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Digital Literacy for Frontline Workers

A practical guide for implementing and evaluating
digital literacy training program for frontline workers.



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INTRODUCTION

Digital literacy is key to implementing telecommunications/information communication technologies (ICTs). A lack of digital skills is commonly identified as a barrier to the uptake and effective use of telecommunications/ICTs (Orgock, 2022). Building others' capacity is important, especially for new and emerging telecommunication/ICT services and technologies, to build a more inclusive information society and further promote sustainable development (ITU, 2021).

There are four major barriers to digital inclusion: lack of infrastructure, low income and affordability, limited user capabilities, and lack of incentives to go online (Schmida et al., 2017). While lack of infrastructure and low income and affordability are key to digital inclusion, they can be difficult barriers to control. Limited user capabilities are easier to change. This barrier includes both those who cannot read or write or are semi-literate and those who do not have basic digital skills. While there are 750 million people who cannot read or write globally (Montoya, 2017), most adults in low- and middle-income countries do not possess basic digital literacy skills or competencies (UNESCO, 2017). In Africa, seven in ten people do not use the internet because they don't know how to use it (World Bank, 2016). In Europe, 19% of adults lack literacy skills, and 45% lack basic digital skills (OECD, 2016). Lack of incentives can include limited cultural and social acceptance of use, low awareness and understanding of the internet, and not enough available or relevant local content. To address these two barriers holistically, the best approach ensures good solution design for all user levels and improves the education, literacy, and digital skills of users (Vosloo, 2018).

Digital literacy can be implemented as a stand-alone project or in combination with a digital solution project. Digital literacy capacity building can be used in almost any sector, public or private, as it is used in almost all aspects of people's lives. As an example, in the health sector, the world is seeing more digital health solutions to simplify and streamline information and healthcare access. Digital health solutions require digital literacy for the technology users to get any benefit. Without proper digital literacy, the solution will not be fully understood, adapted, or successful. By providing health workers with the digital skills to use technology solutions, they will be able to fully utilize digital health solutions improving their work in some capacity, whether efficiency, automation of decisions, or reminders.

The focus of digital literacy as defined by the UNESCO Institute for Statistics (2018) is *the ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies for employment, decent jobs, and entrepreneurship. It includes competencies that are variously referred to as computer literacy, ICT literacy, information literacy, and media literacy.*

THE DIGITAL LITERACY WORK AID FOR THE INFORM PLATFORM

The digital literacy work aid provides all the information necessary to integrate digital literacy into your digital solution to build the capacity of end-users.

Part 1: A guide to digital literacy provides an action plan with 6 key phases, giving guidance for tasks in each phase.

Part 2: Sample tools provide 3 tools for assessing digital literacy.

Part 3: Sample data analysis and visualization tool provides sample indicators and dashboards.

Part 1 A guide to digital literacy	Step 1: Coordinate and plan Step 2: Develop the assessment plan Step 3: Review and adapt data collection and analysis tools Step 4: Recruit and train assessment teams Step 5: Data collection and management Step 6: Data analysis, interpretation, and report writing
Part 2 Sample tools	Tool 1: Self-reflection questionnaire Tool 2: Facilitator's guide for performance self-evaluation questionnaire Tool 3: Self-evaluation questionnaire
Part 3 Sample data analysis and visualization tool	ETL scripts Tool 1: Superset dashboard

WHAT IS DIGITAL LITERACY?

Digital literacy is defined as *the ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competencies that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy* (UNESCO, 2018).

WHY IMPLEMENT A DIGITAL LITERACY PROGRAM?

- Ensure users can successfully access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies for employment, decent jobs, and entrepreneurship (UNESCO, 2018).
- Digital literacy is key to a digital solution uptake and using the digital solution effectively (Orgock, 2022).
- Build digital literacy capacity to support literacy development, increase usage and uptake of digital tools and systems, and support development and inclusion (Vosloo, 2018).

WHY IMPLEMENT A DIGITAL LITERACY PROGRAM?

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HOW DO YOU BUILD THE DIGITAL LITERACY OF OTHERS?

Building the digital literacy of others requires developing a digital literacy program. A **digital literacy program** outlines how to build the digital literacy skills of program participants. The digital literacy program will include a **digital literacy course** with content aimed at building a participant's understanding of digital technologies and capacity to use them. To assess the effectiveness of the digital literacy course, the impact of the digital literacy program, and gaps in the course and program, participants will participate in a **digital literacy assessment** at the beginning and end of the digital literacy course checking their understanding and use of digital technologies.

This **digital literacy work aid** will provide implementers with a step-by-step guide to conduct a digital literacy assessment from beginning to end for those implementing digital literacy programs.

WHO IS THE DIGITAL LITERACY WORK AID FOR?

We hope the digital literacy work aid will be helpful to anyone:

- Looking to improve the digital literacy of end-users of a digital solution or improve the digital literacy of people

- (i.e. students, staff, etc.) in a stand-alone digital literacy program.
- With access to an Open Data Kit (ODK) Platform, like [InForm](#), using XLSForm syntax to define data collection forms.
- With the ability to conduct digital literacy assessments in-person enabling the facilitator to observe participants' capabilities during the assessment.
- With the ability to generate unique IDs for participants and use them on all data collection forms for use in the dashboard.

HOW TO USE THE DIGITAL LITERACY WORK AID

The digital literacy work aid is intended to help teams implement digital literacy as a stand-alone project or in combination with a digital solution project. The work is broken into different parts. Part 1: A guide to digital literacy is broken into six different steps to help you determine the different steps required to implement a digital literacy program, including project timelines, resources and logistics, and adaptation of work aid tools and dashboards. Part 2: Sample tools have all the different tools to implement digital literacy. Part 3: Sample data analysis and visualization has indicator mappings, a script used during data cleaning, transformation, and analysis, and dashboards using different Business Intelligence (BI) tools.

This work aid was developed using InForm, UNICEF's Self-Service Data Collection System. It leverages Open Data Kit (ODK), an open standard for data collection in routine and humanitarian contexts. This means that the sample tools provided in this work aid will still

be compatible if you are using other ODK tools (e.g. Ona Data, Kobo Toolbox, etc.). If you intend to adopt a paper-based approach or non-ODK tools, the sample tools provided might not be the best for you - though you can still use them to some extent by printing the Enketo webforms.

OBJECTIVES OF THE DIGITAL LITERACY WORK AID

The digital literacy work aid provides a way to identify the competency of a participant's digital skills and competencies. The objectives of the digital literacy work aid are to:

- Assess the IMPACT of the digital literacy training building participants' digital capacity
- Identify the GAPS in the digital literacy training

WHEN SHOULD THE DIGITAL LITERACY WORK AID BE USED?

Since digital literacy is key to the successful use and adoption of digital solutions, digital literacy training should occur before training on the digital solution. Trainers will be able to focus on challenges using the digital solution, not lack of digital literacy.

The digital literacy work aid can be used to build the capacity of literate participants in digital literacy in any of the seven areas: devices and software operations, information and data literacy, communication and collaboration, digital content creation, safety, problem-solving, and career-related competencies (UNESCO, 2018). The work aid could potentially be used to build the capacity in all or one or more of the above areas by focusing the course lessons on the specific skills to be built.

WHEN SHOULD THE DIGITAL LITERACY WORK AID NOT BE USED?

The digital literacy work aid will only be helpful when the participants can read and write because the assessments are based on self-reflection and the participant's ability to read and answer questions. The original

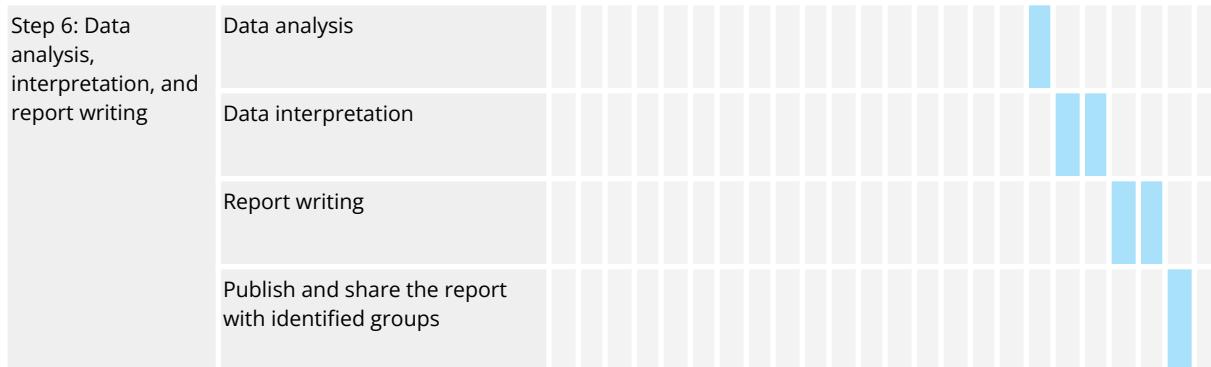
digital literacy content was developed for a specific population - primarily a literate, English-speaking, Caucasian population. The course content may need to be updated with the appropriate language for the location and stock images to look similar to the participants to contextualize the training

PART 1: A GUIDE TO DIGITAL LITERACY

Planning and implementing digital literacy work aid (action plan and timeline)

STEPS	TASK	Month 1		Month 2		Month 3		Month 4		Month 5		Month 6													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Step 1: Coordinate and plan digital literacy training program	Form a team to adapt and implement the digital literacy training program	1																							
	Agree on roles and responsibilities for team members	1																							
	Form a smaller group to adapt/contextualize the training program tools, analysis script, and dashboard.	1																							
	Define the type of training program (stand-alone vs incorporated)	1																							
	Develop a time-bound work plan	1																							
	Develop a budget	1																							
	Develop a risk mitigation plan	1																							
	Agree on the training approach and how to support participants during the course.	1																							
	Agree on the process of sharing information with participants and stakeholders.	1																							
Step 2: Develop training implementation plan	Agree on who will be receiving the digital literacy training program	1																							
	Agree on the objective of the digital literacy training program	1																							
	Agree on course and facilitation method for digital literacy training program	1																							
Step 3: Review and adapt data collection and analysis tools	Identify who will take the digital literacy training program and digital competencies to assess	1																							





Part 1 guides you through the 6 key steps to implement this work aid and explains how the tools (Parts 2 and 3) can be used in the process. The action plan and timeline show the phasing of the steps over 6 months.

SENSITIVE INFORMATION

It is the team's responsibility to ensure the confidentiality of the information. Confidentiality means ensuring authorized restriction on access and disclosure to sensitive information (i.e. names, phone numbers, emails, etc.) collected during the assessment. Sensitive information needs to be protected and shared only with those who need the information.

Shared information should be aggregated so individual results are not available. If shared information must include individual results, shared information should be anonymized, personally identifiable information removed, or stripped of any unnecessary details, unless required and written consent is provided by the source(s).

DATA SECURITY

Data should only be stored for the duration of the project and the required time after the intervention. Original, raw data collected during the assessment should be kept as long as necessary for data security purposes.

STEP 1: COORDINATE AND PLAN A DIGITAL LITERACY TRAINING PROGRAM

Adding a generalized digital literacy training program as a stand-alone project or integrated as a part of implementing a digital solution is difficult without proper training. Forming an implementation team for planning to adaption to implementation to analysis will be important to successfully implementing this work aid.

If the program is being implemented with a digital solution, you should include someone from the digital solution team with a strong understanding of how the solution works to ensure the key skills are included in the training.

1. FORM A TEAM TO ADAPT AND IMPLEMENT THE DIGITAL LITERACY TRAINING PROGRAM

Form a team that includes technical oversight, administrative support, some experience building the capacity of others (especially technology), and an understanding of the digital solution (if part of a larger digital solution project).

The initial activity checklist for the team may include:

- Define whether the training program is a stand-alone project or incorporated into a digital solution project
- Define key outcomes participants will be able to achieve after the training program.
- Develop a time-bound work plan for the training program from enrolling participants, time to take the course, and the facilitated assessment.
- Determine the cost of implementing the training program:
 - Stand Alone Project:
 - Determining logistical and human resource needs, including
 - Devices to take the digital literacy course
 - Access to an internet connection (wifi or mobile data bundles)
 - Developing a budget for the training program needs
 - Integrated with Digital Solution
 - Develop a detailed budget for the training program from the original project budget, assuming the digital solution included a budget.
- Analyzing risks and developing contingency plans
- Form a smaller group to adapt/contextualize the training program tools, analysis script, and dashboard.
- Agree on the training approach and how to support participants during the course.
- Agree on the process of sharing information with participants and stakeholders.

STEP 2: DEVELOP A TRAINING IMPLEMENTATION PLAN

AGREE ON WHO WILL BE RECEIVING THE DIGITAL LITERACY TRAINING PROGRAM

Understanding who will be receiving this training program will be important to contextualizing the program course materials and data collection tools.

Key factors to define your population required to contextualize your implementation plan:

1. Sector: In what sector do most participants work?
 - a. You will want to adapt the tools in Step 3 with questions and tasks focused on things these participants would be doing in their jobs.
2. Language: What language do the participants primarily speak in their day-to-day tasks?
 - a. You may need to translate materials to the appropriate language for the course, data collection tools, and dashboards.
3. Literate: Are all participants literate?
 - a. This may not be the appropriate training program if all participants are not literate.

AGREE ON THE OBJECTIVE OF THE DIGITAL LITERACY TRAINING PROGRAM

The team will have to decide what the training program participants will need to learn to be successful in the digital literacy capacity building. Do the participants need a comprehensive training program building capacity on all competencies or just specific competencies?

The competencies are developed based on the updated framework developed by UNESCO (2018):

Competence areas and competencies	Description
0. Devices and software operations**	To identify and use hardware tools and technologies. To identify data, information, and digital content needed to operate software tools and technologies.
0.1 Physical operations of digital devices**	To identify and use the functions and features of the hardware tools and technologies.
0.2 Software operations in digital devices**	To know and understand the data, information, and/or digital content that are needed to operate software tools and technologies.
1. Information and data literacy	To articulate information needs, to locate and retrieve digital data, information, and content. To judge the relevance of the source and its content. To store, manage, and organize digital data, information, and content.

1.1 Browsing, searching, and filtering data, information, and digital content	To articulate information needs, to search for data, information, and content in digital environments, to access them, and to navigate between them. To create and update personal search strategies.
1.2 Evaluating data, information, and digital content	To analyze, compare, and critically evaluate the credibility and reliability of sources of data, information, and digital content. To analyze, interpret, and critically evaluate the data, information, and digital content.
1.3 Managing data, information and digital content	To organize, store, and retrieve data, information, and content in digital environments. To organize and process them in a structured environment.
2. Communication and collaboration	To interact, communicate, and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.
2.1 Interacting through digital technologies	To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.
2.2 Sharing through digital technologies	To share data, information, and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.
2.3 Engaging in citizenship through digital technologies	To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
2.4 Collaborating through digital technologies	To use digital tools and technologies for collaborative processes and for co-construction and co-creation of resources and knowledge.
2.5 Netiquette	To be aware of behavioral norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.
2.6 Managing digital identity	To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments, and services.
3. Digital content creation	To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licenses are to be applied. To know how to give understandable instructions for a computer system.

3.1 Developing digital content	To create and edit digital content in different formats, to express oneself through digital means.
3.2 Integrating and re-elaborating digital content	To modify, refine, improve, and integrate information and content into an existing body of knowledge to create new, original, and relevant content and knowledge.
3.3 Copyright and licenses	To understand how copyright and licenses apply to data, information, and digital content.
3.4 Programming	To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.
4. Safety	To protect devices, content, personal data, and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.
4.1 Protecting devices	To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and privacy.
4.2 Protecting personal data and privacy	To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damage. To understand that digital services use a "Privacy policy" to inform how personal data is used.
4.3 Protecting health and well-being	To be able to avoid health risks and threats to physical and psychological well-being while using digital technologies. To be able to protect oneself and others from possible dangers in digital environments (e.g. cyberbullying). To be aware of digital technologies for social well-being and social inclusion.
4.4 Protecting the environment	To be aware of the environmental impact of digital technologies and their use.
5. Problem-solving	To identify needs and problems and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up to date with the digital evolution.
5.1 Solving technical problems	To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).

5.2 Identifying needs and technological responses	To assess needs and to identify, evaluate, select, and use digital tools and possible technological responses to solve them. To adjust and customize digital environments to personal needs (e.g. accessibility).
5.3 Creatively using digital technologies	To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.
5.4 Identifying digital competence gaps	To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.
5.5 Computational thinking**	To process a computable problem into sequential and logical steps as a solution for human and computer systems.
6. Career-related competencies**	To operate specialized digital technologies and to understand, analyze, and evaluate specialized data, information, and digital content for a particular field.
6.1 Operating specialized digital technologies for a particular field**	To identify and use specialized digital tools and technologies for a particular field.
6.2 Interpreting and manipulating data, information, and digital content for a particular field**	To understand, analyze, and evaluate specialized data, information, and digital content for a particular field within a digital environment.

Note: In the competence areas and competencies column, text in bold indicates competence areas and plain text indicates competencies.

** Added competence areas and competencies, which are not in the DigComp 2.0 framework.

The course may include some content on problem-solving, but the performance assessment does not include any task related to problem-solving.

Your team will need to decide if the digital literacy training program will be assessing all or just some of the skills. Some helpful questions to consider:

1. Is the training program part of a stand-alone project? Is the training program incorporated into a digital solution project?
2. Do the proposed participants have limited experience using technology tools or require a lot of guidance to perform tasks using technology tools?

3. If incorporating the training program in a digital solution project, what minimum skills are required to use the digital solution?
4. If a stand-alone training program, what skills need to be developed or improved in participants to meet the program's expected outcomes?

AGREE ON COURSE AND FACILITATION METHOD FOR DIGITAL LITERACY TRAINING PROGRAM

Depending on the content of the training program, you may choose to use a previously developed course, adapt a previously developed course, or develop your own content. You will also need to determine how this course would be best delivered: virtually, in-person, using an online training course like Moodle, etc. This information will inform how you decide to deliver the course to participants. This may also affect the cost of the course. The cost may increase for courses delivered with more facilitator time or in-person, while the cost may decrease with an online course delivery which can be done remotely.

