed in PISA-D.

TABLE OF CONTENTS

PISA 2018 CAPACITY BUILDING PLAN: UKRAINE.....	7
1. Project overview	7
2. Capacity building planning methodology	7
3. Key personnel, project partners and stakeholders.....	8
4. Capacity building priorities.....	10
4.1. Required capacity building for the current project implementation.....	11
4.2. Aspirational capacity building for large-scale assessments and the education sector.....	22
4.3. Overall cost summaries	34
REFERENCES	35

Tables

Table 1. Stakeholders interviewed by the consultant	8
Table 2. Total costs by capacity building element.....	34

PISA 2018

CAPACITY BUILDING PLAN: UKRAINE

1. Project overview

The Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. Since 2000, PISA has been testing students worldwide in the key subjects: reading, mathematics and science. The tests are a mixture of open-ended and multiple-choice questions that are organised in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items are covered, but students take different combinations of different tests. Each student's test lasts only 2 hours.

The assessment also collects information on students' backgrounds and on how their schools are managed to identify the factors that influence student performance. The students and their school principals also answer questionnaires to provide information about the students' backgrounds, schools and learning experiences and about the broader school system and learning environment. Policy makers use PISA results to gauge the knowledge and skills of students in their own countries in comparison with those in other countries, set policy targets against measurable goals achieved by other education systems, and learn from policies and practices applied elsewhere.

For some new PISA participants, preparation for the assessment involves a three-stage planning process with: 1) a Capacity Needs Analysis (CNA) based on PISA's technical standards; 2) the development of a Capacity Building Plan (CBP) that addresses the issues identified in the CNA; and 3) a Project Implementation Plan (PIP) that integrates the international implementation timeline and additional contextual information to elaborate all the actions, resources and responsibilities that are necessary to implement the PISA 2018 cycle. These activities are supported by the OECD and development partners.

2. Capacity building planning methodology

The CBP is developed by reviewing the CNA results using the web tool (www.polymetrika.org/ILSA/). The review identifies project requirements that were not met and requirements that were met but where existing experience had to be applied to new or different requirements by PISA. The review also focuses on capacity elements that align with the country's capacity development priorities. Using this list of capacity needs, with reference to the international integrated timeline, the design process develops a set of CBP elements to address the prioritised capacity needs. Each element corresponds to specific ultimate capacity goal. For each CBP element, a sequence of development activities is scheduled across the project cycle to develop the desired capacity, while reaching interim development goals. Each activity was separately costed and resourced to develop the complete CBP. This schedule is aligned to the international PISA implementation schedule. The final step developed a budget for each capacity building element by year of PISA implementation.

The CBP process results in two types of investment goals: 1) related to PISA implementation, and 2) increased capacity corresponding to aspirational development goals. The CBP presents these two types of investment separately. There are several CBP priorities with related capacity targets under each type of

investment. These capacity targets were used to define the ultimate goal for each area of development, and are also used to define the monitoring and evaluation framework. Finally, the specific activities are listed under each of the capacity building elements with their related costs. Detailed cost breakdowns are in the online project plan at <http://polymetrika.org/ILSA/ProjectPlan/ProgramImplementation?country=UKR-PISA>.

The resulting CBP includes aspiration goals that may not be required for minimal PISA implementation. By design, the planned activities contribute more to the general assessment capacity or functionality of the education sector than to the minimum PISA implementation requirements. It is the expectation of the stakeholders who contribute to the development of the CBP that spending priority will be given to minimum implementation requirements. Where budget constrains investment to a limited set of CBP activities, decisions will be made to support aspirational activities on an ad hoc basis as budget and opportunity allow.

3. Key personnel, project partners and stakeholders

The following key people, project partners and stakeholders were interviewed during the process of designing the CBP.

Table 1. Stakeholders interviewed by the consultant

Alzbeta Chmelarova, Counsellor, Embassy of the Czech Republic in Ukraine	Varoslaviv Val, 34A alzbeta_chmelarova@mzv.cz
Ganna Novosad, Department Head, International Cooperation and European Integration Department, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine a_novosad@mon.gov.ua anja.novosad@gmail.com
Georgiy Kasyanov, The Institute of the Development of Science	
Igor Kheyfets, Senior Education Economist, World Bank	
Ihor Andreyko, Deputy Project Director, Ukrainian Standardized External Testing Initiative Alliance (USETI Alliance), American Councils for International Education	Vul. Esplanadna, 20 (6th floor), Kyiv, 01001, Ukraine iandreyko@useti.org.ua +38 044 289 3952, 289 3953, 289 3977, 290 3978 www.useti.org.ua www.americancouncils.org.ua
Inna Sovsun, First Deputy Minister, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine
Irine Kogut, Centre analyst, CEDOS (a private non-profit think tank)	CEDOS, st. Kropivnitskogo 4, Apt. 7
Ivan Pocuch, Ambassador, Embassy of the Czech Republic in Ukraine	Varoslaviv Val, 34A
Liliana Zyhlna, Trade Commissioner Assistant, Trade Commissioner Service, Government of Canada	Embassy of Canada 13A Kostelna St., Kyiv, Ukraine 01901 liliana.zyhlna@international.gc.ca (380 44) 590 3153 (380 50)n330 5323
Lyubov Shchitka, Department Head, International Educational Projects Department, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine
Lyudmila Tatsenko, Head of Education, British Council	4/12 Hryhoria Skovorody Street Kyiv 04070 lyudmila.tatsenko@britishcouncil.org.ua +380 44 490 5600 www.britishcouncil.org.ua
Marina Malygina, Area manager (Ukraine, Belarus, Moldova), Pearson Education Ltd	marina.malgina@pearson.com +380 67 441 5321 www.pearson.com.ua
Michal Sitek, Deputy Director of the Educational Research Institute; A member of the Polish PISA team	Educational Research Institute ul. Górczewska 8 01-180 Warszawa m.sitek@ibe.edu.pl
Natalia Byeskova, Deputy Head, Secondary Education Department, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine
Natalia Vashchaeva, Head of Statistics, Institute for Educational Analytics	Ukrainian Center for Educational Quality Assurance (UCEQA) Str. Vynnychenko 5

Table 1. Stakeholders interviewed by the consultant (continued)

Nataliia Dorosh, Education Lead, Microsoft	Eurasia Business Center 75 Zhylyanska Str. Kyiv, 01032, Ukraine nadorosh@microsoft.com +38 044 392 89 19 +38 067 322 35 27 www.microsoft.ua
Oksana Denysyuk, Director, Institute for Educational Analytics	UCEQA Str. Vynnychenko 5
Oleg Sharov, Head, Higher Education Department, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine
Oleksandr Lyashenko, Branch head, academician Professor, Doctor of Sciences, National Academy of Pedagogical Science of Ukraine	Artema Str., 52-A, 04053, Ukraine o.lyashenko@gmail.com +380 44 481 37 05 +380 50 357 26 36 www.naps.gov.ua
Olena Kolesnikova, Director, Employers Union	4 Volodymyrs'ka st., office 9, Kyiv 01025, Ukraine kolesnikova@fedmet.org (044) 279 03 04
Olena Onaz, Association of School Principals	Artema Str., 52-A, 04053, Ukraine
Olga Buriachenko, Senior Specialist, International Educational Project Division Department for International Cooperation and European Integration, Ministry of Education and Science of Ukraine	10 Peremohy Avenue Kyiv 01135 Ukraine o_buriachenko@mon.gov.ua +38 044 481 32 78
Olga Strelyuk, Deputy Director, Ukrainian Center for Education Quality Assessment	UCEQA Str. Vynnychenko 5
Pavlo Hobzey, Deputy Minister, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine khobzey@mon.gov.ua khobzey@ukr.net +38 (044) 23 660 08
Pavlo Hobzey, Deputy Minister, Ministry of Education and Science	10 Peremohy Avenue Kyiv 01135 Ukraine
Rodion Kolyshko, Deputy Director General, Director of Workforce Development and Corporate Social Responsibility Department, Federation of Employers of Ukraine	1, M. Kotsyubynskogo Str., Kiev, 01030, Ukraine rodionkolyshko@fru.org.ua +38 044 251 70 21 +38 050 385 20 34 www.fru.org.ua/ua
Simon Williams, Director/Cultural Attaché, Cultural Section of the British Embassy, British Council	4 Volodymyrs'ka st., office 9, Kyiv 01025, Ukraine simon.williams@britishcouncil.org.ua +380 44 490 5600 +380 50 448 3146
Tamara Palyvoda, Coordinator, USAID	
Tetiana Vakulenko, National Project Manager (NPM), Ukrainian Center for Education Quality Assessment	UCEQA Str. Vynnychenko 5 vakulenko_tetyana@ukr.net
Vadym Karandii, Director, Ukrainian Center for Education Quality Assessment	UCEQA Str. Vynnychenko 5
Valerii Boyko, Deputy Director, Ukrainian Center for Education Quality Assessment	UCEQA Str. Vynnychenko 5
Vasyl Kremen, President, National Academy of Educational Sciences of Ukraine, President of the Society "Znannya" of Ukraine, President of the Sports Students' Union of Ukraine, Full Member of the National Academy of Sciences of Ukraine, Full Member of the National Academy of Educational Sciences of Ukraine, Doctor of Sciences, (Dr. Hab.) in Philosophy, Professor	52-A, Sichovykh striltsiv Str., Kyiv, 04053, Ukraine president@naps.gov.ua +38 044 226 31 80 +38 044 481 37 01
Vitaliy Lyamichev, Deputy Director, Institute for Educational Analytics	UCEQA Str. Vynnychenko 5
Volodymyr Belimov, Senior Specialist, International Education Projects International Relations Department, Ministry of Education and Science of Ukraine	10 Peremohy Avenue Kyiv 01135 Ukraine v_belimov@mon.gov.ua +380 44 481 3278 www.mon.gov.ua
Volodymyr Bugrov, Vice-President, Kiev National University, Union of Rectors of Higher Educational Institutions of Ukraine	60, Volodymyrska St Kyiv, 01033, Ukraine bugrov@univ.kiev.ua +38 044 239 34 45
Yarema Bachynsky, Country Director, American Councils for International Education	Vul. Esplanadna, 20 (6th floor), Kyiv, 01001, Ukraine yarema@americancouncils.org.ua +38 044 289 3952, 289 3953, 289 3977, 289 3978 www.americancouncils.org.ua

