TERMS OF REFERENCE FOR CONSULTANTS

1. The Asian Development Bank (ADB) will engage 15.5 person-months of consulting services (2 international person-months and 13.5 national person-months) under one consulting firm contract. A consulting firm will be selected using the quality- and cost-based selection method with a quality–cost ratio of 90:10 and simplified technical proposal. An output-based, lump-sum contract with a provision for fixed out-of-pocket expenditures will be considered for the assignment. The consultants will be engaged in accordance with the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions.

2. The objective of the assignment is to design and conduct the assessment (output 1), support the organization of a conference and national and international study tours (output 2), and assist the six advanced urban primary schools and seven associated village primary teaching facilities and the institutes involved in designing and implementing action research projects (output 3). Specifically, the assignment will include:

A. Output 1: Existing teaching, learning, and support systems and instructional resources, and use of information and communication technology in primary education assessed

(i) development of gender-inclusive framework and tools for assessing existing (a) teaching, learning, and support systems including the core competencies reflected in learning objectives, curricula, instructional strategies, assessment and standards, organizational structures, instructional leadership, teachers' professional development, culture, and environment; (b) instructional resources such as textbooks and other teaching and learning materials (e.g., subject-knowledge materials, lesson plans, pedagogical materials, and assessment tools); and (c) uses of information and communication technology (ICT) to develop students’ core competencies and reduce rural–urban disparities in primary education, considering competency frameworks (including digital skills such as coding and other ICT competencies; and science, technology, engineering, and math skills), advanced teaching, learning, and support systems and good examples of instructional resources, common and cutting-edge technologies and uses in the People's Republic of China (PRC) and other relevant countries, to identify locally available good practices and assess their potential for scaling up; and to examine challenges in developing students’ core competencies and reducing rural–urban disparities, as well as gender gaps, if any, in primary education;

(ii) support and guidance in data collection and analysis for the assessment to be conducted by the six advanced urban primary schools: Dongjiao School, Lanzhou Branch of Beijing No. 2 Experimental Primary School, Lanzhou Experimental Primary School, Northwest Normal School-Affiliated Primary School, Qilihe Primary School, and Ningwozhuang Primary School; the seven associated village primary teaching facilities; Northwest Normal University; Lanzhou Institute for Education Research; and Lanzhou Audio-Visual Education Center;

(iii) preparation of an assessment report using data collected and analyzed at the six advanced urban primary schools: Dongjiao School, Lanzhou Branch of Beijing No. 2 Experimental Primary School, Lanzhou Experimental Primary School, Northwest Normal School-Affiliated Primary School, Qilihe Primary School, and Ningwozhuang Primary School; and the seven associated village primary teaching facilities; and
(iv) presentation of findings of the assessment at workshops and seminars with provincial, municipal, district, and county education administrators; primary school principals and teachers; parents; teacher training and research institutes; and other relevant stakeholders.

B. **Output 2: National and international good practices and lessons in building students’ core competencies and addressing rural–urban disparities in primary education through the use of ICT introduced**

(i) preparation and issuance of a call for papers nationally and internationally, for a conference where case studies and research papers dealing with the development of core competencies and reduction of rural–urban disparities and gender gaps in primary education will be presented;

(ii) support and guidance in screening paper abstracts and selecting acceptable papers for Northwest Normal University, Lanzhou Institute for Education Research, and Lanzhou Audio-Visual Education Center who will organize the conference;

(iii) preparation of a report on good practices and lessons (including those dealing with gender gaps and gender-based differences related to ICT) identified from the case studies and research papers presented at the conference with recommendations for programs of national and international (ADB member countries) study tours;¹ and

(iv) support and guidance in identifying good practices and lessons among case studies and research papers presented at the conference and preparing programs of national and international study tours for education administrators, primary school principals and teachers, and teacher training and research institutes in Lanzhou.

C. **Output 3: New or improved ICT-enabled teaching, learning, and support systems and resources in primary education piloted**

(i) suggestions for themes of action research projects focusing on the development of new or improved pilot teaching, learning, and support systems and resources using ICT to foster students’ core competencies and reduce rural–urban disparities in primary education, based on the assessment (output 1) and the good practices and lessons identified (output 2); pilot teaching, learning, and support systems and instructional resources would incorporate latest technologies and combine various audiovisual and mobile devices via ICT platforms; measures to keep in pace with technological changes, and to develop and maintain ICT-enabled systems and resources will be examined in the action research projects;