STEP 3: REVIEW AND ADAPT DATA COLLECTION AND ANALYSIS TOOLS

Adapting tools to make them appropriate to the context where you are conducting the training program is crucial. You will want to consider different issues such as language, literacy levels, technology exposure, tools used by participants for jobs, applications commonly used in that location, etc. This process will ensure that questions asked and tasks performed are specific to your location and training needs. This will also help to ensure that questions are understandable (i.e. translated into the correct language) and location-specific.

In the process of adapting the toolkit, try to maintain the general structure and content. Too many changes may make it no longer applicable, also making the analysis and dashboard biased or incorrect. It may also require additional unexpected/unintended work.

The data collection tools should ideally be translated by facilitators after they are trained. This process will ensure a strong understanding of questions and their intentions. If translations cannot be done by facilitators, professional translators may be required, but the translations should be done before the training with the training facilitation team. The training facilitation team will be able to further discuss the translations and refine them during the training leading to better data collection tools. Key terminologies should be discussed and agreed upon in the group before translation and data collection. All the translations and piloting should be done before starting the digital literacy course

The tools can be reviewed and adapted as follows:

1. Identify who will take the digital literacy training program and digital competencies to assess
2. Adapt Self-reflection, Performance Self-Evaluation, and Facilitator's Guide for Performance Assessment Questionnaire
3. Translation and field testing of questionnaires
4. Decide on the Business Intelligence (BI) tool to use: Superset, PowerBI, Akuko
5. Adapt the data visualization dashboard in the selected BI tool
6. Translation of data visualization dashboard



If you are implementing the training program in multiple locations, we recommend using the same forms and data visualization to minimize the number of required forms and dashboards and complexities.

Customization of the tools goes hand in hand. Many of the changes in one form (Self-reflection) will affect the changes you will want to do in the other forms (Performance).

ADAPT TOOLS: SELF-REFLECTION AND PARTICIPANT/FACILITATOR PERFORMANCE QUESTIONNAIRE

See [Part 2: sample tools](#)

When adapting your forms, you will need to upload the forms to an ODK-based platform. Each implementation team will need a location (i.e. account) to upload their adapted forms for data collection. For more information on creating an account, creating a project, and uploading a form/data, we recommend reviewing the ODK-based platform documentation

The form links generated by the uploaded form will be used to update the data analysis and visualization process. Once data collection has begun, making updates to the form and dashboard will be much more difficult. Therefore, we recommend having the forms and dashboards as finalized as possible before starting data collection.

The main reason for adapting these questionnaires is to:

1. Ensure the questionnaires are relevant for the context (i.e. location, language, work-related tools, etc.)
2. Best assess the skills for your specific training program or digital solution.

General suggestions for adapting tool 1: self-evaluation:

1. Customize the questionnaire summary at the beginning to respondents by changing the question label. How to do this is covered in [Part 2](#).
2. Add constraints for the IDs used to track participants to improve data quality and better matching between self-reflection and performance self-evaluation questionnaires. How to do this is covered in [Part 2](#).
3. Update the different location/administrative levels for your specific area. Examples and how to do this are covered in [Part 2](#).
4. Update apps/programs used for digital tasks (i.e. email) to those apps/programs commonly used in the location. How to do this is covered in [Part 2](#).
5. Update digital tools used for work. Examples and how to do this are covered in [Part 2](#).

General suggestions for adapting tools 2 & 3: participant/facilitator performance questionnaire:

1. Customize the questionnaire summary at the beginning to respondents by changing the question label. How to do this is covered in [Part 2](#).
2. Add constraints for the IDs used to track participants to improve data quality and better matching between self-reflection and performance self-evaluation questionnaires. How to do this is covered in [Part 2](#).
3. Update the assessment task to be relatable to the participants:
 - a. [Name of folder created](#)
 - b. [Page searched](#)

4. Add local emails and phone numbers for participants to use in the performance assessment tasks. How to update the [local emails](#) and [local phone numbers](#) is covered in Part 2.
5. Add tasks from digital tools used for work in the performance assessment tasks. Examples and how to update this are covered in [Part 2](#).
6. You may want to add additional tasks to add other skills to be assessed in the performance assessment.



NOTE: Participants must have a unique ID (**participant_no** data field in tool 1: self-evaluation) to associate the data between the self-reflection and performance self-evaluation questionnaires.

While adapting the questionnaires, you will want to ensure you are using best practices for form authoring:

1. **Clear and consistent naming conventions:** Use meaningful and consistent names for your questions and choices. This makes it easier to understand and maintain the form, especially when working with large or complex surveys.
 - a. **Name column values:** When naming the variables under the name column, please be consistent with the text and symbols used. For instance, you can decide to use the question number(underscore)(concat of question text). If this was my question 1, "What products are you aware of?" I can have this as my variable name "q1_products_aware_of".
 - b. **Choice options:** Whenever you have similar labels such as "other" or "do not know", it is highly recommended to use the same names for them. Consistency in the naming of the options across a given survey facilitates the analysis of the data collected.
2. **Provide helpful labels and hints:** Write clear and concise labels for questions. Include hints or instructions when necessary to guide respondents. Well-written labels can improve data quality by reducing confusion.
3. **Grouping questions:** Use groups to logically organize related questions. This helps in structuring the questionnaire and makes it easier for both respondents and data analysts to navigate.
4. **Use select questions instead of text where possible:** Using select options helps restrict the answers users can provide. Adding another as one of the choices ensures you get answers not thought about in form design. Predefined lists make data cleaning and analysis work a lot easier.

5. **Use of cascading lists:** Long lists can be filtered using the choice_filter to make them manageable. The choice_filter allows you to filter choice options based on the value of a previous question. For example, if the form has the questions state, district, and village, the choice filter can be used to filter districts based on the selected state and filter villages based on the selected district.
6. **Make questions required:** This prevents unclear missing values. Additional options can be provided to questions to ensure no question goes unanswered e.g. Refused to answer/No response for *select_one* and *select_multiple* questions and a value like -99 to stand for refused to answer/No response for numeric fields.
7. **Use the relevant column to show relevant questions:** Using the relevant column to only show relevant questions prevents collecting inconsistent data. For instance, you may want to skip a question on what the monthly income is when the response to a previous question is that the respondent has no source of income.
8. **Add explanations to calculations:** Calculations don't require a label for them to work, but it's good practice to add an explanation of what the calculation does on the label column. This will make it easier for you to remember what you did and also if you happen to share your form with someone else, they can easily understand what you did.
9. **Reuse of choice option lists:** If you have to use the same list of answers several times throughout your survey, there's no need to create a new list of options specifically for those questions. You can use that same list as many times as needed.
10. **Add space between choice options:** In the choices worksheet, a gap or (blank row) can be left after each set of answers. This makes it much easier to navigate the form.
11. **Regular backups:** Keep backups of your XLSForm files, especially when making significant changes. This can help you restore previous versions if needed.
12. **Version control:** If you're collaborating with a team, consider using version control tools, like Google Sheets, to track changes and manage different versions of your form.
13. **Document your form:** Include comments within your XLSForm to explain complex logic or choices in another column with a non-XLSForm syntax name, i.e. "comments". This documentation will be invaluable for you or others who may work on the form in the future.
14. **Test and validate:** Regularly test your form during development to catch errors and ensure it works as expected. Use online XLSForm validators to validate your syntax before deploying the form.
15. **Pilot testing:** Before deploying your questionnaire widely, conduct a pilot test with a small group of respondents to identify any issues or improvements that need to be made.

16. **Test forms on multiple devices:** Test your forms thoroughly on various devices to ensure they function as intended.
17. **Minimize the number of form changes after data collection:** After data collection begins, it can be hard to coordinate the redeployment of updated forms, sometimes resulting in data collection with different form versions.
18. **Data security and privacy:** Avoid collecting sensitive personal information unless necessary.
19. **Updating a form:** When you are replacing a form with form updates, it is recommended to download the latest version of the form and a CSV export with all Advanced default settings unselected before replacing. This will serve as a backup in case the update does not go as intended. For more information on replacing a form with data, see this [help documentation](#).

ADAPT INDICATORS

See [Part 3: Sample data analysis and visualization](#)

The main reason for adapting indicators is if you need to add additional indicators. Most changes, such as updates to the choice options (i.e. admin locations,) will be automatically captured during the transformation process. No major changes are recommended.

ADAPT AND BUILD EXTRACT, LOAD, AND TRANSFORM (ETL)

See [Part 3: Sample data analysis and visualization](#)

After the forms have been adapted and uploaded to the correct location (i.e. project) on an ODK platform, this data will need to be extracted and loaded into a data warehouse (i.e. Canopy) by [Airbyte](#). After extracting and loading (EL), the data will be transformed into a ready-to-use format, which involves writing SQL scripts using [dbt](#) to aggregate, clean, and validate the data before presenting it on Superset. For more information, please see the [extraction, load, and transformation of data section in Part 3](#).

The main reason for adapting the ETL process is to:

1. Customize for your implementation (i.e. update the forms linked, create a project database, create a project repo on GitHub, etc.)
2. Add additional indicators or filters

Most changes, such as updates to the choice options (i.e. admin locations) will be automatically captured during the transformation process.

Everyone will need to customize for their implementation. To customize the implementation, you will need:

1. A copy made of:
 - a. The EL (in Airbyte)
 - b. The T (DBT GitHub Repo)
2. The form URLs are updated on Airbyte to point to the URL location of the adapted forms

You will need assistance for both of these steps. To get this assistance, please reach out to the InForm admin team by sending an email to inform@unicef.org.

ADAPT AND BUILD A DATA VISUALIZATION DASHBOARD

See [Part 3: Sample data analysis and visualization](#)

The main reason for adapting the dashboard is to:

1. Customize for your implementation (i.e. update the dashboard)
2. Add additional indicators or filters

Most changes, such as updates to the choice options (i.e. admin locations) will be automatically captured during the transformation process. The only recommended change on the dashboard is the [dashboard description](#).

Everyone will need to customize for their implementation. To customize the implementation, you will need a copy made of the dashboard (Superset). For more information on how to duplicate a Superset dashboard, please see the [Superset documentation](#).

If the team would like to use another data visualization software, please reach out to the InForm team via email (inform@unicef.org).

STEP 4: RECRUIT AND TRAIN FACILITATION/SUPPORT TEAMS

RECRUIT TRAINING FACILITATORS

Training facilitators would ideally come from your programming or digital solution teams depending on the type of digital literacy training program. If you do not have training facilitators in your team, you will need to find and hire these trainers.

Training facilitator qualities key to successfully implementing and supporting program participants are:

1. Knowledge of the local language
2. Previous adult training experience
3. Intermediate knowledge of computer/smartphone/tablet use:
 - a. Can navigate device settings
 - b. Can navigate the internet
 - c. Working knowledge of email and smartphone communication
 - d. Active on some social media and use
 - e. Knows how to use work tools or is quickly trained
 - f. Good understanding of good security practices for digital tools

Training facilitator's core responsibilities in this training program would include:

1. Facilitating course content in in-person/remote meet-ups with participants:
 - a. Help ensure all participants have devices with internet access
 - b. Understand any issue that participants might have connecting to the internet for the course and help find ways to mitigate or raise with the larger team
 - c. Ensure participants have any required items (i.e. email) for the course, possibly helping them access or get a required item.
 - d. Help participants navigate to the course work and possibly walk them through the navigation for online courses
 - e. Share ways of getting support through the course
2. Support participants during the course should they encounter any challenges or questions.
3. Facilitate the final performance assessment

TRAIN FACILITATORS

Training should be done before the digital literacy course begins. The training should cover:

1. Brief background information on digital literacy
2. Ethical considerations
3. Introduction to the digital solution (if applicable) and course objectives
4. Orientation on how to use any work tools participants assessed in the performance assessment

5. Orientation on the course content
6. Orientation on self-reflection and performance self-evaluation/facilitators questionnaire
7. Roles and responsibilities of team members

The recommended training time to cover all this will be slightly dependent on the need to include content on work tools used by the participants. We would expect such training to take around 4 - 5 days depending on the complexity of the work tools used by participants and the depth of the course content.

While training your facilitators, ensure you do the following as a part of training best practices:

1. Train your data collection team on how to use ODK Collect effectively.
2. Provide clear instructions on filling out forms, using skip patterns, and handling technical issues.
3. Do Field testing with facilitators:
 - a. Conduct a pilot test of your data collection process in a controlled setting to identify any issues or bottlenecks.
 - b. Make necessary adjustments to the forms and procedures based on the feedback received during the pilot test.

STEP 5: DIGITAL LITERACY COURSE FACILITATION AND ASSESSMENT

Prior to beginning the training program, you will want to assign focal points/team leads for the course facilitation and course support, including administration.

IDENTIFY PARTICIPANTS

Based on the type of participant identified [Step 2: Development of training implementation plan](#), you will want to identify participants to take part in the training program.

Key items to consider when identifying participants:

1. Are they part of the end users for the digital solution?
2. Are they part of a group using a particular work-related tool/app?
3. Do they have access to a device with internet access to access the course (if using online course delivery)?
4. Are they able to commit to completing the course within training program timelines?

Points 3 and 4 may be crucial if you don't have any additional budget to buy devices or provide vouchers to access the internet.

ORGANIZE COURSE FACILITATION WITH COURSE PARTICIPANTS

The course facilitation method selected in Step 2 will inform how to organize the course facilitation. For example, it is recommended to have participants meet in person for the first session to ensure participants have the required training to navigate the platform and successfully learn.

Organize the meetings with course participants

If participants have low digital literacy, getting started without sufficient training may affect the successful completion and success of the training program. Some challenges some participants may encounter:

1. Participants may not have an email and may be unsure how to get an email without assistance. Emails may be required to access the course content.
2. If the course content is all digital, participants may not feel comfortable navigating the course alone without proper orientation
3. Not everyone may have internet access sufficient to access an online course.

Having the course training in person, at least the first one, is recommended and may be helpful to get the participants started, identify any challenges that may not have been raised/addressed yet, and set expectations and means of getting support.

To organize a meeting (including the first one) to cover the course content in person, you will need to consider:

1. Define the meeting agenda and objectives to help determine how much time is required.
2. Organize a time and location so that all participants can meet in person. If you have a larger number of participants or participants are spread out over a very large area, you can also consider doing multiple training sessions. If you have a larger number of participants and a limited number of facilitators, additional team members could try to assist or you could hold multiple trainings. You want to make sure that participants get the support required to successfully start and work towards completing this course, which may mean more individual time with facilitators. However, additional training may come at an additional cost. You will have to balance the competing needs of one-on-one time, location, and additional cost when organizing the time and location for the in-person training.
3. You will have to reserve a location for the required amount of time. The location could be at your UNICEF, government, or partner offices to reduce the cost of the training, but this may be limited depending on the number of participants and the size of the rooms available in the offices. Alternatively, you could also consider an external location such as a conference center or hotel, but this may come at an additional cost and will have to be considered when developing the budget.
4. Plan the logistics for all participants to attend, including transport, boarding (if required), and lunch (if to be included) for the one day. These may have costs associated. Make sure to include them in the budget
5. Communicate the time, location, logistics, and necessary items to all participants.
Participants will need to bring their devices unless you are providing the user with devices.

Configure technology devices

If you are providing users with devices for the training, you will want to make sure they are set up before the training meeting:

1. Device has an internet browser
2. The device is capable of connecting to WiFi

If you are providing users with devices for the course training, you will want to make sure that all devices:

1. Have a powering cable
2. Main functionalities work: Starts, Turns off, Speakers work, Audio jack works, WiFi works, etc.

3. Any software required for the course is installed and working.

While planning the first training meeting with participants, ensure you do the following as best practices:

1. Ensure that the Android devices used for data collection are well-maintained, have sufficient battery life, and have adequate storage space.
2. Install the latest version of ODK Collect on each device.
3. Add the user login information. See [Configuring devices](#) in the Appendix for more information.
4. Download forms and data onto devices before heading to the field (if required due to bad network)

We also recommend using a [Device Management Policy](#) to keep track of devices and manage security and productivity as required.

HAVE A MEETING

An in-person meeting may be helpful, especially for low digital literate participants. During a meeting, facilitators can help the participants deliver course content, identify any challenges participants may experience, set/correct expectations for the course and support model, and clarify questions.

An example proposed agenda for the first meeting for a course delivered using an online platform:

1. Welcome and Introductions
2. Background information on the digital solution (if applicable) and course objectives
3. Device check
 - a. Ensure all the participants have devices
 - b. Ensure all the participants have access to the internet
 - c. Identify any participants that might have issues connecting to the internet (i.e. slow bandwidth). Make sure to follow up with these individuals later to make sure you determine a mitigation plan or raise with the larger team for other solutions.
4. Email set up (if required)
 - a. Ensure all participants have an email to log into the course, possibly helping them set one up.
5. Course
 - a. Add participants to the course platform
 - b. Demonstrate to participants how to navigate to the course and have participants try for themselves

- c. Demonstrate to participants how to navigate the course to start the first lesson.
Have participants try for themselves as they listen to the first lesson. Facilitators should walk around the room to help anyone experiencing challenges
6. Support
 - a. Discuss how participants can get support while working through the course:
 - i. Who to reach out to
 - ii. How to reach out to them (i.e. phone - provide the phone number, WhatsApp group - add everyone to the group, email - provide the email, etc.)
 - iii. Key information to include in the request (i.e. Name, Contact Info, Type of Issue, and Detailed information). This will make supporting them easier.
 7. Expectations
 - a. Discuss the timelines/plan for course learning. Make sure to add additional time in case something comes up in participants' schedules reducing their ability to spend time on the course learning.
 - b. Get everyone to commit to the timeline.
 8. Course
 - a. Participants run through the course material according to the schedule planned during training
 9. Fill out the Self-reflection Questionnaire
 10. Take the Performance Assessment and fill questionnaire



Note: Make sure you have enough time to cover all the agenda points, including the forms.

During the first training meeting with participants, ensure you do the following as best practices:

1. Ensure all users have an InForm account:
 - a. Each team member should have their own account.
 - b. For data collectors, each data collector can have one account, or you can have one account for all data collectors.
 - i. If you have an account for all users, each user can manage their own account, and it makes it easy to know who submitted what by the username on the InForm platform.

- ii. If you have a lot of data collectors, creating an account for all uses will be time-consuming. Therefore, one account may be better.
2. Submit data at the end of every day or every other day. Waiting to submit data increases the chance of data loss due to device malfunction or loss.
3. Maintain clear communication channels with your facilitation team for reporting progress, challenges, and receiving updates.

