

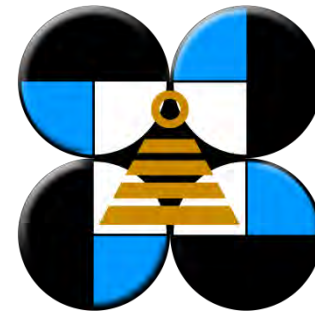


The DOST COURSEWARE IN SCIENCE AND MATHEMATICS

JOSEPHINE S. FELICIANO
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SCIENCE EDUCATION INSTITUTE
DEPARTMENT OF SCIENCE AND TECHNOLOGY

THE SCIENCE EDUCATION INSTITUTE - DOST

- An agency under the Department of Science and Technology
- Mandated to develop a scientifically and technologically literate Filipino citizens and accelerate the development of the country's S&T human resources by administering undergraduate, graduate scholarships; advanced specialized trainings; and to develop science education innovation programs
- The S&T education arm of DOST



THE DOST COURSEWARE – OUR MOTIVATION

- **2003 Results of the Trends in International Mathematics and Science Study (TIMSS) conducted by the International Association for the Evaluation of Educational Achievement (IEA) where the Philippines ranked 2nd and 3rdfrom the bottom**



International Association
for the Evaluation of
Educational Achievement



THE DOST COURSEWARE – OUR MOTIVATION

2004



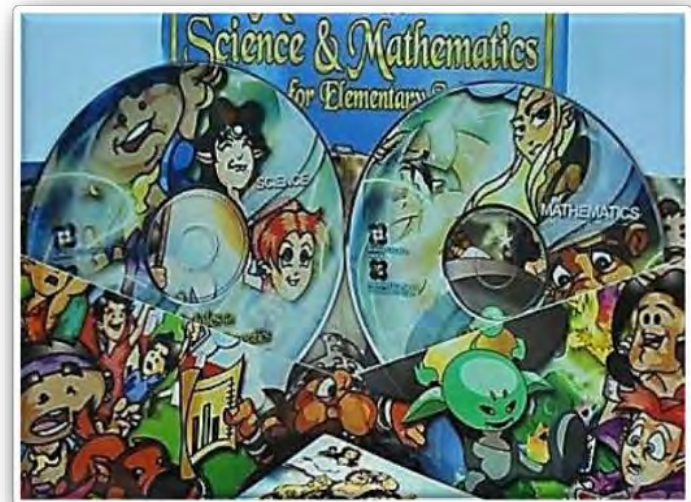
THE DOST COURSEWARE IN SCIENCE AND MATH

- Conceptualized, produced and spearheaded by the Science Education Institute (SEI-DOST)
- In partnership with the Advanced Science and Technology Institute (ASTI-DOST) for module digitization
- In cooperation with the Department of Education (DepEd), Philippine Normal University (PNU) and University of the Philippines-National Institute for Science and Mathematics Education (UP-NISMED).



THE DOST COURSEWARE IN SCIENCE AND MATH

- A Filipino-developed, all-original, highly interactive, multimedia, educational resource packages in science and mathematics



THE DOST COURSEWARE – OUR GOAL

- Primary goal is to develop an education technology teaching and learning innovation and resources to support the upgrading and improvement of science and mathematics education in the country.



THE DOST COURSEWARE INTENTIONS

- Aims to optimize, streamline and standardize lesson presentation in Science and Mathematics through the use of cost-effective and high quality education technology solutions
- Assist in developing competitive learners who can maximize and enhance learning through the use of ICT
- Equip teachers with supplemental tools and resources to assist them in lesson planning and blended-teaching on hard to teach and hard to learn topics



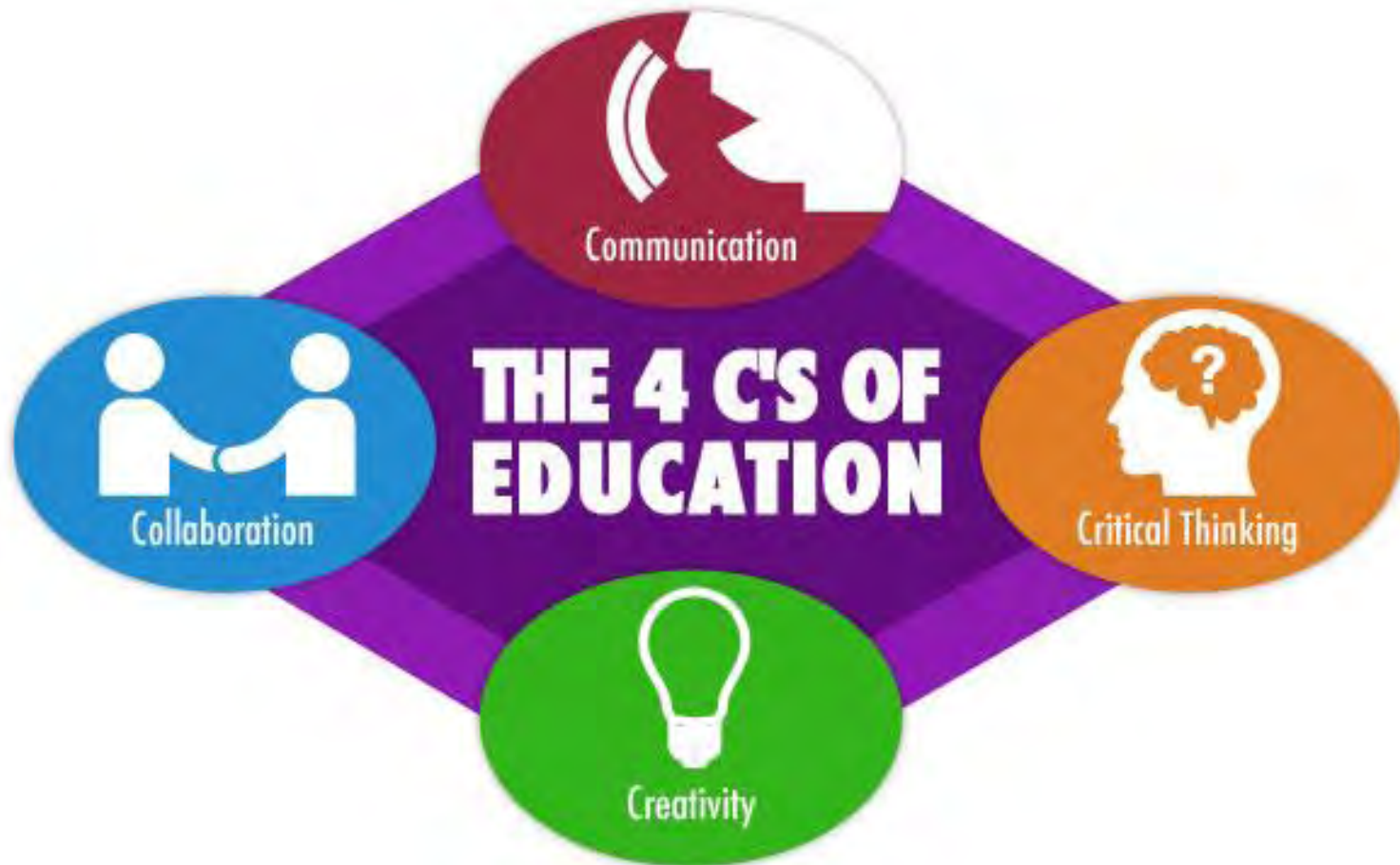
DOST COURSEWARE AND 21ST CENTURY EDUCATION

21st Century Alphabet

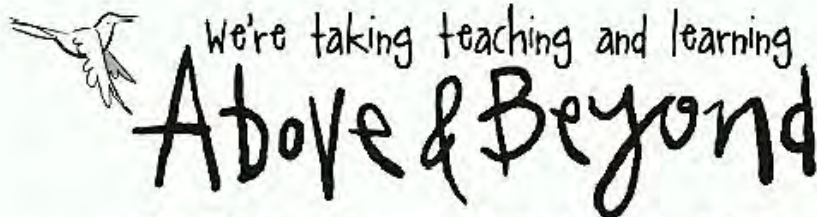
 A <i>Apple</i>	 B <i>Bluetooth</i>	 C <i>Chat</i>	 D <i>Download</i>	 E <i>Email</i>	 F <i>Facebook</i>	 G <i>Google</i>
 H <i>HTML</i>	 I <i>iPhone</i>	 J <i>Java</i>	 K <i>Kindle</i>	 L <i>Laptop</i>	 M <i>MP3</i>	 N <i>Network</i>
 O <i>Office</i>	 P <i>Processor</i>	 Q <i>QR Code</i>	 R <i>RSS</i>	 S <i>Server</i>	 T <i>Twitter</i>	 U <i>USB</i>
 V <i>Virus</i>	 W <i>WiFi</i>	 X <i>X-Box</i>	 Y <i>YouTube</i>	 Z <i>Zip</i>		

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DOST COURSEWARE AND 21ST CENTURY EDUCATION



DOST COURSEWARE AND 21ST CENTURY EDUCATION



We're taking teaching and learning
Above & Beyond

Today's students are moving beyond the basics
and embracing the 4C's — "super skills" for the 21st century!



