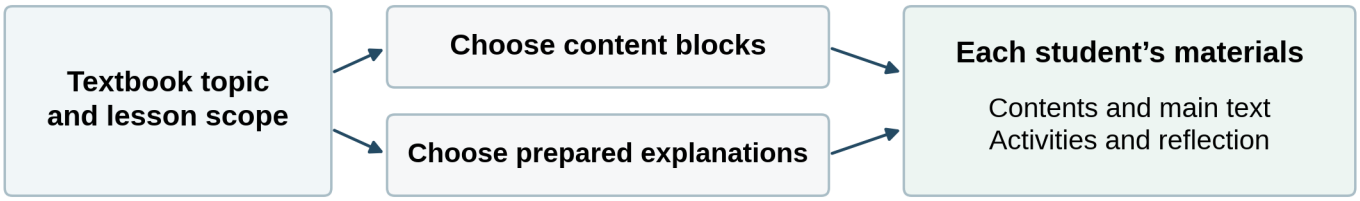
Textbook Plus Project Overview

Digital learning materials students build around a textbook

Textbook Plus lets students **build their own materials** around a shared textbook.
The vision connects **multiple textbooks, educators and explanations** in one learning flow.
Students choose and arrange blocks to form chapters, learning content and activities.
Blocks could extend to **educational services** that match each student's circumstances.

The idea echoes Google's modular phone project, **Project Ara**. As an analogy, a conventional digital textbook is a **robot with built-in capabilities**, while Textbook Plus is **Iron Man choosing equipment**. The learner chooses resources and services to suit the situation.

Materials shaped by student choice



A block is a unit of learning material that can be added or replaced independently.

Current prototype and directions for expansion

The prototype offers **24 blocks and prewritten role-based explanations**. Students start with three and can add or reorder them to create **a table of contents, text and activities**. Multiple textbook connections, contributing educators and services are proposed next steps.

About the developer

Jung-Hoon Lee Dongguk University and Yangjung Middle School

Jung-Hoon Lee holds a PhD in Educational Technology. In 2000, he was responsible for developing an AI search engine with automatic classification and for content planning. At the time, he presented a paper at an advertising society meeting on search-engine implementation and advertising applications on small screens. His published research covers teachers' voices, student doodling, support for students with tics, writing-tool grip and textbook concept maps.

He coordinated the **Rainbow Tray project** from 2014 to 2025 and participated in Samsung Tomorrow Solutions.

Recent work includes **Textbook Plus**, **배움이움**, a digital materials platform for students in graduate schools and departments of education, and the **3D StudyLink** prototype for exploring textbook concepts and learning content in 3D. An ongoing "research paper incubator" experiment converts papers into concept maps and connects them by topic and academic society.

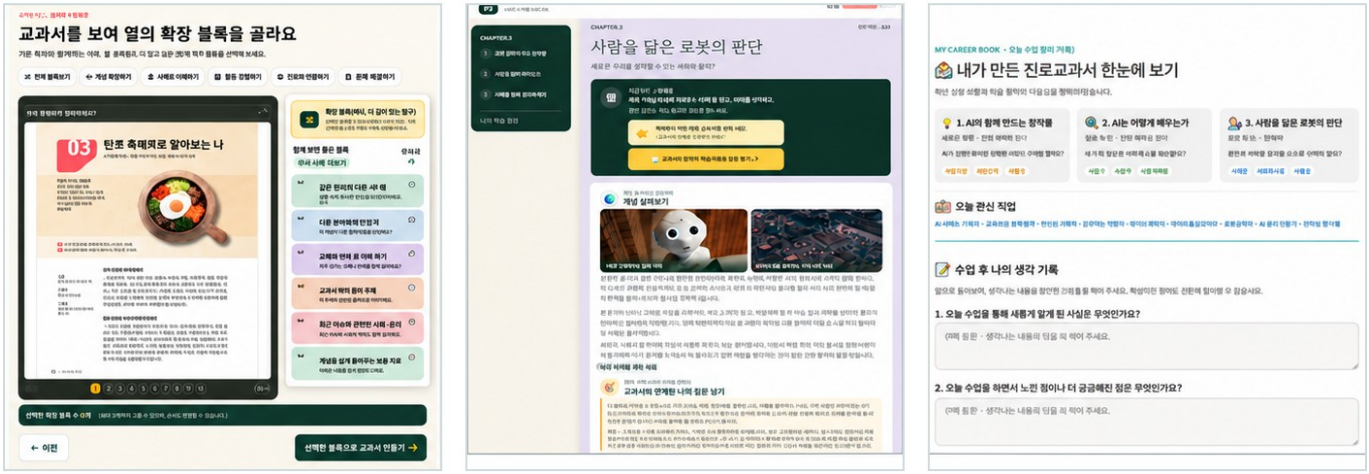
Email yes@dgu.edu **Prototype** https://디지털교과서.com