FILL QUESTIONNAIRES AT THE BEGINNING OF THE COURSE

Regardless of how the course content is delivered, filling the questionnaires would be best done in person. This would allow the facilitator to help answer questions and assist participants who might experience any difficulties more easily. The performance assessment should be performed in person.

The entire first session of the course could be performed in person or a mixture with just the filling of the questionnaires (i.e. Self-reflection and Self-Assessment Questionnaires) done in person.

FILL THE SELF-REFLECTION QUESTIONNAIRE

Regardless of how course content is delivered, we recommend having course participants take the self-reflection questionnaire while a facilitator is available to answer any questions and assist if the participants experience any difficulties.

PERFORMANCE ASSESSMENT AND SELF-ASSESSMENT

Regardless of how course content is delivered, the performance assessment should be performed in-person since the facilitator will need to observe participants, and answering questions will be easiest in person. Be sure the facilitator has been properly trained on the assessment and has all materials for the assessment. It might even be helpful to do a practice session before doing it with the participants.



Note: During the data collection process, you can do quick data checks as a best practice by using InForm's built-in visualization tools to create charts, maps, and graphs for quick insights and data checks.

FINAL MEETING WITH COURSE PARTICIPANTS AFTER COURSE COMPLETION

You will want to organize the final meeting for course participants as you did for the previous in-person meeting. You can reference the [section on organizing meetings for more information](#). The final meeting should be in person to easily facilitate a few items, such as participant feedback, return of technology devices (if loaned out), and facilitate the performance assessment one more time.

An example proposed agenda for the first meeting for a course delivered using an online platform:

1. Welcome and introductions
2. Course participant feedback
 - a. What went well?
 - b. What was challenging?
 - c. What could have been improved?
3. Take the performance assessment and fill questionnaire
4. Course completion certificates handed out
5. Course completed!
6. Return of technology devices (if loaned to participants)

As you close out the course and potentially the program, you will want to define the following as a best practice:

1. **Data retention and deletion**
 - a. Define a data retention policy to determine how long data should be stored on the platform.
 - b. Ensure proper data deletion following ethical guidelines and regulations when data is no longer needed.
2. **Continuous learning and feedback mechanism:** Encourage colleagues to share their experiences, feedback, and lessons learned while using Ona Data. This can help improve future data collection and management processes.

STEP 6: DATA ANALYSIS, INTERPRETATION, AND REPORT WRITING

Data analysis is the process of understanding the data collected or telling the data ‘story’. In data analysis, raw data is translated and transformed into different sources to make it easier to understand. The data can also be visualized as charts on a dashboard to streamline analysis simplifying work. Once analyzed and visualized, key stakeholders can interpret and identify insights informing programming and best practices.

To better identify gaps in course content or groups to pay more attention to, we recommend collecting information on age, gender, and residency location during data collection and disaggregating the data by age, gender, and residency location.

ANALYSIS

Most of the data analysis will be automated by using the dashboard. The data cleaning and transformation process in data analysis is done in the background to output the desired indicators. How the indicators are calculated can be found in [Part 2](#). For more information on the data analysis process, please refer to [Part 3](#).

ACCESS TO RAW DATA AND DASHBOARD

Different people will need different access to the raw data and dashboard depending on their roles and responsibilities.

Role	Reason for access	Access required	Permissions
Project Manager	Provide feedback to course participants, which may require doing some additional data analysis in other data analysis tools	Disaggregated raw data	‘Admin’ for InForm projects
Those writing reports	Generate their own analysis or generate additional charts	Aggregated raw data	‘Can view and download’ for InForm projects
Project team	Interpret data and gather insights	Dashboard	‘Admin’ on Superset
Donors	Identify the impact of intervention	Dashboard	‘Gamma’ on Superset



Note: Set appropriate access controls to ensure that only authorized team members can view, edit, or export the data as a best practice.

PROVIDE INTRODUCTORY TRAINING ON HOW TO NAVIGATE THE DATA COLLECTION PLATFORM AND CHOSEN DASHBOARD

Depending on the access required will determine which training stakeholders will need to attend.

Training required	Access required
Data platform training	Disaggregated raw data
Data platform training	Aggregated raw data
Dashboard training	Dashboard

For the data platform training, you will want to train them, at the minimum, the following:

1. Create an account
2. Access the data platform
3. How to navigate to the project data
4. How to download the data

For the dashboard training, you will want to train them, at the minimum, the following:

1. Create an account
2. Access the dashboard platform
3. How to navigate to the dashboard
4. How to navigate the dashboard (i.e. using the filters, where data is located, etc.)

DATA INTERPRETATION

Interpreting the data is best done by those who have a good understanding of the course content, objectives, and cultural context. It is best interpreted by programming team members, including team members from the place of program implementation. These team members will be able to help interpret the data and trends while bringing a cultural perspective, which may help understand differences in results by age, gender, location, etc.

To better understand the performance assessment results, the facilitator's observations from the facilitator's guide for the performance assessment at the beginning and end can be used to confirm the results from the participants' self-assessments. Confirmation provides another means of assessing the truth of the data because self-reported data can introduce bias into the data.

Participants may exaggerate their ability to make themselves look good or they are embarrassed.

Participants' answers may also be affected by their mood at the time of assessment (i.e. if they are happy or encouraged, they may perform better). You can also use other methods to understand your data even more. You could use other secondary sources or a mixed methods approach to contextualize some of the quantitative results seen in the dashboards. Triangulation of data insights, or comparing data collected through different methods, by different people, and/or from different sources, helps to build a better understanding of the results you are seeing.

REPORTING

After data analysis and interpretation, it is important to share the results with the programming teams and other parties that might implement a similar project to improve programming and identify gaps in the course and understanding by course participants with possible opportunities for follow-up course learning. You may want to consider different reporting based on the different audiences, including:

Product and suggested content	Length	Target group
<p>Briefing:</p> <ol style="list-style-type: none"> 1. Short Narrative 2. Key results and takeaways 3. Visual presentations of data from dashboard 4. Bullet point recommendations 	2 - 4 pages	All interested development sector actors (Donors, UN, senior management of agencies, government, HQ, other NGOs, etc.)
<p>Detailed report:</p> <ol style="list-style-type: none"> 1. Executive Summary 2. Intro 3. A brief discussion of methodology 4. Key findings with <ul style="list-style-type: none"> a. Supporting data tables and visualizations b. Narrative analysis <p>(Organized by gender, age group, geographic area, etc., or combination of these)</p> <ol style="list-style-type: none"> 5. Identification of gaps and challenges 6. Key recommendations for programming and course content 	10 - 20 pages	Other teams who will use this information to inform their programming in the country or other locations or contexts.
Raw Data: Available electronically to be shared (aggregated to hide individual scores and personally identifiable information)	N/A	Other programming teams, Government, etc.

REFERENCES

- ITU (International Telecommunication Union). (2021). DRAFT OPINION 3: Digital literacy and skills for inclusive access. In *ITU (International Telecommunication Union)* (ITU-SG WTPF21OP Contribution 3). Retrieved August 3, 2023, from <https://www.itu.int/md/S21-WTPF21OP-C-0003/en>
- Montoya. (2017, September 5). Tracking literacy in an increasingly digital world. *UNESCO | Institute of Statistics*. Retrieved August 3, 2023, from <http://uis.unesco.org/en/blog/tracking-literacy-increasingly-digital-world-0>
- OECD (Organisation for Economic Co-operation and Development). (2016). The survey of adult skills. In *OECD* (2nd ed.) [Online]. <https://www.oecd.org/publications/the-survey-of-adult-skills-9789264258075-en.htm>
- Orgocka, A. (2022). *Papua New Guinea Digital Literacy for the Health Sector: Inception Report*.
- Schmida, S., Bernard, J., Zakaras, T., Lovegrove, C., & Swingle, C. (2017). *Connecting the next four billion: strengthening the global response for universal internet access*. USAID, Dial Digital Impact Alliance and SSG Advisors. https://2017-2020.usaid.gov/sites/default/files/documents/15396/Connecting_the_Next_Four_Billion.pdf
- UNESCO Institute for Statistics. (2018). *A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2. Information Paper No. 51* (UIS/2018/ICT/IP/51). Retrieved August 3, 2023, from <https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>
- UNESCO-UIS (UNESCO Institute for Statistics). (2017). Literacy rates continue to rise from one generation to the next. *UNESCO Institute for Statistics*, FS/2017/LIT/45. Retrieved August 3, 2023, from https://uis.unesco.org/sites/default/files/documents/fs45-literacy-rates-continue-rise-generation-to-next-en-2017_0.pdf
- Vosloo, S. (2018). *Designing inclusive digital solutions and developing digital skills: guidelines*. United Nations Educational, Scientific and Cultural Organization. <https://unesdoc.unesco.org/ark:/48223/pf0000265537>

PART 2: SAMPLE TOOLS

The sample tools include 3 forms: (1) a self-reflection questionnaire, (2) a performance self-assessment questionnaire, (3) facilitators guide for the performance assessment.

The questionnaires were built generally to fit many different use cases. You can easily adapt the forms to customize them to your specific use case, whether that be a stand-alone digital literacy course or part of a digital solution. The questionnaires were built together with a dashboard.



You can make certain changes to this form with minimal impact on the dashboard, but other changes could significantly break the dashboard requiring assistance from a technical team to resolve, with potential costs associated.

Possible form changes (dashboard)	Form changes not possible (dashboard)
Adding a question (which will not be added to the dashboard as an indicator)	Deletion of questions
Changing a question label, hint, or constraint message	Changing the question type
Adding a choice option	Changing the label of a choice option (if it is not applied to all the data - past & present)
Updating choice option labels	Adding groups
Change whether the question is required or not required	Moving questions from one group to another
Change a calculation	Changing the name column value
Change a relevant condition (skip logic)	
Adding another language to the form	

COMMON FORM CHANGES

UPDATING FORM LABEL

Updating a question label is easy and should have no effect except what a respondent sees. You can easily make the change yourself:

1. Open the questionnaire to the survey worksheet in a spreadsheet software, like Excel or Google Sheets.
2. Find the question you want to update in the label::English (en) column. Update the text and save.

	A	B	C	D
1	type	name	label::English (en)	hint::Eng
2	start	start	start	
3	end	end	end	
4	today	today	today	
5				
6	begin group	introduction	Introduction ### Digital Literacy Assessment #### Self-Reflection Questionnaire	
7	note	intro_title	Dear colleague, Thank you for being part of the initiative strengthening digital literacy for [type of population/audience] implemented by [program implementers; i.e. UNICEF and partners]. For a [type of population/audience] to be digitally literate, it means they have the knowledge and skills to access, manage, understand, integrate, communicate, evaluate, and create [type of information (i.e. health)] information safely and appropriately through digital technologies. This questionnaire aims to aid your professional growth in the area of digital literacy by giving you the opportunity to	
8				

+ ≡ survey ▾ choices ▾ settings ▾ admin1 ▾ admin2 ▾ admin3 ▾ admin4 ▾ admin5 ▾ < >

You can update *hint::English (en)* and *constraint_message::English (en)* columns using the same process.

ADDING/UPDATING/DELETING CHOICE OPTIONS

You might want to add a choice option, update the choice option label, or delete a choice option.

You can easily do this from the choices sheet:

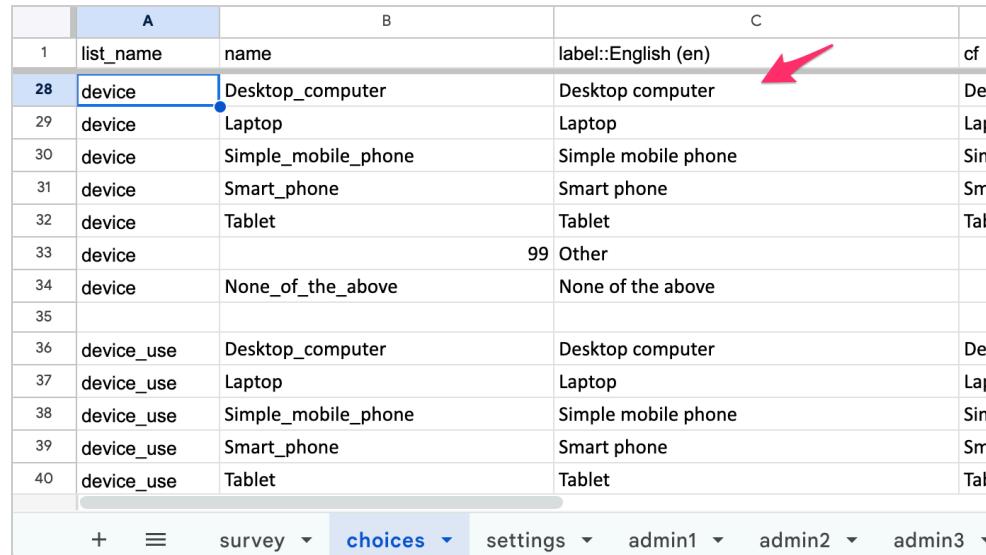
1. Open the questionnaire to the survey worksheet in a spreadsheet software, like Excel or Google Sheets
2. Find the question you would like to update the choice options. In the type column, you will see a similar question type in the forms as shown below:
 - a. select_one **confidence**
 - b. select_multiple **device**

	A	B	C	D
1	type	name	label::English (en)	hint::English (en req)
25	begin group	mobile_devices	II. Mobile devices	
26	select_multiple device	device_access	II.1. Which of these devices do you have access to in your personal life or at work?	Mark all that apply yes
27	text	device_access_other_sp	Please specify the other device you have access to in your personal life or at work	yes
28	begin group	own_group	II.2. Please share the status of ownership for the devices you have access to	
29	select_multiple ownership	own_desktop	Device: Desktop computer	Mark all that apply yes
30	text	own_desktop_other_sp	Please specify the other ownership status for a desktop computer	yes
31	select_multiple ownership	own_laptop	Device: Laptop computer	Mark all that apply yes
32	text	own_laptop_other_sp	Please specify the other ownership status for a laptop computer	yes
33	select_multiple ownership	own_simple_phone	Device: Simple mobile phone	Mark all that apply yes
34	text	own_simple_phone_other_sp	Please specify the other ownership status for a simple mobile phone	yes
35	select_multiple ownership	own_smart_phone	Device: Smart phone	Mark all that apply yes
36	text	own_smart_phone_other_sp	Please specify the other ownership status for a smartphone	yes
37	select_multiple ownership	own_tablet	Device: Tablet	Mark all that apply yes
..				
	+ ≡	survey ▾	choices ▾	settings ▾
	admin1	admin2	admin3	admin4
	admin5	admin6	admin7	admin8
	<	>		

3. From the examples above, **confidence** and **device** should have at least one row on the *choices* sheet under the *list_name* column. Each row with a value of **device** under the *list_name* column is a choice option for the multiple-choice question. The *list_name* values can be used by multiple questions as the choice option as long as the choice options are the same. You DO NOT need a new *list_name* for each question.

	A	B	C	D	E
1	list_name	name	label::English (en)	cf	
28	device	Desktop_computer	Desktop computer	Desktop_computer	
29	device	Laptop	Laptop	Laptop	
30	device	Simple_mobile_phone	Simple mobile phone	Simple_mobile_phone	
31	device	Smart_phone	Smart phone	Smart_phone	
32	device	Tablet	Tablet	Tablet	
33	device		99 Other	99	
34	device	None_of_the_above	None of the above		
35					
36	device_use	Desktop_computer	Desktop computer	Desktop_computer	
37	device_use	Laptop	Laptop	Laptop	
38	device_use	Simple_mobile_phone	Simple mobile phone	Simple_mobile_phone	
39	device_use	Smart_phone	Smart phone	Smart_phone	
40	device_use	Tablet	Tablet	Tablet	
..					
	+ ≡	survey ▾	choices ▾	settings ▾	admin1
				admin2	admin3
				admin4	admin5
				admin6	admin7
				admin8	< >

4. Once you have found the list of choice options for the question you want to update, you can:
- Update the label:
 - Go to the *label::English (en)* column for the choice option you want to update.
 - Change the label accordingly



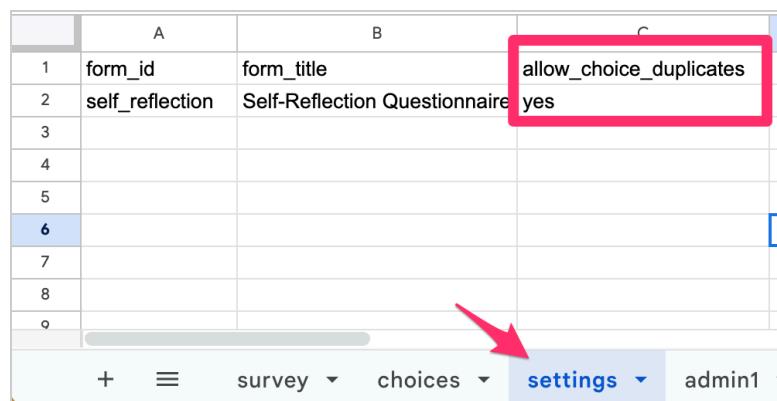
The screenshot shows a Google Sheets worksheet titled 'choices'. The data is organized into three columns: A, B, and C. Column A contains row numbers (1, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40) and column names ('list_name', 'device', 'device_use'). Column B contains values ('name', 'Desktop_computer', 'Laptop', 'Simple_mobile_phone', 'Smart_phone', 'Tablet', '99 Other', 'None_of_the_above'). Column C contains values ('label::English (en)', 'Desktop computer', 'Laptop', 'Simple mobile phone', 'Smart phone', 'Tablet', 'Other', 'None of the above'). A red arrow points from the text 'label::English (en)' in row 1 to the 'label' column in row 28.