(ii) support and guidance in preparing the concept, methodology, and work plan of two or three action research projects (of which at least one is gender-inclusive) to be conducted by the six advanced urban primary schools: Dongjiao School; Lanzhou Branch of Beijing No. 2 Experimental Primary School; Lanzhou Experimental Primary School; Northwest Normal School-Affiliated Primary School; Qilihe Primary School; and Ningwozhuang Primary School; and the seven associated village primary teaching facilities, together with Northwest Normal University, Lanzhou Institute for Education Research, and Lanzhou Audio-Visual Education Center;

(iii) support and guidance in conducting the action research projects and documenting the process of developing new or improved pilot teaching, learning, and support systems and resources using ICT; challenges encountered, and lessons learned;

¹ The double teacher classroom program rolled out nationwide in the PRC could be an interesting case to study.
collecting and analyzing data; and preparing reports of the action research projects;

(iv) preparation of an analytical report on the results of action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities;

(v) presentation of findings from the action research projects and recommendations at workshops and seminars with provincial, municipal, district, and county education administrators; primary school principals and teachers; parents; and teacher training and research institutes in Lanzhou and Gansu Province.

3. The following positions are required:

(i) **Education technology specialist/team leader (national, 5 person-months).** The national specialist should have a graduate degree in education, computer science, and other relevant disciplines; at least 4 years of experience in designing, developing, and using ICT for primary and junior secondary education; and good English speaking and writing skills demonstrated by experience with studying, teaching, and researching outside the PRC. Knowledge of the situation of compulsory education development in Gansu Province is desirable. The specialist will perform the following tasks:

(a) conduct literature review on ICT-based instructional resources such as personalized and adaptive content and curricula, assessments, open educational resources, communication and collaboration tools, interactive simulations, and games; digital professional development resources for teachers; student information and learning management systems; and platforms and systems to deliver education to hard-to-reach children at a lower cost or provide higher quality instruction at the same price in the PRC and other relevant countries;

(b) develop gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources, and existing uses of ICT to develop students’ core competencies (including digital skills such as coding and other ICT competencies; and science, technology, engineering and math skills) and reduce rural–urban disparities, as well as gender gaps, if any, in primary education; the framework and tools should clearly distinguish and categorize different technologies (e.g., hardware such as interactive whiteboards, multitouch tables, movement sensors, mobile device, and computers; software such as apps for mobile device, and eBooks; software as a service; and video) and uses (e.g., improved teaching-learning processes and delivery, personalized and adaptive content and curricula, assessments, open educational resources, teachers’ professional development, communication and collaboration tools, interactive simulations, and games);

(c) provide support and guidance in data collection and analysis for the assessment and prepare an assessment report using data collected and analyzed;

(d) prepare presentation materials, and present findings of the assessment at workshops and seminars;

(e) prepare call for papers, and provide support and guidance in screening paper abstracts and selecting acceptable paper abstracts for the conference;
(f) review the accepted case studies and research papers presented at the conference, and prepare a report on good practices and lessons identified from the case studies and research papers presented at the conference as well as recommendations for programs of national and international study tours;

(g) suggest themes of action research projects, and provide support and guidance in preparing the concept, methodology, and workplan of two or three action research projects; documenting the process of developing and implementing new or improved teaching, learning and support systems and resources using ICT, challenges encountered, and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(h) prepare an analytical report on the action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities;

(i) prepare presentation materials, and present findings from the action research projects and recommendations at workshops and seminars; and

(j) as the team leader, define and coordinate inputs from each team member and ensure the quality, timely completion, and submission of milestone reports.

(ii) **Curriculum specialist (national, 3 person-months).** The national specialist should have a graduate degree in education and other relevant disciplines; at least 5 years of experience in designing, developing, and implementing primary and junior secondary education curriculum which integrates the core competencies; and good English speaking and writing skills demonstrated by experience with studying, teaching, and researching outside the PRC. Knowledge of the situation of compulsory education development in Gansu Province is desirable. The specialist will perform the following tasks:

(a) conduct literature review on competency frameworks, advanced teaching, learning and support systems including competencies reflected in learning objectives, curricula, assessment and standards; and existing uses of ICT in the PRC and other relevant countries to develop students' core competencies, and reduce rural–urban disparities in primary education;

(b) develop gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources to develop students’ core competencies and reduce rural–urban disparities, as well as gender gaps, if any, in primary education;

(c) provide support and guidance in data collection and analysis for the assessment and prepare an assessment report using data collected and analyzed;

(d) prepare presentation materials and present findings of the assessment at workshops and seminars;

(e) prepare and issue a call for papers, and provide support and guidance in screening paper abstracts and selecting acceptable paper abstracts for the conference;

(f) review the accepted case studies and research papers compiled presented at the conference, and prepare a report on good practices and lessons identified from the case studies and research papers presented at the conference as well as recommendations for programs of national and international study tours;
(g) suggest themes of action research projects and provide support and guidance in preparing the concept, methodology, and work plan of two or three action research projects; document the process of developing and implementing new or improved teaching, learning, and support systems and resources using ICT; challenges encountered and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(h) prepare an analytical report on the action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities; and

(i) prepare presentation materials, and present findings from the action research projects and recommendations at workshops and seminars.