Table 1. Stakeholders interviewed by the consultant (continued)

Yaroslav Bolyubash, Executive Secretary, Union of Rectors of Higher Educational Institutions of Ukraine	60, Volodymyrska St Kyiv, 01033, Ukraine 200yar@ukr.net +38 044 239 31 15
Yulia Koba, Program Analyst, Canadian Embassy Development Cooperation Section, Government of Canada	Embassy of Canada 13A Kostelna St., Kyiv, Ukraine 01901 yulia.koba@international.gc.ca +380 44 590 31 29 +380 50 381 6062 www.kyiv.gc.ca
Zheng Zhang, Senior Program Analyst, Canadian Embassy Development Cooperation Section, Government of Canada	Embassy of Canada 13A Kostelna St., Kyiv, Ukraine 01901 zheng.zhang@international.gc.ca +380 44 590 3163 www.kyiv.gc.ca

4. Capacity building priorities

As noted in the CNA results, although minimum implementation of PISA in Ukraine is largely within the capacity of existing human and physical resources, successful implementation of PISA that meets the expectations of a wide variety of Ukrainian and international stakeholders will require additional resources and modifications to existing inter-organisational relationships. There are also many current and competing policy initiatives in Ukraine's education sector which would benefit from integration with PISA implementation.

Most corollary benefits to the education sector from PISA depend on successful implementation, so the immediate capacity building priorities address relate to operational capacity. Enhancing the co-ordination between PISA implementation partners and ensuring the National Project Manager (NPM) has the tools and resources required to manage the complexity of PISA are essential to any additional capacity goals. Operational responsibilities must be appropriately allocated to each of the implementation partners with clear responsibilities, deliverables and timelines. To ensure that these responsibilities can be met, existing shortfalls in human resources (i.e. person-time as well as competencies) and physical resources need to be taken care of. The intent of the CBP is that these enhanced operational capacities should not be for the sole benefit of PISA implementation – the resources should be embedded in other core programmes that can maintain the capacities and receive longer term benefits.

Moving beyond basic PISA implementation, experience in other countries over the past 15 years suggests that stakeholders in Ukraine will need to develop the greater understanding of the cognitive frameworks and statistical and psychometric methods employed by PISA to make best use of the results. PISA methodologies generally represent the latest scientific consensus for best practice in assessment and tend to be relatively advanced compared to the routine practices in participating countries. Although the education sector in Ukraine has seen many recent changes, many of the changes in curriculum and assessment policy have not penetrated to operational practice or do not reflect state-of-the-art methodologies. This disparity tends to limit the ability of Ukraine and other countries to utilise the results of PISA and leverage the experience of PISA participation to foster long-term capacity building in the sector. Capacity building activities should address both the techniques used by PISA to produce assessment data (including the limitations these methods impose on specific inferences based on statistical evidence) as well as how to use the results to address specific research questions and inform decision making.

Moving even further to the broader education sector, there are four aspects of PISA that make it an ideal catalysing agent for sector-wide capacity building. First, the implementation structure of PISA requires co-ordination between many different levels and interests of stakeholders, many of whom would not otherwise have a means or rationale for co-ordination. Second, the rigorously-maintained timeline of PISA provides a concrete structure for implementing other policies and programmes. Historically, many large capacity building activities in Ukraine's education sector, such as education management information system (EMIS) development, have faltered due to lack of focus and adequate management. Integration of capacity building activities with PISA's schedule will add necessary rigidity to other implementation plans.

Third, international interest in PISA provides an existing project structure for allocation of development resources from international sources within the current implementation cycle. After successful implementation, PISA's high profile will also strengthen the justification for additional investments in the sector, based on both analysis findings and the demonstrated success in managing PISA. Last, the high level of national and international attention typically given to PISA in participating countries engenders a degree of oversight that may be missing from other project initiatives. This additional oversight from politicians, media and other stakeholders may provide a deterrence to integrity related issues that have historically decreased the effectiveness of programme implementation in Ukraine.

Over the past decade, successful capacity building in Ukraine has been associated with focused initiatives with specific goals and limited scope. An unintended consequence of this approach is reduced attention to the potential synergies and redundancies across initiatives. In contrast, because PISA inherently crosscuts many geographic and policy areas and has a high political profile, it provides a natural core around which to co-ordinate broader stakeholder interests and initiatives in the education sector. Fostering greater co-ordination between stakeholders will also facilitate the development of shared information infrastructure that may be used by a variety of future initiatives. Capacity building related to information infrastructure should address three classes of activities: 1) collection of data, 2) storing and controlling access to data, and 3) analysing data to produce information.

The PISA CBP develops each of these priorities with capacity goals, a monitoring and evaluation framework and a list of costed capacity building activities. Although the intent of the plan is complete implementation, each activity is sufficiently separable to enable piecemeal implementation as resources and opportunity permit. All costs and funding amounts are in US Dollars.

4.1. Required capacity building for the current project implementation

The following priorities should be satisfied to ensure that the implementation goals are met. The project activities for the current implementation may be implemented successfully using one-time support from consultants and contractors to offset lack of existing capacity, but addressing the priorities in this section will increase the sustainability of future implementations.

4.1.1. Project management

To facilitate successful implementation of PISA, the NPM and designated staff of the National Centre (NC) will develop competence in large project management using allocation of resources from multiple implementing partners. The initial goal is to provide tools and strategies for the NPM to manage the scope and complexity of PISA, including human resource and information management strategies that may be applied to multiple purposes and client relations management (CRM) software to manage correspondence. The NPM and designated staff must be able to allocate and assign appropriate resources to operational responsibilities and implement and enforce protocols and standards (e.g. for data collection, data capture and coding).

Specific capacities targeted by this programme element:

- Computing security – **established**: Staff follow institutional policies regarding regular software and antivirus definition updates
- Fidelity of administration in local contexts – **advanced**: Translators or staff responsible for adaptation have been trained in ILSA data collection procedures

- Software resources – **established**: Organisation maintains software licenses and manages acquisition and installation of necessary software
- Correct sequencing of administration of national options – **advanced**: ILSA administration protocols are sequentially scripted and bound and provided with the testing materials during and after training
- Availability of document formatting and print specifications (manual of style) – **established**: Document print and specifications are maintained on servers accessible to all NC staff
- Fidelity of response coding – **advanced**: Manual is used directly in training for and management of coding activities
- Skill in managing a team of project staff who carry out multiple tasks often needing simultaneous attention – **advanced**: Experience in a matrix management structure, where project team members belong to different administrative hierarchies
- Quality of document proofing – **advanced**: Clear protocols exist for the identification of potential typographic errors and/or the NC has an agreed-upon dictionary and syntactic manual of style
- Sufficient experience to represent the country's stakeholders at international meetings where aspects of the project will be discussed – **advanced**: Direct experience interacting with different sub-national and/or international stakeholders.
- Response coding expertise – **advanced**: Response coders are recalibrated periodically based on results of reliability analysis (see Standard 11.3).
- Testing material distribution infrastructure – **advanced**: Existing infrastructure can be used to transport testing materials using pre-existing security protocols.
- Sampling responsiveness during data during collection – **established**: Updates from centralised data processing are concurrent with data collection on a (maximum) weekly basis.
- Fidelity of instrument translation and adaptation to local contexts – **advanced**: Translators or other individuals responsible for instrument adaption are knowledgeable about the constructs measured by ILSA questionnaires (e.g. ISEI, ESCS school climate, engagement with learning).

Procurements and capacity building activities: Project management

Activity 1	Travel and accommodation costs from Ukraine to other countries for capacity building exposure throughout the course of the PISA 2018 cycle (2016-19).
Deliverables	Peer-to-peer learning experiences covering all of the specific capacities targeted by this programme element.
Country responsibilities	UCEQA is responsible for nominating 2-3 participants to attend each peer-to-peer learning experience.
Administrative details	Completion of required requisition and reporting travel documents for government policy
Costs (USD)	16 000
Activity 2	Project management training workshop. Specific topics covered in a 4-day workshop for approximately 2-5 participants from UCEQA and implementing partners should include matrix management, working with specialists and IT development teams, and international collaboration.
Deliverables	The training consultant will provide all presentations, Presentation notes and reference material used during the workshop. Preference should be given to open-source materials and software.
Reporting requirements	Workshop agenda provided to local manager and professional peers. PISA NPM and Department Deputy Head will provide a summary of the workshop and proposed management strategies that incorporate the workshop recommendations.
Country responsibilities	UCEQA must allocate time for the PISA NPM and Department Deputy Head to fully participate. The NPM is responsible for nominating other participants from UCEQA or related institutions as required.
Administrative details	Training will be provided by a private management consultant. UCEQA will be responsible for drafting final terms of reference and selecting a service provider following standard procurement procedures.
Costs (USD)	1 225
Activity 3	One day workshop on PISA-specific project management provided by an experienced PISA NPM. The workshop will focus on effective techniques and protocols for managing human and physical resources from multiple implementing partners in the context of PISA operational tasks. Example topics may include file management and security structure, shared scheduling and formal decision-making protocols.
Deliverables	Participants will formalise and implement project management protocols based on techniques developed in the workshop in the context of operational constraints at UCEQA.
Country responsibilities	UCEQA must provide a minimum of two project managers (NPM and Deputy Head) responsible for PISA 2018 for full workshop participation.
Costs (USD)	1 500
Activity 4	The NPM will evaluate and implement a Client Relations Management (CRM) software solution to facilitate communication management.
Deliverables	Installation and use of the CRM software to co-ordinate communications with project stakeholders across all management staff and implementing partners.
Reporting requirements	Functional testing results, usability testing results, load testing results, specifications documents, user manuals and maintenance documents.
Country responsibilities	The NPM is responsible for directing the acquisition and installation of the relevant software into project machines. If the solution is cloud-based, the NPM will ensure relevant team members have access. Individual team members are responsible for acquainting themselves with software operating procedures provided in help menus and manuals. Preference should be given to open-source solutions.
Costs (USD)	0

