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IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF-A4096-001

ON A

SMALL GRANT

IN THE AMOUNT OF USD 0.34 MILLION

TO

Ukraine

FOR

Strengthening Evidence-Based Policymaking with Education Statistics and Analysis
(P161312)

December 17, 2019

Education Global Practice
Europe And Central Asia Region

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ABBREVIATIONS AND ACRONYMS

AICEM	Automated Information Complex on Educational Management
ECA	Europe and Central Asia
EMIS	Education Management Information System
FM	Financial management
GNI	Gross National Income
GSE	General secondary education
IA	Implementing agency
IEA	Institute of Educational Analytics
IRI	Intermediate result indicator
MoES	Ministry of Education and Science
ODP	Open Data Portal
OECD	Organisation of Economic Cooperation and Development
PDO	Project Development Objective
PI	Preschool institutions
PISA	Programme for International Student Assessment
SIDA	Swedish International Development Agency
STEP	Systematic Tracking of Exchanges in Procurement
TF	Trust Fund
TOR	Terms of reference
TTL	Task team leader
UCEQA	Ukrainian Center for Education Quality Assessment
UNICEF	United Nations Children's Fund
US	United States
VC	Video conference

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P161312	Strengthening Evidence-Based Policymaking with Education Statistics and Analysis
Country	Financing Instrument
Ukraine	Investment Project Financing
Original EA Category	Revised EA Category
Not Required (C)	Not Required (C)

Organizations

Borrower	Implementing Agency
Ukraine	Ministry of Education and Science, Institute of Educational Analytics

Project Development Objective (PDO)

Original PDO

The development objective of this project is to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data and analytical methods to inform policymaking.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
Donor Financing			
TF-A4096	340,000	340,000	336,624
Total	340,000	340,000	336,624
Other Financing			
Borrower/Recipient	60,000	0	0
Total	60,000	0	0
Total Project Cost	400,000	340,000	336,624

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
16-Dec-2016	27-Jan-2017	24-Jan-2019	24-Jul-2019

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
21-Jan-2019	0.17	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Satisfactory	Satisfactory	Substantial

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	20-Apr-2017	Satisfactory	Satisfactory	0.00
02	31-Jul-2018	Moderately Satisfactory	Moderately Satisfactory	0.11
03	21-Aug-2019	Moderately Satisfactory	Moderately Satisfactory	0.28
04	01-Dec-2019	Moderately Satisfactory	Moderately Satisfactory	0.34

ADM STAFF

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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Context

1. **Country context.** Ukraine is a conflict-affected lower middle income country located in Eastern Europe. In 2014 it had a population of 45 million and a GNI per capita of US\$ 3,560 (Atlas method, current US\$)—a decline from US\$ 3,760 in 2013 and well below the Europe and Central Asia (ECA) regional average of US\$ 6,892. Despite moderate successes in reducing absolute poverty, average real incomes have stagnated and population has declined by 13 percent since 1991. A series of economic crises have been exacerbated by demographic decline and unstable political environment. More recently, a simmering conflict in the country's east and loss of control over part of its territory contributed to a sharp contraction in GDP (by approximately 12 percent in 2015), as well as spiking inflation and sharp devaluation of the currency.

2. Political turmoil precipitated by the “Euromaidan” revolution in 2014 has led to a reorientation of Ukraine towards European integration and a rhetoric supportive of wide reaching social and economic reforms. A reform-minded government has initiated long overdue modernization of a number of sectors with help from the international community. Yet progress on reforms has been uneven and impeded by continued political and macroeconomic instability. Nevertheless, the window of opportunity for reform is currently open, as policymakers continue to express willingness to tackle tough challenges faced by their country.

3. **Sector context.** Ukraine's education sector has long been in need of profound modernization and structural reform. The main challenges include (i) optimization of the school network and efficient use of budget resources, (ii) quality of education and its assessment, and (iii) management and transparency of the sector at all levels using modern evidence-based techniques. With respect to efficiency, the sizable demographic declines that Ukraine has experienced over the past two decades have led to a reduction in the number of children of school age, particularly in rural areas. Yet no commensurate reduction in the number of education institutions has taken place, leading to reduced school and class sizes and increasing unit costs of education provision. With regard to quality, Ukraine had previously not participated in internationally comparable systems of learning assessments, making it difficult to accurately evaluate the quality of education it provides. Despite high rates of secondary school completion and university enrollment, studies show large gaps between the skills possessed by graduates and those demanded by the labor market. Lastly, sector management still relies largely on outdated Soviet-era methods of prescriptive norms and lack of autonomy and accountability. These challenges were detailed in the recent Education Flagship Report prepared by the World Bank¹.

4. The latter of these challenges is exacerbated by a lack of tradition of evidence-based policymaking, as well as weak statistical and analytical capacity at all levels of the education system. However, ambitious reforms have been initiated since 2014 to increase autonomy and accountability of local actors. Several pieces of legislation have been introduced to bring Ukraine's education in line with international standards, reform the financing mechanisms within the sector, and decentralize decision making. The government also committed to Ukraine's first ever participation in the Programme for International Student Assessment (PISA), a triennial measurement of learning among 15-year-old students conducted by the Organisation of Economic Cooperation and Development (OECD) in 2018. New bodies have been set up to enhance the analytical capacity of the education sector—including the Institute of Educational Analytics (IEA) under the Ministry of Education and Science (MoES)—and modernize the statistical practices to inform evidence-based policymaking. The task of modernizing the national information system in Ukraine aims to meet the demand

¹ World Bank, 2019, Ukraine - Resume Flagship Report: Overview



from various governing bodies to improve the collection, processing, and analysis of statistical data in order to obtain a complete picture the functioning of the education sector and enhance its governance and management.

Project Development Objectives (PDOs)

5. The PDO is to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data and analytical methods to inform policymaking.

6. The Project was supported through a small recipient-executed grant in the amount of \$US 0.34 million financed out of the *Multidonor Trust Fund for Statistical Capacity Development III (TF-A4096-001)*. It was approved on December 21, 2016 and became effective on January 27, 2017. The Project was planned initially to be implemented over 24 months, with the closing date on January 24, 2019. It was later extended with six months, having the new closing date on July 24, 2019.

7. The project recipient and implementing agency was the newly established State Scientific Institution "Institute of Educational Analytics" (IEA). The IEA is legally subordinated to the MoES and is responsible according to its charter for development and implementation of a system of education statistics and analysis in Ukraine through research, analytical, and innovative methods.

Key Expected Outcomes and Outcome Indicators

8. The Project included the following key PDO-level indicators to measure progress towards the PDO:

- (a) Upgraded Education Management Information System (EMIS) is fully operational;
- (b) Open data portal is functional and allows stakeholders to access relevant EMIS data;
- (c) Qualified specialists are trained to prepare the national analytical report using PISA 2018 data.

9. Measurement of progress towards the PDO indicators was supported by the following six intermediate result indicators (IRIs):

- i. Percentage of general secondary education schools reporting in EMIS the latest year's data on students enrolled;
- ii. Percentage of general secondary education schools reporting in EMIS the latest year's data on teachers employed;
- iii. Percentage of preschool institutions reporting in EMIS the latest year's data on children enrolled;
- iv. Number of stakeholders trained in the use of the EMIS or the EMIS open data portal;
- v. Sampling of schools for the implementation of PISA 2018 is conducted using EMIS data;
- vi. PISA 2018 assessments are carried out in Ukraine.