Communication

Sharing thoughts, questions,
ideas, and solutions



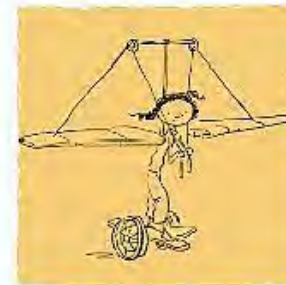
Collaboration

Working together to reach a
goal — putting talent, expertise,
and smarts to work



Critical Thinking

Looking at problems in
a new way, linking learning
across subjects & disciplines



Creativity

Trying new approaches
to get things done equals
innovation & invention



For more 4C resources from
the Partnership for 21st Century Skills,
including the animated film ABOVE & BEYOND
by Peter H. Reynolds & FableVision, journey to
www.p21.org/4Cs



PARTNERSHIP FOR
21ST CENTURY SKILLS



DOST COURSEWARE AND 21ST CENTURY EDUCATION

COMMON CORE: Paths to 21st-Century Success



INNOVATIVE PROBLEM SOLVERS
Investigating real-world problems and finding creative ways to solve them



CREATIVE COMMUNICATORS
Exploring different points of view and using evidence to support and express ideas



CRITICAL THINKERS
Analyzing complex topics and learning academic vocabulary to navigate different subjects



INVESTIGATIVE EXPLORERS
Developing research skills and using technology to find solutions



VERSATILE READERS
Learning about the world with challenging fiction and nonfiction texts



RESOURCEFUL LEARNERS
Building a strong foundation of skills and expanding on those abilities every year

21ST-CENTURY COLLEGE AND CAREER SKILLS
Colleges and employers are seeking people to solve the problems of tomorrow. Here are **3 TOP SKILLS** students will need for college and career success in the 21st century:



ADAPTIVE PROBLEM SOLVING
Versatile individuals who approach problems in creative ways



COLLABORATIVE COMMUNICATION
Global thinkers who express themselves effectively and work with people all over the world



DIGITAL FLUENCY
Tech-savvy workers who use technical and digital media skills in their everyday work

THE DOST COURSEWARE AND THE K12 CURRICULUM

The K to 12 Philippine Basic Education Curriculum Framework



DOST COURSEWARE AND 21ST CENTURY EDUCATION



Figure 6. The K to 12 Graduate

THE DOST COURSEWARE PLATFORMS



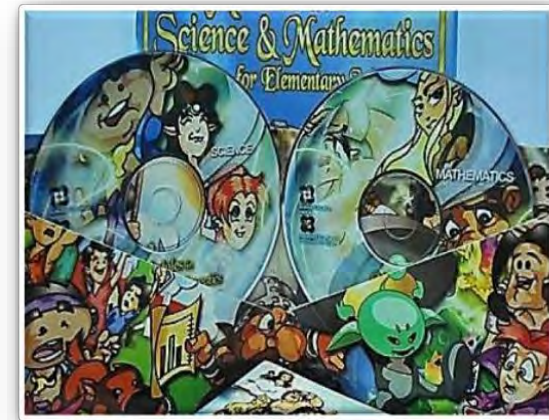
**Laptop, Desktop PC
Content Mgt. Server**



Smartphone, Tablet

THE DOST COURSEWARE - MS WINDOWS

- Modules in Science and Mathematics for Elementary Schools (1st Edition)
- Grades 1-6 Mathematics (2nd Edition)
- Grade 7 Science and Mathematics
- Grade 8 Science and Mathematics



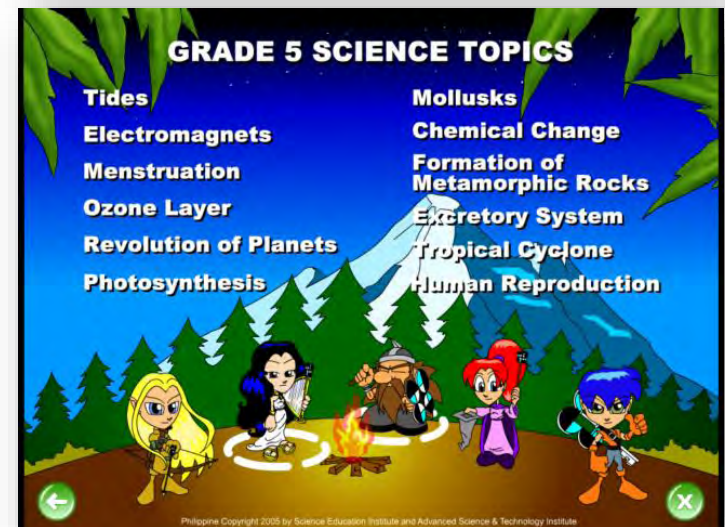
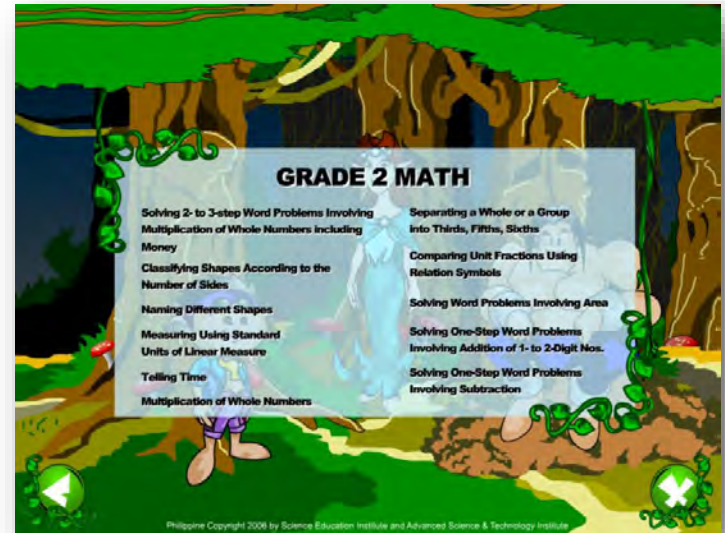
THE DOST COURSEWARE - MS WINDOWS

- **Modules in Science and Mathematics for Elementary Schools (1st Edition)**
 - **Released in 2006**
 - **MS Windows**



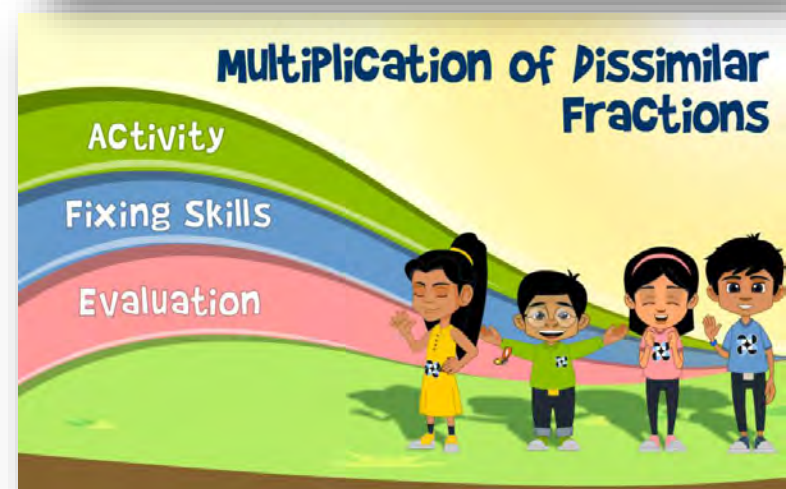
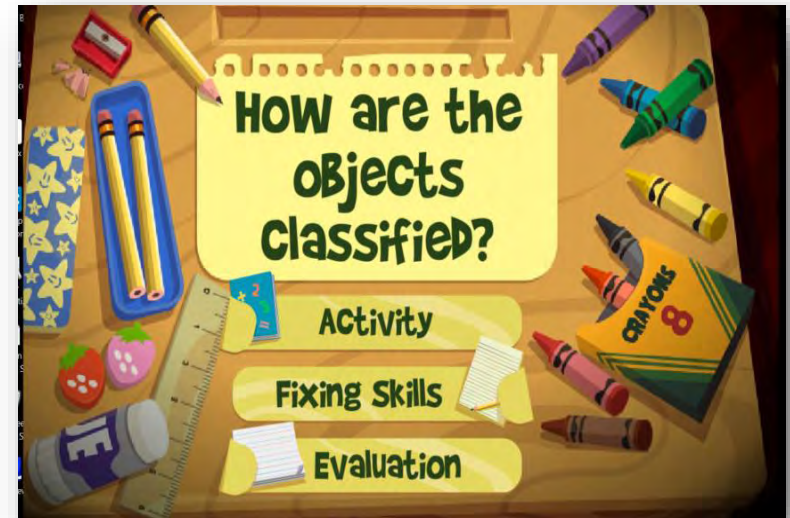
THE DOST COURSEWARE - MS WINDOWS

- Modules in Science and Mathematics for Elementary Schools (1st Edition)
- Total modules = 102
 - Science Gr 3-6 = 42
 - Math Gr 1- 6 = 60