	A	B	C
1	list_name	name	label::English (en)
28	device	Desktop_computer	Desktop computer
29	device	Laptop	Laptop
30	device	Simple_mobile_phone	Simple mobile phone
31	device	Smart_phone	Smart phone
32	device	Tablet	Tablet
33	device		99 Other
34	device	None_of_the_above	None of the above
35			
36	device_use	Desktop_computer	Desktop computer
37	device_use	Laptop	Laptop
38	device_use	Simple_mobile_phone	Simple mobile phone
39	device_use	Smart_phone	Smart phone
40	device_use	Tablet	Tablet

+ ≡ survey ▾ choices ▾ settings ▾ admin1 ▾ admin2 ▾ admin3 ▾

b. Add a choice option:

- Create some additional rows below the list of choice options.
- For each new choice option, add a name column value and label.
 - Please make sure your choice options only use alphanumeric characters and underscores (_). Other special characters can bring issues.
 - Ideally, each choice option would have a unique name column value. However, there are cases where you may want the same choice options, such as with options with choice filters where you can easily differentiate the choice option based on previously selected questions. This is possible, but you will need to take some additional steps:
 - Navigate to the *settings* worksheet and add an *allow_choice_duplicates* column heading
 - Under this column heading, add **yes**.



The screenshot shows a Google Sheets worksheet titled 'settings'. The data is organized into three columns: A, B, and C. Column A contains row numbers (1, 2, 3, 4, 5, 6, 7, 8, 9) and column names ('form_id', 'self_reflection'). Column B contains values ('form_title', 'Self-Reflection Questionnaire'). Column C contains values ('allow_choice_duplicates', 'yes'). A red box highlights the 'allow_choice_duplicates' column header in row 1, and a red arrow points from the 'yes' value in row 2 to the 'allow_choice_duplicates' column in row 6.

	A	B	C
1	form_id	form_title	allow_choice_duplicates
2	self_reflection	Self-Reflection Questionnaire	yes
3			
4			
5			
6			
7			
8			
9			

+ ≡ survey ▾ choices ▾ settings ▾ admin1 ▾

3. We usually recommend using text to easily reference the choice option, but some people prefer to use numbers. All are acceptable.
4. The choice options appear in the order they are listed from top to bottom of the choices sheet. If you want the choice options to appear in a specific order, please make sure they are ordered correctly from top to bottom.
- iii. Once you have added the choice option *name* and *label::English (en)* values, highlight the *list_name* you want to add the choice options to and copy/paste the value to the *list_name* column for the newly added choice options.
- iv. In the example below, **color** is the new choice option list added under the *list_name*. The colors (i.e. Green, Blue, Red) are the added choice options for the list name: color, which will appear in the form.

	A	B	C
1	list_name	name	label::English (en)
5	color	Green	Green
6	color	Blue	Blue
7	color	Red	Red
8			
9			

- c. Delete a choice option
 - i. Select the row with the choice option you would like to delete and delete.
5. Make sure you save your updated form.

ADD ANOTHER LANGUAGE

To contextualize the toolkit, you may need to add another language. Adding another language is easy, but it will require you to provide your own translations. You will need to add some additional columns to the *survey* and *choices* sheet. You can also optionally add a default language, or the language the form will open with, on the *settings* sheet. You can add the other language by following the steps below:

1. On the *survey* sheet:
 - a. Add a column next to the *label::English (en)*, *hint::English (en)*, and *constraint_message::English (en)* columns.
 - b. Copy/paste the column heading next to it.
 - c. Then, delete *English (en)* and replace it with the appropriate language. The language uses the following format: **language (code)**. In this example, English is the language, and en is the code. The codes for the language can be found via this [link](#).

	A	B	C	D
1	type	name	label::French (fr)	hint::French (fr)
25	begin group	mobile_devices	II. Mobile devices	
26	select_multiple device	device_access	II.1. Which of these devices do you have access to in your personal life or at work?	Mark all that apply
27	text	device_access_other_sp	Please specify the other device you have access to in your personal life or at work	
28	begin group	own_group	II.2. Please share the status of ownership for the devices you have access to	
29	select_multiple ownership	own_desktop	Device: Desktop computer	Mark all that apply
30	text	own_desktop_other_sp	Please specify the other ownership status for a desktop computer	
31	select_multiple ownership	own_laptop	Device: Laptop computer	Mark all that apply
32	text	own_laptop_other_sp	Please specify the other ownership status for a laptop computer	
33	select_multiple ownership	own_simple_phone	Device: Simple mobile phone	Mark all that apply
34	text	own_simple_phone_other_sp	Please specify the other ownership status for a simple mobile phone	
35	select_multiple ownership	own_smart_phone	Device: Smart phone	Mark all that apply
36	text	own_smart_phone_other_sp	Please specify the other ownership status for a smartphone	
37	select_multiple ownership	own_tablet	Device: Tablet	Mark all that apply
38	text	own_tablet_other_sp	Please specify the other ownership status for a tablet	
39	select_multiple ownership	own_other	Device: Other \${device_access_other_sp})	Mark all that apply
40	text	own_other_other_sp	Please specify the other ownership status for another device \${device_access_other_sp})	
41	end group	own_group		

+ ≡ survey choices settings admin1 admin2 admin3 admin4 admin5

2. On the *choices* sheet:

- Add a column next to the *label::English (en)* column
- Copy/paste the column heading next to it.
- Then, delete *English (en)* and replace it with the appropriate language for the *survey* sheet

	A	B	C
1	list_name	name	label::French (fr)
5			
6	age_group	age_group_0a	under 6 years
7	age_group	age_group_0b	6 - 9 years
8	age_group	age_group_0c	10 - 14 years
9	age_group	age_group_1	15 - 24 years
10	age_group	age_group_2	25 - 34 years
11	age_group	age_group_3	35 - 44 years
12	age_group	age_group_4	45 - 54 years
13	age_group	age_group_5	55 - 64 years
14	age_group	age_group_6	65 - 74 years
15	age_group	age_group_7	over 75 years
16			
17	admin0	admin0_opt1	Admin 0 - Option 1
18	admin0	admin0_opt2	Admin 0 - Option 2
19	admin0	admin0_opt3	Admin 0 - Option 3
20	admin0	admin0_opt4	Admin 0 - Option 4
21	admin0	admin0_opt5	Admin 0 - Option 5
22	admin0	admin0_opt6	Admin 0 - Option 6

+ ≡ survey choices settings admin1 admin2

3. If you would like to make the added language the default language, go to the *settings* sheet:

- Add a column with the *default_language* column heading
- Under the *default_language* column heading, add the default language using the same process as before by adding the language with the code: **language (code)**. I recommend just copy-pasting the language from the previous changes

	A	B
1	form_id	form_title
2	self_reflection	Self-Reflection Questionnaire
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		



If the language is not uniform among the different sheets, your questionnaire may not appear correctly. To troubleshoot, check for extra spaces where you added the language, or just copy the language from one column heading and paste it wherever you added the languages.

TOOL 1: SELF-REFLECTION QUESTIONNAIRE

Use this tool to capture key participant demographic information and key information on the participants' access to computers and mobile devices, internet access and usage, applications used, digital content creation, and understanding of online safety. The self-reflection questionnaire will be filled out by each participant before getting any digital literacy training. These questions were developed to help assess participants' digital literacy based on five key areas identified in a report written by UNESCO (2018).

The form has an introduction and is broken into 6 other sections:

- Introduction: Provides participants who are filling forms with key information: program being implemented, who is implementing the program, the aim of the questionnaire, and who will have access to their data
- I. General information: Includes questions about participants' unique ID, gender, age, and location.
- II. Mobile Devices: Includes questions about access to computers and mobile devices at work/home and device ownership
- III. Being Online: Includes questions about participants' access to devices with the internet and what they use it for and how often.
- IV. Applications: Includes questions about applications used to do certain tasks and familiarity with using specific work applications
- V. Content Creation: Includes questions about activity on social media, type of content they create, and confidence in creating it.
- VI. Online Safety: Includes questions about online safety used by the participants

Find the ready-to-fill form [here](#). For access to the XLSForm, please see the link in the [resources](#).

The following are used in this tool:

4. *Italic Text* will reference XLSForm column headings.
5. Instructions will reference the row with the data field name in **bold** in the *name* column of the XLSForm.
6. [...] This is an **instruction for the people adapting the tool** and should be deleted before use.

SUGGESTED ADAPTATIONS TO FORM

1. Customize introduction

In **info**, under the *label* column on the *survey* worksheet, update the message a participant will read first before filling in the self-reflection form. The current message can be used with some updates

based on suggested prompts, or the message can be completely updated to your needs. For more information on updating labels, please see the [updating question label section](#).

	A	B	C	D	E	F	G	H
1	type	name	label::English (en)	hint::English (en required)	appearance	relevant	con...	
5								
6	begin group	introduction	Introduction					
7	note	intro_title	### Digital Literacy Assessment #### Self-Reflection Questionnaire					
8			Dear colleague, Thank you for being part of the initiative strengthening digital literacy for [type of population/audience] implemented by [program implementers; i.e. UNICEF and partners]. For a [type of population/audience] to be digitally literate, it means they have the knowledge and skills to access, manage, understand, integrate, communicate, evaluate, and create [type of information (i.e. health)] information safely and appropriately through digital technologies. This questionnaire aims to aid your professional growth in the area of digital literacy by giving you the opportunity to self-reflect on your level of knowledge and skills in accessing and using digital technology. There are no right or wrong answers in this questionnaire. The questionnaire will be completed before we start the capacity building exercises on digital literacy in order to understand your baseline comfort with digital technologies. Only implementing partners will have access to the information shared. Findings will be reported only in summary form, and your personal data will not be shared with anyone. We thank you for sharing your honest reflections with us.					
	note	info						

+ survey choices settings admin1 admin2 admin3 admin4 admin5

2. Add a constraint for participant number

In participant_no, under the constraint column on the survey worksheet, add a constraint using a regular function (`regex ()`) to limit what can be entered to improve data quality. The regular function should start with the following:

```
regex(., '
```

where:

- `regex()` - referenced the regular function
- `.` (period) - reference the current question
- `'`` - starts your regular statement

The rest of your function will include the coding for what you would expect the participant number to be. A few examples can be found below along with an explanation:

Regular Function	Meaning
<code>regex(., '^1000[0-9]{4}\$')</code>	The current question requires a numeric value starting with 1000 followed by 4 digits (between 0 and 9)
<code>regex(., '^PNG[0-9]{4}\$')</code>	The current question requires an alphanumeric value - PNG followed by 4 digits (between 0 and 9)

The values between the `[]` are all the types of values you can include in the response. For example, if it is `[0-9]`, only numbers 0 to 9 can be used in the response.

The values between the { } are the number of expected characters in the response. This does not include any values provided before the ^. For example, the function `regex(., '^PNG[0-9]{4}$')` would expect a response like PNG0001, PNG1000, etc. But, in this example, only 4 digits would be expected after PNG.

	A	B	F	G	H	I	J
1	type	name	appearance	relevant	constraint	constraint_message::English (en)	c
9	end group	introduction					
10							
11	begin group	gen_info					
12	text	participant_no				regex(., '^PNG[0-9]{4}\$')	Please enter an ID with "PNG" followed by 4 digits
13	select_one gender	gender	minimal				
14	select_one age_group	age_group	minimal				
15	begin group	geo_loc					
16	select_one admin0	admin0	minimal				
17	select_one_from_file admin1.csv	admin1	minimal				
18	select_one_from_file admin2.csv	admin2	minimal				
19	select_one_from_file admin3.csv	admin3	minimal				
20	select_one_from_file admin4.csv	admin4	minimal				
21	select_one_from_file admin5.csv	admin5	minimal				
22	end group	geo_loc					

For more information on adding regular expressions, see [this documentation on ODK](#).



In addition to adding a constraint, a good practice is to include a detailed error message in the same row as the constraint, under the column heading `label::English (en)`.



Note: The participant ID must be unique to associate the data collected in the self-reflection and performance self-evaluation questionnaires.

3. Add/update the age categories

Depending on the type of digital literacy program, you may want to add/update age categories, such as for primary or secondary school education interventions. In the `age_group list_name`, under the `label` column on the `choices` worksheet, update the choice options labels. Put your lowest age category under the `label` column for `age_group_1`. Update the labels from the lowest age category choice option to the highest. You may also need to add additional choice options if you have many age categories. For more information on adding/updating choice options, please see the section on [adding/updating/deleting choice options](#).

4. Add a location hierarchy for the area of implementation

Each area has its own location hierarchy. For example, if a project was implementing a digital literacy program in the education sector in the United States, the location hierarchy could be:

- Admin 0 = State

- Admin 1 = County
- Admin 2 = School District
- Admin 3 = City/Town
- Admin 4 = School

The location hierarchy will have to be updated in two places:

1. The question labels on the survey sheet
2. The choice options on the choices sheet/external CSV file.

In the section “Geographic Location Where You are Based” (row 15), there are 5 rows with the admin levels of the location hierarchy. The first question (**admin0**) is a single-select multiple choice, meaning only one answer can be selected. The choice options for **admin0** are stored in the *choices* sheet. The other questions (**admin1** to **admin5**) are single-select multiple-choice questions from an external CSV uploaded in the form’s settings on the InForm platform.

	A	B	C
1	type	name	
15	begin group	geo_loc	label::English (en)
16	select_one admin0	admin0	I.4 Geographic Location Where You are Based
17	select_one_from_file admin1.csv	admin1	I.4.a. Admin 0
18	select_one_from_file admin2.csv	admin2	I.4.b. Admin 1
19	select_one_from_file admin3.csv	admin3	I.4.c. Admin 2
20	select_one_from_file admin4.csv	admin4	I.4.d. Admin 3
21	select_one_from_file admin5.csv	admin5	I.4.e. Admin 4
22	end group	geo_loc	I.4.f. Admin 5
23	end group	gen_info	
24			
25	begin group	mobile_devices	II. Mobile devices
26	select_multiple device	device_access	II.1. Which of these devices do you have access
27	text	device_access_other_sp	Please specify the other device you have access
28	begin_group	own_group	II.2. Please share the status of ownership for the
	+ ≡	survey ▾	choices ▾ settings ▾ admin1 ▾ admin2 ▾ admin3 ▾

Update the survey sheet

You can update the question label on the *survey* sheet:

1. Open the XLSForm and go to the *survey* sheet
2. Go to rows with admin0 in the *list_name* column, or the text that will appear when filling out the form.

	A	B	C
1	list_name	name	label::English (en)
14	admin0	admin0_opt1	Admin 0 - Option 1
15	admin0	admin0_opt2	Admin 0 - Option 2
16	admin0	admin0_opt3	Admin 0 - Option 3
17	admin0	admin0_opt4	Admin 0 - Option 4
18	admin0	admin0_opt5	Admin 0 - Option 5
19	admin0	admin0_opt6	Admin 0 - Option 6
20	admin0	admin0_opt7	Admin 0 - Option 7
21	admin0	admin0_opt8	Admin 0 - Option 8
22	admin0	admin0_opt9	Admin 0 - Option 9
23	admin0	admin0_opt10	Admin 0 - Option 10
24			
25	device	Desktop_computer	Desktop computer
26	device	Laptop	Laptop
27	device	Simple_mobile_phone	Simple mobile phone
28	device	Smart_phone	Smart phone
29	device	Tablet	Tablet
30	device		99 Other

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survey ▾
choices ▾
settings ▾
admin1 ▾
admin2 ▾

3. Update the text for each question in the column *label::English (en)* or other languages. For example, changing "Admin 0" to "State"

Update the choices sheet/external CSV file

You can update the list of locations for an admin level from the choices sheet for **admin_0** or external CSV for **admin1** to **admin5**. We do not recommend having more than 500 - 600 choice options in total on the choices sheet, and location hierarchies tend to have many choice options. Therefore, external CSV was used for the **admin1** to **admin5** in case there were a lot of choice options.

You can update the choice options for admin0:

1. Open the *choices* sheet and navigate to the choices with the *list_name* **admin0**

	A	B	C
1	list_name	name	label::English (en)
14	admin0	admin0_opt1	Admin 0 - Option 1
15	admin0	admin0_opt2	Admin 0 - Option 2
16	admin0	admin0_opt3	Admin 0 - Option 3
17	admin0	admin0_opt4	Admin 0 - Option 4
18	admin0	admin0_opt5	Admin 0 - Option 5
19	admin0	admin0_opt6	Admin 0 - Option 6
20	admin0	admin0_opt7	Admin 0 - Option 7
21	admin0	admin0_opt8	Admin 0 - Option 8
22	admin0	admin0_opt9	Admin 0 - Option 9
23	admin0	admin0_opt10	Admin 0 - Option 10

2. Update the question choice option for the first choice option in the *label::English (en)* for **admin0_opt1**.
3. You may have more choice options to fill than you have choice options. You can delete some of the choice options from those you don't want by deleting these rows.
4. You may need to add additional rows for choice options.
 - a. Add some rows under the choice option **admin0_opt10**.
 - b. Highlight the list_name and name column for choice options **admin0_opt9** and **admin0_opt10**.

	A	B	C
1	list_name	name	label::English (en)
14	admin0	admin0_opt1	Admin 0 - Option 1
15	admin0	admin0_opt2	Admin 0 - Option 2
16	admin0	admin0_opt3	Admin 0 - Option 3
17	admin0	admin0_opt4	Admin 0 - Option 4
18	admin0	admin0_opt5	Admin 0 - Option 5
19	admin0	admin0_opt6	Admin 0 - Option 6
20	admin0	admin0_opt7	Admin 0 - Option 7
21	admin0	admin0_opt8	Admin 0 - Option 8
22	admin0	admin0_opt9	Admin 0 - Option 9
23	admin0	admin0_opt10	Admin 0 - Option 10
24			

- c. Then, pull the dot/box in the lower right corner down as many rows as you need/create.
- d. Add a label for the choice options in the *label::English (en)* column

You can update the choice options for admin1 to admin5 from an external CSV:

1. Download the XLSForm and open it in spreadsheet software:

- a. Go to the form's "Settings" > "Form Info".
- b. Click the drop-down next to "Source" and select "Download XLSForm"

The screenshot shows the InForm software interface. At the top, there is a navigation bar with links for Overview, Map, Table, Photos, Charts, Dashboard, and Settings. The Settings link is highlighted with a red box. Below the navigation bar, there is a sidebar with sections for Form Info, Form Media Files, Basemaps, Apps, and Webhooks. The Form Info section is also highlighted with a red box. On the right side, there is a main content area titled 'Form Info' with fields for Name (Self-Reflection Questionnaire), Description, Form ID (self_reflection), Source (self_reflection.xlsx), Status, Current version, and Encrypted (No). The 'Source' field has a dropdown menu open, showing three options: 'Download XLSForm' (highlighted with a blue box), 'Download XForm', and 'Download JSONForm'. An arrow points from the 'Source' dropdown to the 'Download XLSForm' option.