Components

10. The Project was designed around three components.

Component 1: Development of an integrated EMIS

11. The objective of this component was to support the development of a modern EMIS that contributes to evidence-based policymaking based on modern education statistics. This component had four sub-components:

12. *Sub-component 1.1. Integration and quality assurance of existing databases.* This subcomponent was to support the modernization and upgrading of an existing EMIS that was recently acquired by the Ministry of Education and Science. Previously operated by a private company, the EMIS required significant quality assurance and integration



with existing data systems. Specifically, this required: (i) modernization of the existing data systems; (ii) support from programmers and database developers; (iii) consulting from international and domestic EMIS experts; (iv) knowledge exchange with other countries that had recently established a modern EMIS of their own; and (v) provision of hardware and software necessary to maintain and operate the EMIS.

13. *Sub-component 1.2. Database security certification.* This sub-component was designed to finance the necessary database security measures, as required by national legislation. Specifically, it was to include: (i) development of a Terms of Reference for the services of a firm engaged in database security certification (including assessment of security risks, development of a data protection policy, testing of the security system, and its implementation); and (ii) contracting of such firm to provide the necessary database security services.

14. *Sub-component 1.3. Development of an open data portal.* This sub-component had to support the construction of an open data portal that would make timely and relevant EMIS data available to all stakeholders in the education sector. Specifically, this included: (i) contracting programmers and data visualization specialists to develop a user-friendly portal linked to the EMIS; (ii) acquisition of statistical, database management, mapping, and data visualization software necessary to run the portal; and (iii) communications and outreach services necessary to inform the various stakeholders about the portal and its uses.

15. *Sub-component 1.4. Training and analytical capacity building.* This sub-component was to finance a range of capacity building activities to encourage effective use of education statistics, including training on the use of the EMIS and the open data portal developed under subcomponents 1.1 and 1.3. Specifically, this included: (i) training of the Institute of Educational Analytics staff in proper database maintenance and EMIS operation; (ii) training for representatives of local education authorities in proper data entry and submission techniques; (iii) training of other stakeholders and decision makers (including the MoES, local authorities, and others) in the effective use of education statistics for evidence based policymaking; (iv) instruction of key stakeholders in statistical and analytical methods that take advantage of data available in the EMIS.

Component 2: Prepare for participation in the PISA

16. The objective of this component was to strengthen the capacity of Ukrainian authorities to participate in PISA 2018 and analyze the subsequent assessment results. This component was divided into two sub-components:

17. *Sub-component 2.1. Preparation for PISA implementation.* This sub-component was meant to finance selected activities to be undertaken by the Institute of Educational Analytics, the Ukrainian Center for Education Quality Assessment (UCEQA), and other agencies in preparation for PISA 2018 testing. Specifically supposed to include: (i) data collection and processing for the preparation of the PISA 2018 sample; (ii) preparation of the sample of schools to be included in PISA 2018 piloting and implementation; (iii) knowledge exchange and consulting support with local and international experts on topics relevant to PISA implementation; and (iv) informational activities for teachers and other education system stakeholders regarding international large-scale sample based student assessments.

18. *Sub-component 2.2. Capacity building for the preparation of the PISA 2018 national report.* This sub-component was to finance the training of Ukrainian experts in the accepted analytical techniques used in the preparation of PISA national reports based on international best practices. Specifically, this included: (i) training of the staff of Institute of Educational Analytics and other relevant agencies in statistical techniques used for analyzing PISA data; (ii) knowledge exchange with international organizations and other national agencies experienced in preparation of similar reports; (iii) consulting support from local and international experts on relevant topics.



Component 3: Institutional capacity building.

19. The objective of this component was to build institutional capacity of the IEA and ensure adequate support for Grant implementation. This component was divided into three sub-components:

20. *Sub-component 3.1. Institutional capacity building.* This sub-component was designed to finance the strengthening of institutional capacity of the Institute of Educational Analytics to become the leading education statistics and analysis organization in Ukraine. Specifically, this included: (i) the development of the Institute’s website; (ii) training of Institute staff in modern research methods, analytical report preparation, use of statistical software, and English language proficiency; (iii) knowledge exchange activities with domestic and international experts on topics relevant to the Institute’s mission; and (iv) provision of a small amount of furniture, hardware, and software. Training of IEA staff on sociological research methods was expected to be provided by the Recipient as part of the in-kind contribution toward the implementation of this Grant.

21. *Sub-component 3.2. Grant implementation support.* This sub-component was to finance the necessary support for the Institute of Educational Analytics to adequately implement the Grant in line with World Bank rules and procedures. Specifically, this included: (i) consulting services in the areas of procurement, financial management, translation, and others; (ii) operating costs; and (iii) other expenditures (e.g., training) required by the Project Management Team to successfully implement the Grant. Despite facing severe resource constraints, the Recipient was to provide an in-kind contribution in the form of covering administrative costs of the implementing agency (including staff time and operating expenses of the IEA). These were expected to amount to approximately US\$ 60,000 over the life of the Grant.

22. *Sub-component 3.3. Audit.* This sub-component was to finance the required audit of Grant implementation activities.

Restructuring

23. **During the mid-term review of the Project which took place on September 17-21, 2018, several shortcomings were identified which resulted in a project restructuring.** In particular, shortcomings included insufficient remaining implementation time, impossibility to access data for achievement of an indicator, and a need for redistribution of project resources across categories. Without restructuring, these shortcomings posed a risk to the achievement of the PDO. Thus, on January 16, 2019 the project restructuring was approved, allowing the:

- i. **Extension of the project’s closing date by 6 months**, from January 24, 2019 to July 24, 2019 to allow sustainable and reliable finalization of the works related to EMIS upgrade. These included several activities related to: (i) Database security certification; (ii) training of upgraded EMIS users meant to ensure system security and sustainability that could be performed only after system development; (iii) and creation of the Open Data Portal.
- ii. **Renaming of the initial PDO indicator related to PISA, namely to change the formulation of the indicator “Qualified specialists are trained to prepare the national analytical report using PISA 2018 data”, dropping the reference to the year.** As Ukraine didn’t participate in previous PISA waves and due to unavailability of PISA-2018 data for Ukraine within the Project timeline, the training of experts was done using PISA data of other countries from previous waves. The new indicator is “Qualified specialists are trained to prepare the national analytical report using PISA data”. This change had a minimal impact on achievement of the PDO, given that PISA data is highly structured and consistent across years and countries, meaning that analysis of data from past years of other countries would still provide qualified specialists with the skills needed to analyze PISA 2018 data for Ukraine once it became available.



- iii. **Reallocation of financing across the cost categories considering the slight changes in Project activities and significant difference between planned and actual cost for Upgraded EMIS (US\$115,000 instead of US\$46,000 planned, contract No. TFSCB-CQ-01).** Namely, to compensate for this contract difference, the unused amount of US\$23,800 was reallocated from the “Training” category to the “Goods and Consulting Services” category. Below is reflected the initial and restructured distribution of resources per categories:

Table 1. Reallocation of financing across the cost categories at restructure

Cost category	Amount of the Grant Allocated (expressed in USD)	Requested Amount (USD)	Cost funding percentage
(a) Goods and consulting services	273,500	297,300	100%
(b) Training	58,500	34,700	100%
(c) Operating Cost	8,000	8,000	100%
TOTAL	340,000	340,000	

II. OUTCOME

Assessment of Achievement of Each Objective/Outcome

24. **The objective of the project is:** to strengthen the capacity of Ukrainian education authorities to utilize (i) administrative, statistical, and learning assessment data and (ii) analytical methods to inform policymaking. As the PDO statement has two parts, these are both assessed separately below.