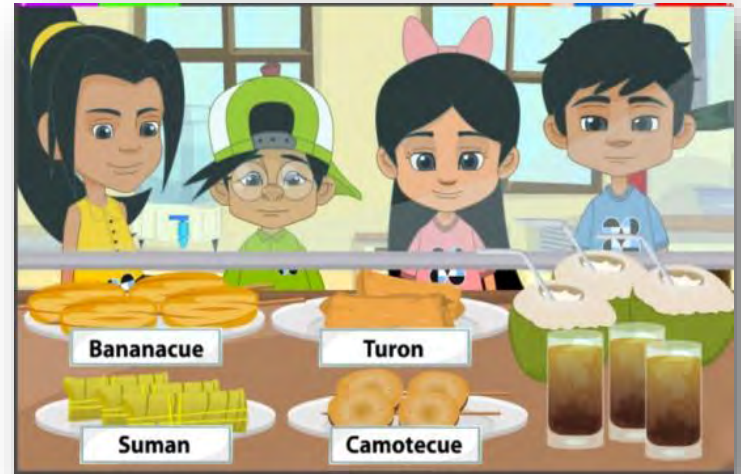
THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grades 1-6 Math (2nd edition)
 - Released in 2014
 - MS Windows
 - The K-12 aligned modules are divided into three parts: **Activity, Fixing Skills and Evaluation**



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grades 1-6 Math (2nd edition)
- Total modules = 60
 - Grade 1 = 16
 - Grade 2 = 8
 - Grade 3 = 7
 - Grade 4 = 10
 - Grade 5 = 7
 - Grade 6 = 12



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 7 Science & Mathematics
 - Released in 2014
 - Topic presentation structure: Concept, Activity and Evaluation
 - Topics are still applicable to higher grade levels



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 7 Science & Mathematics
 - Total modules = 133
 - Science = 73
 - Mathematics = 60



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 7
Science domains
 - Earth and Space
 - Force, Motion and Energy
 - Living Things and Their Environment
 - Matter



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 7 Mathematics domains
 - Geometry
 - Numbers and Number Sense Patterns and Algebra



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 8 Science & Mathematics
 - Released in 2014
 - Topic presentation structure: Concept, Activity and Evaluation
 - Topics are still applicable to higher grade levels
 - Character and setting themes
 - Magicademy
 - D'nayao
 - Freddy's Lab



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 8 Science & Mathematics
 - Total modules = 118
 - Science = 61
 - Mathematics = 57



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 8 Science domains
 - Biodiversity, and Evolution
 - Ecosystems
 - Heredity: Inheritance and Variation of Traits
 - Parts and Functions
 - Structures and Functions



THE DOST COURSEWARE - MS WINDOWS

- Courseware for Grade 8 Math domains
 - Arithmetic Sequence
 - Geometric Sequence
 - Integral Exponents
 - Linear Equations,
 - Quadratic Equations
 - Radicals
 - Rational Algebraic Equations

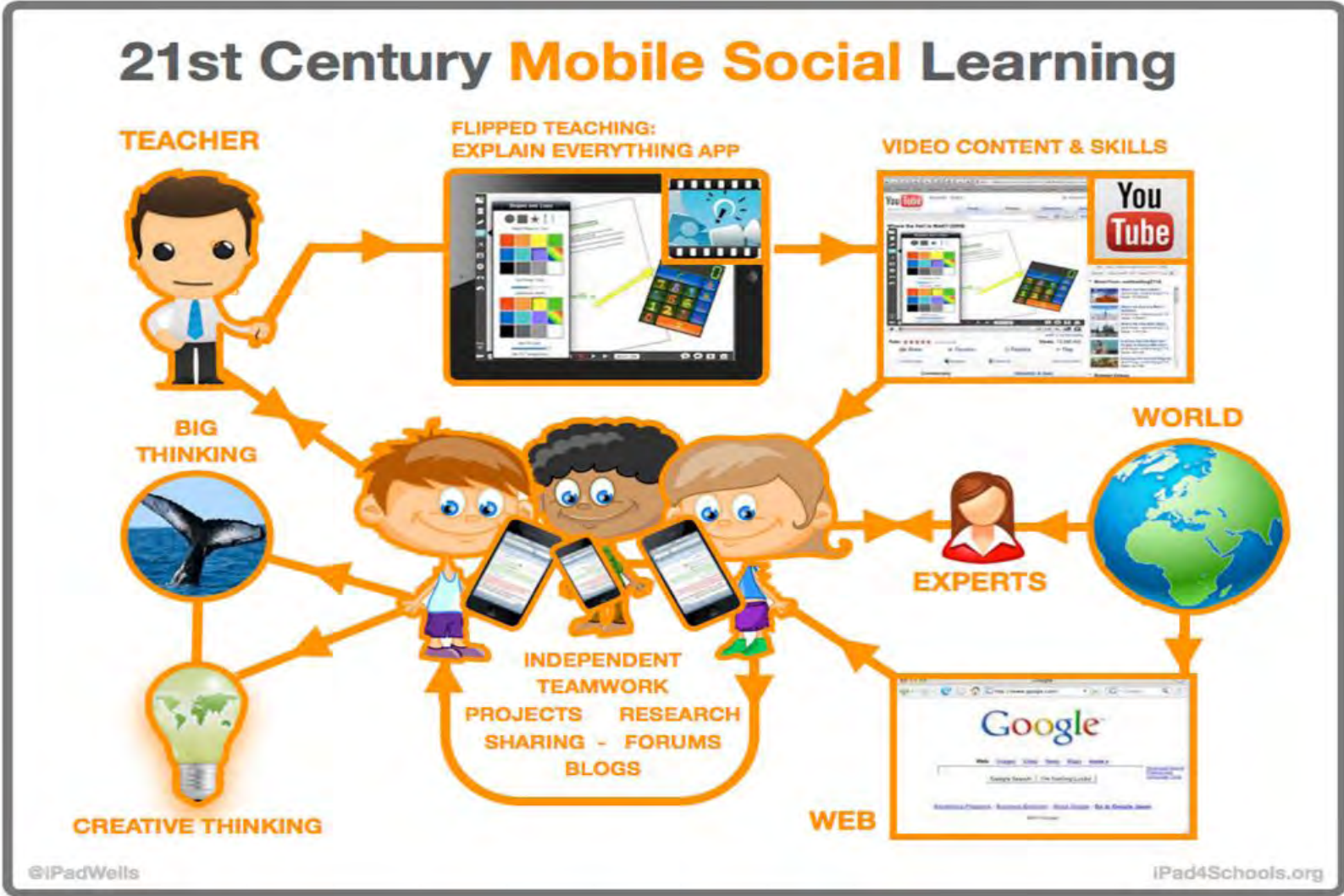


DOST COURSEWARE AND MOBILE LEARNING



<http://vinyardm12.blogspot.com/2012/09/21st-century-learner-reflections-normal.html>

DOST COURSEWARE AND MOBILE LEARNING



THE DOST COURSEWARE - ANDROID

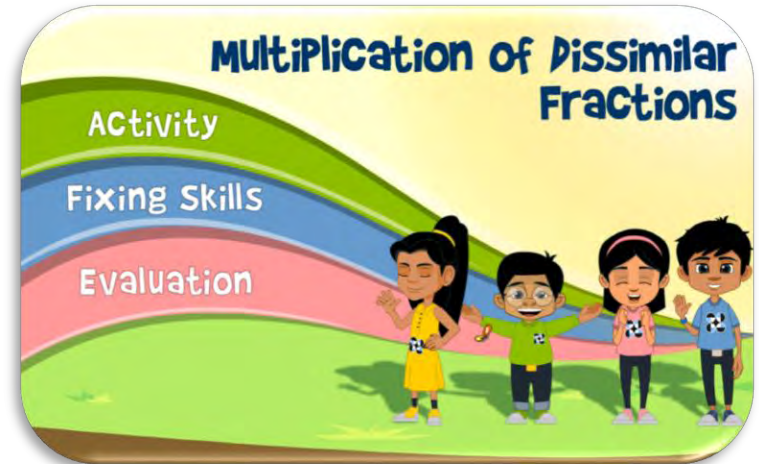
2016



DOST COURSEWARE MOBILE APPLICATION (DOST CMAPP)

DOST COURSEWARE MOBILE APPLICATION (DOST CMAPP)

- **Grades 1-6 Mathematics (2nd Edition) – 60**
- **Grades 7 Science and Mathematics - 10**
- **Grade 8 Science and Mathematics - 10**



DOST COURSEWARE MOBILE APPLICATION (DOST CMAPP)

Search DOST Courseware



DOST COURSEWARE MOBILE APPLICATION (DOST CMAPP)

- **Android additional modules**
 - 10 Grade 7 Science and Math Modules
 - 10 Grade 8 Science and Math Modules
- **Apple IOS Version**
 - First batch of 10 Grade 7 and 10 Grade 8 Science and Math Modules