Scan the prototype

Student experience and improvements

In July 2026, **96 male first-year middle school students from six classes** assembled and used the materials. Preliminary interviews involved 18 students in April. After classroom use, 24 students were interviewed about requested improvements. In October, 23 of those students used the revised version and provided further feedback.

Choose content blocks | **Read your materials** | **Review and reflect**



Screens from the initial Korean prototype show content selection, the assembled materials and reflection.

Content that matched students' interests

Students valued studying topics that interested them and deciding their own learning sequence. Some expressed pride in the materials they had assembled. After completing their work, some chose different blocks to rebuild their materials or followed links to explore additional resources.

Improvements and next steps

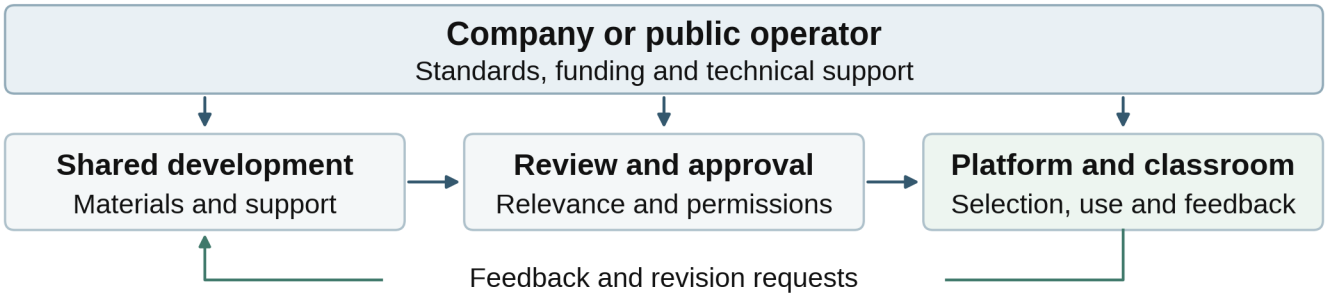
Student feedback	Improvements and next steps
Choosing from many materials was difficult.	Priorities include clearer block descriptions and categories, with better **search and selection support**.
Long scrolling and frequent clicking were inconvenient.	The **layout was divided into separate views and adjusted for tablets**. Ways to show the table of contents and current position are also being considered.
More varied materials and explanations were needed.	Proposed extensions include **links to other subjects**, **teacher explanation videos**, **worked solutions** and **similar practice questions**.

These findings describe short-term use at one school and the development process. Learning outcomes and sustained use remain questions for future classroom applications over time.

Source Design and Development of a Prototype for Textbook-Based, Block-Structured Digital Learning Materials, revised manuscript. Screen images are from Figure 3.

Operating the service together

The service could be run by **a company, a public agency or a partnership**. Operators would provide funding, standards and technology. Publishers could supply permitted materials; developers would connect content and service blocks.



An operator supports the service, while classroom feedback informs resource improvements.

Roles for participating professionals

Participants	Proposed roles
Practicing teachers	Create lesson-aligned materials, use them in class and gather feedback on students' needs.
Retired teachers	Organize accumulated resources and explanations and support authors developing new materials.
Graduate schools of education	Students co-develop and classify resources and examine user experiences under faculty guidance.
Professors of education	Develop design and review criteria and assess whether resources suit the learning goals.
Industry and community professionals	Contribute practical examples and check factual accuracy in their areas of expertise.