PDO Objective 1 - to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data to inform policymaking

25. **The achievement of this objective is assessed moderately satisfactory given that PDO-level indicators were partially achieved with additional progress since project closing date, and all IRI targets were met or exceeded.** The main activities supporting this objective were carried out under *Components 1 – Development of an integrated Education Management Information System (EMIS)*. The results of this objective were measured by the following indicators:

Indicator 1: Upgraded Education Management Information System (EMIS) is fully operational

26. **The target for this indicator was partially achieved by the closing date, and has since been achieved.** The baseline for it was an existing operational EMIS with incomplete coverage of general secondary education (GSE) institutions, and the target was to develop an upgraded EMIS that would cover all GSE schools and preschool institutions in at least 3 regions (oblasts).

27. **At closing, the system successfully was updated and imported information on two previous years from DISO (State Education Information System – former EMIS) and was covering all general secondary education (GSE) schools (including vocational and higher education establishments where GSE could be completed) and all preschool institutions from all regions (oblasts).** Also, the system was renamed from DISO to AICEM – Automated Information Complex on Educational Management, so to avoid confusion, being accessible on the following link <https://aikom.iea.gov.ua>. The information collected and analyzed in the new system is now being used for decision making processes, including in the calculation of the education funding formula which determines subsidies



(subventions) to be transferred from the State Budget to local authorities. Thus, this is a crucially important part of education system, given its decentralization and autonomous management process and the importance of an accurate funding formula for structuring the right financial incentives for school network consolidation and efficiency improvements.

28. Yet, due to dissonance in sequencing, as data shall be collected during the schooling year, avoiding other national statistics data collection processes, MoES and IEA decided to collect this year the data on pupils (ZNZ-1 form) in the DISO system and import it later in the Automated Information Complex on Educational Management (AICEM). To ensure AICEM operability and test system functionalities, during July 2019 was collected information on English textbooks use in schools. The results of this exercise showed some system bottlenecks and Consultant worked on their fixing. In November 2019 in the AICEM started to be collected the information on teachers (RVK-83 form).

29. All the IRIs used during the Project life to measure the progress of this indicator were met or surpassed their targets:

- i. *IRI-1. Percentage of general secondary education schools reporting in EMIS the latest year's data on students enrolled* had the baseline 95.11% and the target 100%. By the closing date the indicator was fully achieved.
- ii. *IRI-2. Percentage of general secondary education schools reporting in EMIS the latest year's data on teachers employed* had the baseline 82.31% and the target 100%. By the closing date 100% of the GES were reporting in EMIS the latest year's data on teachers employed.
- iii. *IRI-3. Percentage of preschool institutions reporting in EMIS the latest year's data on children enrolled* had the baseline 0.0% and the target 20%. By the closing date, due to the IEA efforts, all 100% preschool institutions were reporting in EMIS, the target being thus overachieved.

30. Also, to ensure the system security, that would allow in the future the EMIS use for detailed at the personal level data collection, if decided, under this component were also prepared the documents for Database security certification. The package was submitted for review and decision to the State Service of Special Communications and Information Protection of Ukraine, waiting their decision by the end of the 2019 year.

Indicator 2: Open data portal is functional and allows stakeholders to access relevant EMIS data.

31. This indicator was partially achieved by the Project closing date, but has since been achieved. An Open Data Portal (ODP) was created for querying and generating custom reports in various formats (Microsoft Word, Excel, PDF) based on AICEM system, and it is available on <http://opendata.iea.gov.ua/>. At the closing date, the ODP was populated with data and in October 2019, after the completion of information uploading, the Portal was officially launched.

32. The IRI used during the Project life to measurement the progress of this indicator met its target. Thus,

- iv. *IRI-4. The number of stakeholders trained in the use of the EMIS or the EMIS open data portal* was at the Project closing - 204 persons, overpassing the initial target of 200 potential users. To assist EMIS users, were created user's video-tutorials and user's manual (in PDF format). The materials used for the training on EMIS and ODP content management and use are available on <https://aikom.iea.gov.ua/help>). All materials were adjusted in accordance with the recommendations received during the trainings.

33. In order to disseminate the information to stakeholders on the EMIS upgrade and OPD availability, in July 2019, a consultant was hired who produced: (i) a video on the EMIS update process that was promoted on the following Facebook page https://m.facebook.com/story.php?story_fbid=426285654889246&id=423292725188539; and (ii) a brochure presented at the following link within the MoES article on EMIS update and renaming



<https://mon.gov.ua/ua/news/vilnij-dostup-do-osvitnoyi-informaciyi-ta-analiz-efektivnosti-roboti-zakladiv-institut-osvitnoyi-analitiki-mon-prezentuvav-novu-onlajnsistemu>. Currently, the ODP has daily about 300 users and many more are expected after additional information that is to be uploaded in December 2019.

PDO Objective 2 - to strengthen the capacity of Ukrainian education authorities to utilize analytical methods to inform policymaking.

34. The achievement of this objective is assessed satisfactory with development indicator and all intermediate results fully achieved by the closing date. The main activities supporting this objective were carried out under Component 2 - *Prepare for participation in the PISA*. The results of this objective were measured by the following indicators:

Indicator 3: Qualified specialists are trained to prepare the national analytical report using PISA data.

35. The indicator achieved its objective with 20 specialists trained to prepare the national analytical report using PISA data. On December 17-21, 2018, 20 IEA, UCEQA, as well as other stakeholders' specialists participated in the training on PISA data analysis. The Consultant hired for this task (Daniel Caro) continued to provide assistance to the Ukraine PISA team even after the contract finalization.

36. The IRI under this indicator also achieved their target. Thus:

- v. *IRI-5. The sampling of schools for the implementation of PISA 2018 was conducted using EMIS data. Also, in preparation for PISA 2018, from June 26 - 30, 2017, 3 IEA specialists and 1 representative of UCEQA participated to the 7th International Research Conference in Prague, Czech Republic.*
- vi. *IRI-6. PISA 2018 assessments were carried out in Ukraine and the results for Ukraine came out on December 3, 2019 in line with other countries.*

37. In addition, out of the resources available from savings, the IEA staff received IT trainings on: Excel 2016 (IV): Power Pivot + Power View + Power Query + Power Map for 5 people; M20761 Querying Data with Transact-SQL for 2 people, M20762 Developing SQL Databases for 3 people, M20744 Securing Windows Server 2016 for 2 people.

38. The activities under Component 3 were to support the achievement of the above objectives from the perspective of institutional capacity building. Thus, during the Project, the IEA hired financial management (FM), procurement and translator Consultants, who provided their support in Project management by the closing date. To strengthen these specific competences, during the Project the IEA staff and the consultants benefited from the trainings in the area of FM, procurement and English courses. Also, under this component, a hired consultant developed the official IEA web-page that can be found at the following link: <http://iea.gov.ua/> and the institution benefited from procured furniture and IT computer equipment that allows it to realize its functions and operate with the big landscape of data, including from EMIS.

39. The Project financial audits funded from the third component were issued with a non-qualified opinion and it was published on the IEA's website. The full description of the objectives, specific objectives, and the indicators and intermediary result indicators that contributed to reaching the objectives is presented in annex 1.



Overall Outcome Rating

40. **The overall outcome rating of the project is assessed Moderate Satisfactory** as of the project closing date, July 24, 2019.

