

Learning Fungal and Plant Biology via “Science Mobile”

Cheung-Ming Chow, Siu-Kwan Wong & Ka-Man Carmen Cheng
School of Life Sciences

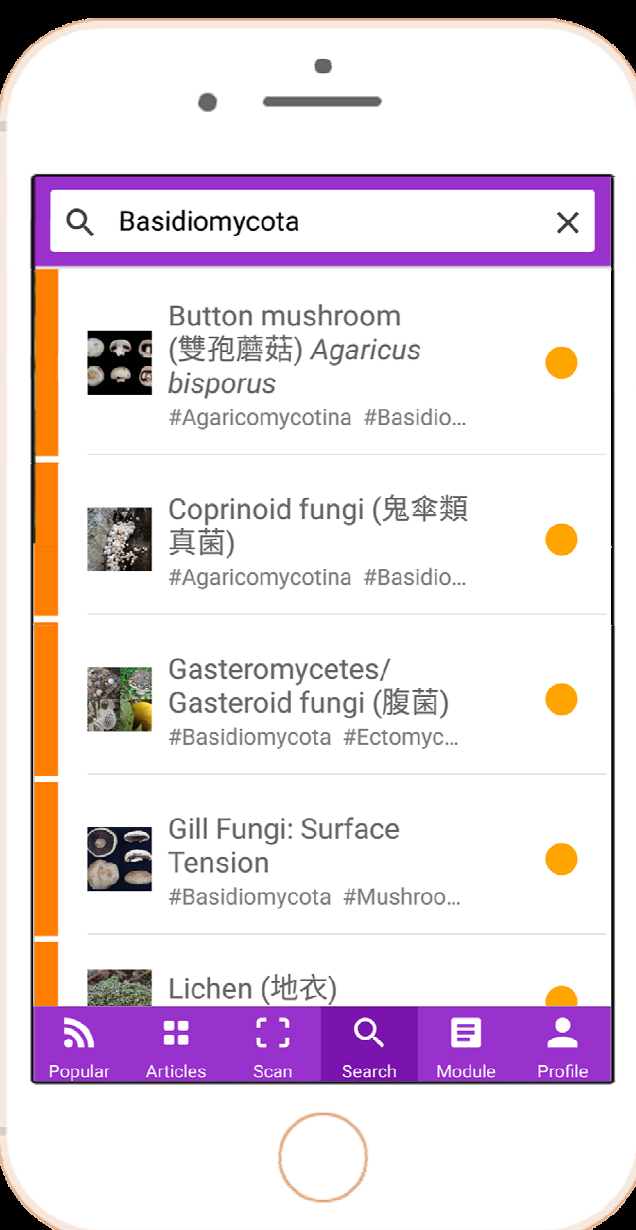
Introduction

Our project enhances the learning experience for students by

- promoting **ubiquitous learning** by digitalising lab specimens and wildlife examples with relevant information and explanation;
- fostering **knowledge integration** with **hashtags** and **in-text links** for swift connection to related topics;
- guiding students with **learning modules** so that they can go step by step in their learning pathway;
- encouraging **self-learning** with self-assessment and in-class sharing.

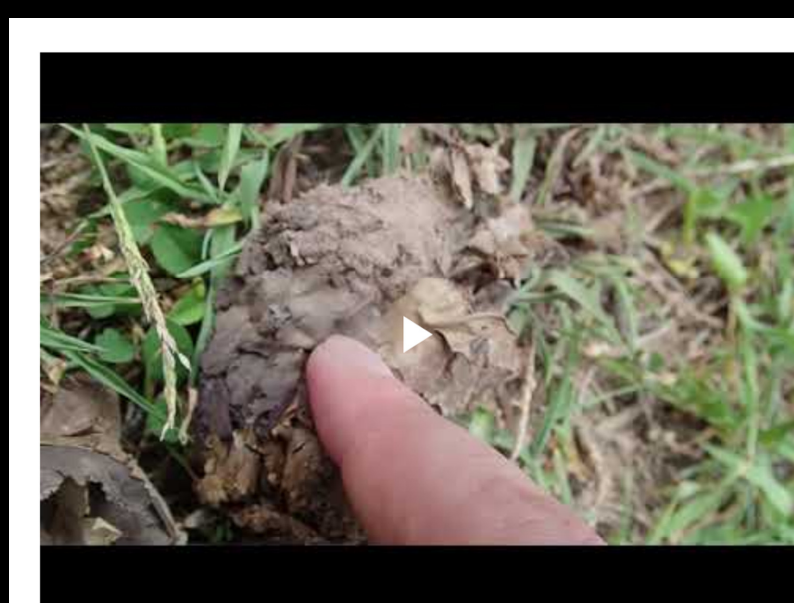
Hashtags

By using **hashtags**, learners can quickly link the current learning objects to the related learning objects, and thus achieving knowledge integration.