(iii) **Instructional strategy specialist (national, 2 person-months).** The national specialist should have a graduate degree in education and other relevant disciplines; more than 10 years of experience in studying instructional strategies and training and supporting teachers in transforming teaching and learning processes into student-centered and problem- and project-based and using formative assessment and other assessment measures in line with the primary and junior secondary education curriculum emphasizing on the core competencies; and good English speaking and writing skills demonstrated by experience with studying, teaching, and researching outside the PRC. Knowledge of the situation of compulsory education development in Gansu Province is desirable. The specialist will perform the following tasks:

(a) conduct literature review on competency frameworks, advanced teaching, learning and support systems including competencies reflected in learning objectives, curricula, instructional strategies, assessment and standards, instructional leadership, teachers’ professional development, and instructional resources such as textbooks and other teaching and learning materials (e.g., subject-knowledge materials, lesson plans, pedagogical materials, and assessment tools); and existing uses of ICT in the PRC and other relevant countries to develop students’ core competencies, and reduce rural–urban disparities in primary education;

(b) develop gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources to develop students’ core competencies and reduce rural–urban disparities, as well as gender gaps, if any, in primary education;

(c) provide support and guidance in data collection and analysis for the assessment and prepare an assessment report using data collected and analyzed;

(d) prepare presentation materials and present findings of the assessment at workshops and seminars;

(e) prepare and issue a call for papers, and provide support and guidance in screening paper abstracts and selecting acceptable paper abstracts for the conference;

(f) review the accepted case studies and research papers presented at the conference, and prepare a report on good practices and lessons identified from the case studies and research papers presented at the conference as well as recommendations for programs of national and international study tours;
(g) suggest themes of action research projects, and provide support and guidance in preparing the concept, methodology, and work plan of two or three action research projects; document the process of developing and implementing new or improved teaching, learning, and support systems and resources using ICT, challenges encountered and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(h) prepare an analytical report on the action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities; and

(i) prepare presentation materials, and present findings from the action research projects and recommendations at workshops and seminars.

(iv) **Learning leadership specialists (international, 2 person-months, national, 2.5 person-months).** The international specialist should have a graduate degree in education, cognitive science, design studies, and other relevant disciplines; and more than 10 years of experience in studying learning leadership and supporting school leaders and/or assuming learning leadership in transforming primary and secondary schools based on student-centered principles, rationalizing the use of ICT, and establishing mechanisms for teachers’ professional development. The national specialist should have a graduate degree in education and other relevant disciplines; more than 7 years of experience in studying learning leadership and supporting school leaders in reforming and implementing the primary and junior secondary education curriculum emphasizing on the core competencies, establishing mechanisms for teacher professional development, and introducing technology at primary and secondary schools; and good English speaking and writing skills demonstrated by experience with studying, teaching, and researching outside the PRC. Knowledge of the situation of compulsory education development in Gansu Province is desirable. The specialists will perform the following tasks:

(a) conduct literature review on learning leadership for 21st century skills and competencies, ICT-enabled 21st century learning environments, and advanced teaching, learning, and support systems including competencies reflected in learning objectives, curricula, instructional strategies, assessment and standards, organizational structures, instructional leadership, teachers’ professional development, culture, and environment in the PRC and the other relevant countries;

(b) develop gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources to develop students’ core competencies and reduce rural–urban disparities, as well as gender gaps, if any, in primary education;

(c) provide support and guidance in data collection and analysis for the assessment and prepare an assessment report using data collected and analyzed;

(d) prepare presentation materials, and present findings of the assessment at workshops and seminars;

(e) prepare and issue a call for papers, and provide support and guidance in screening paper abstracts and selecting acceptable paper abstracts for the conference;

(f) review the accepted case studies and research papers presented at the conference, and prepare a report on good practices and lessons identified from the case studies and research papers presented at the conference as
well as recommendations for programs of national and international study tours;

(g) suggest themes of action research projects, and provide support and guidance in preparing the concept, methodology, and work plan of two or three action research projects; document the process of developing and implementing new or improved teaching, learning, and support systems and resources using ICT, challenges encountered and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(h) prepare an analytical report on the action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities; and

(i) prepare presentation materials, and present findings from the action research projects and recommendations at workshops and seminars.