2. In the XLSForm export, you will see tabs with the name "admin1", "admin2", "admin3", "admin4", and "admin5".
3. In each tab, you will see 8 columns. The *list_name*, *name*, and *label::English (en)* are similar to what you saw in the choices worksheet. There are 5 additional column headers: *admin0_id*, *admin1_id*, *admin2_id*, *admin3_id*, and *admin4_id*. These columns will be used as choice filters, which will filter the choice options based on previous locations so respondents can only choose area locations based on previous answers.
 - a. In admin1, you will have a choice filter for *admin0_id*, based on answers from **admin0**
 - b. In admin2, you will have a choice filter for *admin0_id* and *admin1_id*, based on answers from **admin0** and **admin1**
 - c. A similar pattern will be followed for admin3, admin4, and admin5
4. When updating the external CSV files from these tabs, please start with admin1 and move to admin5.
5. In admin1:
 - a. Add all the secondary area locations in *label::English (en)*.

	A	B	C	D
1	list_name	name	label::English (en)	admin0_id
2	admin1	admin1_opt1	Admin 1 - Option 1	admin0_opt1
3	admin1	admin1_opt2	Admin 1 - Option 2	admin0_opt2
4	admin1	admin1_opt3	Admin 1 - Option 3	admin0_opt3
5	admin1	admin1_opt4	Admin 1 - Option 4	admin0_opt4
6	admin1	admin1_opt5	Admin 1 - Option 5	admin0_opt5
7	admin1	admin1_opt6	Admin 1 - Option 6	admin0_opt6
8	admin1	admin1_opt7	Admin 1 - Option 7	admin0_opt7
9	admin1	admin1_opt8	Admin 1 - Option 8	admin0_opt8
10	admin1	admin1_opt9	Admin 1 - Option 9	admin0_opt9
11	admin1	admin1_opt10	Admin 1 - Option 10	admin0_opt10
12				

+ ≡ survey ▾ choices ▾ settings ▾ admin1 ▾

- b. Similar to [step 4](#) in updating admin0 choice options, add more rows as needed and make sure to add more name column values with the choice option - admin1.
- c. Go back to the list for the choice options for **admin0**. For each location located in a choice option for **admin0**, add the name column value from **admin0** to the admin1 location row under the *admin0_id column*.
 - i. For example, the **admin1_opt1** location lies in **admin0_opt1** as shown below.
- d. From the admin1 tab, save as a CSV file with the name “admin1”. You may have to rename it from your local machine if it also adds the tab name. The final file must be named “admin1.csv”.

	A	B	C	D
1	list_name	name	label::English (en)	admin0_id
2	admin1	admin1_opt1	Admin 1 - Option 1	admin0_opt1
3	admin1	admin1_opt2	Admin 1 - Option 2	admin0_opt2
4	admin1	admin1_opt3	Admin 1 - Option 3	admin0_opt3
5	admin1	admin1_opt4	Admin 1 - Option 4	admin0_opt4

- 6. In admin2:
 - a. Add all the secondary area locations in *label::English (en)*.
 - b. Similar to [step 4](#) in updating admin0 choice options, add more rows as needed and make sure to add more name column values with the choice option - admin2.

- c. Go back to the list for the choice options for **admin1**. For each location located in a choice option for **admin1**, add the name column value from **admin1** to the admin2 location row under the *admin1_id* column.
 - d. Then, add *admin0_id* from the admin1 choice option added in *admin0_id*
 - e. From the admin2 tab, save as a CSV file with the name "admin2". You may have to rename it from your local machine if it also adds the tab name. The final file must be named "admin2.csv".
7. In admin3:
- a. Add all the secondary area locations in *label::English (en)*.
 - b. Similar to [step 4](#) in updating admin0 choice options, add more rows as needed and make sure to add more name column values with the choice option - admin3.
 - c. Go back to the list for the choice options for **admin2**. For each location located in a choice option for **admin2**, add the name column value from **admin2** to the admin3 location row under the *admin2_id* column.
 - d. Add *admin1_id* from admin2 choice option added in *admin1_id*
 - e. Then, add *admin0_id* from the admin2 choice option added in *admin0_id*
 - f. From the admin3 tab, save as a CSV file with the name "admin3". You may have to rename it from your local machine if it also adds the tab name. The final file must be named "admin3.csv".
8. In admin4:
- a. Add all the secondary area locations in *label::English (en)*.
 - b. Similar to [step 4](#) in updating admin0 choice options, add more rows as needed and make sure to add more name column values with the choice option - admin1.
 - c. Go back to the list for the choice options for **admin3**. For each location located in a choice option for **admin3**, add the name column value from **admin3** to the admin4 location row under the *admin3_id* column.
 - d. Add *admin2_id* from admin3 choice option added in *admin2_id*
 - e. Add *admin1_id* from admin3 choice option added in *admin1_id*
 - f. Then, add *admin0_id* from the admin3 choice option added in *admin0_id*
 - g. From the admin4 tab, save as a CSV file with the name "admin4". You may have to rename it from your local machine if it also adds the tab name. The final file must be named "admin4.csv".
9. In admin5:
- a. Add all the secondary area locations in *label::English (en)*.
 - b. Similar to [step 4](#) in updating admin0 choice options, add more rows as needed and make sure to add more name column values with the choice option - admin1.
 - c. Go back to the list for the choice options for **admin4**. For each location located in a choice option for **admin4**, add the name column value from **admin4** to the admin5 location row under the *admin4_id* column.

- d. Add admin3_id from admin4 choice option added in *admin3_id*
 - e. Add admin2_id from admin4 choice option added in *admin2_id*
 - f. Add admin1_id from admin4 choice option added in *admin1_id*
 - g. Then, add admin0_id from the admin4 choice option added in *admin0_id*
 - h. From the admin5 tab, save as a CSV file with the name "admin5". You may have to rename it from your local machine if it also adds the tab name. The final file must be named "admin5.csv".
10. You will have to upload each CSV using the exact name in the form. For example, the file name for admin1 external CSV will have to be "admin1.csv" or the form will not work correctly.
11. Once the file is named correctly, upload the external CSV as noted in this [help documentation](#).

5. Update the choice options for programs/applications for tasks on computers and mobile devices

Section 4 talks about the different programs/applications used for specific tasks, like texting and emailing.

	A	B	C
1	type	name	label::English (en)
85	begin group	apps_qn	IV1. An application, most commonly referred to as an app, is a type of application software designed to run on an internet-enabled device, such as a smartphone or tablet to perform different activities.
86	select_multiple text	app_text_message	What application(s) or program(s) do you use for Text messaging?
87	text	app_text_message_oth_sp	What other application(s) or program(s) you use for Text messaging?
88	select_multiple email	app_emailing	What application(s) or program(s) do you use for Emailing?
89	text	app_emailing_oth_sp	What other application(s) or program(s) you use for Emailing?
90	select_multiple search_engine	app_search_info	What application(s) or program(s) do you use for Searching for information?
91	text	app_search_info_oth_sp	What other application(s) or program(s) you use for Searching for information?
92	text	app_read_content	What application(s) or program(s) do you use for Reading content?

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While the lists highlight frequently used programs/applications, you may want to add/delete some choice options to fit your specific area. You can easily add/delete choice options as mentioned in the [common form updates section](#).

6. Update the work applications the respondent is familiar with

Section 4 includes a question asking how familiar the respondent is with a specific work application. Update the work applications used by the respondent that are key for their work tasks. You will need to update the [question labels](#) by replacing the contents in the square brackets ([]).

	A	B	C
1	type	name	label::English (en)
109	begin group	familiar_apps	IV.3b How familiar are you with the following applications on a work device?
110	select_one familiar	familiar_app1	How familiar are you with [app 1]?
111	select_one familiar	familiar_app2	How familiar are you with [app 2]?
112	select_one familiar	familiar_app3	How familiar are you with [app 3]?
113	select_one familiar	familiar_app4	How familiar are you with [app 4]?
114	select_one familiar	familiar_app5	How familiar are you with [app 5]?
115	select_one familiar	familiar_settings	How familiar are you with Settings?
116	end group	familiar_apps	
117	end group	apps	
118			

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ASSOCIATED INDICATORS

Indicator name	Indicator definition	Indicator calculation
Access to SMART devices	<p>Percentage of persons who have access to SMART mobile device</p> <p>Number of persons who marked "Smart phone" or "Tablet" to questions II.1</p>	device_access = Smart_phone or device_access = Tablet
Access to SMART devices for work	<p>Percentage of persons who have access to SMART mobile device for work</p> <p>Number of persons who marked "Smart phone" or "Tablet" to questions II.3</p>	device_work = Smart_phone or device_work = Tablet
Access to digital devices	<p>Number of persons who rely on their employer to access digital devices</p> <p>Number of persons who marked "Provided on loan by your employer" or "Available at your workplace" to "Desktop computer", "Laptop computer", "Smart phone", "Tablet" and have not marked "Owner by you" in question II.2.</p>	COUNT DISTINCT of individual (participant_no) where own_desktop = Provided_on_loan_by_your_employer or own_desktop = Available_at_your_workplace) or

		<p>(own_laptop = Provided_on_loan_by_your_employer or Own_laptop =Available_at_your_workplace) or (own_smart_phone = Provided_on_loan_by_your_employer or own_smart_phone = Available_at_your_workplace) or (own_tablet = Provided_on_loan_by_your_employer or own_tablet = Available_at_your_workplace)</p>
People able to do at least 3 tasks themselves very well and help others (digital skills)	<p>Percentage of persons who know how to do at least 3 activities very well and can assist others on how to do this</p> <p>Number of persons who marked "I know how to do this very well and can assist others on how to do this" for at least 3 activities</p>	confidence_3tasks >= 3
Active on social media	<p>Number of persons who are active on at least 1 social media platform</p> <p>Number of persons who marked "Active" for at least one social media platform in Q V.1</p>	posted_content_calc = 1

TOOL 2: SELF-EVALUATION QUESTIONNAIRE

Use this tool to capture the participant's self-evaluation of their performance during the assessment. The participants will take this questionnaire at the beginning and the end of the digital literacy course. The performance assessment is meant to be done with a tablet or smartphone. The performance assessment helps to assess participants' digital literacy based on five key areas identified in a report written by UNESCO (2018).

The form is broken into six key sections highlighting the 5 key areas for digital literacy competency in the assessment:

- Fundamentals of hardware and software
- Information and data literacy
- Communication and collaboration
- Digital content creation
- Career-related competencies
- Online safety



Note: To link the performance self-evaluation with the self-reflection form filled at the beginning of digital literacy training, make sure participants enter the same exact unique ID. To improve data quality, you can also add a constraint/form validation using a [regular function](#), a more advanced form change.

Find the ready-to-fill form [here](#). For access to the XLSForm, please see the link in the [resources](#).

The following are used in this tool:

7. *Italic Text* will reference XLSForm column headings.
8. Instructions will reference the row with the data field name in **bold** in the *name* column of the XLSForm.
9. [...] This is an **instruction for the people adapting the tool** and should be deleted before use.

SUGGESTED ADAPTATIONS TO FORM

1. Customize introduction

In **info**, under the *label* column on the *survey* worksheet, update the message a participant will read first before filling in the self-reflection form. The current message can be used with some updates based on suggested prompts, or the message can be completely updated to your needs. For more information on updating labels, please see the [updating question label section](#).

	A	B	C		
1	type	name	label::English (en)		
6	begin group	introduction	Introduction		
7	note	intro_title	### Digital Literacy Assessment Exercise #### Performance Self-Evaluation Dear colleague, Thank you for being part of the digital literacy assessment exercise carried out by JNICEF and partners. The facilitators have given you instructions to conduct several tasks to complete using your smart phone and/or your tablet. The questionnaire in front of you asks that you evaluate yourself on how well you did completing each of the tasks. Please evaluate yourself as you complete each task, not at the end of the training session. Please take your time and be as honest as you can with your evaluation. This information will help us to provide course content that will improve your skills to help you do your job better. Only UNICEF will have access to the information shared and findings will only be looked at in summary form.		
8	note	info			
9	end group	introduction			
10	select_one form	evaluation	Evaluation type		
11					
	+ ≡	survey ▾	choices ▾	settings ▾	Coun

2. Update the evaluation type

If your team is implementing the performance assessment twice, pre and post training, you will need to update the default value for the **evaluation** in the form. You will also have to update the default value for **evaluation** if you are only doing a one-time evaluation. In **evaluation**, under the *default* column on the *survey* worksheet, change the default value according to your needs:

- **one_time** for a one-time evaluation
- **pre_evaluation** for the evaluation before the digital literacy training
- **post_evaluation** for the evaluation after the digital literacy training

	A	B	C	K	L
1	type	name	label: English (en)	read_only	default
8	note	info			
9	end group	introduction			
10	select_one form	evaluation	Evaluation type	yes	pre_evaluation
11					
12	text	participant_no	Participant Number:		
13					
14	begin group	fundamentals	I. Fundamentals of hardware and software		
15	select_one do	turn_on	I.1. Turn on your internet-enabled device.		
16	select_one do	no_preinstalled_apps	I.2. Count how many apps are pre-installed on the internet-enabled device.		
17	select_one do	home_screen	I.3. Return to the home screen.		
	◀ ▶	survey	choices	settings	+
	Ready	Accessibility: Good to go			

3. Add a constraint for participant number

In **participant_no**, under the *constraint* column on the *survey* worksheet, add a constraint using a regular function (`regex()`) to limit what can be entered to improve data quality.

For more information on adding regular expressions, see the [previous tool for adding regular statements](#) and see [this documentation on ODK](#).

	A	B	G	H
1	type	name	constraint	constraint_message::English (en)
10	select_one form	evaluation		
11				
12	text	participant_no	regex(.,'^PNG[0-9]{4}\$')	Please enter an ID starting with "PNG" followed by 4 digits
13				

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In addition to adding a constraint, good practice is to include a detailed error message in the same row as the constraint, under the column heading *label::English (en)*.

4. Customize the name of the folder created to save files

In **create_folder**, **locate_download_folder**, **word_doc**, and **powerpoint**, you can change the name of the folder, currently called “UNICEF”, in the question label (*label::English (en)*) to another name if desired.

	A	B	C
1	type	name	label::English (en)
13	begin group	fundamentals	I. Fundamentals of hardware and software
14	select_one do	turn_on	I.1. Turn on your internet-enabled device.
15	select_one do	no_preinstalled_apps	I.2. Count how many apps are pre-installed on the internet-enabled device.
16	select_one do	home_screen	I.3. Return to the home screen.
17	select_one do	find_notifications	I.4. Locate the “Notifications” function.
18	select_one do	wifi_on	I.5. While in the “Notification” area, determine whether Wifi is on.
19	select_one do	turn_wifi_on	I.6. Go to the Settings of the internet enabled device and turn on the Wifi.
20	select_one do	odk_app	I.7. Locate the ODK Collect App in Playstore and download it.
21	select_one do	create_folder	I.8. Locate “My files” and under “Documents” create a folder called “UNICEF”.
22	select_one do	sound	I.9. Locate the Sound/Volume on your device and turn the sound to mute.
23	select_one do	microphone	I.10. Go to the Settings of the internet enabled device and make sure the microphone is on for the camera application.

+ ≡ survey ▾ choices ▾ settings ▾

	A	B	C
1	type name		label::English (en)
29	begin group info_literacy		II. Information and data literacy
30	select_one do search_info		II.1. On Google, search for the Covid-19 page on WHO website (spend no more than 5 minutes).
31	select_one do download_doc		II.2. Go to Vaccines, Treatment and Tests, choose the topic Vaccine Equity, and download the document "Accelerating COVID-19 Vaccine Deployment" (spend no more than 3 minutes).
32	select_one do locate_download_folder		II.3. Locate the file you downloaded in "Downloads" and save it in the folder "UNICEF" you created earlier (spend no more than 3 minutes).
33	calculate info_literacy_partial		Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
34	calculate info_literacy_cannot		Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
35	calculate info_literacy_total_score		Calculates the total for the Information and data literacy
36	end group info_literacy		
37			

+ ≡ survey ▾ choices ▾ settings ▾

	A	B	C
1	type name		label::English (en)
49	begin group content_creation		IV. Digital content creation
50	select_one do camera_image		IV.1. Locate the camera app on the internet enabled device and take an image of one thing on your desk.
51	select_one do write_status		IV.2. Write out a status to accompany the image you took if you were to post it on social media. Please use the box to the right to write the status. Spend no more than 15 minutes.
52	select_one do word_doc		IV.3. Open a word document application (app/in browser). Create a document with: a title and 2 sentences. Save the document to the folder "UNICEF".
53	select_one do powerpoint		IV.4. Open a powerpoint application (app/in browser). Create a powerpoint with one slide with your name and today's date. Save the document to the folder "UNICEF".
54	calculate content_creation_partial		Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
55	calculate content_creation_cannot		Calculates if participant selected any can not do alone (1 = Yes; 0 = No)

+ ≡ survey ▾ choices ▾ settings ▾

5. Customize the page searched for the information and data literacy section

In the information and data literacy section, you can change the page participants search in the task. Currently, participants are searching for the COVID-19 page on the WHO website. You can customize this for your sector.

	A	B	C
1	type name		label::English (en)
29	begin group info_literacy		II. Information and data literacy
30	select_one do search_info		II.1. On Google, search for the Covid-19 page on WHO website (spend no more than 5 minutes).
31	select_one do download_doc		II.2. Go to Vaccines, Treatment and Tests, choose the topic Vaccine Equity, and download the document “Accelerating COVID-19 Vaccine Deployment” (spend no more than 3 minutes).
32	select_one do locate_download_folder		II.3. Locate the file you downloaded in “Downloads” and save it in the folder “UNICEF” you created earlier (spend no more than 3 minutes).
33	calculate info_literacy_partial		Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
34	calculate info_literacy_cannot		Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
35	calculate info_literacy_total_score		Calculates the total for the Information and data literacy
36	end group info_literacy		
37			

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For example, if you work in the education sector at UNICEF, you may want to the participants search for

1. Education Page on the UNICEF website (<https://www.unicef.org/education>) for question II.1.
2. Go to Our Results and choose the “Explore” hyperlink in “Explore our latest global results in education.” Then, find and click “Download Report” and select “Full Report - English”. In a new window, select Download the file for question II.2.
(<https://www.unicef.org/media/102271/file/Global-annual-results-report-2020-goal-area-2.pdf>)

If you are working in child protection, you may want to have participants search for

3. Child Protection page on the UNICEF website (<https://www.unicef.org/child-protection>) for question II.1.
4. Go to Our Results and choose the “Explore” hyperlink in “Explore our latest global results in child protection.” Then, find and click “Download Report” and select “Download file”. In a new window, select Download the file for question II.2.
(<https://www.unicef.org/media/121671/file/%20Global-annual-results-report-2021-goal-area-3.pdf>)

6. Customize the email where greetings are sent for the communication and collaboration section

In the communication and collaboration section for questions **send_message** and **attach_file**, update the email address participants should send an email to in the question label (*label::English (en)*). For more information on updating labels, please see [the previous section](#).