**In November
2018**



DOST COURSEWARE MOBILE APPLICATION

Android Version of DOST CMAApp Installs from Google Play as of June 12, 2018

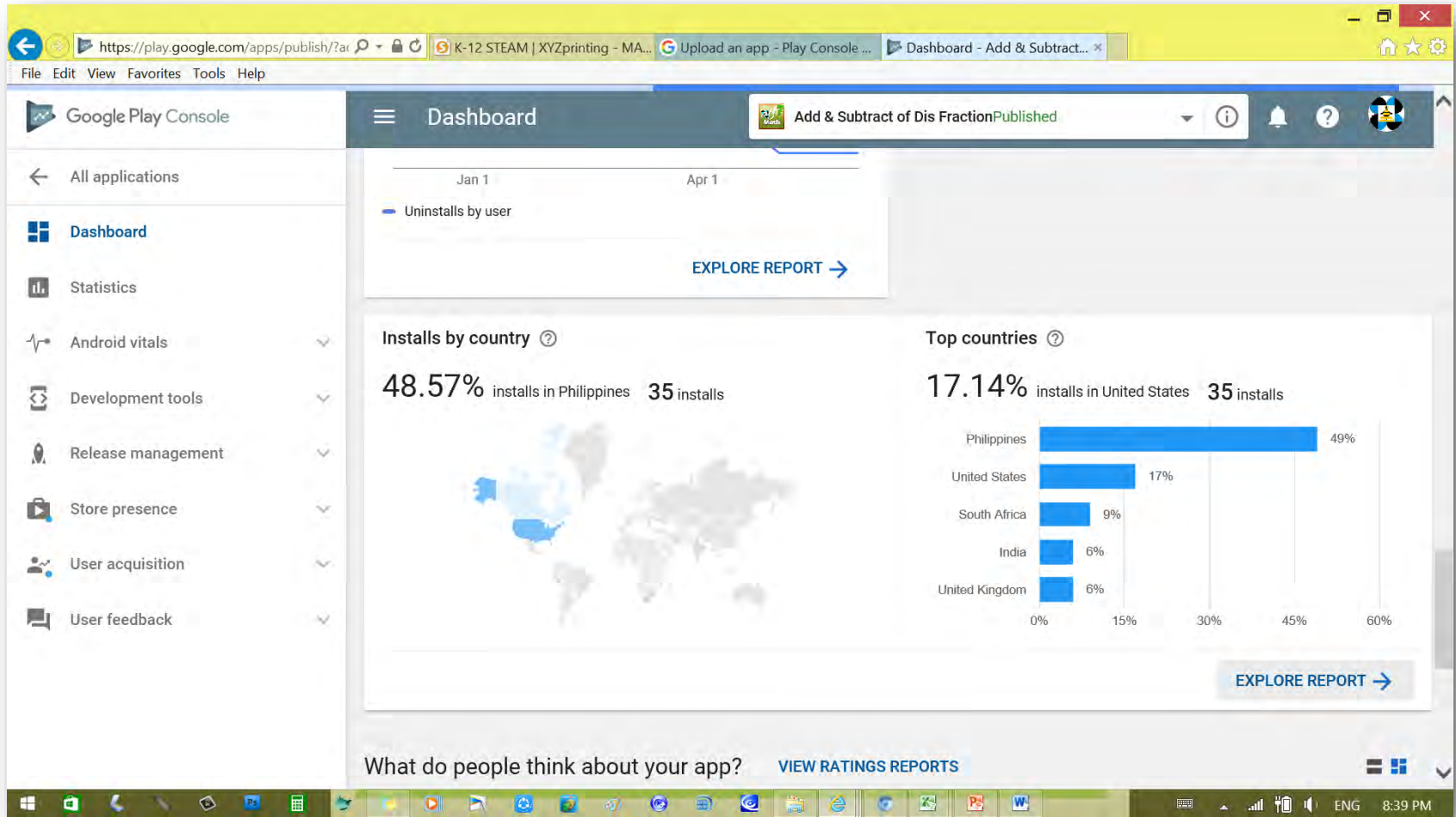
Grade/Subject	No. of Installs
Grade 7 - Science	1,835
Grade 7 – Mathematics	1,868
Grade 8 - Science	3,617
Grade 8 – Mathematics	2,681
Grade 1-6 Mathematics	4,413
Total	14,414