(v) **Gender specialist (national, 1 person-month).** The national specialist should have a graduate degree in gender studies, and other social sciences with focus on gender; more than 7 years of experience in studying gender inequality, preferably in education; and good English speaking and writing skills demonstrated by experience with studying, teaching, and researching outside the PRC. Knowledge of the situation of compulsory education development in Gansu Province is desirable. The specialist will perform the following tasks:

(a) conduct literature review on gender inequality in primary education, especially in the development of students’ core competencies, as well as gender-based differences related to ICT (preferences, skills, attitudes), with due consideration for rural-urban disparities in general, and especially in teaching, learning and support systems including competencies reflected in learning objectives, curricula, instructional strategies, assessment and standards, instructional leadership, teachers’ professional development, and instructional resources such as textbooks and other teaching and learning materials (e.g., subject-knowledge materials, lesson plans, pedagogical materials, and assessment tools); and existing uses of ICT in the PRC and other relevant countries;

(b) develop gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources to develop students’ core competencies and reduce rural–urban disparities, as well as gender gaps, if any, in primary education;

(c) provide support and guidance in data collection and analysis for the assessment to make sure that gender elements, including sex-disaggregated data, are incorporated, and prepare an assessment report using data collected and analyzed;

(d) prepare presentation materials and present findings of the assessment at workshops and seminars;

(e) prepare and issue a call for papers, and provide support and guidance in screening paper abstracts and selecting acceptable paper abstracts for the conference to make sure that some acceptable paper abstracts address gender gaps and gender-based differences related to ICT;

(f) review the accepted case studies and research papers presented at the conference, and prepare a report on good practices and lessons, including those dealing with gender gaps and gender-based differences related to ICT, identified from the case studies and research papers presented at the
conference as well as recommendations for programs of national and international study tours;

(g) suggest themes of action research projects, and provide support and guidance in preparing the concept, methodology, and work plan of two or three action research projects to make sure that at least one action research project is gender-inclusive; document the process of developing and implementing new or improved teaching, learning, and support systems and resources using ICT, challenges encountered and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(h) prepare an analytical report on the action research projects with recommendations for extending the systems and resources to other primary schools and village primary teaching facilities; and

(i) prepare presentation materials, and present findings from the action research projects and recommendations at workshops and seminars.

4. Reporting requirements. The team leader will ensure the quality, timely completion, and submission of the following milestone reports in English and Chinese, with clearly defined inputs from each team member:

(i) an inception report to be submitted by the end of the third month after mobilization that will include (a) updated detailed workplan and methodology; (b) literature review on competency frameworks, advanced teaching, learning, and support systems, and good examples of instructional resources, including ICT-based instructional resources and digital professional development resources for teachers, learning leadership for 21st century skills and competencies, technology-enabled 21st century learning environments including student information and learning management systems, and platforms and systems to deliver education to hard-to-reach children at a lower cost or provide higher quality instruction at the same price in the PRC and other relevant countries; (c) gender-inclusive framework and tools for assessing existing teaching, learning, and support systems and instructional resources to develop students’ core competencies and reduce rural–urban disparities, as well as gender gaps, if any, in primary education, with clear distinction and categorization of different technologies and uses; (d) assessment report on existing teaching, learning, and support systems and instructional resources at the six advanced urban primary schools and seven associated village primary teaching facilities; (e) presentation materials for workshops and seminars and summary of workshop and seminar discussions; and (f) call for papers for the conference;

(ii) an interim report 1 to be submitted by the end of the 10th month after mobilization that will include (a) review of the accepted case studies and research papers presented at the conference, (b) report on good practices and lessons (including those dealing with gender gaps and gender-based differences related to ICT) identified from the case studies and research papers presented at the conference, (c) recommendations for programs of national and international study tours, and (d) suggestions for themes of action research projects;

(iii) an interim report 2 to be submitted by the end of the 13th month after mobilization that will include (a) concept, methodology, and work plan of two or three action research projects (of which at least one is gender-inclusive); and (b) report of support and guidance provided in documenting the process of developing and implementing new or improved teaching, learning, and support systems and
resources using ICT, challenges encountered and lessons learned; collecting and analyzing data; and preparing reports of the action research projects;

(iv) a draft final report to be submitted by the end of the 18th month after mobilization that will include (a) analytical report on the action research projects; (b) recommendations for extending the systems and resources to other primary schools and village primary teaching facilities; and (c) presentation materials for workshops and seminars and summary of workshop and seminar discussions; and

(v) a final report to be submitted by the end of the 20th month after mobilization that will incorporate comments on draft final report from ADB, Gansu Finance Department, Gansu Education Department, and other workshop and seminar participants.