Summary: Total capacity building element cost: USD 18 725

Monitoring and evaluation: Project management

Indicator	Target
Paid and unpaid overtime hours	Overtime activities do not exceed initial project management expectations.
Date of completion of project milestones	All project milestones are met within the milestone dates of the PISA international implementation schedule.
Participation in management training	NPM and required staff fully attend training.
Use of management protocols	Management of information and human and physical resources uses defined protocols and infrastructure (i.e. not relying on personal email inbox or unstructured file directories).

4.1.2. External data access and independent inquiry

Although PISA may be able to successfully satisfy stakeholder needs with internal research capacity, long-term sustainability depends on engaging the larger community of professional researchers in academia and private think-tanks in Ukraine. The PISA 2018 implementation should integrate the current and future needs of these stakeholders in the capacity building process to facilitate use of PISA data to conduct independent research.

Specific capacities targeted by this programme element:

- Local capacity building for ILSA – **advanced**: The country/system offers a wide range of opportunities to learn about ILSA.
- Availability of ILSA training – **advanced**: Opportunities to learn about ILSA are available to a wide audience, in addition to the country's/system's ILSA team members.
- Quality of school sample frame – **advanced**: EMIS is updated annually with an accurate frame.
- Communication with stakeholders – **advanced**: NC has regular meetings or accessible forums with stakeholders for two-way discussions.
- Use of ILSA – **advanced**: Results from the ILSA are used in a variety of ways to inform decision making in the country/system.
- Effect of political climate on implementation – **advanced**: All relevant political bodies (government and opposition) actively support the project.
- Stakeholder use of LSA data – **advanced**: Stakeholders directly access data for specific information.
- Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders – **established**: Recognise a clear washback effect from the results of LSA and the policies and practices affecting learning.
- Data quality of ILSA – **established**: The country/system met all technical standards required to have its data presented in the main displays of the international report.

Procurements and capacity building activities: External data access and independent inquiry

Activity 1	Make information on PISA research methods publicly available to Ukrainian audiences.
Deliverables	Updated documentation and links on the Ukrainian PISA website
Country responsibilities	UCEQA is responsible for co-ordinating translation of research references or selecting references in languages that are likely to be accessible to Ukrainian audiences. The Ukrainian PISA website should provide links to international PISA site for data downloads. The Ukrainian PISA website should provide links to resources (software, macros, and analysis syntax and data visualisation templates) on how to mine PISA data and publicise availability of information through professional networks. To facilitate access for Ukrainian audiences, the website should provide a brief description and review of each linked resource.
Costs (USD)	1 000
Activity 2	Information workshop on data use and data access including employers, universities and NGOs.
Deliverables	Workshop reference materials.
Reporting requirements	Distribution of workshop materials on Ukrainian PISA website.
Country responsibilities	UCEQA is responsible for delivering a workshop explaining how to access the PISA 2018 Ukraine and International datasets. The workshop should begin with an introduction to the structure and content of the Ukrainian PISA website and demonstrate how to access the data and use the data to answer simple research questions using basic descriptive statistics. Examples from the National and International Reports may be used to illustrate specific variables data sets. The workshop is not a training activity on statistics or research but should serve to inform participants about data access and publicise opportunities for additional research. The workshop should include a lengthy question period and plenary discussion for participants to discuss the potential role of PISA to address different information needs.
Administrative details	Selection and contracting of facility and catering. Travel and accommodation reimbursements.
Costs (USD)	5 500

Summary: Total capacity building element cost: USD 6 500

Monitoring and evaluation: External data access and independent inquiry

Indicator	Target
Recommendations to Ministry referencing PISA results or data	The majority of policy recommendations related to policy and practice of Secondary Education refer to PISA results or PISA-related infrastructure.
Count of visitors to local PISA site	Averages of 100 distinct users visit the local PISA website per month.
Number of distinct media posts or articles	At least 5 distinct media posts or articles describing how the results of PISA 2018 in Ukraine rationalise specific changes to (or justify existing) policy or practice in education.
Downloads of test items, cognitive framework (i.e. any PISA reference material) by schools and teachers	PISA materials are downloaded to users representing the majority geographic regions in Ukraine.
Conduct of independent research	At least one Ukraine-based researcher who is not a member of the PISA Analysis Team produces and disseminates the results of analysis performed using PISA 2018 data.
Count of visitors from Ukraine to international PISA site	At least 100 distinct IP addresses from Ukraine access the PISA international site.
Number of downloads of data and reference material from local PISA site	Data and reference material related to data analysis or results are downloaded by at least 10 distinct users from the local PISA site.
Number of media articles or news reports in credible sources (pay attention to indirect coverage)	At least 100 references to Ukraine's participation in PISA during the period 2018-19.

4.1.3. Competency-based education and assessment

The PISA assessments are based on current research in human cognition and information processing. This approach to defining the content and methods of assessment emphasizes the construction of meaning or extraction of information from a variety of texts, which is sometimes in conflict with classroom

education and assessment practices that emerge from tradition or ideological influences, such as emphasis on recall of specific quotations from canonical literature. Actors at different levels within the education sector will benefit from familiarisation with and utilisation of approaches based on a PISA-type cognitive framework. Informing relevant audiences about this framework and preparing resource material is facilitated by the content development activities of PISA 2018, and any stakeholder engagement in advance of results will increase the likelihood that educators and students can see immediate benefits from PISA participation.

Specific capacities targeted by this programme element:

- Priority of competency-based foundation skills (literacy, numeracy, reasoning, problem solving) in academic education – **emerging**: K-11 curriculum uses competency-based implementation of curriculum.
- Dissemination of ILSA results – **advanced**: Country/system-specific results and information are regularly and widely disseminated in the country/system.
- Use of ILSA – **advanced**: Results from the ILSA are used in a variety of ways to inform decision making in the country/system.
- Priority of competency-based foundational skills (literacy, numeracy, reasoning, problem solving) in vocational education – **advanced**: Foundational skills are supported by employers or vocational workplace training.
- Effect of political climate on implementation – **advanced**: All relevant political bodies (government and opposition) actively support the project.
- Positive washback of ILSA – **advanced**: Decisions based on the ILSA results have had a positive impact on students' achievement levels.
- Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders – **established**: Recognise a clear washback effect from the results of LSA and the policies and practices affecting learning.

Procurements and capacity building activities: Competency-based education and assessment

Activity 1	At least one curriculum expert from the Educational Research Institute, Poland, will deliver a 2-day workshop to participants from the National Academy of Pedagogical, Institutes of Teachers' Professional Development Sciences and Regional Centres on approaches used in Poland to implement the PISA competence-based cognitive framework in curriculum and teaching practice. The workshop should provide a review of which strategies worked better or worse in different contexts.
Deliverables	Workshop materials in Ukrainian
Reporting requirements	The workshop agenda and training materials will be posted on the PISA website.
Country responsibilities	The NC is responsible for inviting participation from the Academy and Regional Centres. The workshop providers should provide training materials in advance for translation.
Administrative details	Selection and contracting of facility and catering. Transportation of participants. Translation of documents and translation services for workshop. Distribution of required printed and electronic material.
Costs (USD)	3 300
Activity 2	Recommendations for instruction related to PISA-type competence-based response formats and cognitive tasks.
Country responsibilities	The National Academy of Pedagogical Sciences will develop recommendations for pedagogy and produce appropriate training materials.
Costs (USD)	0
Activity 3	Develop textbooks and instructional material for instruction of competencies.
Country responsibilities	Based on feedback from initial implementation of the draft recommendations, the National Academy of Pedagogical Sciences will develop PISA-oriented instructional resources, with a planned release around the same time as the initial release of PISA 2018 results.
Costs (USD)	0
Activity 4	Include competence-based items or requirements into assessment framework (curriculum of assessment).
Country responsibilities	Based on feedback from initial implementation of the draft materials, the Institute for Means of Teaching will recommend additions for competence-based content into the curriculum of assessment, with planned release around the initial release of PISA 2018 results. The Ministry of Education and Science will be responsible for promoting and publicising these additions.
Costs (USD)	0

Summary: Total capacity building element cost: USD 3 300

Monitoring and evaluation: Competency-based education and assessment

Indicator	Target
Availability of educational resources related to competency-based learning and assessment that incorporate the PISA cognitive framework	Resources are available to all schools and teachers, either in print or electronic format.
Workshop participants in regional centres can use resources based on PISA cognitive and assessment frameworks to provide in-service training in learning and assessment	At least 80% of workshop participants are deemed adequately proficient by the workshop provider(s) to perform in-service training in assessment and learning using new resources.
Schools and teachers download competency-based learning and assessment resources	PISA materials are downloaded to users representing the majority geographic regions in Ukraine.
Representation of competency-based items in curriculum of assessment	The curriculum of assessment includes at least 10 new items and methods per relevant grade level that reflect the competency-based PISA cognitive framework.