Google play

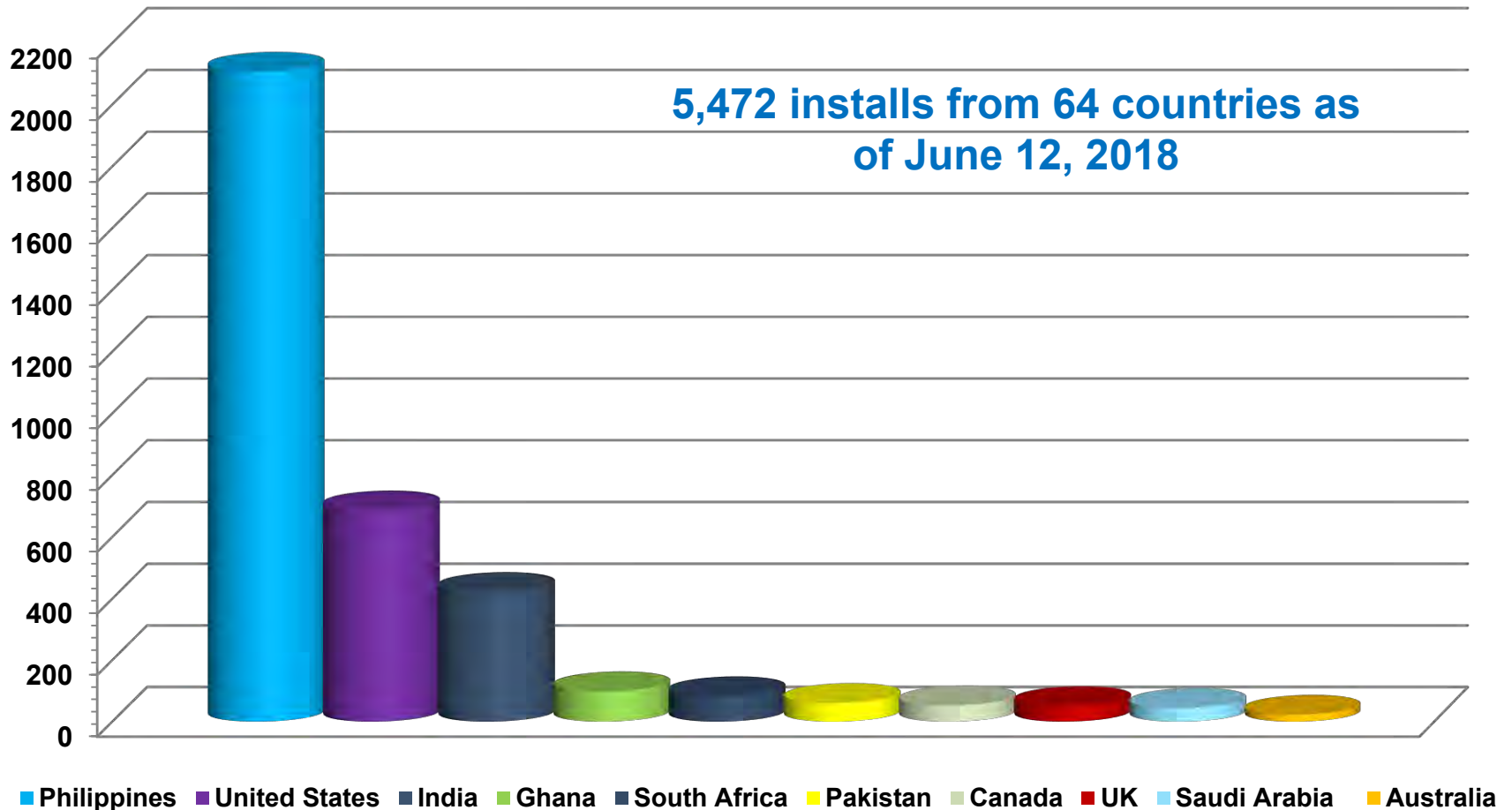


DOST COURSEWARE MOBILE APPLICATION WORLDWIDE



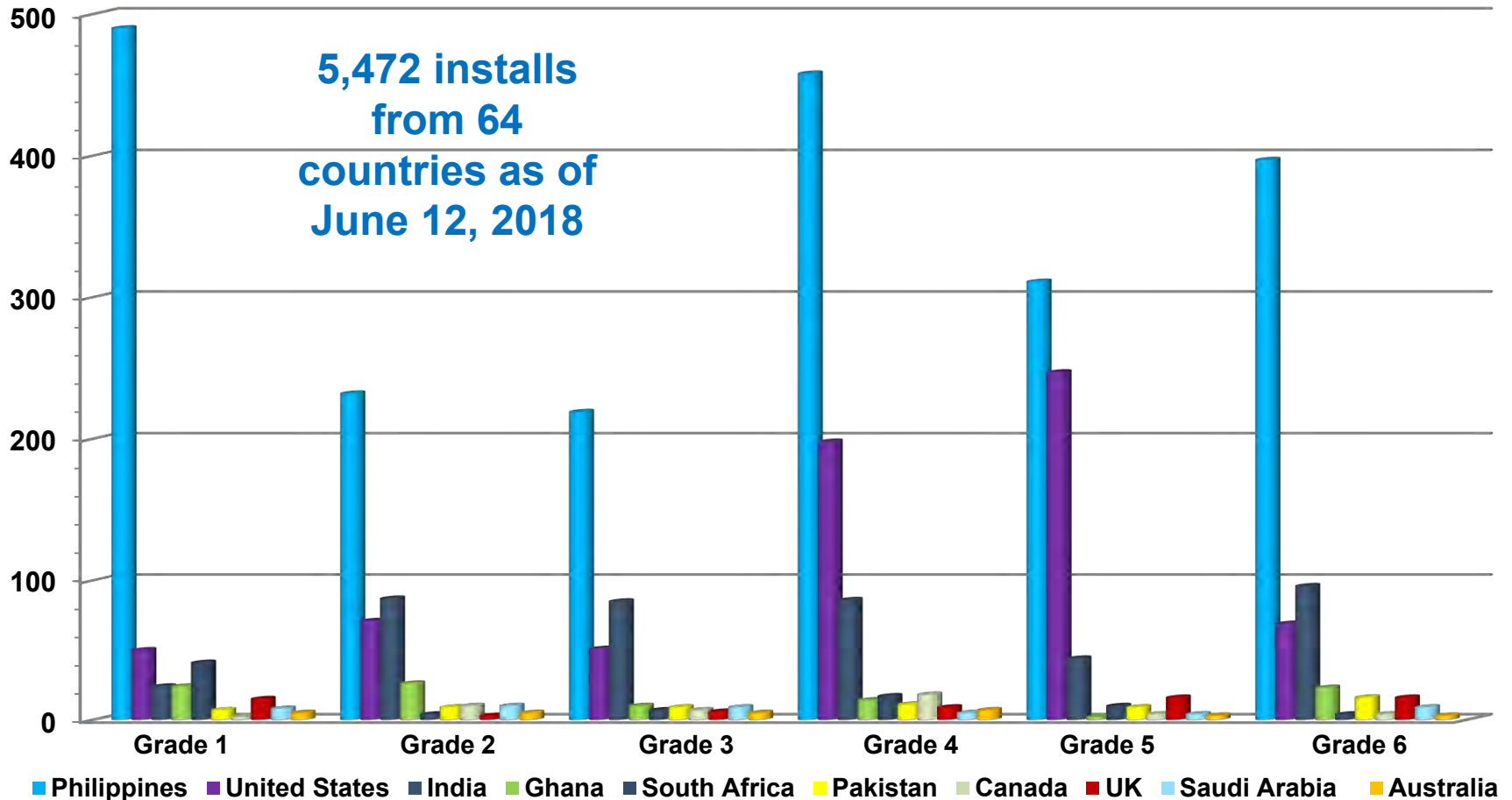
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 1-6 Mathematics April 2017 to June 2018 by Country (Top Ten)



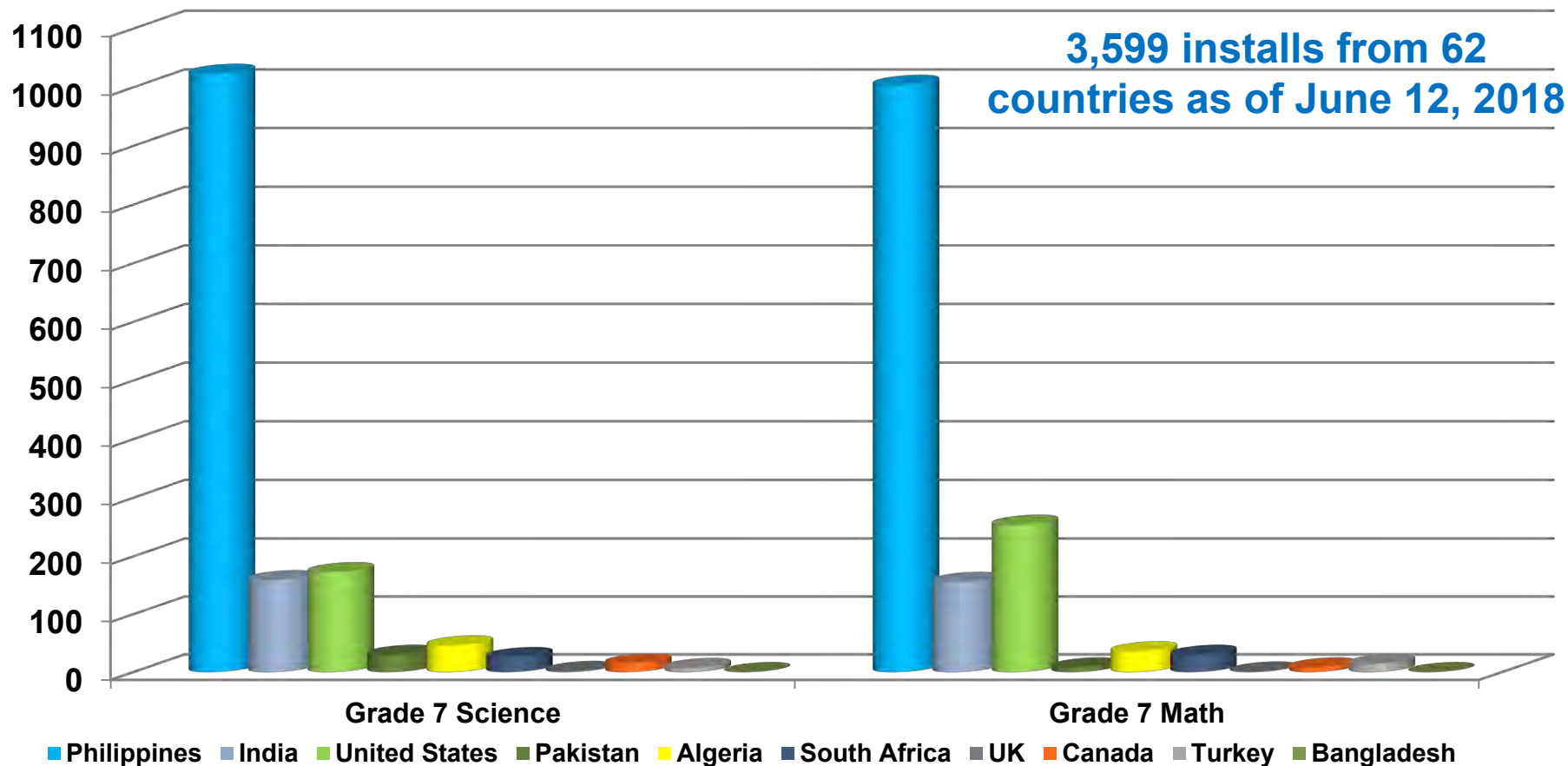
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 1-6 Mathematics by Grade Level April 2017 to June 2018 by Country (Top Ten)



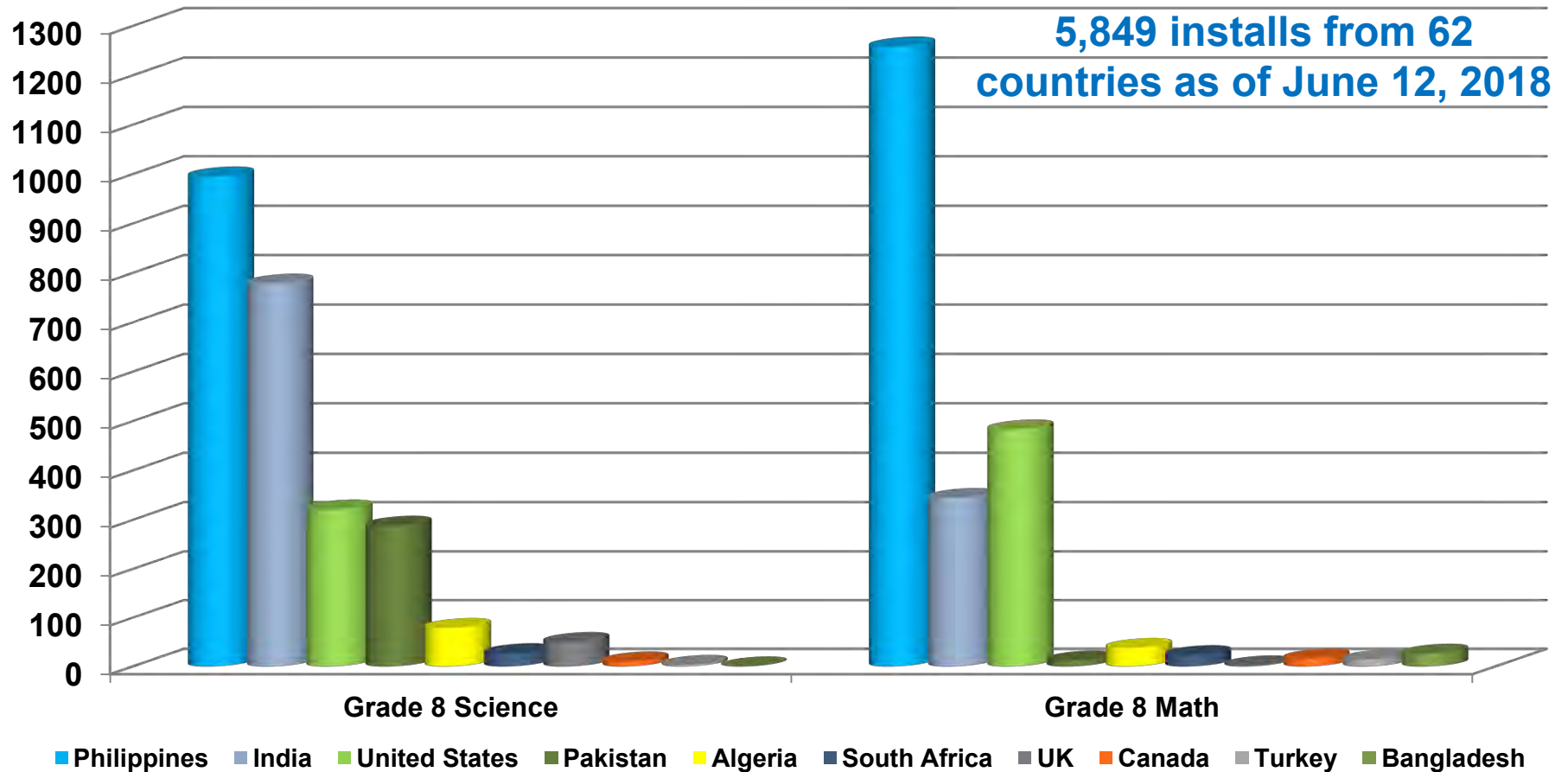
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 7 Science and Mathematics January 2016 - June 2018 by Country (Top Ten)