- i. *The objective to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data to inform policymaking* was partially achieved as by its measured indicators which were partially met by the closing date. Thus, PDO indicators 1 and 2 were partially achieved by the closing date, and the intermediate results indicators were fully achieved, one being overachieved.
- ii. *The objective to strengthen the capacity of Ukrainian education authorities to utilize analytical methods to inform policymaking* fully met as measured by Indicators 3 which was fully achieved reaching the target. All the IRIs under this objective achieved the targets.

Other Outcomes and Impacts

41. **As a result of the discussions with the Government during the grant implementation, currently, after ten years of hiatus, the Bank is preparing a new lending operation in the education sector in Ukraine.** The project tentatively would have a component that would focus on expanding the current achievements of the grant in supporting EMIS. Specifically, it is expected to detail EMIS data from aggregate to individual level and expand the system coverage from pre-school to higher education level. This activity would build on the design of the EMIS supported under this Project.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

42. **The project was running in a context of instability, followed by institutional leadership changes.** Despite the volatile political environment further complicated by the change in the implementing agency (IA) team within the IEA and the election period in 2019, the IEA was very committed to implement the Project. Also, to ensure Project continuity, a larger group of stakeholders was engaged during the implementation. Thus, during the missions, meetings were held with both IEA and MoES teams. This helped to ensure that project implementation proceeded as planned in spite of changes in leadership and staffing.

43. **The major challenge and delays were related to the lack of previous experience of the IA in managing Bank projects, as well as developing informational systems.** The lack of experience of IEA to manage Bank project was addressed by close cooperation between the Bank team and IEA and frequent missions or video conferences (VC). Also, IEA capacity to implement a Bank-supported Project was enhanced by hiring procurement and FM consultants. To address the delays on informational system development, the Project closing date was extended with 6 months, from January 24, 2019 to July 24, 2019, with the procurement and FM consultants being kept during this period as well.

44. **Another constraint to project implementation was insufficient cost estimation at the Project design stage.** Thus, underestimation of the cost for the EMIS upgrade, represented another challenge during Project implementation. In this context, the timely reaction of the teams and support offered by the Trust Fund team and Country Management Unit was a good solution. This allowed to restructure the cost by category and extend the closing date with 6 months.



45. **At the Project implementation stage, the introduction of the new Bank procurement system (Systematic Tracking of Exchanges in Procurement - STEP) created occasional challenges which also affected implementation.** Since the system was a new instrument, the lack of experience in its use from both sides, the Bank and IA, as well as some occasional glitches were bringing delays in timely approval of the terms of reference (TORs) or procurement plan changes. This was addressed by the Bank's procurement team which delivered trainings on system use, as well as their close and continuous support to the Bank task team and the IA team.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

46. **Bank performance was satisfactory at entry.** The Bank, IEA and MoES was closely collaborating from the beginning of the Project, prioritizing and designing it in support to the initiated reforms in educational sector. There were several moderate shortcomings, mostly related to the institutional leadership changes in the IEA. The continuous engagement and close collaboration of the Bank with IEA and MoES teams, as well as other development partners of Ukraine, ensured the Project smooth implementation.

47. **Bank performance was satisfactory at supervision.** There were regular supervision missions from the Bank sides, as well as frequent VC, quick turnaround for emails, or phone call discussions. The IEA counterparts repeatedly expressed their gratitude to the Bank for the prompt reaction to the requests, as well as for continuous support in implementation. Close and intense collaboration between the Bank, IEA and MoES teams contributed to the successful Project completion, despite delays for some indicator's achievement.

48. **Bank performance was satisfactory at completion.** Over the two and a half years of implementation, the Project had three task team leaders (TTLs). Despite the change of task team leaders, it is worth mentioning that their collaboration, experience, and knowledge sharing even after the handover, plus Trust Fund (TF) accreditation, contributed to the smooth oversight of project implementation and its successful completion.

49. **The project has been implemented with one extension of the closing date and spent 99 percent of the funds allocated.** The PDO remained unchanged and has been rated Moderate Satisfactory. The risk in achieving sustainable results was addressed by a timely restructure and continuous support. Also, the new Bank engagement in the Ukraine educational sector would expand the achieved Project results.

50. **There were no significant Procurement or Financial Management compliance issues.** The Project have had an established simplified Procurement Plan. The flexible approach towards the activities included in the Procurement Plan contributed to an easy adjustment to the Project needs. Since the Project was initially planned for two years implementation and after the first year the spending was small, it was agreed a waved audit. However, at restructuring, since the requested extension of the closing date and changes in the disbursement categories, it was requested a Project audit. Thus, there were two audits conducted, both provided on time and unqualified. The final project audit was submitted in November 2019.

51. **The supervision budget allocated for the project was estimated at US\$178,000 and was exceeded by 40 percent in order to support additional analytical work which allowed a new engagement in the sector.** Most of the funds were allocated to staff costs, followed by travels.

52. **Risk to development outcome is rated as moderate.** The updated EMIS serves as a main instrument for the Ukrainian education authorities to utilize administrative, statistical, and learning assessment data; and the conducted trainings on analytical methods are an important step in consolidating the authority's capacity to inform policymaking. Yet, considering other countries experience, and developments at the international level, for a performant EMIS and



good data, the system needs a continuous update and a detailed at the personal level data is a must for targeted policy. Also, since human turnover in the institutions is a natural phenomenon, there is a need for continuous capacity building activities, including from the perspective of analytical method use. Thus, these efforts need to be continuously supported.

V. LESSONS LEARNED AND RECOMMENDATIONS

53. **During the two and a half years of Project implementation, significant experience was acquired and lessons for future engagements were learned which** can be summarized in three main categories—general, national, and project levels.

54. **At the general level, a key lesson learned is that informational systems upgrade, or development of a new system takes significantly longer time than the two years required by the TF criteria at the design stage for this Project.** This is even more relevant in the cases of the countries or institutions that do not have experience in this area, or if the systems developed within the Project needs to follow different procedures, and there is no previous experience to apply them in the local context. Thus, a standard two and a half, or three years implementation time may be more realistic for such type of projects.

55. **At the national level, a broader engagement, within the institution, as well as with other institutions and development partners were critical for implementation of the Project.** Regular meetings during the Project implementation, beside those with the IEA, were critical for successful implementation. For example, the Project team met regularly with representatives of MoES, UCEQA, and Ukraine development partners, such as Swedish International Development Agency (SIDA), United Nations Children's Fund (UNICEF), Finland representatives and other donor partners contributed to smooth implementation of the project, despite the challenges. These other stakeholders and donor partners helped to facilitate implementation by reinforcing key design principles related to the new EMIS and to the management and implementation of PISA, for example.

56. **It is important to note that in context of limited capacity and experience with Bank Project, frequent and regular communication, country presence of staff, especially for FM function, are critical to expedite the Project implementation and build capacity going forward.**

57. **At the Project level, a specific recommendation for the further work on EMIS is that having access to individual data and an integrated systems would allow the IEA and MoES to design better targeted policies and avoid data entry redundancy and administrative burden.** Yet, this require, beside additional work on the system, amendments to the current laws, better equipped schools with computers, improved internet access, as well as IT trainings for those responsible for data input. IEA informed the Bank that the draft laws were developed and submitted to MoES for consideration. On the other aspects, there is a need for stakeholder's discussions and decisions. This could be considerate a potential activity within the new Bank Projects.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Upgraded Education Management Information System (EMIS) is fully operational	Text	Existing EMIS is operational with incomplete coverage of general secondary education (GSE) institutions 01-Nov-2016	EMIS is upgraded to cover all GSE schools and preschool institutions in at least 3 regions (oblasts) 24-Jan-2019	EMIS is upgraded to cover all GSE schools and preschool institutions in at least 3 regions (oblasts) 24-Jul-2019	The system is developed and covers all GSE schools (including vocational and higher education establishments where GSE could be completed) and all preschool institutions (PI). 24-Jul-2019

Comments (achievements against targets):

The indicator is partially achieved. The system is developed. Necessary training were conducted. System testing at the national level was performed. In November 2019 in the EMIS started to be collected the information on teachers (RVK-83 form).