	A	B	C
1	type name		label::English (en)
38	begin group comms_collab		III. Communication and collaboration
39	select_one do email_open		III.1. Open your email account (for example- Gmail, Hotmail, Yahoo).
40	select_one do send_message		III.2. Send a greetings message to the email address [email address].
41	select_one do attach_file		III.3. Attach the file downloaded and saved earlier, "Accelerating COVID-19 Vaccine Deployment" to an email and send it to [email address].
42	select_one do send_sms		III.4. Send a SMS message to the phone number: [local phone number]
43	select_one do send_whatsapp		III.5. Send a WhatsApp message to the phone number: [local phone number]
44	calculate comms_collab_partial		Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
45	calculate comms_collab_CANNOT		Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
46	calculate comms_collab_total_score		Calculates the total for the Communication and collaboration
47	end group comms_collab		
48			
+ ≡ survey ▾ choices ▾ settings ▾			

7. Customize the number where SMS and WhatsApp messages are sent for the communication and collaboration section

In the communication and collaboration section for questions **send_sms** and **send_whatsapp**, update the phone number participants should send an SMS and WhatsApp message to in the question label (*label::English (en)*). For more information on updating labels, please see [the previous section](#).

	A	B	C
1	type name		label::English (en)
38	begin group comms_collab		III. Communication and collaboration
39	select_one do email_open		III.1. Open your email account (for example- Gmail, Hotmail, Yahoo).
40	select_one do send_message		III.2. Send a greetings message to the email address [email address].
41	select_one do attach_file		III.3. Attach the file downloaded and saved earlier, "Accelerating COVID-19 Vaccine Deployment" to an email and send it to [email address].
42	select_one do send_sms		III.4. Send a SMS message to the phone number: [local phone number]
43	select_one do send_whatsapp		III.5. Send a WhatsApp message to the phone number: [local phone number]
44	calculate comms_collab_partial		Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
45	calculate comms_collab_CANNOT		Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
46	calculate comms_collab_total_score		Calculates the total for the Communication and collaboration
47	end group comms_collab		
48			
+ ≡ survey ▾ choices ▾ settings ▾			

8. Customize the work-related tool/app and tasks used for the work-related competencies section.

You will want to customize the work-related tool/app section and the associated tasks in the section. In adapting the tool for your use case, you will want to pick a key tool that users will be using, hopefully, better after taking the digital literacy course. This can be more specific or generalized.

	A	B	C
1	type	name	label::English (en)
59	begin_group	career_comp_tool	V. Career related competences – [Work Related Tool/App]
60	select_one do	locate_tool	V.1 Locate the [Work Related Tool/App] app and launch the app on the internet-enabled device.
61	select_one do	task1_tool	V.2. [Add a task 1 to complete on the tool - Add the time it takes] (spend no more than X minutes).
62	select_one do	task2_tool	V.3. [Add a task 2 to complete on the tool - Add the time it takes] (spend no more than X minutes).
63	select_one do	task3_tool	V.4. [Add a task 3 to complete on the tool - Add the time it takes] (spend no more than X minutes).
64	calculate	career_comp_tool_partial	Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
65	calculate	career_comp_tool_cannot	Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
66	calculate	career_comp_tool_total_score	Calculates the total for the Career related competences
67	end group	career_comp_tool	
		+ ≡	survey ▾ choices ▾ settings ▾

Examples of assessing specific tools

In Papua New Guinea, health workers use a tool called [mSupply](#), a pharmaceutical supply chain management tool. To assess health workers' abilities to use mSupply, they could make the following updates to the Work Related Tool/App section:

1. Rename the section heading from "V. Career related competencies – [Work Related Tool/App]" to "V. Career related competencies – mSupply"
2. Question V.1. (locate_tool) could be updated to "Locate the mSupply app and launch the app on the internet-enabled device."
3. Question V.2. (task1_tool) could be updated to "Check the stock of COVID-19 vaccines (Pfizer/BioNTech, Janssen, AstraZeneca/Oxford, Sinopharm) (spend no more than 3 minutes)."
4. Question V.3. (task2_tool) could be updated to "Create a requisition order (spend no more than 10 minutes)."
5. Question V.4. (task3_tool) could be updated to "Create a record for dispensing a COVID-19 vaccine to a patient (spend no more than 10 minutes)."

For a program in the education sector, teachers may need to create an online [Moodle](#) course for remote learners. To assess teachers' abilities to use Moodle, they could make the following updates to the Work Related Tool/App section:

1. Rename the section heading from "V. Career related competencies – [Work Related Tool/App]" to "V. Career related competencies – Moodle"
2. Question V.1. (locate_tool) could be updated to "Locate your browser and open Moodle on the internet-enabled device."
3. Question V.2. (task1_tool) could be updated to "Open one of your courses and add the facilitator as a new student manually (spend no more than 5 minutes)."
4. Question V.3. (task2_tool) could be updated to "Put one of your courses in edit mode and add the Word doc and PowerPoint you just created to the course (spend no more than 5 minutes)."
5. Question V.4. (task3_tool) could be updated to "For one of your courses, set up a quiz activity called "Digital Literacy Test" with default settings and a multiple question: "Did you enjoy the digital literacy course? (Choice options: Yes, No) (spend no more than 10 minutes)."

Examples of assessing general skills

For a general digital literacy course, the government wants to build the capacity of identified officers to use online meeting platforms, such as Google Hangouts. To assess officers' abilities to use the online meeting platform, they could make the following updates to the Work Related Tool/App section:

6. Rename the section heading from "V. Career related competencies – [Work Related Tool/App]" to "V. Career related competencies – Technology Skills"
7. Question V.1. (locate_tool) could be updated to "Open your browser. Open a new tab with your email and another tab with Google Meetings"
8. Question V.2. (task1_tool) could be updated to "Schedule a meeting with [email] for now (spend no more than 5 minutes)."
9. Question V.3. (task2_tool) could be updated to "Join the meeting and make sure you have your camera and audio working (spend no more than 3 minutes)."
10. Question V.4. (task3_tool) could be updated to "Share the email invite information with a [email] by copying-pasting the information in a new email in your email tab. Then, send the email to [email] (spend no more than 5 minutes)."

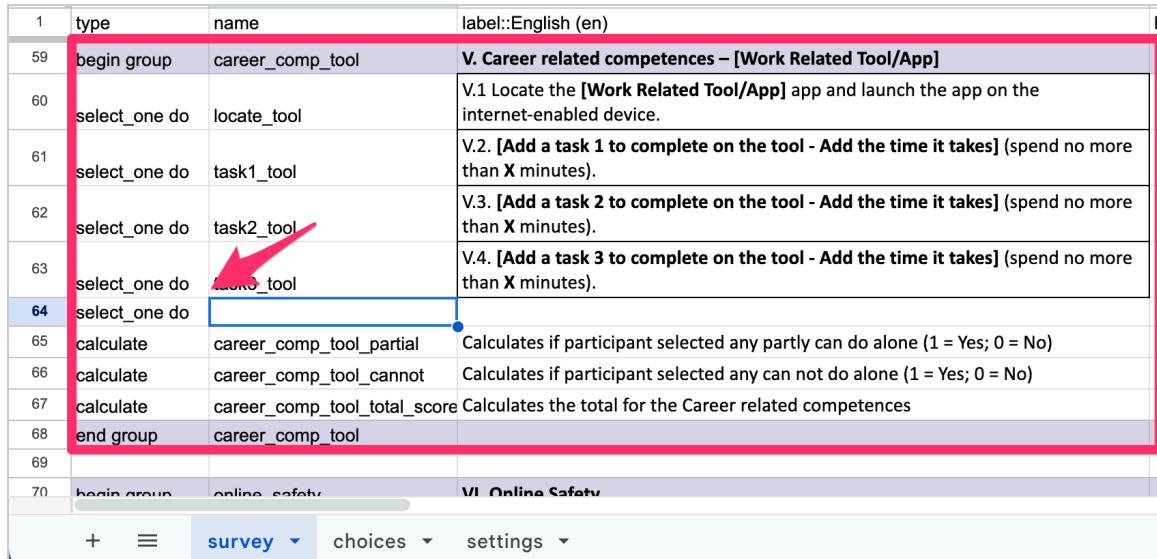
9. Add additional questions/remove questions to/from any of the sections

The assessment has calculations built into the form, which are used by the dashboard. As a result, if you add any additional questions or remove questions, you will need to update these calculations or you will have incorrect data on the dashboard.

Add additional questions

1. Navigate to the section where you would like to add a question.

2. In between the *begin_group* and *end_group* for the section, add another row anywhere above the *calculate* question types as desired. The questions will appear from top to bottom of the survey sheet. See the example below when an additional question is added to the **Career related competencies section**.



1	type	name	label::English (en)	
59	begin group	career_comp_tool	V. Career related competences – [Work Related Tool/App]	
60	select_one do	locate_tool	V.1 Locate the [Work Related Tool/App] app and launch the app on the internet-enabled device.	
61	select_one do	task1_tool	V.2. [Add a task 1 to complete on the tool - Add the time it takes] (spend no more than X minutes).	
62	select_one do	task2_tool	V.3. [Add a task 2 to complete on the tool - Add the time it takes] (spend no more than X minutes).	
63	select_one do	audio_tool	V.4. [Add a task 3 to complete on the tool - Add the time it takes] (spend no more than X minutes).	
64	select_one do			
65	calculate	career_comp_tool_partial	Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)	
66	calculate	career_comp_tool_cannot	Calculates if participant selected any can not do alone (1 = Yes; 0 = No)	
67	calculate	career_comp_tool_total_score	Calculates the total for the Career related competences	
68	end group	career_comp_tool		
69				
70	begin group	online_safety	VI. Online Safety	

+ ≡ survey ▾ choices ▾ settings ▾

3. In that new row, copy-paste the content from the *type* column heading from the last row. It should look something like *select_one do*.
 4. In the same row, add the question text under the *label::English (en)* column heading.
 5. In the same row, add a short unique data field name in the *name* column, similar to other rows in the form. The name can only use letters, numbers, and underscores (_), and the first character cannot be a number. See the example below when an additional question is added to the **Career related competencies section**.

	A	B	C
1	type	name	label::English (en)
59	begin group	career_comp_tool	V. Career related competences – [Work Related Tool/App]
60	select_one do	locate_tool	V.1 Locate the [Work Related Tool/App] app and launch the app on the internet-enabled device.
61	select_one do	task1_tool	V.2. [Add a task 1 to complete on the tool - Add the time it takes] (spend no more than X minutes).
62	select_one do	task2_tool	V.3. [Add a task 2 to complete on the tool - Add the time it takes] (spend no more than X minutes).
63	select_one do	task3_tool	V.4. [Add a task 3 to complete on the tool - Add the time it takes] (spend no more than X minutes).
64	select_one do	task4_tool	V.5. [Add a task 4 to complete on the tool - Add the time it takes] (spend no more than X minutes).
65	calculate	career_comp_tool_partial	Calculates if participant selected any partly can do alone (1 = Yes; 0 = No)
66	calculate	career_comp_tool_cannot	Calculates if participant selected any can not do alone (1 = Yes; 0 = No)
67	calculate	career_comp_tool_total_score	Calculates the total for the Career related competences
68	end group	career_comp_tool	
69			

+ ≡ survey ▾ choices ▾ settings ▾

6. In the same row, add “yes” under the *required* column heading, similar to other rows in the form.
7. For the rows with *calculate* question types in the section (between *begin_group* and *end_group*), you will need to add the new question to these calculations.
 - a. The first calculate questions should have a *name* column values of something like **fundamentals_partial**, where **_partial** is included in the name. The calculation, in the *calculation* column, should look something like

```
if(${turn_on}='1' or ${no_preinstalled_apps}='1' or
${home_screen}='1' or ${find_notifications}='1' or ${wifi_on}='1'
or ${turn_wifi_on}='1' or ${odk_app}='1' or ${create_folder}='1'
or ${sound}='1' or ${microphone}='1', 1, 0)
```

- b. To add the additional questions, before the “, 1, 0”, add “**or \${[name column value of added question from step 5]} = '1'**”. If you added more than one question, please add those as well by repeating this step until all new questions have been added. See the example below when an additional question is added to the **Career related competencies section**.

J65		if(\${locate_tool}='1' or \${task1_tool}='1' or \${task2_tool}='1' or \${task3_tool}='1' or \${task4_tool}='1', 1, 0)									
	A	B	J	K	L	M	N	O			
1	type	name	calculation								
59	begin group	career_comp_tool									
60	select_one do	locate_tool									
61	select_one do	task1_tool									
62	select_one do	task2_tool									
63	select_one do	task3_tool									
64	select_one do	task4_tool									
65	calculate	career_comp_tool_partial	if(\${locate_tool}='1' or \${task1_tool}='1' or \${task2_tool}='1' or \${task3_tool}='1' or \${task4_tool}='1', 1, 0)								
66	calculate	career_comp_tool_CANNOT	if(\${locate_tool}='0' or \${task1_tool}='0' or \${task2_tool}='0' or \${task3_tool}='0' or \${task4_tool}='0', 1, 0)								
67	calculate	career_comp_tool_total_score	number(\${locate_tool})+number(\${task1_tool})+number(\${task2_tool})+number(\${task3_tool})								

- c. The second calculate questions should have a *name* column values of something like **fundamentals_CANNOT**, where **_cannot** is included in the name. The calculation, in the *calculation* column, should look something like

```
if(${turn_on}='0' or ${no_preinstalled_apps}='0' or
${home_screen}='0' or ${find_notifications}='0' or ${wifi_on}='0'
or ${turn_wifi_on}='0' or ${odk_app}='0' or ${create_folder}='0'
or ${sound}='0' or ${microphone}='0', 1, 0)
```

- d. To add the additional questions, before the ", 1, 0)", add "or \${[name column value of added question from step 5]} = '0' ". If you added more than one question, please add those as well by repeating this step until all new questions have been added. See the example below when an additional question is added to the **Career related competencies section**.

J66		if(\${locate_tool}='0' or \${task1_tool}='0' or \${task2_tool}='0' or \${task3_tool}='0' or \${task4_tool}='0', 1, 0)									
	A	B	J	K	L	M	N	O			
1	type	name	calculation								
59	begin group	career_comp_tool									
60	select_one do	locate_tool									
61	select_one do	task1_tool									
62	select_one do	task2_tool									
63	select_one do	task3_tool									
64	select_one do	task4_tool									
65	calculate	career_comp_tool_partial	if(\${locate_tool}='1' or \${task1_tool}='1' or \${task2_tool}='1' or \${task3_tool}='1' or \${task4_tool}='1', 1, 0)								
66	calculate	career_comp_tool_CANNOT	if(\${locate_tool}='0' or \${task1_tool}='0' or \${task2_tool}='0' or \${task3_tool}='0' or \${task4_tool}='0', 1, 0)								
67	calculate	career_comp_tool_total_score	number(\${locate_tool})+number(\${task1_tool})+number(\${task2_tool})+number(\${task3_tool})								

- e. The third calculate question should have a *name* column value of something like **fundamentals_total_score**, where **_total_score** is included in the name. The calculation, in the *calculation* column, should look something like

```
number(${turn_on})+number(${no_preinstalled_apps})+number(${home_screen})+number(${find_notifications})+number(${wifi_on})+number(${turn_wifi_on})+number(${odk_app})+number(${create_folder})+number(${sound})+number(${microphone})
```

- f. To add the additional questions, add “+ `+ number(${[name column value of added question from step 5]})`”. If you added more than one question, please add those as well by repeating this step until all new questions have been added. See the example below when an additional question is added to the **Career related competencies section**.

J67		number(\${locate_tool})+number(\${task1_tool})+number(\${task2_tool})+number(\${task3_tool})+number(\${task4_tool})
	A	B
1	type	name
59	begin group	career_comp_tool
60	select_one do	locate_tool
61	select_one do	task1_tool
62	select_one do	task2_tool
63	select_one do	task3_tool
64	select_one do	task4_tool
65	calculate	career_comp_tool_partial if(\${locate_tool}='1' or \${task1_tool}='1' or \${task2_tool}='1' or \${task3_tool}='1' or \${task4_tool}='1', 1, 0)
66	calculate	career_comp_tool_cannot if(\${locate_tool}='0' or \${task1_tool}='0' or \${task2_tool}='0' or \${task3_tool}='0' or \${task4_tool}='0', 1, 0)
67	calculate	career_comp_tool_total_score number(\${locate_tool})+number(\${task1_tool})+number(\${task2_tool})+number(\${task3_tool})+number(\${task4_tool})

ASSOCIATED INDICATORS

Indicator name	Indicator definition	Indicator calculation	Comments
Participants completed all digital literacy skills alone	Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for all skills Number of persons who marked "I could do this completely on my own" all competency tasks	COUNT DISTINCT of individual (participant_no) with total_score = 52	Since there are 26 competency questions and an answer "I could do this completely on my own" for a question is worth 2 points, the total score would be 52.