Review and sustainable operation

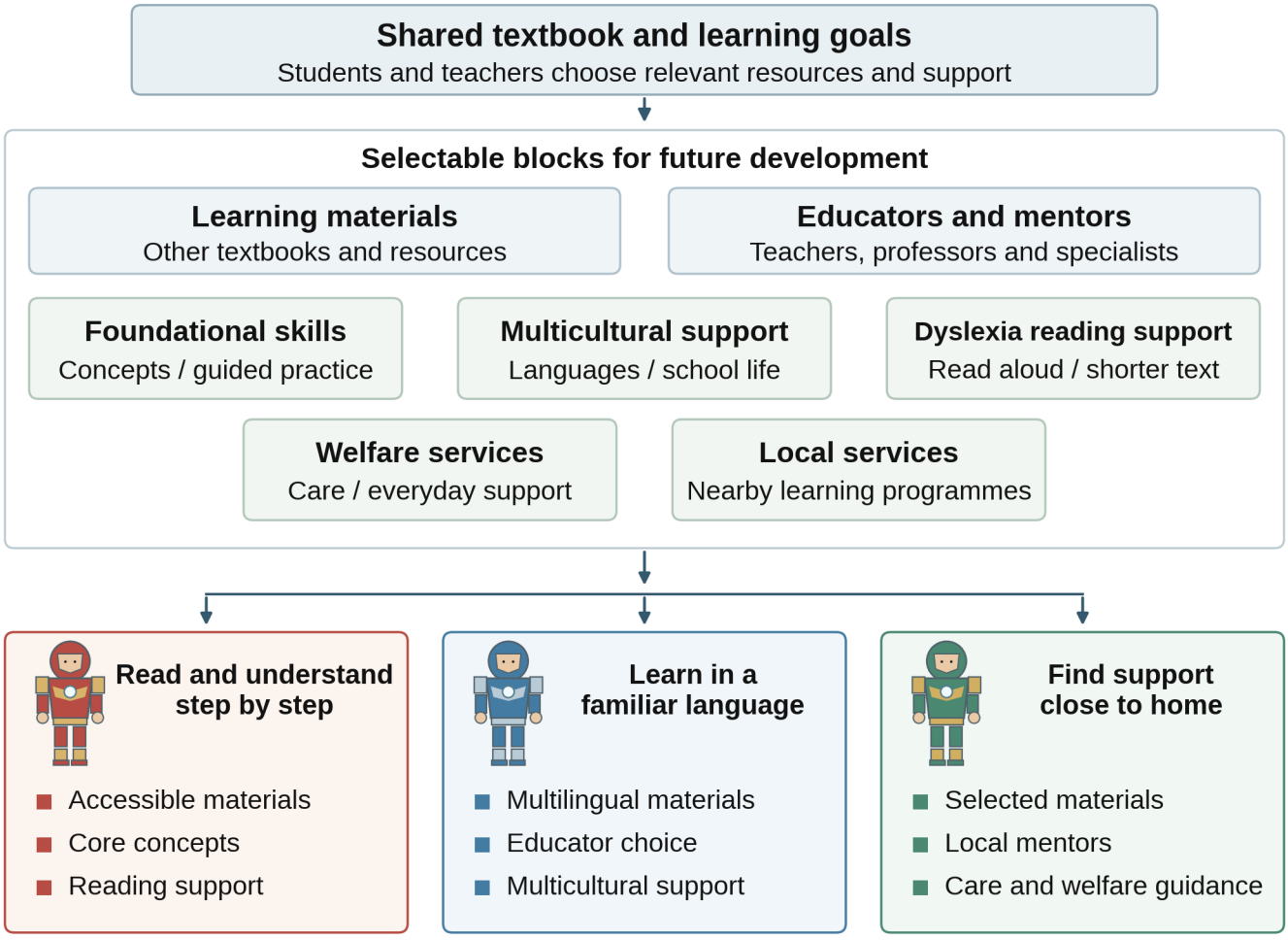
Each block would record its **provider, source, permissions and revision history**. Reviewers would check content and learning design before the operator approves publication. Teachers would set choices linked to **textbook units and learning goals**. Blocks could be corrected or replaced individually, while unaffected resources remain available.

Agreements would set **authoring and review fees, credit and revision duties**. They would also define role permissions, record access and contributors' workloads.

Proposed services for different learner needs

Resources and support for each student

Just as Iron Man's equipment changes with the situation, **materials, educators and educational services could be combined around each learner**. A shared textbook provides the foundation. With teacher guidance, students would choose the blocks they need.



Different sets of equipment illustrate possible combinations of support for different learner needs.

The same learner could choose different blocks as needs or circumstances change. Teachers and service providers would review resources and support so that **students could find practical help alongside their learning**.

Expansion proposals: the Textbook Plus report and OEDE proposal at 디지털교과서.com.
Modular design analogy: Google (2016), 10 things you may have missed at Google I/O.