Scan

By scanning QR code labels on the specimen shown in the lab session, learners can access related learning objects ubiquitously.



Video 1. Mature puffballs would release a cloud of spore when you use your finger to poke them

Video

Multimedia

Well-labelled micrographs, photos of live specimens and in-house videos facilitate the acquirement of knowledge by visual learners. They help the learners to understand the specimens from different perspectives.



Figure 4. Puffball – *Calvatia* sp., growing on a lawn (Courtesy of SK Wong)

Photo

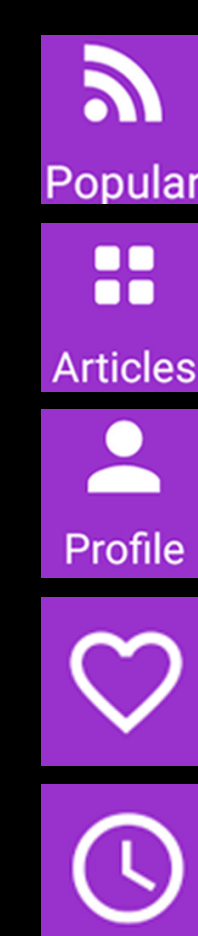


Modules

By browsing different learning modules, learners can access various sets of learning objects. Examples of learning modules:

- Application of Fungi
- Edible Fungi
- Fungal parasites
- BIOL3012 Biodiversity Laboratory I