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Open data portal is functional and allows stakeholders to access relevant EMIS data	Text	No open data portal exists 01-Nov-2016	Open data portal is functional and allows stakeholders to access relevant EMIS data 24-Jan-2019	Open data portal is functional and allows stakeholders to access relevant EMIS data 24-Jul-2019	Portal is created. Processes of testing and filling information are ongoing. 24-Jul-2019
<p>Comments (achievements against targets): The indicator is partially achieved. The Open data portal was developed and was launched on October 18, 2019.</p>					

Objective/Outcome: To strengthen the capacity of Ukrainian education authorities to utilize analytical methods to inform policymaking.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Qualified specialists are trained to prepare the national analytical report using PISA data	Number	0.00 01-Nov-2016	20.00 24-Jan-2019	20.00 24-Jun-2019	20.00 24-Jul-2019
<p>Comments (achievements against targets): The indicator is achieved.</p>					



A.2 Intermediate Results Indicators

Component: Components 1 – Development of an integrated Education Management Information System (EMIS)

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of general secondary education schools reporting in EMIS the latest year's data on students enrolled	Percentage	95.11 01-Nov-2016	100.00 24-Jan-2019	100.00 24-Jul-2019	100.00 24-Jul-2019

Comments (achievements against targets):

The indicator is achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of general secondary education schools reporting in EMIS the latest year's data on teachers employed	Percentage	82.31 01-Nov-2016	100.00 24-Jan-2019	100.00 24-Jul-2019	100.00 24-Jul-2019

Comments (achievements against targets):

The indicator is achieved.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of preschool institutions reporting in EMIS the latest year's data on children enrolled	Percentage	0.00	20.00	20.00	100.00
		01-Nov-2016	24-Jan-2019	24-Jul-2019	24-Jul-2019
Comments (achievements against targets): The indicator is overachieved.					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of stakeholders trained in the use of the EMIS or the EMIS open data portal	Number	0.00	200.00	200.00	204.00
		01-Nov-2016	24-Jan-2019	24-Jul-2019	24-Jul-2019
Comments (achievements against targets): The indicator is achieved.					

Component: Components 2 - Prepare for participation in the Programme for International Student Assessment (PISA)

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Sampling of schools for the	Text	No sample of schools	Sampling of schools	Sampling of schools	Sampling of schools



implementation of PISA 2018 is conducted using EMIS data		exists for PISA 2018 implementation 01-Nov-2016	for the implementation of PISA 2018 is conducted using EMIS data 24-Jan-2019	for the implementation of PISA 2018 is conducted using EMIS data 24-Jul-2019	for the implementation of PISA 2018 is conducted using EMIS data 24-Jul-2019
Comments (achievements against targets): The indicator is achieved.					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
PISA 2018 assessments are carried out in Ukraine	Text	No PISA assessments have been carried out in Ukraine to date 01-Nov-2016	PISA 2018 assessments are carried out in Ukraine 24-Jan-2019	PISA 2018 assessments are carried out in Ukraine 24-Jul-2019	PISA 2018 assessments are carried out in Ukraine 24-Jul-2019
Comments (achievements against targets): The indicator is achieved.					

Component: Component 3 - Institutional capacity building



B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1 - to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data	
Outcome Indicators	<ol style="list-style-type: none"> 1. Upgraded Education Management Information System (EMIS) is fully operational (Indicator One in the Project Paper) 2. Open data portal is functional and allows stakeholders to access relevant EMIS data (Indicator Two in the Project Paper)
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Percentage of general secondary education schools reporting in EMIS the latest year's data on students enrolled 2. Percentage of general secondary education schools reporting in EMIS the latest year's data on teachers employed 3. Percentage of preschool institutions reporting in EMIS the latest year's data on children enrolled 4. Number of stakeholders trained in the use of the EMIS or the EMIS open data portal
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<ol style="list-style-type: none"> 1. An updated and tested EMIS with imported from the former system information on previous two years that covers all GSE schools (including vocational and higher education establishments where GSE could be completed) and all PI from all regions (oblasts). Data collection on teachers started in November 2019. 2. A Database security certification that would allow in the future the EMIS use for detailed at the personal level data collection, if decided, initiated. 3. An Open Data Portal (ODP) was created for querying and generating custom reports in various formats (Microsoft Word, Excel, PDF) based on updated EMIS. At the closing date was populated with data and in October 2019, after the completion of information uploading, the Portal was officially launched. 4. 204 stakeholders were trained in the use of the EMIS or the EMIS open data portal.
Objective/Outcome 2 - to strengthen the capacity of Ukrainian education authorities to utilize analytical methods to inform policymaking	
Outcome Indicators	<ol style="list-style-type: none"> 1. Qualified specialists are trained to prepare the national analytical report using PISA data (Indicator Three in the Project Paper)
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Sampling of schools for the implementation of PISA 2018 is conducted using EMIS data 2. PISA 2018 assessments are carried out in Ukraine
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none"> 3. 20 specialists were trained to prepare the national analytical report using PISA data. 4. First PISA report with PISA 2018 data, collected on a sample created using EMIS data came out on December 3, 2019.



ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval %
Development of an integrated Education Management Information System (EMIS)	.17	.19	112
Preparation for participation in the Programme for International Student Assessment (PISA)	.07	.03	43
Institutional capacity building	.10	.12	120
Total	0.34	0.34	100

58. **Objective 1 of the Project to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data to inform policymaking was achieved with funds allocated from Components 1, 63.3 percent of the expenses.** Around 8 percent of the funds were allocated for the Component 2 which supported the achievement of the objective 2 to strengthen the capacity of Ukrainian education authorities to utilize administrative, statistical, and learning assessment data to inform policymaking. At the same time, 35.3 percent of the Project were allocated for the Component 3 - capacity building activities that contributed to achievement of both objectives.

59. As a category of expenses, consulting services is the one that leads the ranking with 83 percent, as shown in table 2.1.