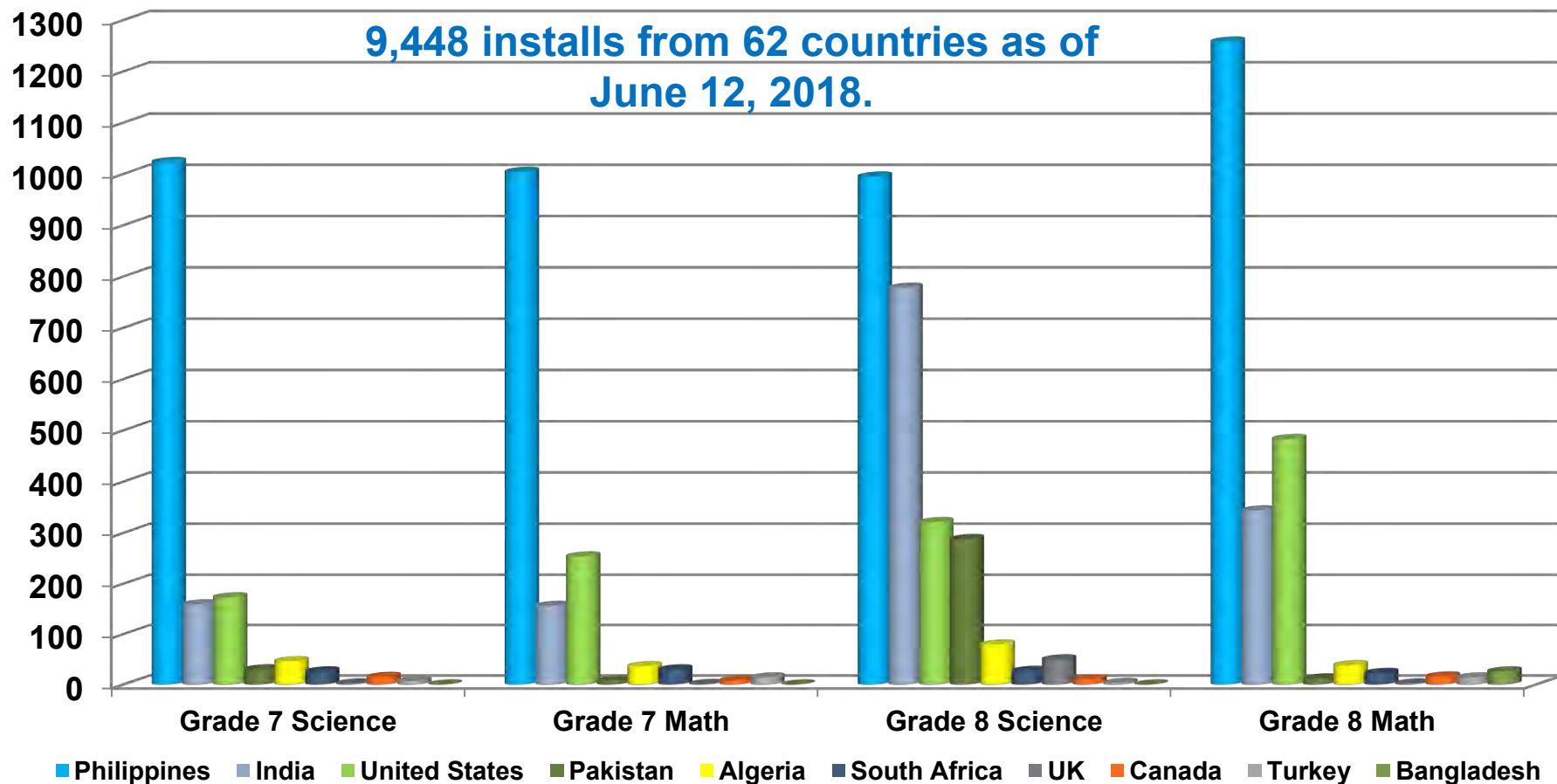
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 8 Science and Mathematics January 2016 - June 2018 by Country (Top Ten)



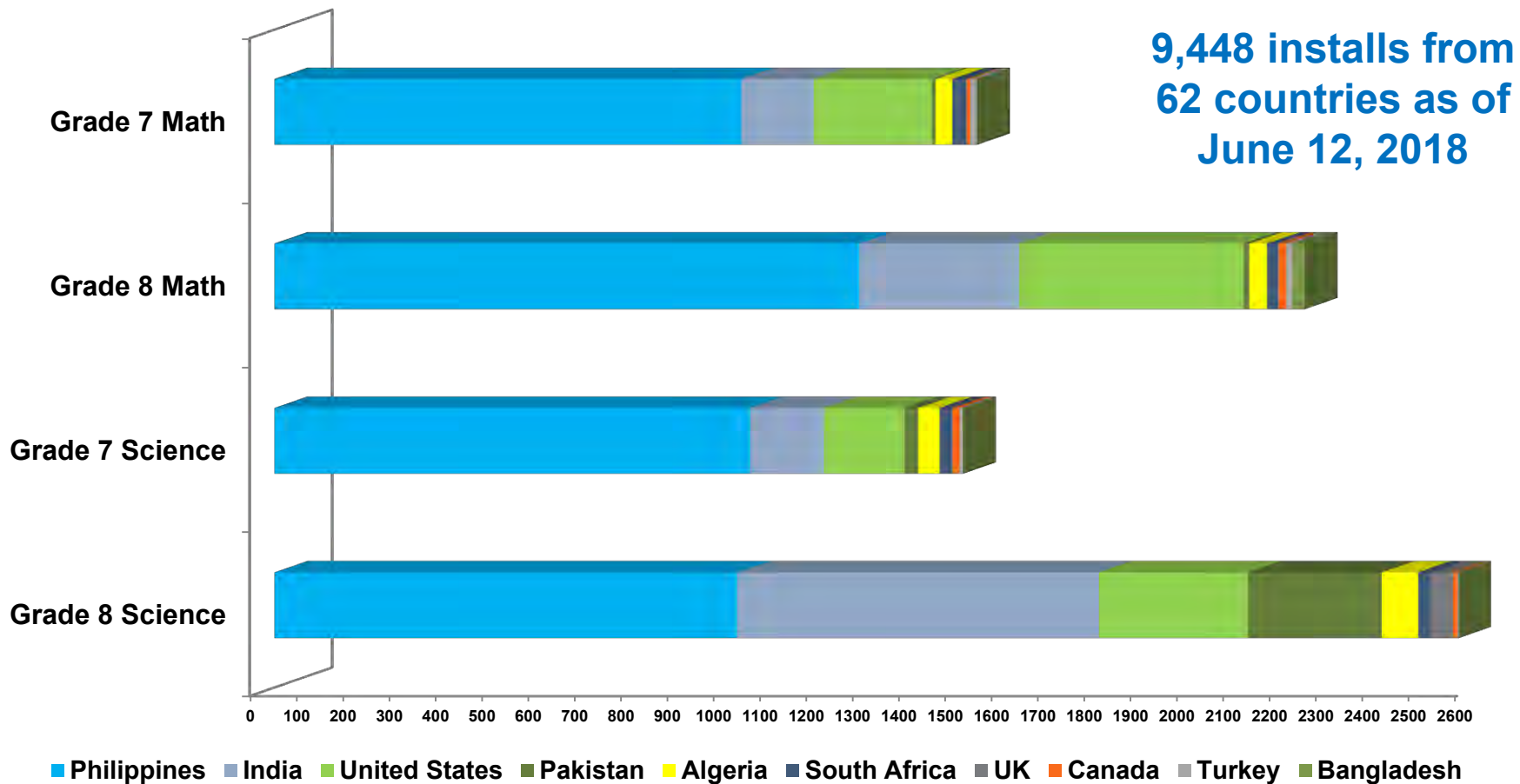
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 7-8 Science and Mathematics January 2016 - June 2018 by Country (Top Ten)