4.1.4. Co-ordination of PISA implementation partners

Allocation of operational responsibilities and assignment of appropriate human resources from UCEQA and other implementation partners.

Specific capacities targeted by this programme element:

- International Participation Agreement – **established**: Participation agreement is signed and approved.
- Autonomy of NLSA structures – **established**: Political considerations sometimes obstruct technical or scientific considerations.
- Skill in managing a team of project staff who carry out multiple tasks often needing simultaneous attention – **advanced**: Experience in a matrix management structure, where project team members belong to different administrative hierarchies.
- Communication with stakeholders – **advanced**: NC has regular meetings or accessible forums with stakeholders for two-way discussions.
- Sufficient experience to represent the country’s stakeholders at international meetings where aspects of the project will be discussed – **advanced**: Direct experience interacting with different sub-national and/or international stakeholders.
- Effectiveness of human resources for ILSA – **advanced**: The ILSA office is adequately staffed and trained to carry out the ILSA effectively, with no issues.

Procurements and capacity building activities: Co-ordination of PISA implementation partners

Activity 1	Formalise operational responsibilities between NC and operational partners for activities related to analysis, project promotion and communication. Allocation of operational responsibilities and assignment of appropriate human resources to PISA 2018 implementation partners (UCEQA, CEDOS, MoES-Rector Union, MoES-Union of Employers, MoES and National Academy of Pedagogical Sciences).
Reporting requirements	Documentation of protocols and processes.
Administrative details	Draft of memorandum. Signatures to memorandum from relevant parties or distribution to and acceptance by relevant parties.
Costs (USD)	0
Activity 2	Train cognitive item coders. Although the immediate goal is to staff positions responsible for PISA 2018 operations, there should be additional participants with expertise in curriculum, teacher training and develop of learning resources. Training in cognitive item coding should be accompanied by detailed information about the PISA cognitive framework and the structure of complex item types.
Deliverables	A 5-day workshop facilitated by an international contractor with experience developing and/or scoring items based on the PISA cognitive framework (or similar, such as PIAAC). The workshop will enhance the basic coding protocols for PISA 2018 with additional information about the development of appropriate teaching and learning strategies associated with specific PISA cognitive tasks. The contractor shall provide all workshop materials in advance for translation.
Reporting requirements	Participants are expected to participate in all aspects of the workshop and prepare briefing notes and copies of non-confidential workshop materials for distribution to colleagues in their respective home institutions.
Country responsibilities	UCEQA will be responsible for selecting participants based on nominations from implementation partners.
Administrative details	Selection and contracting facility and catering. Transportation of participants. Translation of documents. Workshop simultaneous translation, if necessary. Distribution of required printed and electronic material. Define terms of reference for international contractor and local translator.
Costs (USD)	17 015

Procurements and capacity building activities: Co-ordination of PISA implementation partners (continued)

Activity 3	Develop protocols for the selection and employment of operational staff responsible for data collation, questionnaire coding and production of micro data (UCEQA) according to PISA guidelines.
Deliverables	Draft terms of reference for use for Regional Centres and UCEQA to assist in the hiring of operational staff.
Country responsibilities	UCEQA is responsible for drafting terms of reference for all operational positions.
Costs (USD)	0
Activity 4	The PISA Analysis Team will be led by UCEQA and should include members from a variety of stakeholder institutions, including: the Institute for Educational Analytics, Department of Research and Analytics, National Academy of Pedagogical Sciences, CEDOS, and at least one researcher from Higher Education. The Analysis Team will be responsible for developing and maintaining capacity related to sampling, data analysis and reporting of complex statistical findings. The Analysis Team will also be responsible for applying these skills to the execution of PISA 2018 operational tasks, where possible.
Deliverables	The NPM must receive a formal commitment of time (and physical resources, as required) from the parent institution of each Analysis Team member.
Country responsibilities	Each implementing partner is responsible for nominating a suitable candidate. Members of the Analysis Team should have at least one of the following competencies: data management, statistical analysis (correlational or multivariate) or data visualisation. At least two members of the Analysis Team should be fluent in English or be prepared to complete English language training. Each member of the Analysis Team will be assigned responsibilities related to sampling, analysis, participation in international training, participation in local training, delivery of training to colleagues and preparation of reports and communications materials.
Administrative details	Where required by regulation, the NPM will complete procurement procedures to establish contracts with implementing partners. These contracts should be limited in scope to the allocation of time and work space; other resource requirements or capacity building are addressed in other capacity building or operational activities.
Costs (USD)	20 000
Activity 5	Conduct workshops with regional centre managers to implement and enforce protocols and standards for data collection, data capture and coding. In each of 9 regional centres, NPMA and a UCEQA colleague will deliver 2-day workshops to 24 regional managers (and 1 dedicated PISA manager in each centre).
Deliverables	Each Regional Centre manager will define terms of reference for operational activities (including temporary staff transportation and accommodation) related to assessment administration, booklet scanning and data coding. These TOR may use a common template, if available and provided by UCEQA. Based on these TOR, the regional managers will draft preliminary operational budgets for data collection and processing.
Reporting requirements	Regional managers are responsible for maintaining personal working copies of training materials and operational protocols for reference during operations. UCEQA will maintain master copies and provide updates to regional managers if required.
Country responsibilities	UCEQA is responsible for translation and distribution of required printed and electronic material. Regional Centre managers must allocate full two-day commitments and ensure regional participants have adequate transportation and accommodation to permit full workshop attendance.
Administrative details	Completion of required requisition and reporting travel documents for government policy.
Costs (USD)	12 155

Summary: Total capacity building element cost: USD 49 170

Monitoring and evaluation: Co-ordination of PISA implementation partners

Indicator	Target
Use of internal/external human resources for implementation and reporting of PISA	Operational tasks (not including tasks performed within the scope of capacity building activities) are performed by employees of PISA 2018 implementing partner agencies or institutions with minimal use of external short-term contractors.
Validation of results	
Successful administration meeting Technical Standards	Ukraine PISA 2018 data are included in the PISA 2018 international report.
Frequency of coding errors	Re-coding of no less than 10% random sample of respondents requires less than 1% revision in the main survey data coding.

4.1.5. Psychometric capacity

The major component of PISA is the assessment of skills. These assessments use state-of-the-art methods for defining assessment tasks, determining the psychometric properties of each assessment task, calculating statistical representations of student performance and interpreting scores. Many of these methods may be relevant to ongoing large-scale assessment activities in Ukraine. However, without external motivation and resources, modernisation of assessment methodologies is challenging. The production cycles for UCEQA's assessment activities are continuous and overlapping, which leaves little opportunity for research and development in the period between administration of assessments and reporting of results. Consequently, recent changes in large scale assessment methodology tend to favour methodological familiarity and expedience over psychometric best practice. The international resources made available by PISA and the increased attention to assessment practices typically accompanying PISA participation provide the opportunity and rationale for UCEQA to enhance competence in psychometric analysis for reviewing item/test quality as well as reporting assessment results.

Specific capacities targeted by this programme element:

- Flexibility of test development software – **advanced**: Test development software allows creation of multiple forms, rotated content or adaptive tests for paper and computer based administration.
- Flexibility of item development software – **advanced**: Item banking software allows unlimited response types for paper and computer-based administration and stores appropriate scoring information.
- Response coding expertise – **advanced**: Response coders are recalibrated periodically based on results of reliability analysis (see Standard 11.3).
- Item response theory – **advanced**: Experience with multiple item response models (e.g. polytomous, Rasch, 2PL, 3PL).

Procurements and capacity building activities: Psychometric capacity

Activity 1	Participation in planned capacity building activities of the PISA-D project. The PISA-D schedule is not synchronised with PISA 2018. It will be up to the UCEQA management and NPM to determine which training activities may be integrated with the PISA 2018 schedule. The cost estimates are based on the assumption that the schedule can accommodate participation of 2 participants for a single 1-week workshop (or 1 participant for 2 workshops). Participation costs are assumed to be marginal, given that the workshops are already scheduled.
Reporting requirements	Translation of workshop materials into Ukrainian (international). Distribution of workshop materials on PISA website. Workshop agenda provided to local manager and professional peers. Delivery of workshop to UCEQA staff.
Country responsibilities	UCEQA is responsible for identifying appropriate workshops from the PISA-D capacity building series and nominating 1-2 participants to attend. Participants must have the required English fluency to attend the training activities.
Administrative details	Completion of required requisition and reporting travel documents for government policy
Costs (USD)	9 000
Activity 2	A two-part workshop on the cognitive structure of items and sensitivity to language, delivered by an international consultant with expertise developing cognitive items using the PISA framework (or similar, such as PIAAC). Workshop topics will include identifying how the PISA cognitive framework relates to task difficulty in different domains, how to development and adapt items to maintain specific cognitive properties, and how to identify and classify salient response categories for open-ended item responses. Each workshop segment shall take one week. The first will address the cognitive framework and item development. The second week will address item review and development of scoring (coding) protocols. In the interim, participants will continue to develop and review their items.
Deliverables	Workshop materials in Ukrainian. A sample of items based on each of the PISA cognitive domains. Documentation in Ukrainian on the procedures required to develop and code item content using the PISA cognitive framework.
Country responsibilities	The workshop is expected to use updated item and test development infrastructure, including fully resourced computer laboratory and updated item banking software. UCEQA is responsible for nominating workshop participants; all participants should be familiar with the new item banking software prior to the workshop. Participants should include analytical psychometricians as well as item writers. Participants are responsible for developing a minimum number of items (to be specified by the workshop provider) before the second stage of the workshop. The consultant should provide the training materials prior to the workshop for translation.
Administrative details	Simultaneous translation, if required. Non-UCEQA participants are assumed to have existing employment with UCEQA through ZNO development.
Costs (USD)	20 700
Activity 3	Workshop on psychometric analysis. Following a learning-by-doing approach, participants will use PISA item response data (or response data from items with similar cognitive complexity and identified cognitive characteristics) and quantify the statistical characteristics of items and tests and identify connections between statistical and cognitive characteristics. The workshop will be delivered by an international consultant over the course of 1 week to a maximum of 25 participants. If PISA data and secure items are used, UCEQA must conduct the training in secure facilities.
Deliverables	Workshop materials in Ukrainian
Reporting requirements	Workshop agenda and training materials will be posted on the Ukrainian PISA website.
Country responsibilities	UCEQA is responsible for nominating staff and inviting external psychometricians from universities to participate in training. UCEQA will make available PISA cognitive response data from field trials (or other comparable data), along with the original test booklets in Ukrainian. Participants are expected to collaborate on analyses and interpretation with other participants.
Administrative details	Identification of key learning objectives and recommendation of service provider (formal request and TOR from external agency, Director level approval). Selection and contracting of facility and catering. Transportation of participants. Translation of documents and translation services for workshop. Distribution of required printed and electronic material.
Costs (USD)	15 450