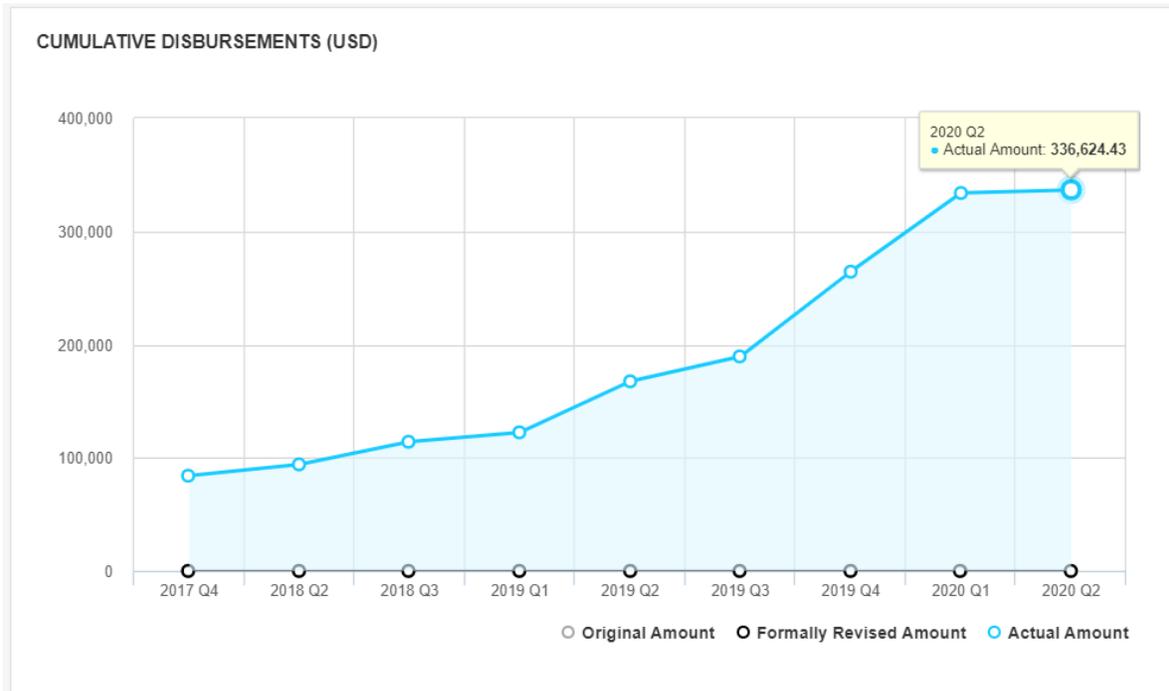
Table 2.1. Expenditure by Category of Costs

Type of Costs	Allocation	Expenses	Percentage spent of Allocation	Percentage Spent of the Total
(a) Goods and consulting services	297,300	295,713	99.5	87.8
(b) Training	34,700	32,981	95.1	9.8
(c) Operating Cost	8,000	7,930	99.2	2.4
Total	340,000	336,624	99.0	99.0

60. The disbursement graph (figure 2.1) illustrates that IEA disbursement. As it can be seen, higher disbursement was registered by the end of the Project.



Figure 2.1. Project Disbursement Graph



Source: Operations Portal

61. The selected auditor, performed the auditing services and provided a clean unqualified opinion covering all grant expenses.



ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

62. There are no comments provided. An extract from the Recipient completion report is attached in annex 4.



ANNEX 4. SUPPORTING DOCUMENTS (IF ANY)

Extract from Recipient Implementation Completion Report

I. PROJECT BACKGROUND

1. Ukraine obtained financial assistance from the International Bank for Reconstruction and Development ("World Bank"), acting as the holder of the grant funds of different "Donors" within the framework of the Target Fund for Statistical Capacity Building III (TFSCB-III:TF070561) in the amount of USD 340,000.00 ("Grant") for the Strengthening Evidence-Based Policymaking with Education Statistics and Analysis Project ("Project").

Project general information:

Country:	Ukraine
Project:	Strengthening Evidence-Based Policymaking with Education Statistics and Analysis Project
Grant No.	TF0A4096
Project No.	P161312
Total Amount:	340,000 USD
Duration:	2.5 years (January 24, 2017 – July 24,2019)
Project Extension:	Project was extended once by 6 months in comparison with the initial Closing date
Implementing agency:	State Scientific Institution "Institute of Educational Analytics (IEA)
Total number of main contracts:	29
Disbursed:	USD 336,560.93
Undisbursed:	USD 3,439.07
Categories:	(1) Goods and consulting services – USD 297,300 (2) Training - USD 34,700 (3) Operating Costs - USD 8,000

II. PROJECT IMPLEMENTATION BY COMPONENTS

2. The project was implemented by the State Scientific Institution "Institute of Educational Analytics (IEA) under the overall supervision of the Ministry of Education and Science of Ukraine ("MoES").
3. Implementation of the Grant was governed by the documents of the TFSCB Grant No. TF0A4096 and by the Resolution of the Cabinet of Ministers of Ukraine No. 153 "On Creation of a Unified System for



the Engagement, Use and Monitoring of International Technical Assistance" dated February 15, 2002, and other legal acts of the Cabinet of Ministers of Ukraine, IEA and MoES orders.

4. Beginning from the start of the Project the IEA signed 29 main contracts (excluding Operating Costs) in the total amount of USD 328.6 thousand. The amount of used funds within operating costs is USD 7.9 thousand.

Component 1: Development of the integrated EMIS system

5. In order to achieve results under mentioned component 8 contracts were signed and successfully completed (1 CQ, 3 IC, 1 Shopping and 3 training contracts).
6. The national consultant for development of TOR for EMIS was selected and relevant contract was signed on October 27, 2017. For the compliance of TOR developed by national consultant with the best international practices the IEA also hired the international expert on April 24, 2018.
7. The main contract for development of EMIS and Open Data Portal (ODP) was signed on September 11, 2018 and completed in the end of June 2019. Initially the Project Concept envisaged two separate contracts for these activities but later it was reviewed and the IEA made decision to combine them and add scope of services for ODP development to the contract for the EMIS development in order to optimize time and avoid misunderstanding between contractors in case of signing separate contracts.
8. After EMIS and ODP were developed the IEA conducted training for 204 potential users and signed contract for Database security certification. The relevant contract was completed in July 2019.
9. For better functioning and operating EMIS the IEA also procured the high-performance server on February 2019.
10. During Project implementation the specialists of the IEA and the MoES visited Moldova (April 2-6, 2018) and Lithuania (March 12-17, 2018) for knowledge exchange on EMIS development.
11. The EMIS was developed on June 2019 by the Joint Venture of CIVITTA UAB (Lithuania), MEDIAPARK UAB (Lithuania) and CIVITTA UKRAINE LLC (Ukraine) with the sub-consultant Centre for Information Technologies in Education (Lithuania).
12. After the System was developed the Ministry of education and science of Ukraine and SSI "Institute of Educational Analytics" decided to rename it and give the new title as **AICEM (Automated Information Complex Educational Management)** - <https://aikom.iea.gov.ua>.
13. AICEM is an online system for collecting, storing, managing and using data in the decision-making process. AICEM allows to improve resources and processes management in the education system to achieve greater system efficiency and better learning outcomes.
14. It generates and monitors statistics within the education system and has a multifaceted structure, in particular technological and institutional mechanisms for data collection, processing and dissemination. AICEM plays a key role in tracking changes, ensuring data quality, timely provision of information, and facilitating the use of information in decision-making.

The benefits of the new system are:

- *Parents*. Free access to extensive educational information that allows to choose the best from schools to teach their child;



- *Schools*. Ability to analyze performance compared to previous periods and other schools, simplifying compilation and providing statistical reporting;
- *Managers in the field of education*. Prompt and automated collection of any data in a convenient interface;
- *Society*. Transparency and efficiency in the use of taxpayers' funds for education.

Pilot testing of the AICEM

15. Pilot testing was started on June 2019. As a result of testing of the updated EMIS IEA collected information from about 10 thousand schools (about 65% from overall quantity). The level of school responding was lower due to the summer vacations period. IEA analyzed collected data using BI in the new system, for example (<http://212.26.146.64:3000/public/dashboard/78e0f20f-0fca-4881-8cad-3998a0f02efa>) there are about 8700 schools who filled form #1 of monitoring (there were 2 different forms) and IEA could analyze what English textbooks are most and least popular.
16. Meanwhile, functionally system was successfully tested. Some minor adjustments were scheduled under development provided by the CIVITTA. Additionally, IEA listed all suggestions in letters to CIVITTA.