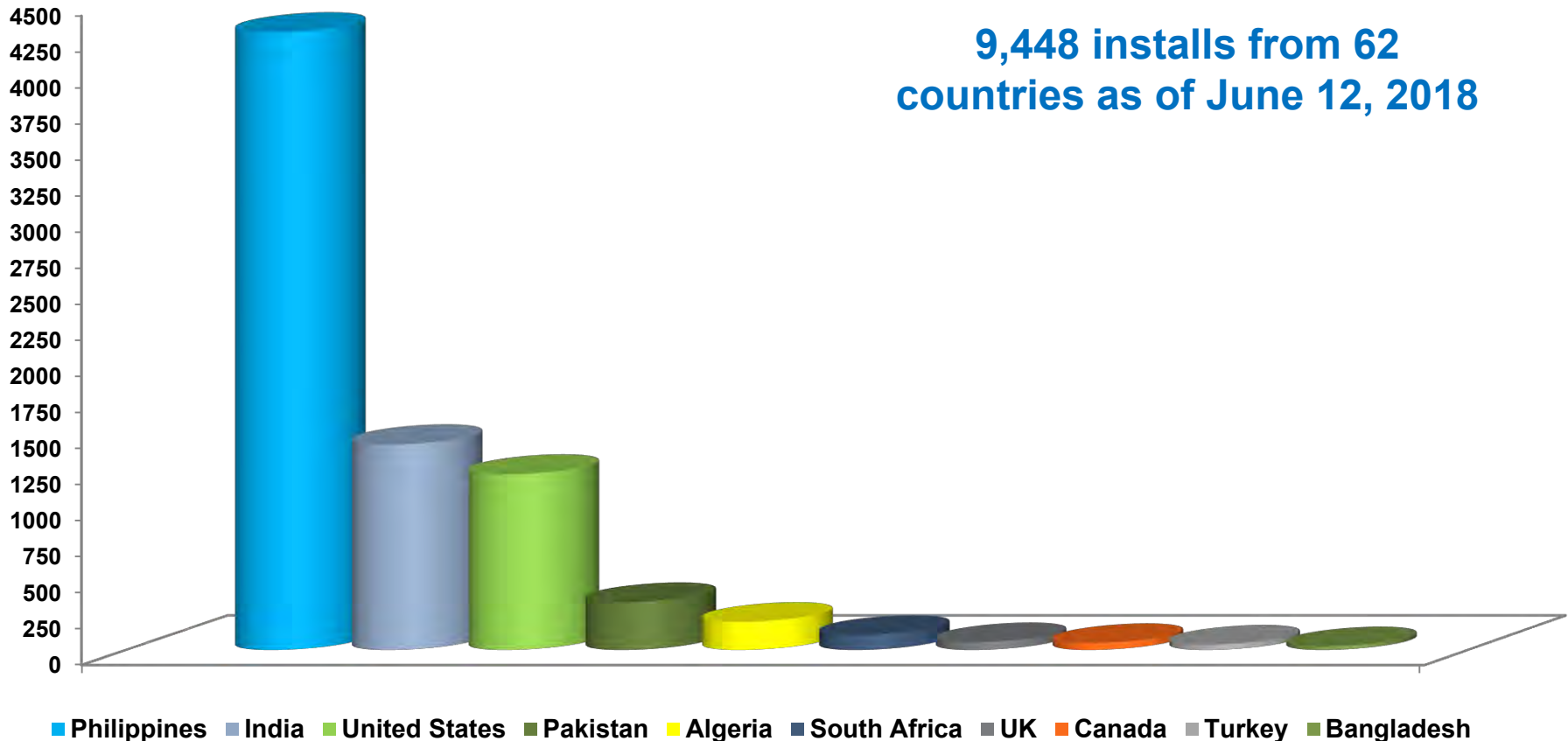
DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 7-8 Science and Mathematics January 2016 - June 2018 by Country (Top Ten)



DOST COURSEWARE MOBILE APPLICATION WORLDWIDE

Installs Grade 7-8 Science and Mathematics January 2016 - June 2018 by Country (Top Ten)



DOST COURSEWARE – HOW TO MAXIMIZE THE USE

- In the classroom
 - Use the projector if laptops or PCs are not available for everyone
 - If 1:1 laptop:learner, install the Courseware in each
 - Provide headset or earphone
 - Install in Content Management Server or in each PC unit in computer lab



DOST COURSEWARE – HOW TO MAXIMIZE THE USE

- In the classroom
 - May be used in motivation, discussion, or processing as blended-learning tool
 - Integrate in DLL, Lesson Plan
 - As intervention resource material
 - As a review or advanced topic study-material



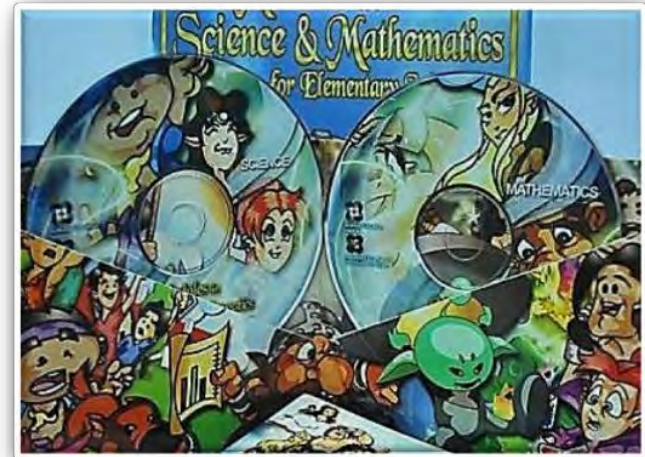
DOST COURSEWARE – HOW TO MAXIMIZE THE USE

- In the classroom
 - If 1:1 tablet:learner, install the Courseware in each
 - Provide headset or earphone
- Use at home or anywhere



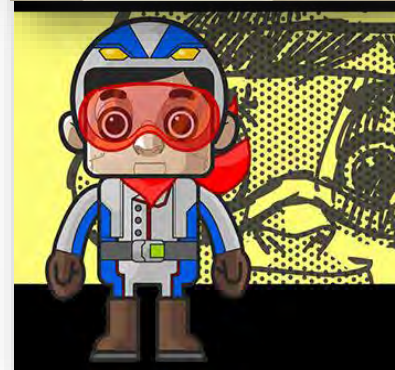
DOST COURSEWARE DISTRIBUTION

- For Windows Version
 - CD Packages – per request basis
 - Copy and share with fellow educators, learners, family and friends
 - 10,000 copies for 1st edition Science & Math
 - 1,800 copies 2nd edition Gr 1-6 Math
 - 1,200 copies Grades 7&8



HOW TO AVAIL?

- **THE DOST COURSEWARE ALL VERSIONS ARE FOR FREE**



WHERE TO ACCESS THE DOST COURSEWARE

www.sei.dost.gov.ph

<http://www.sei.dost.gov.ph/index.php/programs-and-projects/innovations/83-courseware>



The screenshot shows a web browser window with the address bar displaying www.sei.dost.gov.ph. The main content area features several promotional graphics and text:

- A graphic for the **PRIMER** on the DOST-SEI Undergraduate Scholarship Examination.
- A graphic for the **PRIMER** DOST-SEI Junior Level Science Scholarships Examination.
- A photograph of students in green hard hats participating in a plankton sampling activity.
- A colorful graphic titled **Science & Mathematics for Elementary** featuring cartoon characters and globes.
- A photograph of two **DOST Courseware** booklets for Grades 1-6 Mathematics and Science and Mathematics.

Text on the page includes:

UP Marine Science Institute's Mark Tolentino (rightmost) engages the interest of Science Camp participants in plankton sampling activity.

For most, the dry season or "summer" time is for art workshops and taekwondo lessons; but for students from various public schools in Siquijor, it's all about the sea, the atmosphere, science, and saving the planet.

Forty students are about to experience becoming scientists in the 2018 Cebu Science Youth Camp, a project organized annually by the Department of Science and Technology – Science Education Institute (DOST-SEI), which will run this time from April 17 to 22 in the island province.

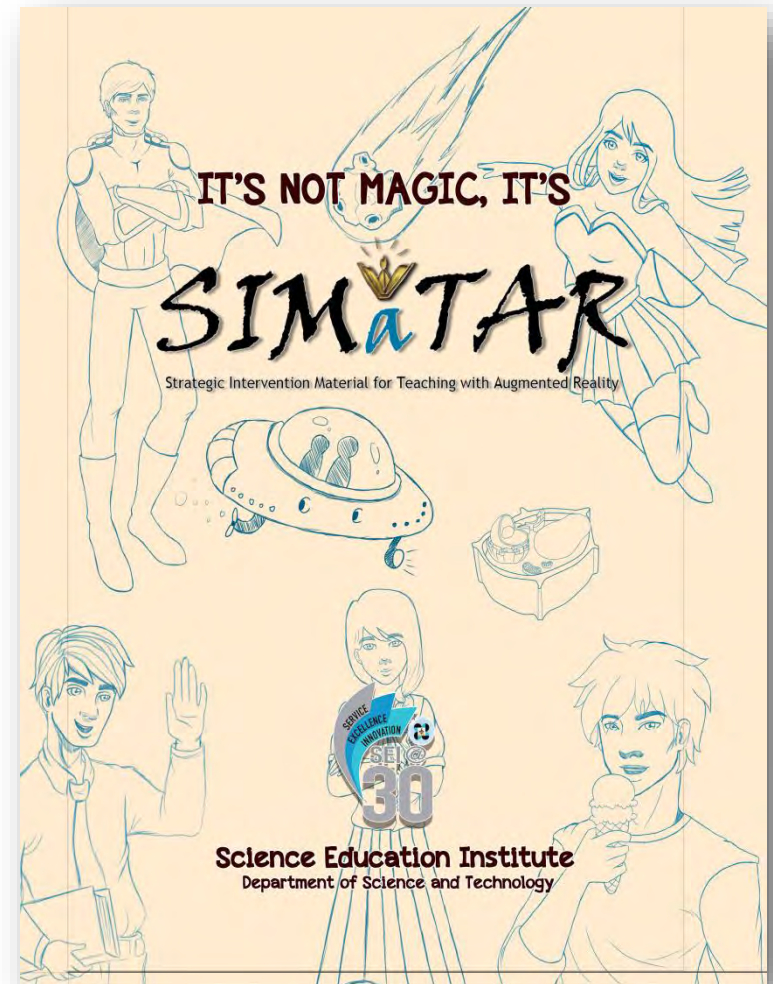
The Science Camp is one of DOST-SEI's most anticipated projects that aim to encourage the youth to get into Science, Technology, Engineering and Mathematics (STEM) courses. It is also one of the most effective platforms of the Institute as many of the camp's previous participants are now enrolled in Science fields while some are now DOST scholars.