Procurements and capacity building activities: Psychometric capacity (continued)

Activity 4	Protocols for item and test modification
Reporting requirements	Documentation of protocols and processes. Delivery of workshop to UCEQA managers and lead item writers
Country responsibilities	Based previous training, UCEQA will define and implement protocols and processes that relate psychometric analysis with specific decisions regarding item and test modification.
Costs (USD)	0

Summary: Total capacity building element cost: USD 45 150

Monitoring and evaluation: Psychometric capacity

Indicator	Target
Use of advanced psychometric methods	UCEQA uses psychometric techniques with ZNO to: 1) support decision-making about adding, modifying or updating items; 2) determine or understand performance standards; and 3) scale test scores

4.2. Aspirational capacity building for large-scale assessments and the education sector

The following priorities are not essential for minimum implementation. However, they represent goals within the education sector that may be reached more easily or efficiently if they are pursued during and/or integrated with the implementation schedule.

4.2.1. Data utilisation and evidence-based decision making

Enhancing the use of PISA results and the capacity of the broader education sector to generate and use information requires enabling a broader base of stakeholders to access and correctly use data to inform decision-making. This goal requires increasing access to data and providing tools to interpret and mine data. Clear protocols for scientific review of information should also be clearly communicated to allow objective evaluation of analysis findings to inform decision-making. Encouraging use of information with a broader audience requires development and implementation of a dissemination strategy by engaging stakeholders with existing communication networks and developing information products appropriate to their needs and communication preferences.

Specific capacities targeted by this programme element:

- Information on school language of instruction – **advanced**: School information contains predominant language of instruction.
- NPM experience with dissemination of results from large scale assessment – **advanced**: Reporting using multiple narratives to multiple audiences, referencing relevant data where appropriate.
- Co-ordination of international educational reporting – **advanced**: Regular participation in multilateral international research.
- Autonomy of NLSA structures – **established**: Political considerations sometimes obstruct technical or scientific considerations.
- Dissemination of ILSA results – **advanced**: Country/system-specific results and information are regularly and widely disseminated in the country/system.

- Use of ILSA – **advanced**: Results from the ILSA are used in a variety of ways to inform decision making in the country/system.
- Engagement of international stakeholders – **advanced**: Foreign private sector investors use results to inform decision making.
- Engagement of private sector – **established**: Federations of employers, Chamber of Commerce or equivalent use results for planning and advocacy.
- Stakeholder use of LSA data – **advanced**: Stakeholders directly access data for specific information.
- Positive washback of ILSA – **advanced**: Decisions based on the ILSA results have had a positive impact on students’ achievement levels.

Procurements and capacity building activities: Data utilisation and evidence-based decision making

Activity 1	Policy review to define a sector-wide PISA-based monitoring and evaluation framework.
Deliverables	A review document summarising the data requirements to support monitoring and evaluation strategies for current and proposed policies in the education sector. Policies may include Law(s) of Education as well as lower level and NGO-sponsored programmes. In the case that a programme has no formal monitoring and evaluation framework, the review should propose a suitable strategy based on the stated programme objectives. The review should identify where existing data holdings cannot meet the needs of programmes. For all programmes, the review should identify variables in the PISA 2018 database that address the monitoring and evaluation requirements. The review should include a set of terms of reference that may form the basis of government and independent research that may address information needs using PISA 2018 data.
Reporting requirements	Standard accounting (invoices, payments, receipts).
Country responsibilities	UCEQA is responsible for recommending suitable local consultant(s) with relevant expertise in Ukrainian education policy. The consultant must have strong writing skills with experience writing for policy and research audiences. The consultant will be responsible for acquiring programme documentation from various stakeholders in the education sector.
Administrative details	Define terms of reference. Post request for proposals and select consultant (as required by procurement procedures). The contract should include approximately 30 days of activity conducted over a maximum of 3 months.
Costs (USD)	3 000
Activity 2	Implementation of research agenda based on policy Monitoring and Evaluation Framework. This activity defines the inaugural year of this programme element. Ideally, this activity should be conducted on an annual basis for the three years in each PISA cycle.
Deliverables	Each research project will produce a scientific paper using a generally-acceptable statistical methodology that is consistent with the survey and psychometric design of PISA 2018. Each project will also prepare communications materials that may be appropriate to lay audiences, including graphics, key messages and presentation material. Researchers will present these communication materials to stakeholders and are encouraged to submit scientific papers to peer reviewed journals for publication.
Reporting requirements	Standard accounting (invoices, payments, receipts).
Country responsibilities	UCEQA will be responsible for ensuring the research grant is publicised in the research community. Priority should be given to key implementing partners that have been designated as long-term recipients and maintainers of quantitative research capacity (e.g. Rectors Union, CEDOS). UCEQA will award funding to applicants based on their existing capacity, ability to transfer capacity to immediate colleagues and other researchers within the education sector, and proven experience in communicating statistical research findings. UCEQA will provide a kick-off workshop for approximately 12 participants following the initial release that introduces applicants to the PISA database. The workshop will include provision of relevant software and explanation appropriate statistical methods. Following the initial year of implementation, UCEQA will co-ordinate an annual conference where researchers present their finding to other researchers and invited stakeholders.

Procurements and capacity building activities: Data utilisation and evidence-based decision making (cont'd)

Administrative details	Produce a public request for proposals for academic research motivated by the Monitoring and Evaluation Framework. Proposal must use PISA data and address an existing information need related to a current or proposed programme in the education sector. Projects will be funding with range to a maximum of 10 000 USD per project, with a maximum of 6 funded projects per year due to review capacity. Project budgets should use resource estimates in line with the following guidelines. Person costs: 15 000UAH for analyst/month; 20 000 UAH/month for communication; 20 000 UAH for visualisation manager. Required effort: 2 months for analysis; 1 month for planning communication strategy; 3 months total with 4 analysts, 1 communication manager, 1 month visualisation manager, 1 month design, journalists event/press conference (150 maximum); 2 500 UAH per hour for simultaneous translation; \$6 per page for translation. Workshop and conference costs will be budgeted separately outside of research project costs.
Costs (USD)	63 000
Activity 3	Engage stakeholders with existing communication networks and developing information products appropriate to their needs and communication preferences by involving media (mass and social), encourage agents within the communication network to act, develop key messages and disseminate audience-specific results (website, email).
Deliverables	
Reporting requirements	Standard accounting (invoices, payments, receipts).
Country responsibilities	UCEQA is responsible for selecting and inviting key stakeholders with established communication networks for participation in 2 workshops. Selected stakeholders must have a demonstrated media or communication presence, which may include traditional as well as social media, and have an active interest in the education sector. The first workshop will focus on identifying the information needs and interests of the stakeholders. The workshop, which will be held after the initial draft of the PISA 2018 national report, will be to assist stakeholders in developing key messages relevant to their audiences based on findings of the Ukrainian national report. As necessary, UCEQA will produce print or media materials to support stakeholders' communication activities.
Administrative details	Travel reimbursements. Publication costs, as required. Participants in the second workshop must sign an embargo agreement following standard practice for peer review and journalistic pre-release of PISA results.
Costs (USD)	4 000
Activity 4	Formation of a scientific review committee to address questions about the scientific or technical validity of policy-oriented PISA-based research in Ukraine. This activity defines the formation and first year of committee activity. Ideally, the committee would be a permanent fixture operating at arms-length to internal PISA research activities within the NC and implementing partners.
Deliverables	Scientific review criteria used by the committee will be published on the Ukrainian PISA website. An international PISA expert will deliver a 2-day workshop to the committee with a focus on how to evaluate PISA research and identify common errors in analysis or interpretation with PISA and how to respond to them. The expert will provide all workshop materials for translation and reference. As required, the committee will conduct virtual meetings chaired by UCEQA to review current or proposed research. The research will be evaluated on a purely scientific merit based on the published criteria. Based on a consensus position, the committee will draft a formal response to the review that will be submitted to relevant policy or decision-making audiences.
Reporting requirements	Standard accounting (invoices, payments, receipts).
Country responsibilities	UCEQA is responsible for empanelling a research review committee who will review the scientific validity of research proposed or conducted using Ukrainian PISA data that intends to inform policy decision making. The committee is responsible for defining and publicising the criteria used to evaluate scientific studies using PISA data. The committee membership will include 3 active academic researchers, 3 UCEQA members, 1 policy specialist, with an open invitation to OECD and an open seat for an international consultant. As required, UCEQA will distribute relevant research to the committee for review.
Administrative details	Identification and selection of PISA expert. Selection and contracting of facility and catering. Transportation of participants. Translation of documents including translation services for workshop. Distribution of required printed and electronic material. Honoraria for external committee participants.
Costs (USD)	8 540

