



Aquatic Animal Health

Remote training courses on Learn.ink Platform

Version 2



What is Learn.ink and how does it work?

Learn.ink is a training and learning digital platform designed for use on low-end mobile devices. It allows WorldFish and partner organizations to create and disseminate training materials remotely through interactive learning experiences on mobile devices. Learn.ink (<https://learn.ink>) is currently used by over 100 organizations across 35 countries. Multiple CGIAR institutions, including the International Livestock Research Institute and the International Rice Research Institute, are actively using the digital microlearning platform to reach users in Kenya (<https://learn.ink/resources/best-online-training-platform-2021/kenya>), Tanzania (<https://learn.ink/resources/best-online-training-platform-2021/tanzania>), Nigeria (<https://learn.ink/resources/best-online-training-platform-2021/nigeria>) and the Philippines (<https://learn.ink/resources/best-online-training-platform-2021/philippines>).

Using specific links generated and shared from the Learn.ink platform, new users only need to access the link(s) and register in order to start the courses developed under the WorldFish account. Each WorldFish Learn.ink training course consists of multiple modules, and every module is further divided into stages that comprise a lesson and an accompanying quiz section to assess learning effectiveness (Figure 1).

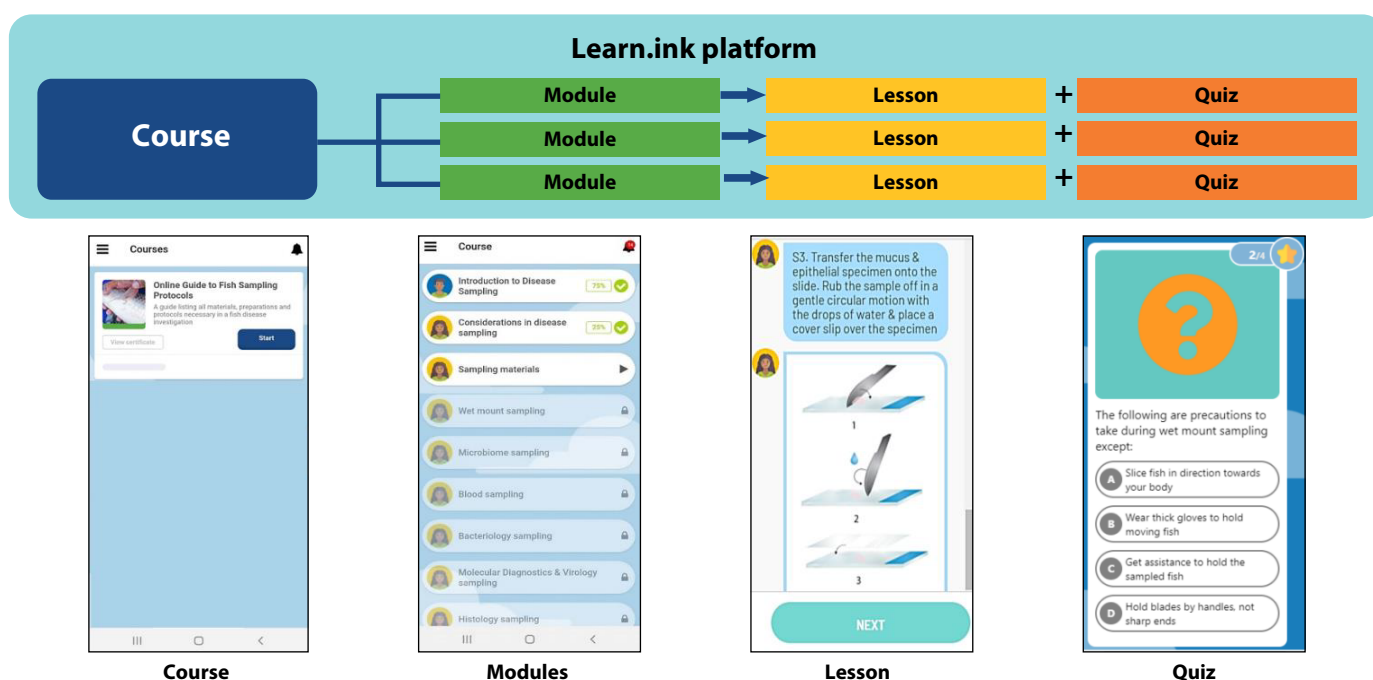


Figure 1. Structure of a micro-curriculum on Learn.ink. WorldFish micro-curriculums developed on the Learn.ink platform are organised into courses, modules, lessons and quizzes.