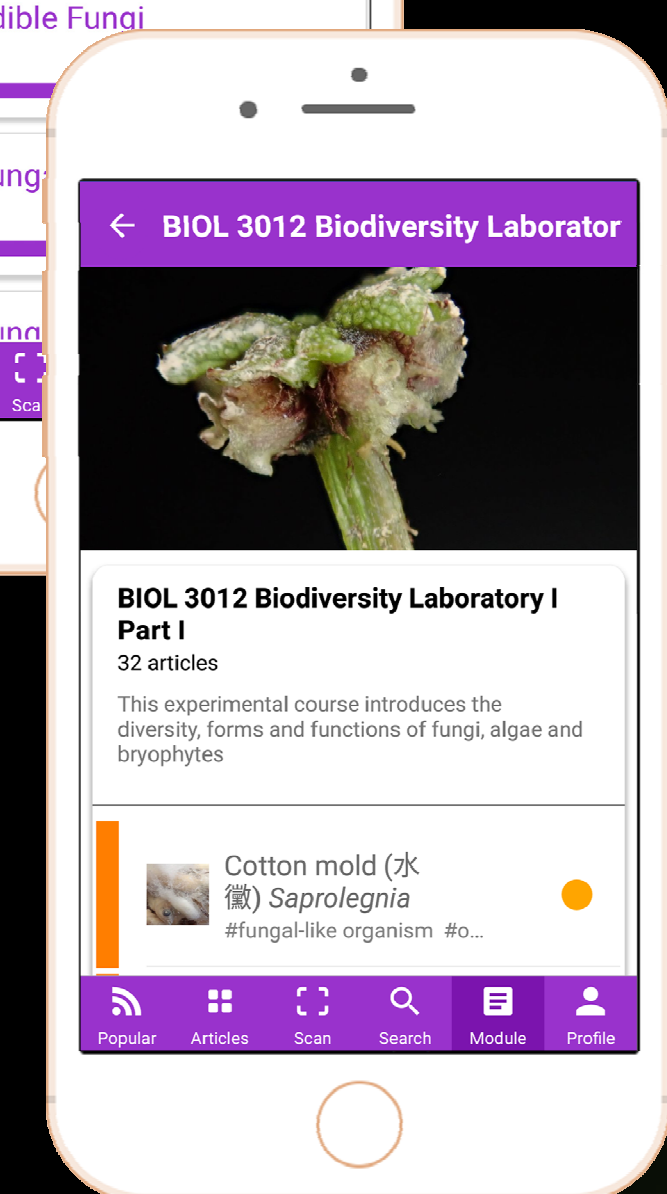
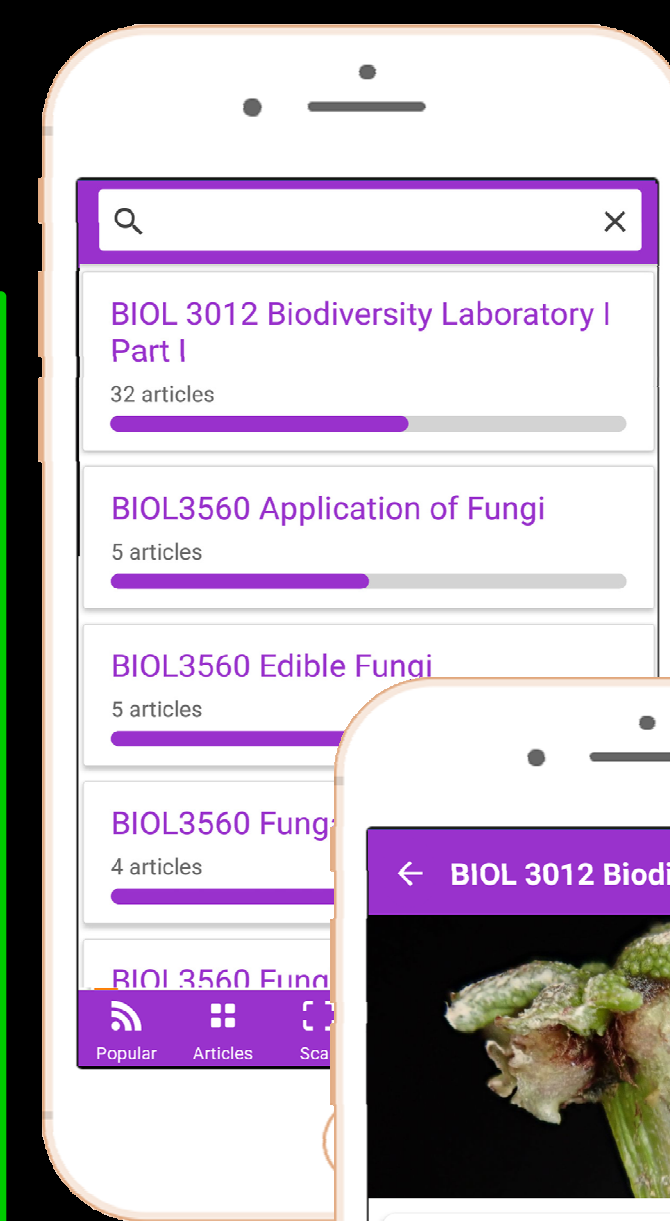
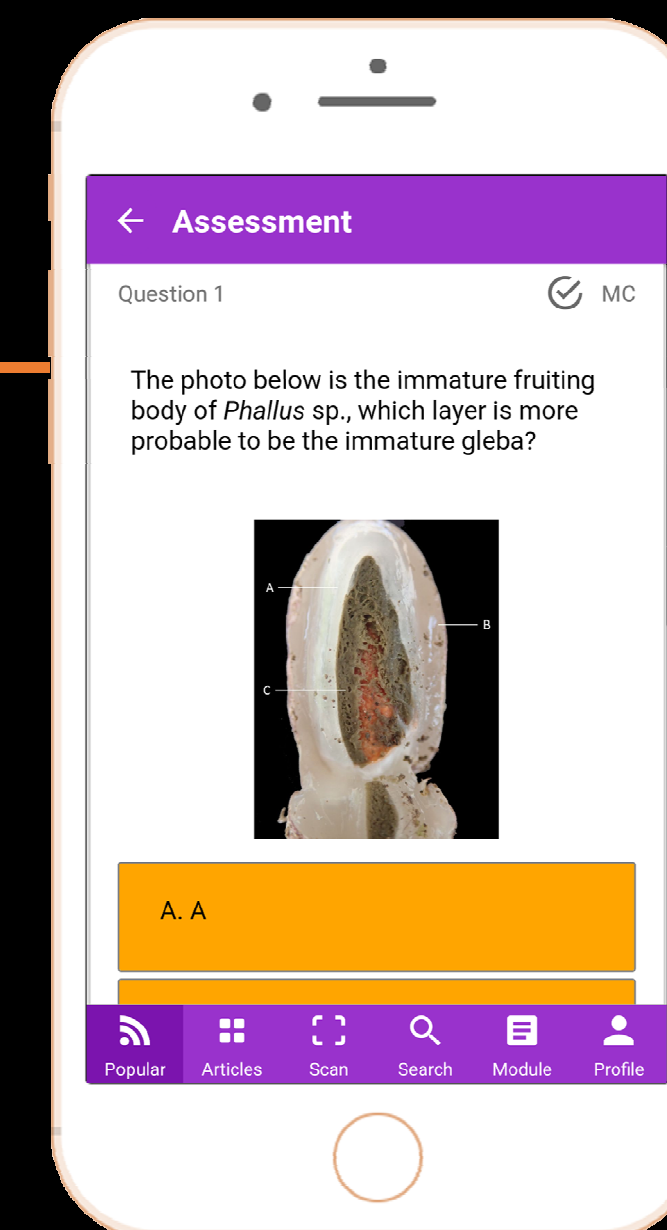
Other features:



- Popular: View recent popular articles
- Articles: View all articles from two disciplines and six themes
- Profile: Change account details and view bookmarked articles
- Heart icon: Bookmark your favorite articles
- Clock icon: Show the history of your navigated articles when you use in-text hyperlinks

Assessments

Multiple-choice/matching questions to test learners' knowledge on the learning object. Such kind of educative assessment builds learner insight and understandings about one's own learning.

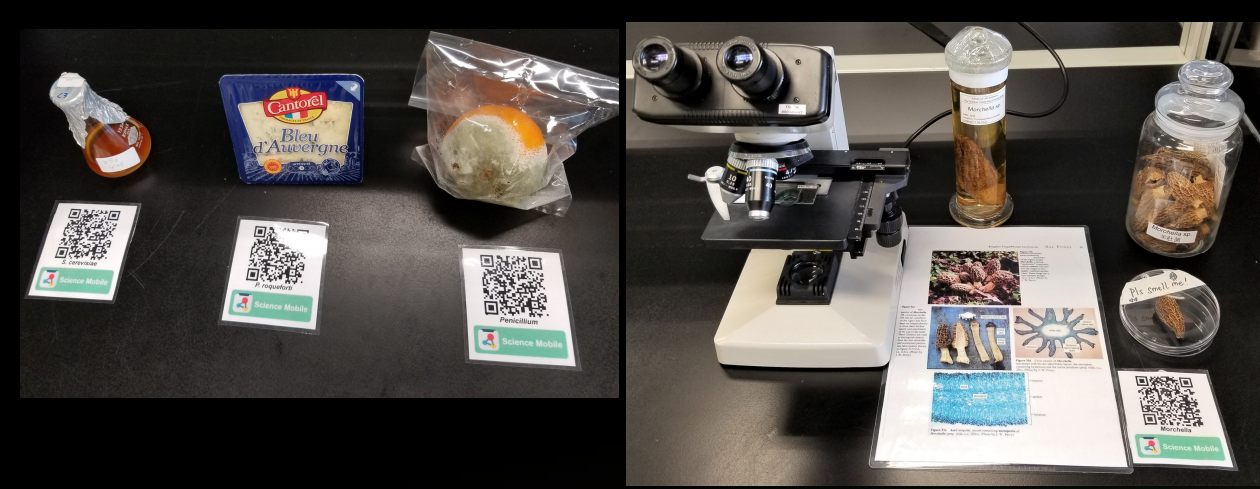


Implementation

Lab Courses:

BIOL3012 and BIOL3022-Biodiversity Lab I and II

Scanning of QR codes on specimens or PDF



Read specific information of the specimens and extend the knowledge through hashtags/links