Summary: Total capacity building element cost: USD 78 540

Monitoring and evaluation: Data utilisation and evidence-based decision making

Indicator	Target
Academic publication of PISA research	At least one academic publication from a Ukraine-based researcher or from an international researcher using Ukraine-specific data accepted for publication in an academic journal within one year of release of PISA 2018 results.
Number of people registering for workshops	Each workshop should have a participant registration not less than 75% of the workshop capacity.
Number of people responding to RFPs	Each RFP should have at least one technically-sound response from a Ukraine-based researcher or research institution.
Quality of independent research (appropriateness of methodology and interpretation according to generally accepted scientific standards)	Independent research passes peer review for scholarly journals or other academic publications.
Recommendations to Ministry referencing PISA results or data	The majority of policy recommendations related to policy and practice of Secondary Education refer to PISA results or PISA-related infrastructure.
Downloads of test items, cognitive framework (i.e. any PISA reference material) by schools and teachers	PISA materials are downloaded to users representing the majority geographic regions in Ukraine.
Number of distinct media posts or articles	At least 5 distinct media posts or articles describing how the results of PISA 2018 in Ukraine rationalise specific changes to (or justify existing) policy or practice in education.
Number of media articles or news reports in credible sources (pay attention to indirect coverage)	At least 100 references to Ukraine's participation in PISA during the 2018-19 period.

4.2.2. Development of data infrastructure to support analysis

Any sustainable data infrastructure requires a functioning Education Management Information System (EMIS). EMIS provides a framework and data holdings to support ongoing planning, monitoring and research in education. In addition to data storage, an EMIS should also define clear protocols for access of data and use of results in order to both protect privacy and prevent misuse of data. Developing an EMIS requires the following sequence of operations: 1) develop school frame that identifies all schools in Ukraine; 2) populate data records for each school describing school location, composition, and other administrative and financial details; 3) develop architecture and software platform; 4) implement and test EMIS; and 5) go live with school data.

Specific capacities targeted by this programme element:

- Quality of replacement sample – **advanced**: Replacement sample provides random assignment of matched replacement(s) for each school.
- Level of detail in administrative student data – **established**: Students are identifiable in central records by name and school.
- Specialised skill for scientific probability sampling – **advanced**: Designed complex samples and appropriate design weights or performed non-response adjustments to analysis weights.
- Quality of school sample frame – **advanced**: EMIS is updated annually with an accurate frame.
- Effectiveness of human resources for ILSA – **advanced**: The ILSA office is adequately staffed and trained to carry out the ILSA effectively, with no issues.
- Information on student language of instruction – **advanced**: Student files contain language of instruction for each subject.
- Adequacy of ILSA funding – **established**: Funding covers all core activities of the ILSA.
- Sampling responsiveness during data during collection – **established**: Updates from centralised data processing are concurrent with data collection on a (maximum) weekly basis.

- Data quality of ILSA – **established**: The country/system met all technical standards required to have its data presented in the main displays of the international report.

Procurements and capacity building activities: Development of data infrastructure to support analysis

Activity 1	Developing a school frame that identifies all schools in Ukraine by location, student composition, governance and language of instruction.
Deliverables	A database with a unique record for each school in Ukraine that describes school location, composition and other administrative and financial details. The database should identify individual students using a globally unique identifying code that is assigned upon entry to the education system and remains associated with the student across school levels and institutions.
Country responsibilities	The Institute for Educational Analytics is responsible for using financial records to create school list and estimate size and composition. Each school will be mapped after confirming the address and location via telephone or email.
Costs (USD)	0
Activity 2	Develop Education Management Information System (EMIS) architecture and software platform. Cost estimates are based on the following assumptions of work effort: 700 person-days for software development (or equivalent licensing); 3 weeks for training MoES IT and Institute staff; 200 person days for the first operational year for dedicated IT support, maintenance and continuous development.
Deliverables	Servers Installed EMIS application Deployment and use of the application by regional education authorities. Manuals and system documentation. Successful completion of training. Updated computer hardware and software for Institute operational staff
Country responsibilities	The Institute for Educational Analytics is responsible for the acquisition and installation of the EMIS on MoES servers. The EMIS have the following features: 1) variables that track characteristics of each school required for sampling, financial auditing, planning and policy development, 2) ability to easily define, through administrative user interfaces (not source code) additional data fields, as required to respond to emergent information needs, 3) secure interfaces to manage local user access in accordance with the decentralisation policy of MoES, 4) secure interfaces to allow data updates and service requests from users at different regional levels while protecting privacy from unauthorised access, 5) API accessibility to facilitate secure integration with existing Regional Centre information systems, and 6) well-documented source-code and operating instructions to facilitate knowledge transfer within the Institute. The Institute is responsible for defining the functional requirements of the EMIS to address current and projected information needs. Based on these requirements, the Institute shall select an appropriate vendor and complete negotiations and/or purchase required for the transfer of software to MoES servers. The EMIS vendor is responsible for providing installation support and training to Institute IT staff and operational staff in the maintenance and use of the application. The Institute is responsible for ensuring the relevant staff attend EMIS training.
Administrative details	The EMIS implementation will require several resources not currently in place in the Institute to ensure sustainable maintenance and operation: 1) four separate physical servers (Staging and Production environments for web and database), 2) trained IT support staff, 3) trained operational staff, 4) functional EMIS that addresses the information needs and security requirements of MoES Workshops will be conducted in an operational setting, vendor premises and Institute offices.
Costs (USD)	106 100
Activity 3	Train schools and regions to input and access data. Provide one day training workshops to participants in 9 Regional Centres or oblast Institutes of Post-Graduate Education.
Deliverables	Training and operational reference materials for the EMIS. The Institute should also provide information on how to access technical support directly via web or telephone.
Country responsibilities	The Institute for Educational Analytics is responsible for providing training to managers at Regional Centres on the user and data management functions of the EMIS. In accordance with the education decentralisation policy, each Regional Centre is responsible for training oblast managers in use of the EMIS, if required. Oblast managers are, in turn, responsible for training managers, who are responsible for training school administrators. However, if Regional Centres have existing EMIS that will be integrated with the Institute's EMIS, downstream training will not be required.
Administrative details	Transportation of Institute staff. Distribution of required printed and electronic material. Training will be conducted in operational environments at Regional Centres or oblast Institutes of Post-Graduate Education.
Costs (USD)	2 930

Summary: Total capacity building element cost: USD 109 030

Monitoring and evaluation: Development of data infrastructure to support analysis

Indicator	Target
EMIS database updates	EMIS data are updated annually.
Creation and deployment of EMIS to MoES servers	The private-sector-based EMIS is fully migrated to MoES servers by August of 2017.
EMIS direct access by schools and/or regions to update data	At least 60% of schools and/or 100% of regions access the system at least once per year to update their data.
EMIS data input interface	A secure web-based interface exists that allows local users to update their own data. Web-based management interfaces allow managers to grant and restrict system access for lower-level regional users.
Use of EMIS for PISA	Data from EMIS on school counts and student composition within schools are used as the basis for calculating final student weights for PISA.
EMIS public access to EMIS aggregate data	A web-based interface exists that allows read-only public access to submit structured queries directly to the EMIS.

4.2.3. Analysis capacity

Analysis of PISA data (and other large surveys using modern sampling and measurement methods) requires competency in analysis with latent variables or multiple imputations from complex samples. The analytical methods often require specific techniques to communicate and visualise the statistical results. Develop capacity in multivariate analysis of complex survey data and provide tools to communicate statistical results effectively. Ability to exploit opportunities to develop these competencies depends on adequate commitments from donors co-operating partners in term of both funding and human resources. In order for individuals to fully benefit from the planned capacity building activities using international resources and learning opportunities, designated members of the Analysis Team (and external participants in local workshops) must have adequate English language fluency.

Specific capacities targeted by this programme element:

- Experience in planning, organising and conducting international assessments – **advanced**: The country/system has participated in two or more ILSA in the last 10 years.
- ILSA research and development funding – **advanced**: Funding covers research and development activities.
- Quality of replacement sample – **advanced**: Replacement sample provides random assignment of matched replacement(s) for each school.
- Specialised skill for scientific probability sampling – **advanced**: Designed complex samples and appropriate design weights or performed non-response adjustments to analysis weights.
- Use of ILSA – **advanced**: Results from the ILSA are used in a variety of ways to inform decision making in the country/system.
- Effectiveness of human resources for ILSA – **advanced**: The ILSA office is adequately staffed and trained to carry out the ILSA effectively, with no issues.
- NLSA research and development funding – **advanced**: Funding covers research and development activities.
- Item response theory – **advanced**: Experience with multiple item response models (e.g. polytomous, Rasch, 2PL, 3PL).