Key features of the AICEM:

- Data collection, storage and management. Enrollment of over 30,000 schools and kindergartens, ability to connect from any computer through a web browser and without installing special software;
- Form and report builder. Availability that allows to create, assign, process and submit information in any form without the involvement of the developer;
- Business Intelligence (BI). Analytical module of work with statistical reporting;
- Open Data Portal. For querying and generating custom reports in various formats (Microsoft Word, Excel, PDF) - <http://opendata.iea.gov.ua/>;
- Indicators for assessing the state of education and comparing schools with specific indicators.



The differences between old System and AICEM:

	Old system data that is currently available	AICEM new additional data that will become available
Functional	Client program Impossibility of forms modification without involvement of the developer Absence of analytical module and open data	Web Solutions (Portal) Availability of form and report builder Availability of the BI analytics module and the open data portal
Audit data	-	Interaction with the databases of the State Service for Education Quality will allow to upload in the system information about the results of the regular school audit
Data on students and teaching staff	School level aggregated data	The system is ready to deploy an individual data module, which provides the ability to automatically generate reports on the contingent of students and teaching staff
Children performance data	-	Interaction with the databases of the Ukrainian Center for Educational Quality Assessment will allow to calculate indicators of school students' performance based on the results of national and international educational attestations, assessments
Financial data	-	Interaction with the databases of the Ministry of Finance of Ukraine will allow to calculate expenditures per student, etc.

New possibilities of using AICEM data:

- Assessments:
 - Performance of schools;
 - Student performance;
 - Growth reports;
 - Diagnostic reports;
 - Effectiveness of teaching staff.



- Public administrations:
 - Public policy decisions;
 - Accountability;
 - Planning (based on the school level data).
- Schools:
 - Academic success;
 - Effectiveness of teaching staff;
 - Comparison with other schools.
- Users:
 - Access of parents to the education management system;
 - Access of communities to the education management system.
- Government:
 - Cost effectiveness;
 - Remuneration of the teaching staff;
 - Data usage to set quality requirements.

Functions of the AICEM

- Data collection:
 - Collection and accounting of educational statistics according to approved forms of official statistical reporting;
 - Implementation of flexible forms collection due to the availability of the form builder (without the involvement of programmers);
 - Automation of control processes, cascading user registration.
- Data analysis:
 - Automatic generation of official statistical reporting forms;
 - Ability to present information from database through user report (report builder);
 - The analytics module allows to work directly with the database in a user-friendly interface that does not require knowledge of the programmatic query language;
 - Ability to form random samples, visualize and place them in external resources.
- Data verification:
 - The system has automatic checks for data integrity and validity;
 - The administrator can return the respondent's report with a comment to any field of input, as needed.
- The system is ready for:
 - Deployment of the personal data module (students, teachers);
 - Interactions with other databases (education systems, Ministry of Finance, etc.).



- Data entry:
 - In digital form via a web interface (the system has functionality to pre-fill reports in case of availability of the information for the previous period);
 - By collecting using third-party software within interagency agreements on data exchange.
- Data export:
 - Generate mandatory statistical reports (electronic and print forms);
 - Free access to the generated datasets and the ability to create individual searches through the Public Open Data Portal;
 - Export custom reports in different formats (Microsoft Word, Excel, PDF).

Using data in managing school education (new possibilities):

	Existing practice	Best practice (new additional data that will become available)
Assessments	Overall effectiveness of education	School performance Student success Diagnostic reports Variation indicators (number of students per teacher, occupancy of classes, availability of computer equipment, etc.)
Public administration	Public policy decisions Planning	Accountability Planning (allocation of funds and other resources at school level) Leadership
Schools	-	Expanded Demographics Salaries Performance evaluation Certification training
Society	-	Parents' access to AICEM Community access to AICEM Using data to make decisions Using data to set quality requirements
Government	Performance factors Infrastructure capacity Quality / performance metrics Gender equality	Cost effectiveness Remuneration of the teaching staff

17. On the May 2019, AIKOM user trainings were successfully conducted. 204 participants from all regions took part in this event. Participants became familiar with new system, BI module and open data portal. Some feedbacks caused system adjustments by CIVITTA.
18. Bohdan Yarema (UNICEF) attended training and had possibility to ask local responsible how do they organize education enrollment monitoring process, etc.



19. One of the training deliverables was possibility to discuss step by step user's video-tutorials and user's manual (PDF). All materials were adjusted in accordance with recommendations received and are available at <https://aikom.iea.gov.ua/help>.
20. In order to disseminate of information to stakeholders on the EMIS and data portal availability and uses promotional video was created - <https://photos.app.goo.gl/wwQcptVKbu3EwpAG9>.
21. Official information about new system on the MoES website is available at <https://mon.gov.ua/ua/news/vilnij-dostup-do-osvitnoyi-informaciyi-ta-analiz-efektivnosti-roboti-zakladiv-institut-osvitnoyi-analitiki-mon-prezentuvav-novu-onlajnsistemu>.

Component 2: Preparation for Participation in PISA

22. In order to achieve results under mentioned component 2 contracts were signed and successfully completed (1 IC and 1 training contracts).
23. According to the letter from the Ukrainian Center for Education Quality Assessment dated 27.06.2018 No. 02-24-01/1514, the provision of services for preparation in PISA implementation envisaged initially was quite complicated, considering the tight deadlines for the Grant implementation and the possibility to obtain access to the outcomes of the Ukrainian researchers' work only in the last quarter of 2019. Taking into account this conclusion the IEA made decision to carry out the trainings on analysis of PISA data and report preparation only. The IEA carried relevant training during December 17-21, 2018. 20 IEA specialists and stakeholders participated this training.
24. During June 26-30, 2017 3 IEA specialists and 1 UCEQA representative participated 7th IEA International Research Conference in Prague under implementation of this Component.

Component 3: Institutional Capacity Building

25. In order to achieve results under mentioned component 19 contracts were signed (1 CQ, 5 IC, 4 Shopping and 9 training contracts).
26. On April 18, 2017 the IEA signed 3 contracts with individual consultants for Project management for the following positions: (1) FM specialist, (2) Procurement specialist and (3) Translator. These consultants provided technical assistance till the end of the Project.
27. On September 21, 2017 the IEA signed and completed 3 contracts for procurement of furniture, computer equipment (10 computers, 3 laptops, 12 printers, 1 projector) and Private Automatic Branch Exchange (PABX).
28. In the end of December 2017 the selected consultant developed official web-site for IEA. Here is the link: <http://iea.gov.ua/>.
29. On July 2019 the IEA also procured Additional computer and office equipment as following: 6 computers, 2 laptops, 1 printer, 2 air conditioners in the server room, 1 server for IEA Enterprise Resource Planning system at the expense of the savings received during Project implementation.
30. In order to disseminate of information to stakeholders on the EMIS and data portal availability and uses the IEA signed relevant contract. It was completed in July 2019. Consultant produced:
 - a video on the EMIS update that can be found on <https://photos.app.goo.gl/wwQcptVKbu3EwpAG9>; and



- a brochure presented on the following link within the MoES article on EMIS updated and renaming <https://mon.gov.ua/ua/news/vilnij-dostup-do-osvitnoyi-informaciyi-ta-analiz-efektivnosti-roboti-zakladiv-institut-osvitnoyi-analitiki-mon-prezentuvav-novu-onlajnsistemu>.