Completion of the assessment items to earn marks

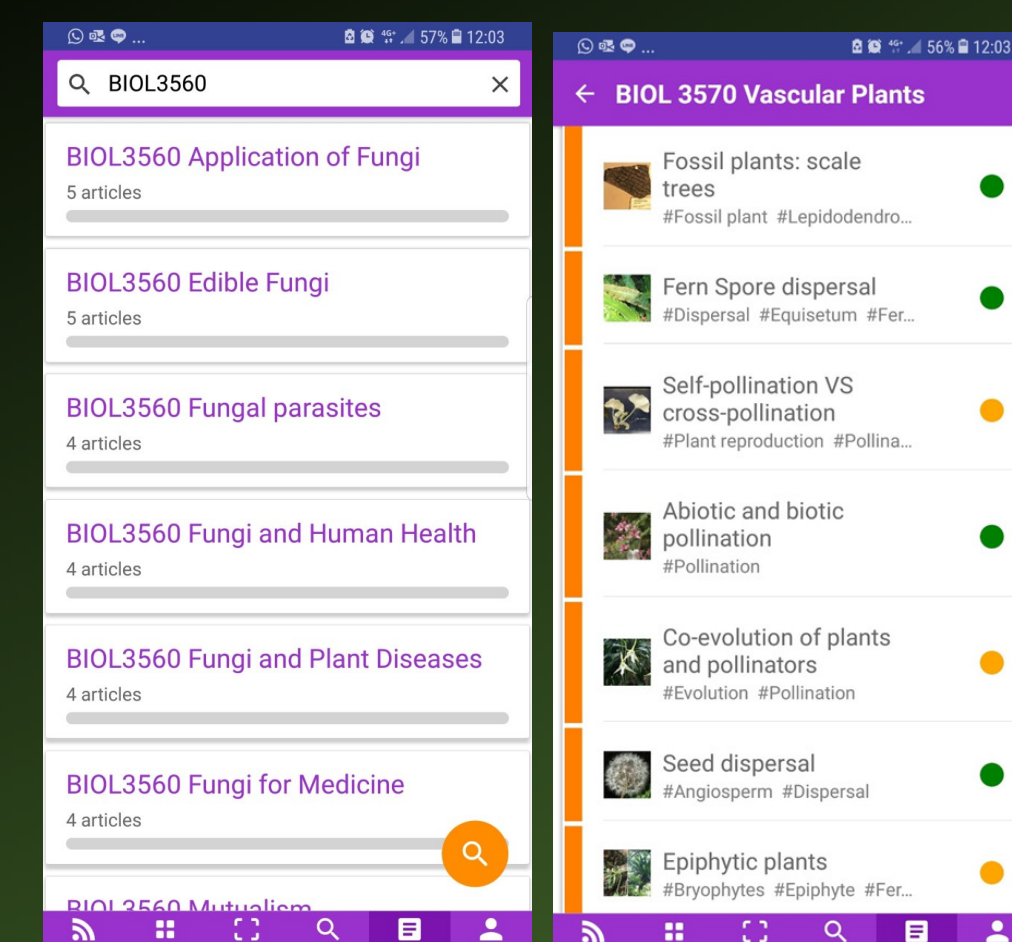
Student can earn 2 marks by answering the assessment items of the articles.

Course	Article no.	Average no. of articles read by students	Total no. of articles read by students
BIOL3012	32	20.6	825
BIOL3022	112	55.2	1988

Lecture Courses:

BIOL3560-Biology of Fungi and Non-vascular Plants
BIOL3570-Biology of Vascular Plants

Browse the learning modules and read the preassigned learning objects



Write notes for the learning items; complete all associated assessment items

Share their knowledge in the small group discussion in the lecture room or the breakout rooms of Zoom session



Student	Score	Percentage
Student1	8/14	(57.1%)
Student2	25/64	(39.1%)
Student3	50/64	(78.1%)
Student4	41/64	(64.1%)
Student5	36/64	(56.3%)
Student6	50/64	(78.1%)
Student7	12/64	(18.8%)
Student8	4/64	(6.3%)
Student9	51/64	(79.7%)
Student10	42/64	(65.6%)
Student11	16/64	(25%)
Student12	41/64	(64.1%)
Student13	54/64	(84.4%)
Student14	51/64	(79.7%)

Module Statistics

Students' performance in assessment can be viewed on the teacher panel of Science Mobile. Course instructors may use the statistics for evaluation and grading.

Conclusion and Future prospective

We have so far created **over 226 learning objects** and **15 modules/learning paths** under the themes “**Plant Biodiversity**” and “**Fungal Biodiversity**” in “Science Mobile” apps, including 19 videos, 1080 photos, 43 illustrations, 397 questions and 800 hashtags/links in addition to the basic information and descriptions. In the coming few months, we aim to enrich the themes with additional **videos and learning objects**.

Items	Uploaded	Goals
Learning objects	226	240
Photos	1080	~ 1200
Illustrations	43	
Videos	19	~400
Questions	397	