...ide from the students, 20 teachers from different public schools in Region...



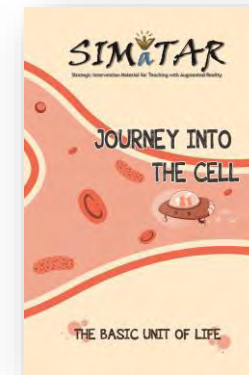
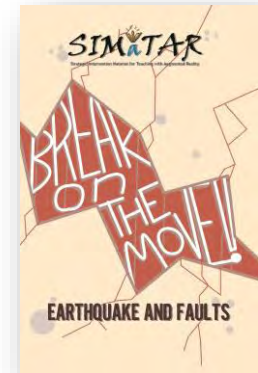
UPCOMING DOST MOBILE APPLICATION - SIMATAR

- **STRATEGIC INTERVENTION MATERIAL FOR TEACHING WITH AUGMENTED REALITY (SIMATAR)**
- **Strategic Intervention Materials for Teaching with Augmented Reality (SIMaTAR) is a collection of teaching and learning materials in Science Grade 8 using augmented reality technology to produce information, increase knowledge, explore new spaces and places and greatly improve experience through digital immersion in different 3D and 4D worlds.**



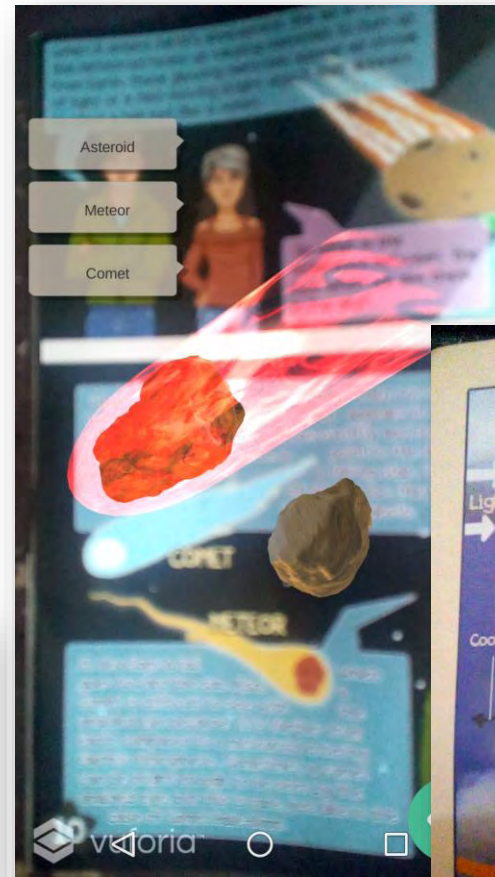
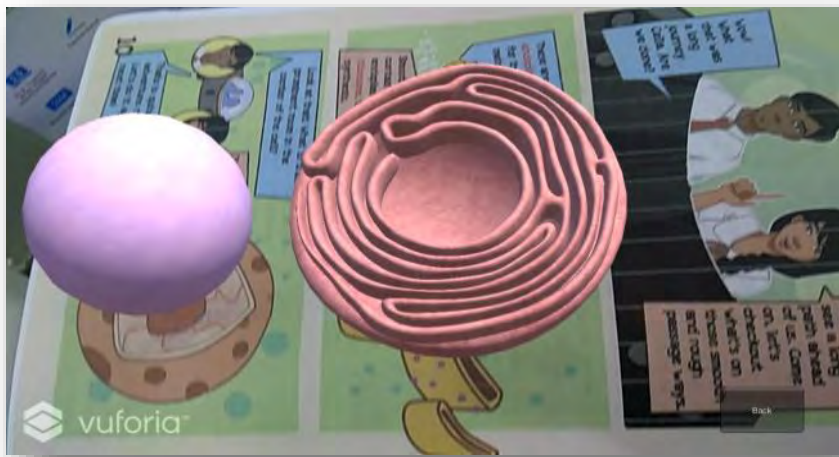
UPCOMING DOST MOBILE APPLICATION - SIMATAR

- **SIMATAR topics**
 - **A Storm is Born: Understanding Formation of Typhoon**
 - **Break on the Move: Earthquake and Faults**
 - **Journey Into the Cell: The Basic Unit of Life**
 - **The Amazing Visitors of Planet Earth: Comets, Meteors and Asteroids**
 - **What's the Matter: The Particle Nature of Matter**



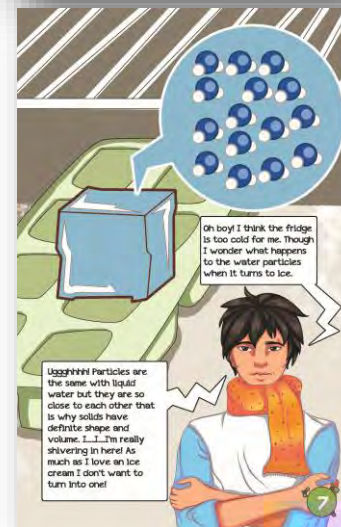
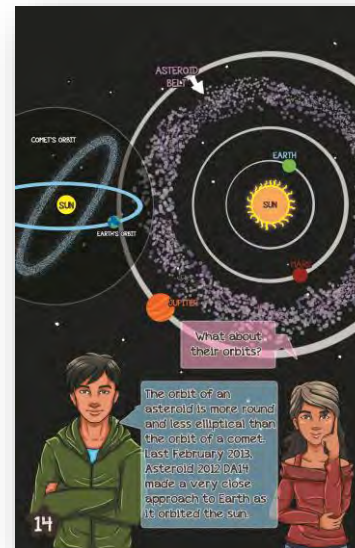
UPCOMING DOST MOBILE APPLICATION - SIMATAR

- **SIMATAR**
 - **When augmented, it will show 3D simulation of the drawings**
 - **Interactive, engaging and immerses student into virtual simulations**



UPCOMING DOST MOBILE APPLICATION - SIMATAR

- **SIMATAR**
 - The print and mobile application will be pilot-tested to select schools in July 2018
 - Will be available in Google Play and Apple Stores in November 2018



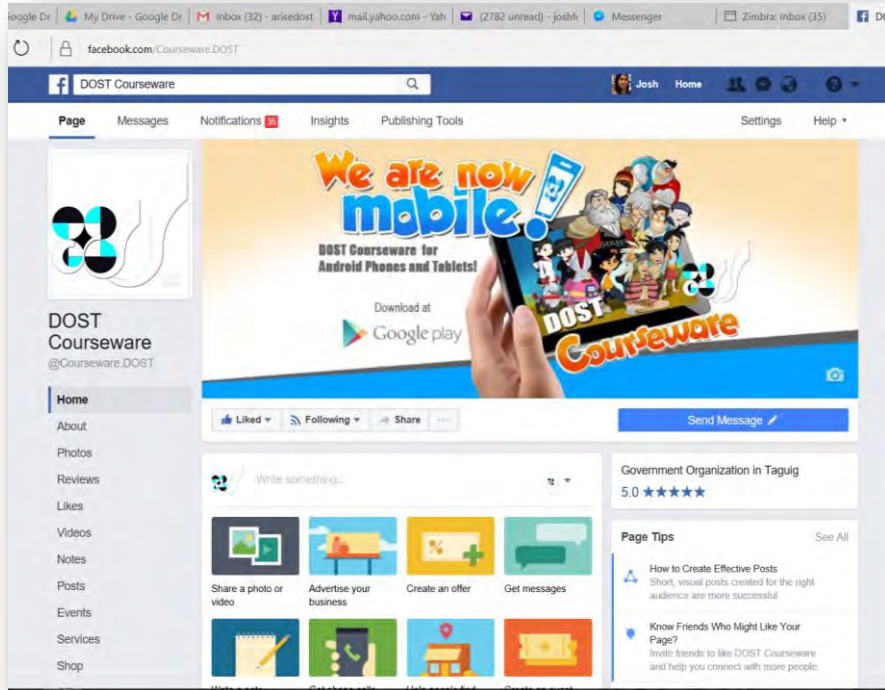
DOST COURSEWARE RESEARCHES

- We encourage studies on the use of DOST Courseware
 - Action Research
 - Research Project
 - Thesis
 - Dissertation
- Kindly provide us a copy of the result



DOST COURSEWARE SOCIAL MEDIA SITES

DOST Courseware



ARISE DOST





DOST COURSEWARE



CONTACT ME

Email:

dostcoursewareph@gmail.com

Website

Science Education Institute

www.sei.dost.gov.ph

SALAMAT PO AT MABUHAY!