Participants completed fundamentals of hardware and software skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with fundamentals_total_score = 20</p>	Since there are 10 competency questions and an answer "I could do this completely on my own" for a question is worth 2 points, the total score would be 20.
Participants completed information and data literacy skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for information and data literacy</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with info_literacy_total_score = 6</p>	Since there are 3 competency questions and an answer "I could do this completely on my own" for a question is worth 2 points, the total score would be 6.
Participants completed communication and collaboration skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for communication and collaboration</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with comms_collab_total_score = 10</p>	Since there are 5 competency questions and an answer "I could do this completely on my own" for a question is worth 2 points, the total score would be 10.
Participants completed digital content creation skills alone	Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy	COUNT DISTINCT of individual (participant_no) with	Since there are 4 competency questions and an answer "I could do this completely on my own" for a question

	<p>training programming for digital content creation</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	content_creation_total_score = 8	is worth 2 points, the total score would be 8.
Participants completed career-related competencies alone	<p>Number of participants that self-score they can complete task by themselves at the end of the digital literacy training programming for career related competencies</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	COUNT DISTINCT of individual (participant_no) with career_comp_tool_total_score = 8	Since there are 4 competency questions and an answer "I could do this completely on my own" for a question is worth 2 points, the total score would be 8.
Participants partially completed some digital literacy skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for all skills</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but haven't marked any "I could not do it" among all competency tasks</p>	COUNT DISTINCT of individual (participant_no) with (fundamentals_partial = 1 or info_literacy_partial = 1 or comms_collab_partial = 1 or content_creation_partial = 1 or career_comp_tool_partial = 1) and (fundamentals_CANNOT = 0 and info_literacy_CANNOT = 0 and comms_collab_CANNOT = 0 and content_creation_CANNOT = 0 and career_comp_tool_CANNOT = 0)	Each section individually evaluates whether a respondent selected at least 1 "I could do this partly on my own". If a respondent did select this answer, the section will be assigned a value of "1", otherwise "0". If the respondent hasn't marked any "I could not do it" among all competency tasks, the section will be assigned a value of "0", otherwise "1". Since only one answer of "I could do this partly on my own" is required, OR is used. Since, no answer of "I could not do it" could be selected, AND was used

		career_comp_tool_can not = 0)	
Participants partially completed some fundamentals of hardware and software skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(fundamentals_partial = 1 and fundamentals_CANNOT = 0)</p>	See the " Participants partially completed some digital literacy skills alone " indicator above for further explanation
Participants partially completed some information and data literacy skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for information and data literacy</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(info_literacy_partial = 1 and info_literacy_CANNOT = 0)</p>	See the " Participants partially completed some digital literacy skills alone " indicator above for further explanation
Participants partially completed some communication and collaboration skills alone	Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(comms_collab_partial = 1 and</p>	See the " Participants partially completed some digital literacy skills alone " indicator above for further explanation

	<p>communication and collaboration Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	comms_collab_cannot $= 0$)	
Participants partially completed some digital content creation skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for digital content creation Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	COUNT DISTINCT of individual (participant_no) with (content_creation_partial = 1 and content_creation_can_not = 0)	See the " "Participants partially completed some digital literacy skills alone" indicator above for further explanation "
Participants partially completed some career related competencies alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for career related competencies Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	COUNT DISTINCT of individual (participant_no) with (career_comp_tool_partial = 1 and career_comp_tool_can_not = 0)	See the " "Participants partially completed some digital literacy skills alone" indicator above for further explanation "

Participants cannot complete some digital literacy skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for all skills</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(fundamentals_CANNOT = 1 or info_literacy_CANNOT = 1 or comms_collab_CANNOT = 1 or content_creation_can_not = 1 or career_comp_tool_can_not = 1)</p>	<p>If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".</p> <p>Since an answer of "I could not do it" could be selected in any of the sections, OR was used</p>
Participants cannot complete some fundamentals of hardware and software skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(fundamentals_CANNOT = 1)</p>	<p>If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".</p>
Participants cannot complete some information and data literacy skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for information and data literacy</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(info_literacy_CANNOT = 1)</p>	<p>If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".</p>

Participants cannot complete some communication and collaboration skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for communication and collaboration</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(comms_collab_cannot = 1)</p>	If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".
Participants cannot complete some digital content creation skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for digital content creation</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(content_creation_can not = 1)</p>	If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".
Participants cannot complete some career-related competencies alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for career-related competencies</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	<p>COUNT DISTINCT of individual (participant_no) with</p> <p>(career_comp_tool_can not = 0)</p>	If the respondent has marked any "I could not do it" among all competency tasks, the section will be assigned a value of "1", otherwise "0".
Average digital competency score	Average digital literacy competency score	average(total_score /2)	The scoring system uses categorizations:

			<p>1 = "Can do completely on my own" 0.5 = "Can do partly on my own" 0 = "Can not do it"</p> <p>Since the actual categorizations in the form are: 2 = "Can do completely on my own" 1 = "Can do partly on my own" 0 = "Can not do it" Whole numbers can only be used in the choice options.</p> <p>Therefore, the total score would be divided by 2 to be equivalent to the desired recategorization as desired</p>
Average digital competency score for fundamentals of hardware and software	Average digital literacy competency score for fundamentals of hardware and software	average(fundamentals_total_score /2)	See the comment for "Average digital competency score" for more information how this is calculated
Average digital competency score for information and data literacy	Average digital literacy competency score for information and data literacy	average(info_literacy_total_score /2)	See the comment for "Average digital competency score" for more information how this is calculated
Average digital competency score for communication and collaboration	Average digital literacy competency score for communication and collaboration	average(comms_collab_total_score /2)	See the comment for "Average digital competency score" for more information how this is calculated
Average digital competency score for digital content creation	Average digital literacy competency score for digital content creation	average(content_creation_total_score /2)	See the comment for "Average digital competency score" for more information how this is calculated

Average digital competency score for career related competencies	Average digital literacy competency score for career related competencies	<code>average(career_comp_tool_total_score/2)</code>	See the comment for "Average digital competency score" for more information how this is calculated
Participants with knowledge of online safety	Number of participants that self-score they know all online safety information at the end of the digital literacy training programming Number of persons who answered all the questions of Online knowledge correctly	<code>COUNT DISTINCT of individual (participant_no) with online_safety_total_score = 3</code>	If the person answered a question correctly in this section, 1 point was assigned. There are 3 questions. The total answer if all were correct is 3 points
Participants with partial knowledge of online safety	Number of participants that self-score they know the most information about online safety at the end of the digital literacy training programming Number of persons who answered at least 1 questions of Online knowledge incorrectly, but no all incorrectly	<code>online_safety_total_score = 2 or 1</code>	If the person answered a question correctly in this section, 1 point was assigned. If one question was incorrect, the respondent would have answered 1 or 2 questions correctly. Hence, the respondent would have a total of 1 or 2 points
Participants with no knowledge of online safety	Number of participants that self-score they don't know any online safety information at the end of the digital literacy training programming Number of persons who answered all the questions of Online knowledge incorrectly	<code>online_safety_total_score = 0</code>	If the person answered a question correctly in this section, 1 point was assigned. If no questions were correct, the respondent would have a total of 0 points.

TOOL 3: FACILITATOR'S GUIDE FOR PERFORMANCE SELF-EVALUATION QUESTIONNAIRE

Use this tool to capture the facilitator's observations of participants' performance assessment, which is conducted at the beginning and end of the course training. This tool will serve as a way to reinforce the responses of individual participants. The facilitator's guide has all the same sections as

the participants, but it provides additional guidance to the facilitator to lead the performance self-evaluation. The facilitator should read through the entire assessment before facilitating the assessment. The performance assessment helps to assess participants' digital literacy based on five key areas identified in a report written by UNESCO (2018).

The form is broken into six key sections highlighting the 5 key areas for digital literacy competency in the assessment:

- Fundamentals of hardware and software
- Information and data literacy
- Communication and collaboration
- Digital content creation
- Career-related competencies
- Online Safety

Find the ready to fill form [here](#). For access to the XLSForm, please see the link in the [resources](#).

The following are used in this tool:

10. *Italic Text* will reference XLSForm column headings.
11. Instructions will reference the row with the data field name in **bold** in the *name* column of the XLSForm.
12. [...] This is an **instruction for the people adapting the tool** and should be deleted before use.

SUGGESTED ADAPTATIONS TO THE FORM

Since this form is similar to the performance self-evaluation, you will need to make some of the same updates.

1. Customize the name of the folder created to save files

In **create_folder**, **locate_download_folder**, **word_doc**, and **powerpoint**, you can change the name of the folder, currently called "UNICEF", in the question label (*label::English (en)*) to another name if desired. You should update as done for the [performance self-evaluation](#).

2. Update the evaluation type

If your team is implementing the performance assessment twice, pre and post-training, you will need to update the default value for the **evaluation** in the form. You will also have to update the default value for **evaluation** if you are only doing a one-time evaluation. You should update as done for the [performance self-evaluation](#).

3. Update the information and data literacy section based on the page searched for

In the information and data literacy section, you can change the page participants search in the task. Currently, participants are searching for the COVID-19 page on the WHO website. You can customize this for your sector. This section should be updated similarly to the [performance self-evaluation](#).

4. Update the communication and collaboration section with customized email

In the communication and collaboration section for questions **send_message** and **attach_file**, update the email address participants should send an email to in the question label (*label::English (en)*). This section can be updated similarly to the [performance self-evaluation](#).

5. Update the communication and collaboration section with the number where SMS and WhatsApp messages are sent

In the Communication and Collaboration section for questions **send_sms** and **send_whatsapp**, update the phone number participants should send an SMS and WhatsApp message to in the question label (*label::English (en)*). This section can be updated similarly to the [performance self-evaluation](#).

6. Update the work-related competencies section with custom work-related tool/app and tasks

You will want to customize the Work-Related Tool/App section and the associated tasks in the section. In adapting the tool for your use case, you will want to pick a key tool that users will be using, hopefully, better after taking the digital literacy course. This section can be updated similarly to the [performance self-evaluation](#).

7. Add additional questions/remove questions to/from any of the sections added in performance self-evaluation

The assessment has calculations built into the form, which are used by the dashboard. As a result, if you add any additional questions or remove questions, you will need to update these calculations or you will have incorrect data on the dashboard. Update your facilitator guide similarly to the [performance self-evaluation](#).

ASSOCIATED INDICATORS

No indicators were associated with this form. As mentioned previously, this form is a way to validate the self-reflection values provided by respondents. Therefore, no indicators were included in the dashboard.

PART 3: SAMPLE DATA ANALYSIS AND VISUALIZATION

EXTRACTION, LOADING, AND TRANSFORMATION OF DATA

Extracting, loading, and transforming data (ELT) is a data integration process where raw data is extracted and loaded into a target destination, typically a data warehouse (i.e. Canopy), before undergoing transformation for analysis, using tools (i.e. [DBT](#)), and reporting purposes. This approach allows for flexible data manipulation and analysis and optimizing business intelligence workflows.

EXTRACTING AND LOADING DATA TO THE DATABASE

Once data has been uploaded to the forms on InForm, the data has to be loaded into a database for further transformation to be done. Ona uses Airbyte to load data into a database. [Airbyte](#) is an open-source data integration platform that securely extracts data from different data sources and reliably loads the data to a data warehouse or database. This is managed by Ona through a Canopy subscription. However, users can also set up their own Airbyte instance and manage the connection themselves. More information on using Airbyte can be found in [this guide specific to InForm](#) or the [product documentation](#).

TRANSFORMATION SCRIPTS

Transformation is converting a raw dataset into a ready-to-use format. In the InForm work aid, this involves writing SQL scripts using [dbt](#) to aggregate, clean, and validate the data before presenting it on Superset.

TRANSFORMATIONS USING DBT

dbt is installed on the host or client environment and dbt CLI commands are run to execute and test SQL models. This is managed by Ona through a Canopy subscription. To access and update the scripts, reach out to the InForm admin team by sending an email to inform@unicef.org.

If you are interested in learning more about dbt, take a look at the [dbt documentation](#) for best practices and guidelines.

MODEL ARCHITECTURE

The dbt model structure follows a modular and version-controlled approach, promoting collaboration and maintainability. Here's an example of a generic model:

```
dbt-project/
├── macros/
│   └── macro.sql
├── tests/
│   └── test.sql
└── models/
    ├── marts/
    │   └── mart_model.sql
    ├── intermediate/
    │   └── intermediate_model.sql
    ├── staging/
    │   └── staging_model.sql
    └── dbt_project.yml
├── packages.yml
└── README.md
```

The diagram below illustrates the file structure for the dbt repository accompanying the UNICEF East Asia and Pacific (EAPRO) Digital Literacy workstream:

```
canopy-unicef-eapro/
├── macros/
├── tests/
└── models/
    ├── marts/
    │   ├── participant_submissions.sql
    │   ├── baseline_submissions.sql
    │   ├── baseline_submissions_unpivot.sql
    │   ├── baseline_submissions_overview.sql
    │   ├── pre_and_post_evaluation_submissions.sql
    │   ├── pre_and_post_evaluation_unpivot.sql
    │   ├── pre_and_post_evaluation_overview.sql
    ├── intermediate/
    │   └── int_participant_submissions.sql
    ├── staging/
    │   ├── stg_facilitator_evaluation.sql
    │   ├── stg_participant_self_evaluation.sql
    │   └── stg_self_reflection.sql
    └── dbt_project.yml
└── packages.yml
```

|— README.md

The models are divided into three main sections.

a. Staging (source connection)

Through the staging models, dbt connects to the source data, allowing for the extraction and initial transformation of raw datasets. This stage sets the foundation for subsequent processing, ensuring a seamless transition from raw data to refined, analysis-ready structures.

In the digital literacy work aid, we have the following staging models:

1. **stg_facilitator_evaluation.sql**

- Description: This dbt model represents the staging data for facilitator evaluations sourced from Ona data forms via Airbyte into Postgres tables. All the records in the source table are selected in the model and consolidated with its corresponding labels table.
- Data Source: Ona data forms pushed by Airbyte into the PostgreSQL table `sbm_facilitator_pe_rmance_questionnaire` in the `inform` schema.

2. **stg_participant_self_evaluation.sql**

- Description: This dbt model corresponds to the staging data for participant self-evaluations sourced from Ona data forms through Airbyte into Postgres tables. All the records in the source table are selected in the model and consolidated with its corresponding labels table.
- Data Source: Ona data forms pushed by Airbyte into the PostgreSQL table `sbm_performance_self_evaluation` in the `inform` schema.

3. **stg_self_reflection.sql**

- Description: This dbt model represents the staging data for self-reflection evaluations sourced from Ona data forms via Airbyte into Postgres tables. All the records in the source table are selected in the model and consolidated with its corresponding labels table.
- Data Source: Ona data forms pushed by Airbyte into the PostgreSQL table `sbm_self_reflection` in the `inform` schema.

b. Intermediate (join)

In the intermediate models, dbt facilitates data integration by performing joins across datasets. This step ensures that unlike sources are effectively merged, providing a unified dataset that serves as the basis for further analysis and modeling.

In the digital literacy work aid, we have the following intermediate models:

1. **int_participant_submissions.sql**

- Description: This dbt model consolidates data from two of the staging sources using the unique participant ID, creates the new age group category and filters columns required for the programmed indicators.
- Data Source: **stg_self_reflection, stg_participant_self_evaluation**

c. Marts (final tables)

Marts in dbt represent the final stage of indicator engineering, where aggregated and transformed data is stored for analytical purposes. dbt's marts enable efficient querying and reporting, supporting the generation of insights from the cleaned and organized datasets.

In the digital literacy work aid, we have the following marts models:

1. **participant_submissions.sql**

- Description: This model calculates the programmed indicators using the columns selected in the intermediate model and the criteria provided in the requirements document shown in the '*Indicators and programmed indicators*' section below.
- Data Source: **int_participant_submissions**

2. **baseline_submissions.sql**

- Description: This dbt model generates a mart for baseline evaluations with data from participant submissions filtered by evaluation criteria. It structures the data to facilitate the creation of Superset dashboards related to baseline evaluations.
- Data Source: **participant_submissions**

3. **baseline_submissions_unpivot.sql**

- Description: This dbt model creates an unpivoted version of the baseline evaluations. It structures the data in key-value pairs, making it suitable for specific Superset dashboards that require this format in the baseline evaluation overview section.
- Data Source: **baseline_submissions**

4. **baseline_submissions_overview.sql**

- Description: This dbt model utilizes the unpivoted version from `baseline_submissions_unpivot.sql` to generate an overview mart. It supports the creation of Superset dashboards that provide an overview of baseline evaluations.
- Data Source: **baseline_submissions_unpivot**

5. **pre_and_post_evaluation_submissions.sql**

- Description: This dbt model generates a mart accommodating both pre-evaluation and post-evaluation data from participant submissions filtered by evaluation criteria. It structures the data to facilitate the creation of Superset dashboards related to pre-evaluation and post-evaluation data.

- Data Source: **participant_submissions**

6. **pre_and_post_evaluation_submissions_unpivot.sql**

- Description: This dbt model creates an unpivoted version of the pre-evaluation and post-evaluation data. It structures the data in key-value pairs, making it suitable for specific Superset dashboards in the pre-evaluation and post-evaluation overview sections that require this format.
- Data Source: **pre_and_post_evaluation_submissions**

5. **pre_and_post_evaluation_submissions_overview.sql**

- Description: This dbt model utilizes the unpivoted version from `pre_and_post_evaluation_submissions_unpivot.sql` to generate an overview mart. It supports the creation of Superset dashboards that provide an overview of pre-evaluations and post-evaluations.
- Data Source: **pre_and_post_evaluation_submissions_unpivot**

ADJUST THE SCRIPT FOR FORM CHANGES

Users may need to make changes to the scripts to account for changes to the forms. The expected changes include adding/deleting questions, adding/updating/deleting choice options, and possibly changing the name of the question field.

In the scripts, the data flows start in the staging models. The staging models feed into the intermediate model (`int_participant_submissions.sql`), which is used to generate the various marts for Superset dashboards.