31. Under this Component the IEA also organized a set of trainings for the IEA and MoES specialists, such as:

- project management trainings (one on FM in Minsk in 2018, one on procurement in Kiev in 2018, and another one in Torino in 2019 specifically on Bank rules for procurement of Informational Systems),
- English language trainings for 29 people;
- and IT trainings on Excel 2016 (IV): Power Pivot + Power View + Power Query + Power Map for 5 people; M20761 Querying Data with Transact-SQL for 2 people, M20762 Developing SQL Databases for 3 people, M20744 Securing Windows Server 2016 for 2 people out of the resources available from savings.

32. According to WB's FM rules and procedures the IEA also conducted the Project financial audit for 2017-2018. The audit opinion and management letter were sent to the WB in time. The audit report is published on the IEA's website. For the conduction of the audit for 2019 the IEA signed the amendment to the contract with selected company which audited the Project for 2017-2018. The expected time period for audit for 2019 is September – October 2019.

III. ENCOUNTERED ISSUES AND BOTTLENECKS

33. During the Project implementation the IEA faced the following problems:

- Lengthy process of preparation of TOR for integrated EMIS by national consultant.** National consultant developed TOR about 6 months. As the result IEA couldn't launch the selection of company for EMIS development.
- The absence of work with WB procurement application STEP.** Due to absence of such experience sometimes the IEA has problems with uploading of relevant information and documents into the System.
- Impossibility to obtain access to the outcomes of the Ukrainian researchers' work within PISA 2018 during Grant implementation period.** The IEA couldn't select the Consultants for support during PISA 2018.

IV. LESSONS LEARNED

34. During the project implementation the State Scientific Institution "Institute of Educational Analytics (IEA) as Project implementation unit (PIU) faced some problems and issues which were solved with great efforts and with some time-consuming procedures. In this part of the Implementation Completion and Results Report IEA will provide some information about mentioned facts what might be helpful for other PIUs in similar cases.

- Conflict of the national legislation in Ukraine and the procurement rules in World Bank.** There are a lot of regulations, limits, restrictions in Ukrainian legislation which could make procurement within project implementation time-consuming, more complicated or even make them completely impossible. There was some information about prevailing World Bank procedures within the project implementation, but it required additional clarification from the Ukrainian side. It took about a month to receive such clarification from the Ministry of Finance of Ukraine. IEA was



enabled to use World Bank procedures instead of national ones finally and not to use Ukrainian procurement limits for goods. This document (clarification from the Ministry of Finance of Ukraine) was very helpful thing during the project implementation.

- b. **It is not always possible to use the opportunity not to pay taxes in the procurement procedures.** At the stage of negotiations, potential suppliers were offered to reduce the price of goods by the amount of VAT, taking into account that the Buyer (IEA) has the mentioned privilege indicated in the registration card No. 3597 dated 30.03.17. As a result of the negotiations, potential suppliers refused to conclude contracts on the such specified conditions for several reasons, including: the availability of the goods in stock (purchased with VAT) and the complexity of tax accounting for preferential transactions.
 - c. **Difficulties with the direct payments accounting.** From the project accounts of the IEA (the foreign currency account in PJSC “Ukreximbank” and / or from the Treasury account with the funds of the Grant) in the respective years these payments were not made and in the accounting of the IEA there are no related mutual settlements. Meanwhile deliverables obtained as results of the contracts paid for using direct payments are the property of the IEA. The issue was resolved when IEA decided to reflect such payments as the financial values of the contract deliverables taken on the IEA balance sheet.
 - d. **The new World Bank procurement system STEP and the change in the composition of the PUI team was the cause of a short delay in the implementation process.** Few months was needed for new PUI team to start all grant implementing procedures due to the necessity to become familiar with project strategy and new procurement system STEP. Some bugs in STEP caused situations when PUI was waiting for solving such bugs due to the inability to do some actions.
 - e. **Structure of the Project Plan (PP) was required adjustments during project implementation.** At the initial version of the PP there was main contract for EMIS modernization and different contract for open data portal development. This split was not logical due to the interrelation of this components. So, IEA combined such contracts and converted the contract for open data portal development into the additional agreement to the main contract. It is very important to do such things while planning PP instead of while project implementation process when it could cause delays, additional procedures, etc.
35. IEA is ready to provide all necessary consultations in case of their importance for other PUIs.

V. SUGGESTIONS

on further cooperation with the World Bank on the development of educational statistics and analytics in Ukraine

- 36. In the field of education in Ukraine, a number of reforms are being implemented with the aim of increasing the efficiency of education in the context of the formation of human capital and its competitiveness in the global educational space.
- 37. The most significant goals of reforming are improving the quality of education at all levels, ensuring equal access of Ukrainian citizens to quality education, more efficient use of budgetary resources. However, the initiated reforms have not yet become irreversible and require significant further efforts to implement the planned educational policy measures.



38. The success of the implementation is largely determined by the reliability of statistical and management information obtained in the framework of the collection of educational statistics, monitoring of educational processes, and conducting analytical studies on this basis.
39. The World Bank's project "Strengthening Evidence-Based Policymaking with Education Statistics and Analysis", which was carried out by the State Scientific Institution "Institute of Educational Analytics" during 2016-2019, has significantly improved the Institute's and Ministry of Education and Science of Ukraine's capacity to collect statistical information, ensure its reliability, use it at making management decisions in the fields of general secondary education and to a certain degree of pre-school education. Modernized within the framework of the project, Ukrainian EMIS is a modern information educational system with new opportunities.
40. At the same time, the capacity of the Ministry of Education and Science of Ukraine to collect and use reliable statistical educational information remains limited. If depersonalized individual data on students and teaching staff is not available, there might be a risk of incorrect distribution of educational subsidies, wrong distribution of textbooks for schools, the process of the school network optimization could be more complicated, etc.
41. Therefore, the successful implementation of education reform requires the further development of educational statistics on the basis of depersonalized individual data and development of educational analytics on the basis of these statistics.
42. For this purpose, certain legislative preconditions are already being created in Ukraine. In particular, the possibility to use depersonalized individual data in the educational sphere is referred to in the current, recently adopted Law of Ukraine "On Professional Pre-Higher Education". An electronic census of the population using ID is planned in Ukraine soon. This will give an additional basis to create a database of individual data on students and on the teaching staff.
43. Moreover, implementation of the grant P161312 included the procedure of database security certification in accordance with requirements of the State Service of Special Communications and Information Protection of Ukraine, which enables the new system to proceed personalized data.
44. Therefore, the next stage in the further development of a modernized Ukrainian EMIS should be in the configuration, automatization and adjusting depersonalized individual data modules. The best way to implement depersonalized individual data collection this is a step-by-step introduction: teachers' data module for the beginning, and later – students' module.

International expert Jan Herczynski notes (SN90 "Collection of individual data on teachers in DISO") that the Ministry of Education and Science urgently needs useful data on teachers for several reasons:

- to develop an effective long-term teacher policy;
- for making detailed forecasts of needs for new teachers, by area and by subject;
- to analyze real numbers of teaching hours a week;
- to assess whether all Ukrainian children receive the same teaching time;
- to assess the teachers' training needs, based on regional concentration and training required;
- to create strategies for local education system development.



45. Another important component under the further improvement of the system is integration with the databases of other central authorities in Ukraine. The working group (Ministry of Finance, Ministry of Education, IEA) is currently working on developing ways to integrate the new system with the MoF databases to obtain information on each school's budget.
46. The elimination of these gaps is necessary for further development of information and analytical support for the reforms.
47. The implementation of individual and financial data collection in the new EMIS could provide additional opportunities for the development of educational institutions of various levels, additional indicators of education quality control for state regulators as State Service of Education Quality of Ukraine and National Agency for Higher Education Quality Assurance, etc.