Procurements and capacity building activities: Analysis capacity

Activity 1	Two participants representing UCEQA and the Institute for Educational Analytics will visit the Educational Research Institute, Poland, to review the activities conducted to prepare for the release of PISA 2015.
Deliverables	Participants will prepare a joint workshop based on their observations to be delivered jointly to the UCEQA and Institute staff associated with PISA implementation and other similar research dissemination activities. These workshop materials shall be made available to other implementing partners.
Reporting requirements	Travel reporting, as required by policy.
Country responsibilities	UCEQA and the Institute are responsible for ensuring that at least one of the training participants is fluent in English or Polish. The UCEQA representative should be the NPM or Deputy Head responsible for PISA implementation.
Costs (USD)	3 400
Activity 2	Participation in workshops, travel and collaboration with others requires members of the Analysis Team to use modern laptops with up-to-date security and operating systems that are maintained by UCEQA IT staff.
Deliverables	Four laptops with fully-licensed analytical, data visualisation, data management and word processing software required for the analysis of data and production of reports. Preference should be given to open-source software. All equipment should have up-to-date antivirus software and definitions.
Country responsibilities	Analysis Team members are responsible for defining the software and hardware specifications for equipment. UCEQA IT staff are responsible for performing periodic maintenance and software updates on all equipment. Where geography prevents IT staff from performing updates, the main user of a laptop must perform maintenance according to an agreed-upon schedule.
Administrative details	Standard procurement protocols as required by policy
Costs (USD)	18 600
Activity 3	Workshop on data visualisation delivered by 2-3 experts from CEDOS over two days to researchers from Institute for Educational Analytics, Institute for Research Analytics and UCEQA. The approximate number of participants should be 15-20. The workshop will focus on the use of open-source analysis tools (e.g. R) to communicate complex research findings. The presentation should use examples from published research using Ukrainian data as well as novel research using PISA data.
Deliverables	Workshop training materials (including software, sample data sets, exercises)
Reporting requirements	Participants will present the workshop agenda and workshop materials to institutional colleagues.
Country responsibilities	Participating institutions are responsible for allocating sufficient time to ensure all participants fully attend the workshop. CEDOS is responsible for selecting an appropriate venue. Participating agencies are responsible for ensuring there is a minimum of one computer (laptop) shared between three participants. Ideally, the workshop should be structured to encourage co-operation and knowledge sharing between participants.
Administrative details	Selection and contracting of facility and catering. Standard accounting (invoices, expenses)
Costs (USD)	1 600
Activity 4	OECD PISA Lead Analyst training (Thomas J Alexander Fellowship)
Deliverables	Translation of materials provided or developed during the training programme into Ukrainian.
Reporting requirements	Workshop agenda provided to local manager and professional peers. Preparation of workshop materials for delivery to Ukrainian audiences (Regional Centres, UCEQA, Institute for Educational Analytics, other implementing partners)
Country responsibilities	UCEQA is responsible for nominating a lead analyst and analysis team that meets the profile defined by the OECD. It is essential that the lead analyst has the required proficiency in English. Individuals are responsible for accessing language training co-ordinated by UCEQA through the CBP to develop sufficient language skills prior to the commencement of the Fellowship.
Administrative details	Completion of required requisition and reporting travel documents for government policy
Costs (USD)	205 000

Procurements and capacity building activities: Analysis capacity (continued)

Activity 5	The PISA Analysis Team (and external consultant, as required) will deliver a workshop 3-part series on analysis methodology to invited participants from the Institute for Education Analytics, Institute for Research Analytics and universities. Each 2-day workshop will focus on a separate topic related to PISA data analysis. The first day should address theoretical issues and present step-by-step instructions for implementation. The second day should allow participants to perform supervised analysis related to their interests and share their process and results with other participants. The first workshop will focus on the analysis of complex sample data using a variety of software. The second workshop will focus on the analysis using latent and scale variables. The third workshop will focus on hierarchical modelling and decomposition of variance.
Deliverables	Workshop training materials
Reporting requirements	Publication of workshop agendas and training materials on the PISA website.
Country responsibilities	UCEQA is responsible for inviting and selecting participants. UCEQA will provide printing services and ensure that participants have the computers, software, data and training materials required for each workshop.
Administrative details	Selection of training facilities and catering. Travel and accommodation reimbursements, as required.
Costs (USD)	6 450

Summary: Total capacity building element cost: USD 235 050

Monitoring and evaluation: Analysis capacity

Indicator	Target
Performance of data analysis and visualisation operations in PISA implementation	All of the data analysis and data visualisation required for the production of national reports is performed by core project staff (the Analyst Team).
Participation in international workshops	Every international workshop defined in the PISA CBP is attended by at least one member of the Analysis Team.
English language fluency in the Analysis Team	At least one member of the Analysis Team is fluent in spoken English and at least two members of the Analysis Team are fluent in English reading and writing.
Participation in Ukraine-based workshops	All members of the Analysis Team participate in Ukraine-based workshops

4.2.4. Co-ordination of stakeholders

Sustainable implementation requires co-ordination of the needs, priorities, resources and responsibilities between stakeholders in PISA to ensure that the scope of the PISA implementation is appropriate to the requirements and resources within the education sector without unnecessary redundancies. The proposed mechanism for this goal is the formation of a co-ordinating committee with a regular schedule of formal meetings. The key objectives of this committee are to secure allocation of funds and/or in-kind contributions from co-operating partners or government and assist stakeholders to integrate their priorities into existing or upcoming activities that are managed by other institutions. The immediate priority of the committee should be to formalise all PISA 2018 operational responsibilities and partnerships between UCEQA, IEA and external agencies (e.g. CEDOS, universities).

Specific capacities targeted by this programme element:

- Sufficient authority and confidence to represent the country at international meetings where aspects of the project will be discussed – **established**: PGB member can exercise own discretion in representing country priorities and interests.
- Breadth of NC expertise – **advanced**: The NC office is adequately staffed to carry out the LSA effectively, with no issues.

- Feedback from ILSA – **advanced**: Feedback to schools and educators about ILSA results are systematically made available through a communication strategy.
- International Participation Agreement – **established**: Participation agreement is signed and approved.
- Local capacity building for ILSA – **advanced**: The country/system offers a wide range of opportunities to learn about ILSA.
- Capacity of NC – **advanced**: The NC is adequately staffed to carry out the LSA effectively with no issues.
- Availability of ILSA training – **advanced**: Opportunities to learn about ILSA are available to a wide audience, in addition to the country's/system's ILSA team members.
- Media coverage of ILSA – **advanced**: There is wide media coverage of the ILSA results.
- Communication with stakeholders – **advanced**: NC has regular meetings or accessible forums with stakeholders for two-way discussions.
- Priority of competency-based foundation skills (literacy, numeracy, reasoning, problem solving) in academic education – **emerging**: K-11 curriculum uses competency-based implementation of curriculum.
- Funding for NPM/NC for international training and meetings – **advanced**: Dedicated funds are available for participation in international training and meetings.
- Dissemination of ILSA results – **advanced**: Country/system-specific results and information are regularly and widely disseminated in the country/system.
- Priority of competency-based foundational skills (literacy, numeracy, reasoning, problem solving) in vocational education – **advanced**: Foundational skills are supported by employers or vocational workplace training.
- Effectiveness of human resources for ILSA – **advanced**: The ILSA office is adequately staffed and trained to carry out the ILSA effectively, with no issues.
- Engagement of private sector – **established**: Federations of employers, Chamber of Commerce or equivalent use results for planning and advocacy.
- Effect of political climate on implementation – **advanced**: All relevant political bodies (government and opposition) actively support the project.
- Stakeholder use of LSA data – **advanced**: Stakeholders directly access data for specific information.
- Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders – **established**: Recognise a clear washback effect from the results of LSA and the policies and practices affecting learning.
- Breadth of stakeholder engagement – **advanced**: Multiple stakeholders are engaged including non-government or indirect educational stakeholders.

Procurements and capacity building activities: Co-ordination of stakeholders

Activity 1	Following up on the relationships established during the project launch, MoES will establish a Co-ordinating Committee. The Co-ordinating Committee membership should include key internal and external stakeholders of the education sector with leadership from MoES. The purpose of the Co-ordinating Committee is to facilitate co-ordination of needs, priorities, resources and responsibilities between stakeholders to ensure that the scope of the PISA implementation is appropriate to the requirements and resources within the education sector without unnecessary redundancies.
Deliverables	Co-ordinating Committee Terms of Reference. Signed memoranda of understanding from institutions represented in the Co-ordinating Committee agreeing to the Terms of Reference.
Reporting requirements	Reporting requirements will be determined by existing regulations and additional terms defined by the Co-ordinating Committee TOR.
Country responsibilities	MoES is responsible for nominating a Committee Chair who can speak with authority on the priorities of the education sector in Ukraine (ideally, Deputy Minister level). MoES is also responsible for defining Terms of Reference for members Co-ordinating Committee including communication protocols, schedule, roles and responsibilities.
Costs (USD)	0
Activity 2	Biannual meetings of the Co-ordinating Committee (maximum 20 budgeted participants).
Country responsibilities	The Co-ordinating Committee secretary will organise meeting facilities.
Administrative details	Required documents are the signed Co-ordinating Committee memoranda of understanding from participating organisations. Transportation or travel and accommodations reimbursements should follow standard policy.
Costs (USD)	12 000
Activity 3	Referencing the PISA Project Implementation Plan and Co-ordinating Committee minutes and resolutions, NPM will secure appropriate annual allocation of funds from government to support the PISA 2018 (including CBP) activities.
Country responsibilities	NPM is responsible for collating information from the Co-ordinating Committee and the PISA budget to prepare and submit the annual request for funding to MoES. Where implementation and capacity building activities may exploit existing physical or human resources, the NPM shall prepare a formal request for the appropriate in-kind contributions from the respective co-operating partners.
Costs (USD)	0
Activity 4	Dissemination workshop series to co-ordinate messaging to key audiences and lower-level stakeholders (teachers, parents, students, communities, local media). Each one-day workshop, to be conducted in Regional Centres (Central, Eastern, Western, and Southern groupings by region) will be delivered by NPM and one technical support staff with ability to work with international experts. The workshop series will include 6 meetings in each selected Centre to anticipate and respond to the following project milestones: Field Test, Main Survey and Initial Release. The contents of each meeting will be determined by operational or thematic priorities that emerge during project implementation. Expected meeting should have approximately 10 participants.
Deliverables	Project documentation, data or communications material as relevant. Meeting resolutions and directives from UCEQA regarding co-ordination of communication activities.
Reporting requirements	Participants will use reproduce or deliver key messages to colleagues and local stakeholders according to the broader strategies identified by UCEQA.
Country responsibilities	UCEQA is responsible for drafting the agenda for each meeting based on emergent project priorities. Key themes to address include perceptions of credibility, relevance of PISA to educational policy and practice, and benefits of PISA to education sector capacity. Each Regional Centre is responsible for ensuring participation of at least one staff member in each meeting.
Administrative details	Identification of key learning objectives. Recommendation of service provider (formal request and TOR from external agency, Director level approval). Selection and contracting facility and catering. Transportation of participants. Translation of documents. Translation services for workshop. Distribution of required printed and electronic material. In-country workshops should be maximum 2 days; themes can be broken into multiple workshops, separated by at least two weeks. 2 participants per computer with necessary software, references and data. Completion of required requisition and reporting travel documents for government policy.
Costs (USD)	24 005