Adding/Deleting a question

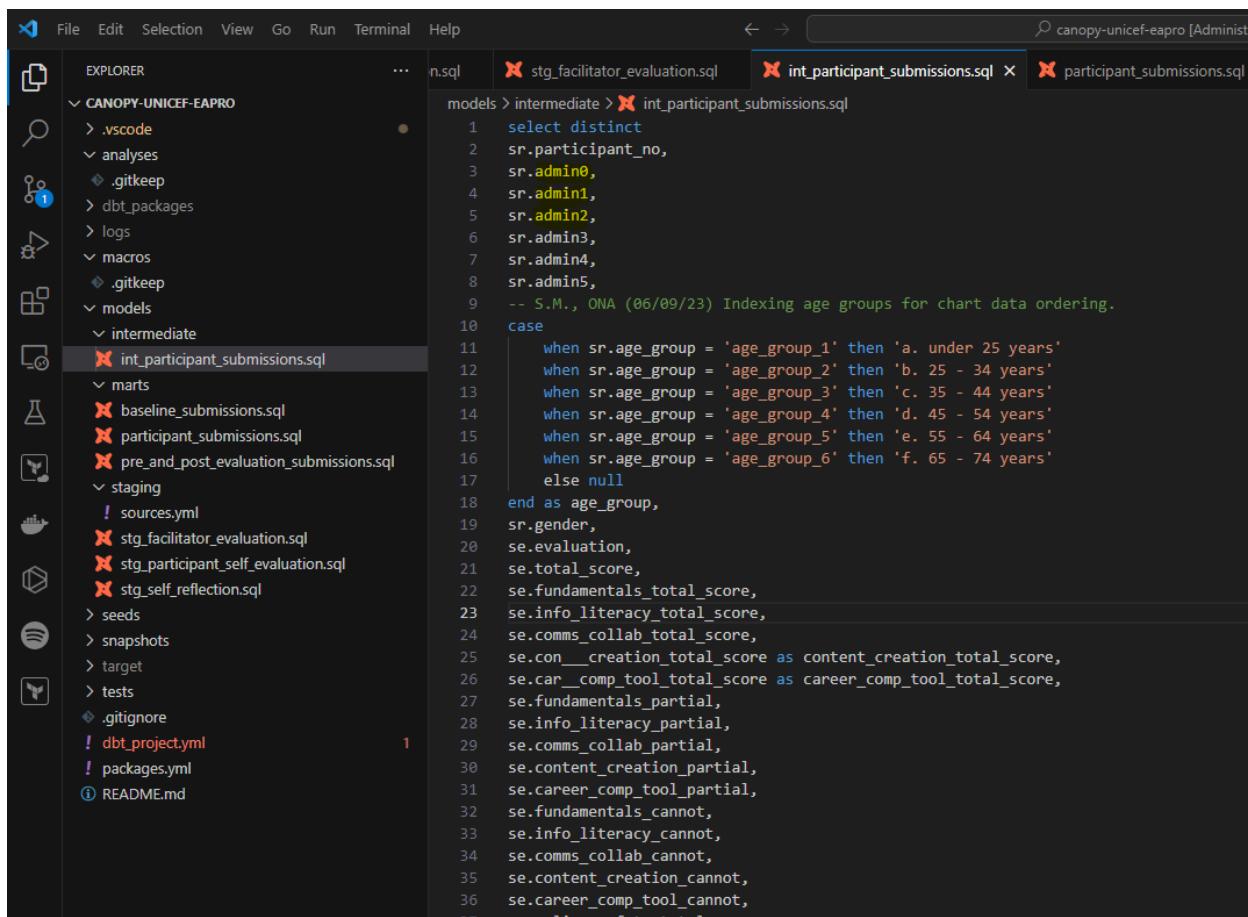
To add a new question data field, start in the intermediate model and add the new data field using a similar naming convention as other variables in the script. You will also want to add the new data field to all the relevant subsequent models downstream, i.e. all the mart models that will reference the question. We recommend using the [model architecture](#) descriptions and [list of indicators](#) to help you.

CHANGES TO CHOICE OPTIONS

Changes to the choice options in the forms will not require updates to the script. The data models were built in such a way that these changes should be accommodated automatically.

CHANGING QUESTION FIELD NAME

The intermediate model lists all the data fields pulled from the data source through the staging files.



```

models > intermediate > int_participant_submissions.sql
  1  select distinct
  2    sr.participant_no,
  3    sr.admin0,
  4    sr.admin1,
  5    sr.admin2,
  6    sr.admin3,
  7    sr.admin4,
  8    sr.admin5,
  9    -- S.M., ONA (06/09/23) Indexing age groups for chart data ordering.
 10   case
 11     when sr.age_group = 'age_group_1' then 'a. under 25 years'
 12     when sr.age_group = 'age_group_2' then 'b. 25 - 34 years'
 13     when sr.age_group = 'age_group_3' then 'c. 35 - 44 years'
 14     when sr.age_group = 'age_group_4' then 'd. 45 - 54 years'
 15     when sr.age_group = 'age_group_5' then 'e. 55 - 64 years'
 16     when sr.age_group = 'age_group_6' then 'f. 65 - 74 years'
 17     else null
 18   end as age_group,
 19   sr.gender,
 20   se.evaluation,
 21   se.total_score,
 22   se.fundamentals_total_score,
 23   se.info_literacy_total_score,
 24   se.comms_collab_total_score,
 25   se.con__creation_total_score as content_creation_total_score,
 26   se.car__comp_tool_total_score as career_comp_tool_total_score,
 27   se.fundamentals_partial,
 28   se.info_literacy_partial,
 29   se.comms_collab_partial,
 30   se.content_creation_partial,
 31   se.career_comp_tool_partial,
 32   se.fundamentals_CANNOT,
 33   se.info_literacy_CANNOT,
 34   se.comms_collab_CANNOT,
 35   se.content_creation_CANNOT,
 36   se.career_comp_tool_CANNOT,
 37   se.info_literacy_fails

```

If a field name is changed in the form, this is the first file to check and modify for alignment with the forms.



Note: Unique Identifier: The unique participant ID in the data collection forms plays a crucial role in consolidating and organizing data across different stages of the transformation process. It must be included, filled, and remain unchanged. The value should also be unique for all participants.

DASHBOARD

Once the data has been pulled into the database, cleaned, and transformed into simple data tables, the data is ready for visualization. The data is visualized using Canopy Superset. The dashboard aims to highlight the impact of digital literacy training, identify gaps during the training for correction and improvements for future training, and highlight groups of people who might need extra assistance/additional training.

The dashboard will help several groups improve implementation and future training. This dashboard is envisioned to be used primarily by the project management team to help facilitate effective digital literacy training and write reports. The dashboard may also be shared with others implementing digital literacy training, such as governments or partners, to improve future training. The dashboard may also be shared with participants to show their progress and highlight areas for improvement and additional practice.

INDICATORS

Indicator name	Indicator definition	Programmed indicator
Participants completed all digital literacy skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for all skills</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks</p>	comp_dig_literacy
Participants completed fundamentals of hardware and software skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	comp_fund_hw_sw
Participants completed information and data literacy skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for information and data literacy</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	comp_inf_dig_literacy
Participants completed communication and collaboration skills alone	Number of participants that self-score they can complete tasks by themselves at the end of	comp_comm_collaboration

	<p>the digital literacy training programming for communication and collaboration</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	
Participants completed digital content creation skills alone	<p>Number of participants that self-score they can complete tasks by themselves at the end of the digital literacy training programming for digital content creation</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	comp_dig_content_creation
Participants completed career-related competencies alone	<p>Number of participants that self-score they can complete task by themselves at the end of the digital literacy training programming for career related competencies</p> <p>Number of persons who marked "I could do this completely on my own" all competency tasks for a specific competency dimension</p>	comp_career_competencies
Participants partially completed some digital literacy skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for all skills</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but haven't marked any "I could not do it" among all competency tasks</p>	partial_dig_literacy
Participants partially completed some fundamentals of hardware and software skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the</p>	partial_comp_fundamentals

	<p>digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	
Participants partially completed some information and data literacy skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for information and data literacy</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	partial_comp_info_literacy
Participants partially completed some communication and collaboration skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for communication and collaboration</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	partial_comp_comms_collab
Participants partially completed some digital content creation skills alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for digital content creation</p>	partial_comp_content_creation

	Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension	
Participants partially completed some career related competencies alone	<p>Number of participants that self-score they can complete most tasks partially by themselves at the end of the digital literacy training programming for career related competencies</p> <p>Number of persons who marked at least 1 "I could do this partly on my own" but have not marked any "I could not do it" among all competency tasks for a specific competency dimension</p>	partial_comp_career_comp_tool
Participants cannot complete some digital literacy skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for all skills</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks</p>	cannot_comp_dig_literacy
Participants cannot complete some fundamentals of hardware and software skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for fundamentals of hardware and software</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	cannot_comp_fundamentals
Participants cannot complete some information and data literacy skills alone	Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for information and data literacy	cannot_comp_info_literacy

	Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension	
Participants cannot complete some communication and collaboration skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for communication and collaboration</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	cannot_comp_comms_collab
Participants cannot complete some digital content creation skills alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for digital content creation</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	cannot_comp_content_creation
Participants cannot complete some career-related competencies alone	<p>Number of participants that self-score they cannot complete some tasks by themselves at the end of the digital literacy training programming for career-related competencies</p> <p>Number of persons who marked at least one "I could not do it" among all competency tasks for a specific competency dimension</p>	cannot_comp_career_comp_tool
Average digital competency score	Average digital literacy competency score	digital_competency_score
Average digital competency score for fundamentals of hardware and software	Average digital literacy competency score for fundamentals of hardware and software	dc_score_hardware_software

Average digital competency score for information and data literacy	Average digital literacy competency score for information and data literacy	dc_score_info_data_literacy
Average digital competency score for communication and collaboration	Average digital literacy competency score for communication and collaboration	dc_score_comm_collab
Average digital competency score for digital content creation	Average digital literacy competency score for digital content creation	dc_score_dig_content
Average digital competency score for career related competencies	Average digital literacy competency score for career related competencies	dc_score_career_comp
Participants with knowledge of online safety	<p>Number of participants that self-score they know all online safety information at the end of the digital literacy training programming</p> <p>Number of persons who answered all the questions of Online knowledge correctly</p>	knowledge_online_safety
Participants with partial knowledge of online safety	<p>Number of participants that self-score they know the most information about online safety at the end of the digital literacy training programming</p> <p>Number of persons who answered at least 1 questions of Online knowledge incorrectly, but no all incorrectly</p>	partial_knowledge_online_safety
Participants with no knowledge of online safety	<p>Number of participants that self-score they don't know any online safety information at the end of the digital literacy training programming</p> <p>Number of persons who answered all the questions of Online knowledge incorrectly</p>	no_knowledge_online_safety

Access to SMART devices	<p>Percentage of persons who have access to SMART mobile device</p> <p>Number of persons who marked "Smart phone" or "Tablet" to questions II.1</p>	access_smart_devices
Access to SMART devices for work	<p>Percentage of persons who have access to SMART mobile device for work</p> <p>Number of persons who marked "Smart phone" or "Tablet" to questions II.3</p>	access_smart_devices_for_work
Access to digital devices	<p>Number of persons who rely on their employer to access digital devices</p> <p>Number of persons who marked "Provided on loan by your employer" or "Available at your workplace" to "Desktop computer", "Laptop computer", "Smart phone", "Tablet" and have not marked "Owner by you" in question II.2.</p>	access_digital_devices
People able to do at least 3 tasks themselves very well and help others (digital skills)	<p>Percentage of persons who know how to do at least 3 activities very well and can assist others on how to do this</p> <p>Number of persons who marked "I know how to do this very well and can assist others on how to do this" for at least 3 activities</p>	more_than_3tasks_and_help_others
Active on social media	<p>Number of persons who are active on at least 1 social media platform</p> <p>Number of persons who marked "Active" for at least one social media platform in Q V.1</p>	posted_content_calc

SUPERSET DASHBOARD

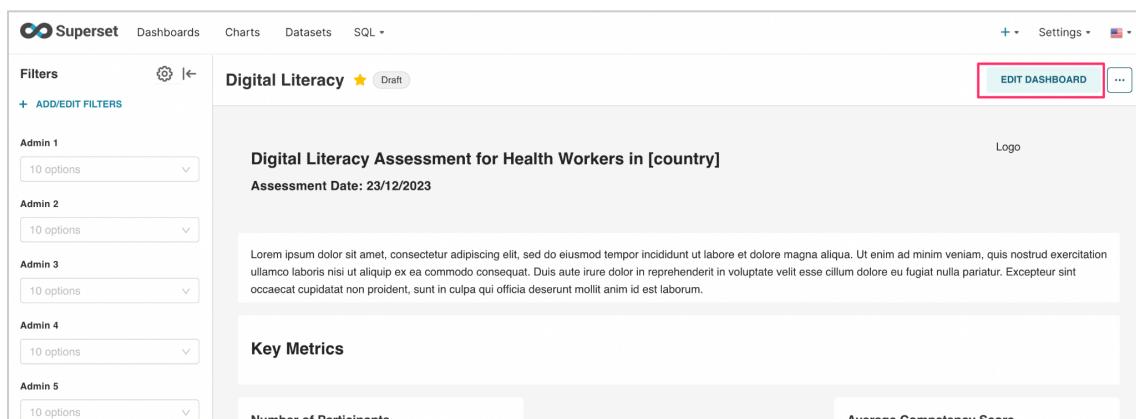
Canopy Superset is an analytics platform that complements the data collection done in Ona or other platforms. With Superset, users can draw insights from data gathered both within their organizations and from external sources so that they can review historical trends and make informed decisions.

UPDATING THE DIGITAL LITERACY DASHBOARD

While the dashboard is quite comprehensive, you may want to make some changes to the dashboard. Depending on the types of changes you would like to make to the dashboard, you may need to make an update to the script. You will need edit permissions to all the relevant data sources and dashboards to make updates.

Edit a dashboard

To edit a dashboard, you select **Edit Dashboard** from the dashboard page to update the dashboard chart configuration and content.



Update the dashboard text description

You will want to update the dashboard text description to include a bit of background information about the project, digital literacy training, etc. Once in edit mode, select the text box at the top and add/update the text. You can also preview how it will look by putting it in preview by selecting in the drop-down (as shown by the red arrow in the screenshot below).

The screenshot shows a Superset dashboard titled "Digital Literacy". A red arrow points to the edit icon (pencil) on a card component. The card contains the title "Digital Literacy Assessment for Health Workers in [country]" and the text "Assessment Date: 23/12/2023". Below the card is a text box with placeholder text: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum."

Additional filters and indicators

If you would like to make additional changes to the dashboard, you will need to make updates to the scripts and dashboard.

Additional filters

To add additional filters, you will need to add the column to all the data sources used in the charts on the dashboard. For more information on adding additional fields to sources, see this [previous section](#). For more information on adding additional filters to a dashboard, see the filter-building section on the [Canopy Superset documentation](#).

Additional indicators

To add additional indicators, you will need to add the column to the data sources used to create the chart. For more information on adding additional fields to sources, see this [previous section](#). For more information on adding additional charts to a dashboard, see the charts building section on the [Canopy Superset documentation](#).

How to build good dashboards is a constantly evolving topic as technology advances. We like to reference sources, which update as the practice evolves, when building our dashboards. We recommend referencing the following resources:

1. [How to Design a Dashboard](#) - This website provides some best practices for how you can build your overall dashboard, which is composed of charts.
2. [Data Visualization Catalog](#) - This website provides a catalog of different types of charts. For each chart, there is an example, descriptions, anatomy of the chart, functions, when to group data, similar charts, tools to generate the visualization, and examples along with a link to a YouTube video. You can also search the catalog by function or list.

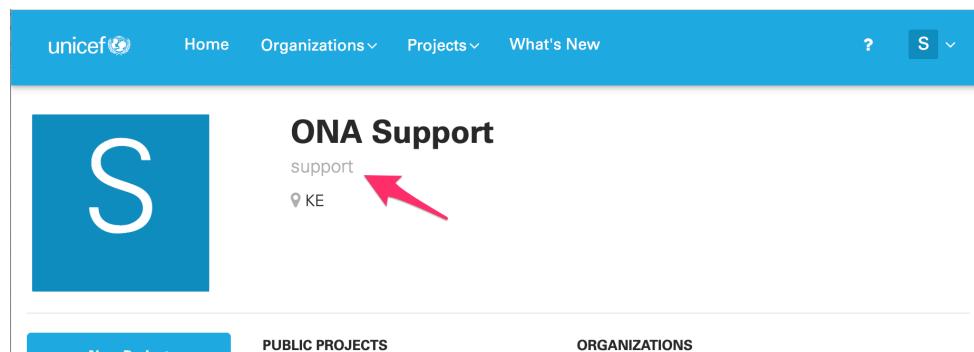
APPENDIX

RESOURCES

1. [Tool 1: Self-reflection questionnaire on InForm](#)
2. [Tool 2: Self-evaluation questionnaire on InForm](#)
3. [Tool 3: Facilitator's guide for performance self-evaluation questionnaire on InForm](#)
4. [Superset Dashboard](#)
5. Supplemental Docs:
 - a. [Airbyte Documentation](#)
 - b. [Superset Documentation](#)
 - c. [Form updates to better cater to education sector](#)

CONFIGURING DEVICES

1. Username:
 - a. Log in to inform: <https://inform.unicef.org/>. Once logged in, navigate to your account icon (upper right corner), click on the dropdown, and select the first choice
 - b. A new page will open. The username, which is based on your email, is on the page (as shown below).



2. ODK Key (This is used for the password):
 - a. Log into inform: <https://inform.unicef.org/>. Once logged in, navigate to your account icon (upper right corner), click on the dropdown, and select the third choice
 - b. A new window will open. Select the third tab (ODK Key) and click the button "Show".
 - c. The ODK Key should then appear. NOTE: These do have expirations. Please note that when you take your ODK Key.

The screenshot shows the ONA Support Settings page. At the top, there is a navigation bar with links for Home, Organizations, Projects, and What's New. On the far right, there are a help icon and a user profile icon. Below the navigation bar, the page title is "ONA Support > Settings". Under the title, there are three buttons: "Edit Public Profile", "API", and "ODK Key", with "ODK Key" being the active tab. A horizontal line separates this from the main content area. In the content area, there is a section titled "Your ODK Token:" followed by a redacted token value. Below the token, it says "Expires July 31st 2024, 9:45:27 am on:". At the bottom of this section is a blue "Hide" button.

3. URL: <https://data.inform.unicef.org>
4. Configure the device to automatically download updated forms to streamline updates to the form during data collection:
 - a. Open Form Management: Project Icon ▶ Settings ▶ Form management
 - b. Under Form Update, open **Blank form update mode**
 - c. Select **Previously downloaded forms only**.
 - d. Select the checkbox next to **Automatic download** to automatically download all forms previously downloaded.