How do Learn.ink courses benefit content creators and course users?

Lessons are where the content creators can share training and learning materials in the form of text, images and URLs to external resources (audio, videos, PDFs). Content and survey questions on various topics are placed within each lesson to push and pull general information from course users about their background, experience or current practices. A quiz also follows each lesson for course users to self-assess what they have learned from the previous lesson. Course users have the option to repeat both completed lessons and quizzes at any time using their mobile devices. All that is needed is a reliable internet connection. Additionally, content creators can opt to place the quiz before each lesson to gauge the course users' baseline knowledge before being trained. Once users begin accessing the courses, content creators will be able to obtain near real-time analytics on each user's progress through the Learn.ink dashboard (<https://docs.learn.ink/creating-courses/viewing-course-analytics/>). The analytics provide information on course completion rates and quiz accuracy rates as well as aggregate responses from survey questions.

WorldFish courses can be contextualized for specific user groups using the course builder tool (<https://docs.learn.ink/creating-courses/creating-a-course/>). Each published course on Learn.ink can be shared with target communities through specific URLs that will automatically group new users, such as enumerators groups, farmers groups, researchers and field officers, who sign up to the course using that link.

Through WorldFish Learn.ink courses, users will have a more convenient way of learning on-the-go using only their mobile devices. Our courses provide an alternative method for long-distance training by engaging users in an interactive chatbot-like learning environment. Our online training courses can serve to prepare targeted audiences in advance of face-to-face or virtual workshops. Users will be able to start, pause and complete our courses at their own pace, and they will receive a digital certificate at the end of each course. Users can also participate in discussion threads at the end of each course to share their inputs and questions with course creators and other users within the Learn.ink community. The Learn.ink team is currently working on redesigning and upgrading the way communities work on Learn.ink. The team aims to build this as a standalone feature within the platform that allows organizations to separate courses and groups of users who can form community discussions.

WorldFish intends to implement these training courses with ongoing and future projects in focal and scaling countries, including Bangladesh, Egypt, Nigeria, Malawi, Ghana and Kenya.

WorldFish has developed a number of Learn.ink courses and user guidelines summarized in Table 1.

Courses by WorldFish	Purpose	Modules	Links
Aquaculture survey with Open Data Kit (ODK) course	The aquaculture survey with the ODK course* was developed to provide guidance on how to prepare and conduct digital farmer surveys, install and use the ODK Collect mobile app and learn how to implement our Fish Epidemiology and Health Economics survey tool.	<ol style="list-style-type: none"> 1. Role of enumerators 2. Basic operations 3. Questionnaire 	<p>Aquaculture survey with ODK course on Learn.ink: https://bit.ly/3AYXUGQ</p> <p>End user guidelines: How to sign up and access the course on aquaculture survey with ODK on Learn.ink: https://hdl.handle.net/20.500.12348/4894</p>
Fish sampling course for disease diagnostics	The fish sampling microcourses** were developed to provide the necessary guidance, preparation, skills and knowledge to end users on how to perform one of the six major fish sampling methods for disease diagnostics: (1) wet-mount sampling, (2) microbiome sampling, (3) blood sampling, (4) bacteriology sampling, (5) molecular and virology sampling, and (6) histology sampling	<ol style="list-style-type: none"> 1. Intro to fish sampling for disease diagnostics 2. Foundations in fish disease sampling 3. Wet mount sampling 4. Microbiome sampling 5. Blood sampling 6. Bacteriology sampling 7. Molecular and virology sampling 8. Histology sampling 	<ol style="list-style-type: none"> 1. https://bit.ly/39Rfh00 2. https://bit.ly/3kVQm1W 3. https://bit.ly/3ojMTfT 4. https://bit.ly/2XZ5931 5. https://bit.ly/3F82nd4 6. https://bit.ly/3oljnX2 7. https://bit.ly/39VaGdu 8. https://bit.ly/3zUCKs4 <p>End user guidelines: How to sign up and access the fish sampling microlearning curriculum on Learn.ink: https://hdl.handle.net/20.500.12348/4897</p>
Fish syndromic surveillance course (under development)	The fish syndromic surveillance course was developed to train users on how to identify typical clinical signs of fish disease, basic syndromic surveillance and how to use our rapid digital reporting tool for fish disease outbreak investigations.	<ol style="list-style-type: none"> 1. Major clinical signs of fish diseases 2. Introduction to syndromic surveillance 3. Rapid digital reporting tool for fish disease outbreak investigations 	<p>Fish syndromic surveillance course on Learn.ink: https://bit.ly/3FmiCmz</p>
Fish farm biosecurity course (under development)	The fish farm biosecurity course was developed to introduce course users to basic knowledge of farm biosecurity and to provide guidelines on how to improve biosecurity at their farm/facility.	<ol style="list-style-type: none"> 1. Biosecurity preparation 2. Disease outbreak response measures 3. Biosecurity audit checklist 	<p>https://bit.ly/3bAh370</p>
Data Collection with Survey CTO Collect	General guidelines on the basic operations of SurveyCTO Collect app for collecting survey data on a mobile device	<ol style="list-style-type: none"> 1. Preparing SurveyCTO Collect on your mobile device 2. Using SurveyCTO in the field 	<p>https://bit.ly/3rRR970</p>