Summary: Total capacity building element cost: USD 36 005

Monitoring and evaluation: Co-ordination of stakeholders

Indicator	Target
Representation of stakeholder priorities	The communication plan incorporates at least one priority from each group of stakeholders.
Co-operating partners regularly communicate with each other and the NC or NPM	The NC or NPM communicates at least once each month with each co-operating partner and at least 80% of co-operating partners attend each co-ordination meeting.
Production of relevant information	Each group of stakeholders receives a report of results relevant to their respective priorities in an appropriate format.
Financial commitment of stakeholders	At least 80% of capacity building activities defined in the CBP are funded or directly supported by MoES or external donors.

4.2.5. Item and question banking

UCEQA requires updated software and hardware infrastructure to support existing assessment activities. To optimise the benefits of PISA participation, these systems should also be able to support item and test development using complex item types, response formats and processing (e.g. open-ended items, online administration, online response scoring). These applications should be fully installed on UCEQA-controlled servers, and relevant staff will need adequate training to develop test items, maintain test blueprints with links to curriculum, develop tests, and process response data.

Specific capacities targeted by this programme element:

- Adequacy of test development software – **advanced**: Test development uses secure server application that facilitates administration and response capture for paper and computer based administration.
- Flexibility of test development software – **advanced**: Test development software allows creation of multiple forms, rotated content or adaptive tests for paper and computer based administration.
- Flexibility of item development software – **advanced**: Item banking software allows unlimited response types for paper and computer-based administration and stores appropriate scoring information.
- Translator knowledge of ILSA conceptual framework – **established**: Translators or staff responsible for adaptation are knowledgeable about the ILSA conceptual framework.
- Fidelity of instrument translation and adaptation to local contexts – **advanced**: Translators or staff responsible for instrument adaption are knowledgeable about the constructs measured by ILSA questionnaires (e.g. ISEI, ESCS school climate, engagement with learning).

Procurements and capacity building activities: Item and question banking

Activity 1	Develop and/or acquire software to support item and test development using complex item types. The cost estimates for this activity are based on a total system development effort of 800 days (or equivalent licensing cost) for local consultants.
Reporting requirements	Functional testing results, usability testing results, load testing results, specifications documents, user manuals and maintenance documents.
Country responsibilities	UCEQA is responsible for defining the functional requirements of the item banking and test development software. At a minimum, the software must be able to facilitate the production and automated scoring of multiple choice and short numeric response items. Desirable features include complex response and scoring formats, including open-ended text items, online interactive items, and online response scoring (manual and automated). The software should support regional and classroom assessments as well as large scale assessments and provide appropriate security features to facilitate various uses. UCEQA will co-ordinate with Regional Centres to evaluate usability and scalability of potential software solutions. The selection of a solution should be based on flexibility and functionality as much as by cost.
Administrative details	The software license should be perpetual and royalty free for an unlimited number of users and installation on an unlimited number of servers within MoES.
Costs (USD)	80 000
Activity 2	Acquisition of servers and computers for operational staff to interact with centralised item bank and test development software. Installation of required software on server and client systems. Training operational staff on use of installed software.
Deliverables	Separate Staging and Production servers for web and database Dedicated computers for operational staff and fully resourced secure computer laboratory for external content developers.
Country responsibilities	UCEQA IT staff are responsible for defining the server and laptop/desktop computer specifications required for the development items, survey questions and data collection instruments. It staff are responsible for installing the item and test banking infrastructure of UCEQA training operational staff in the use of the system to support large-scale assessments.
Administrative details	Acquisition of hardware following standard procurement protocols.
Costs (USD)	8 000
Activity 3	Workshop to develop complex item types and adaptive tests to exploit new features. Using a learning-by-doing approach, participants will populate the item bank with new item content through the course of learning about the creation, review and revision functions of the software.
Deliverables	A repository of sample items or item templates that may be used as the basis for testing a variety of curricular areas.
Country responsibilities	UCEQA will be responsible for leading a workshop of ZNO item writers in the development of items with complex response delivery and response formats. The workshop leaders will explain the appropriateness of each response format for different cognitive tasks. Participants are responsible for developing curriculum-appropriate content and sharing their learning experiences with other participants.
Administrative details	Workshop participants should be existing ZNO item writers. If necessary, the terms of reference for the existing item writing role should be extended to incorporate the additional training.
Costs (USD)	0

Summary: Total capacity building element cost: USD 88 000

Monitoring and evaluation: Item and question banking

Indicator	Target
Item bank usage	Item bank is populated with items and used for ZNO development and implementation.
Use of diverse assessment formats	Item bank contains competency-based items using complex (open-ended) response formats.
Item bank acquisition	The item bank and test development software is installed on UCEQA-managed servers.

4.3. Overall cost summaries**Table 2. Total costs by capacity building element**

	Capacity Building Element	Purpose	Total (USD)
1	Project management	Minimum ILSA implementation	18 725
2	External data access and independent inquiry	Increased capacity for large scale assessments and the Education sector	6 500
3	Competency-based education and assessment	Increased capacity for large scale assessments and the Education sector	3 300
4	Co-ordination of PISA implementation partners	Increased capacity for large scale assessments and the Education sector	49 170
5	Psychometric capacity	Increased capacity for large scale assessments and the Education sector	9 000
6	Data utilisation and evidence-based decision making	Increased capacity for large scale assessments and the Education sector	78 540
7	Development of data infrastructure to support analysis	Increased capacity for large scale assessments and the Education sector	109 030
8	Analysis Capacity	Increased capacity for large scale assessments and the Education sector	271 200
9	Co-ordination of stakeholders	Increased capacity for large scale assessments and the Education sector	36 005
10	Item and question banking	Increased capacity for large scale assessments and the Education sector	88 000
	Total		669 470

REFERENCES

- Embassy of Canada in Ukraine (2014), *The International Education Market in Ukraine*, Government of Canada.
- Kasianov, G. (2015), *UKRAINE: Education Sector Overview 1990-2014*, Institute for Education Development, Kyiv, Ukraine, <http://iro.org.ua/en/main/research/21>.
- NORRIC (April 2009), *A Nordic Recognition Network (NORRIC) Country Report. The Education System of Ukraine*, Nordic Recognition Network, www.norric.org.
- Poroshenko, P. (2015), *Decree of the President of Ukraine No. 5/2015 On the “Ukraine-2020” Sustainable Development Strategy*, President of Ukraine.
- State Statistics Service of Ukraine (2015), *Ukraine 2014 Statistical Publication*, State Statistics Service of Ukraine, Kyiv.
- State Statistics Service of Ukraine documents publishing, Demographic and social statistics /Education, https://ukrstat.org/en/operativ/menu/menu_e/osv.htm.
- Vakarchuk, I.O. (2008), *Ukraine Ministry of Education Order 25.12.2007 N 1171: On the external independent evaluation of educational achievements of graduates of secondary education who wish to enter higher education in 2008*, <http://zakon3.rada.gov.ua/laws/show/z0005-08>.
- Zhuk, I.M. (ed.) (2014), *Statistical Yearbook of Ukraine for 2014*, State Statistics Service of Ukraine, Kyiv.

PISA

Capacity Building Plan: Ukraine

In 2018 Ukraine will take part for the first time in the OECD's triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. Ukraine joins more than 80 countries and economies participating in the 2018 Programme for International Student Assessment (PISA). The Ministry of Education and Science of Ukraine is working with the OECD to maximise its use of PISA for monitoring progress towards nationally-set targets for improvement, for the analysis of factors associated with student learning outcomes, for institutional capacity building, and for tracking international educational targets included in the UN-led Sustainable Development Agenda. This plan covers the four-year PISA 2018 cycle (2016-19) and includes costed learning activities related to the implementation schedule of the assessment in Ukraine. PISA is technically complex, operationally demanding and statistically advanced, and the capacity building plan therefore focuses on components that will allow Ukraine to benefit from international benchmarking and from evidence on student performance derived from multivariate analyses, while also gaining capacity and competencies to raise the quality of its own national assessments through the use of item response theory methodology, rigorous international standards of implementation and increased analysis to provide explanations for the results.

The results from the *Capacity Needs Analysis: Ukraine* report have been used to design this capacity building plan for Ukraine that will be implemented by the Ministry of Education and Science, and the Ukrainian Centre for Educational Quality Assurance (UCEQA), which is responsible for managing the PISA assessment in Ukraine with the support of the OECD and its contractors.