Knowledge in Action

A Graduate Project for 21st Century Classrooms

Learn by doing. Learn by creating. Learn by imagining.

“If we teach today’s students as we taught yesterday’s, we rob them of tomorrow.”

- John Dewey
The “learn by doing” idea at the center of Project-Based Learning (PBL) is spreading in schools around the world. Competing with increasing demands on students’ attention led by technological advances, today’s curriculum needs to meet the new expectations set forth in the digital age. This urgency to adapt both content and instruction to students’ present realities is at the forefront of worldwide changes in education policy.

All over the world, schools are rising to meet the burgeoning need to provide students engaging and relevant content with real-life applications. Understandably, because of the endless demands on their time, researching, designing, and curating such content and instruction can be daunting for even the best teachers. This is where Knovva Academy’s flagship PBL program, Knowledge in Action, can help.

Studies have found that PBL courses like Knowledge in Action:

- Improve student achievement scores by 26%, not only in the target subject, but in all subjects.
- Improve students’ critical thinking and reading skills by up to 90%, depending on grade level and initial performance.
- Enhance teachers’ rates of confidence and interest by as much as 50%. For those who teach multiple PBL courses, the effects may be even higher.
- Improve schools’ average attendance rates to over 90% and reduce suspensions and disciplinary problems overall.

“...The Knowledge in Action courses give you an opportunity to actually learn something new, and maybe an actual final product: something tangible.”

- Minh Tran
  Irving High School, CA
  Stanford University, 2023
Common Core Skills Being Met

- Communication
- Teamwork/collaboration
- Problem-solving
- Reasoning
- The application/extension of core content in various situations
- The use of data
- Research
- Time management
- Use of technology (in ELA/literacy)

AP Course Content and Skills

Content
- History
- Science
- Computer Science
- Math

Skills
- Comprehension & Literacy
- Written Expression
- Numeracy
- Research

Knowledge in Action

- Intro to Computer Science
- Global Health
- Video Game Design
- App Design
- Python
- Humanities
- Science

Honors (add-on) Level Skills and Content

- Capstone project in the areas of Computer Science, Biology (Epidemiology), and Humanities
- Assessment
- Research
- Time management

Standalone Elective Courses

See a sample standard alignment
Based in **Universal Design for Learning**, Knowledge in Action courses find their foundations in the theory of multiple intelligences. Students independently review video lectures of exceptionally high-quality curated content. Teachers then provide the mentorship and guidance to help build out desired skill sets in a multitude of areas: Communication, Collaboration, Problem Solving, Value Creation, Critical Thinking, Personal Agency, Global Citizenship, and Leadership.

Knowledge in Action offers

- Hour-long lessons with timely checkpoint quizzes to emphasize and reinforce learning material
- Analytics-equipped Learning Management Systems (LMS) platform
- Flexible curriculum structure to allow for course completion
- Complete, ready-to-use academic content for 6 weeks or 12 weeks
- Quality academic content curated, developed, and reviewed by individuals of elite backgrounds

"The reason I'm becoming a computer scientist is so that I can gain the skills to apply to real-world problems. Once you get a hang on the basics of video game design, and learn how to make small gains by yourself, your output really starts to ramp up."

- Rohit Chopra
  Community Charter School of Cambridge
  Georgia Institute of Technology, 2023
Application Design: Interactive Sequencing

Throughout this course, students will learn how to build an Android application in a program called MIT App Inventor 2*. This block-based programming language allows students to build both the front-end (the parts of the application that users interact with) and the back-end (the parts of the application that happen in the background, like connecting to databases). Lessons from this course include:

Introduction to App Inventor*
The Engineering Design Process
Prototyping and Testing

By the end of this course, students will be able to:

Build a mobile application in MIT App Inventor 2*.
Collect and interpret qualitative data from potential users and use findings to develop features in a mobile application.
Test and evaluate a prototype of a mobile application with potential users to gain valuable feedback on the design.

Game Design: Information Architecture

In this course, students will learn the process by which engineers create video games. They will begin by learning how to build a video game in a program called Scratch*. This block-based programming language can be used to create many types of projects, including games. Lessons from this course include:

Introduction to Scratch*
Market Research and Empathy
Iterative Design

By the end of this course, students will be able to:

Build a video game in Scratch*.
Collect and interpret qualitative data from potential users, then use their findings to develop features in a mobile application.
Test and evaluate a prototype of a video game with potential users to gain valuable feedback on the design of the game.
Global Diplomacy: Global Health and Pandemics

In this course, students will learn about global diplomacy and the role it can play in mitigating the global pandemics the world faces. Students will engage in an online simulation, playing the role of a key minister preparing for the G20, and propose society-changing policies. Lessons from this course include:

- The Global Impact of Pandemics
- Civil Society and Pandemics
- Global Coordination
- Policy Proposals and Position Papers

By the end of this course, students will have submitted a 10-page research paper describing the policy goals their nation should encourage to prevent and manage global pandemics while advancing prosperity.

“If you’re interested in learning about something that impacts a lot of people, is very timely, and expands your policy knowledge and really learns with agency, by taking charge in your learning, then Knowledge in Action is the course for you.”

- Jennifer Zhang
  Potsdam High School, NY
  Columbia University, 2023

*Neither MIT App Inventor 2 nor Scratch are affiliated with or work in conjunction with Knovva Academy. The use of the MIT App Inventor 2 and Scratch platforms are for educational purposes only. For more information, please see MIT App Inventor 2 Terms of Service and Scratch Terms of Use.
Progress at Your Fingertips!

Automatically generated student performance data guides decision making for optimal results. Knowledge in Action’s dynamic portal enables teachers to gain valuable insights into each student’s individual performance as well as the performance of the class as a whole.

![Dashboard]

With effective analytics, teachers can confidently identify students’ strengths while also addressing their areas of growth.

Redefining College Readiness

Knovva’s students become college ready with the skills they need to succeed:

- Critically evaluating academic content
- Using research to generate original content
- Working with multinational learners
- Publicly defending their learning via presentations, speeches, and capstones
- Developing a high-quality portfolio of intellectually rigorous work
About Knovva Academy

Knovva Academy is an international education organization committed to the enhancement of educational quality and opportunity for youth around the world. We provide tailor-made educational solutions, services, and products to support student, teacher, school, and governmental preparedness for the 21st century.

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