Courses by WorldFish	Purpose	Modules	Links
Antimicrobial Usage (AMU) Survey for Aquatic Systems	General overview & guidelines on how to use the Antimicrobial Usage (AMU) survey tool in an aquaculture farm setting Enumerators who are learning to use the AMU survey tool on aquaculture farms	1. Introduction 2. General guidelines for the survey 3. Preparations before & after the field survey	https://bit.ly/3EMIsCo
Data collection with SurveyCTO Collect	Basic operations of SurveyCTO Collect app on a mobile device Enumerators who will be using SurveyCTO Collect mobile app to conduct a survey	1. Preparing SurveyCTO Collect on your mobile device 2. Using SurveyCTO in the field	https://bit.ly/3rRR970
Principles of Conducting Social Surveys	Learn about the basics of planning and conducting social surveys Enumerators, researchers, survey team members	1. Introduction 2. Research Ethics 3. Conducting a Social Survey 4. Protecting Social Survey Data	https://bit.ly/3RQQ7ol
Epizootic Ulcerative Syndrome (EUS)	An introduction to Epizootic Ulcerative Syndrome - its cause, clinical signs & ways to mitigate its spread Farmers, researchers, students, aquatic veterinarians	1. Introduction to EUS 2. What to do on suspicion of EUS? 3. What to do when EUS is confirmed?	https://bit.ly/3TWWlpz
Tilapia Lake Virus (TiLV)	An introduction to Tilapia Lake Virus, its identification methods and response measures to outbreaks.	1. Overview of TiLV 2. TiLV signs, sampling & diagnostics 3. Response to TiLV outbreaks	https://bit.ly/40gHBES
Basic insight on Molecular Diagnostics in aquaculture	Basic introduction to molecular diagnostics, its methodology and application in aquaculture disease identification.	1. DNA Extraction 2. PCR Amplification 3. Primer Design 4. DNA Sequencing 5. Data Analysis	https://bit.ly/4fbp68Z

* The course is designed to train and teach participating team leaders, principal investigators, co-investigators and enumerators prior to virtual or face-to-face training on conducting ODK surveys in the field.

** The microcourses are aimed at preparing participating enumerators, extension workers, service providers and lead farmers with the skills of quality biological sample collection in the event of disease outbreaks or high mortalities.

Table 1. Courses developed by WorldFish on Learn.ink.

Acknowledgments

This work was undertaken as part of the CGIAR Research Program on Fish Agri-Food Systems (FISH) led by WorldFish, the CGIAR Inspire Challenge 2019 project “Rapid Genomic Detection of Aquaculture Pathogens” implemented by WorldFish and partners, the project “Increased Sustainability in the Aquaculture Sector in sub-Saharan Africa, through Improved Aquatic Animal Health Management” implemented by WorldFish and the Norwegian Veterinary Institute, and the Feed the Future Innovation Lab for Fish project “Improving Biosecurity: A Science-Based Approach to Manage Fish Disease Risks and Increase the Socioeconomic Contribution of the Nigerian Catfish and Tilapia Industries” implemented by WorldFish and partners.

The programs are supported by contributors to the CGIAR Trust Fund, the Norwegian Agency for Development Cooperation (Norad), and the United States Agency for International Development (USAID) funded Feed The Future Innovation Lab for Fish.