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# Effective Use of Technology within Today's Classroom

Melissa Bradley & Terence Cavanaugh

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# Current Situation

- BYOD (Bring Your Own Device) - For the most part, students are not allowed to take devices to school unless its for a presentation.
- Cell phones are banned in almost all schools. - Stealing
- Computer labs are on the compound but are use to teach IT ( Information Technology)
- This is why the Ministry of Education and Digi are partnering to hopefully create a paperless classroom in Belize - Just Starting



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# My school



- My school is apart of the pilot program and I had the opportunity to teach and observe the progress of students who were allowed to use computer in class and those who had to use paper and pen.
  - As a teacher, I was far more enthused about going to the class that was allowed to use technology. Students were far more engaged, had far less disciplinary issues and they were eager to do any assessment given.
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**Substitution**

Technology is only a tool substitute

**Augmentation**

Technology is a tool substitution with some functional improvements

**Modification**

Technology allows for significant task redesign

**Redefinition**

Technology allows for the creation of a new task.

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# Hindrance of technology integration in the classroom



## Infrastructure

- Power
- Network Connections

- Actually, only a few schools in Belize are equipped with technology to teach.
  - Most use a portable projector that is taken into class when the teacher needs it.
  - Basically, technology in the classroom in Belize is new in schools.
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**Issue:**  
**Teachers teach as they  
were taught.**

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Hamlet on Technology  
(a paraphrase)

... for there is nothing either  
good or bad, but thinking  
makes it so.

Hamlet Act 2, scene 2.

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## Purpose



1. Not distract the learning - Promote the learning
  2. Enhance/Option
  3. Assist/Scaffold/Support learner
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# Technology is just a tool... (not an end)

Educators who engage in best practices utilize a variety of instructional delivery methods to assist all learners in achieving success in concept mastery.



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- 1 Makes Learning More Engaging
- 2 Prepares Students for the Future
- 3 Improved Retention Rate
- 4 Helps Students Learn at Their Own Pace
- 5 Technology Connects with Students

# Benefits



# Instructional Approach

Interdisciplinary

Collaboration

Inquiry

Motivational

Self Directed Learning

Learning Style

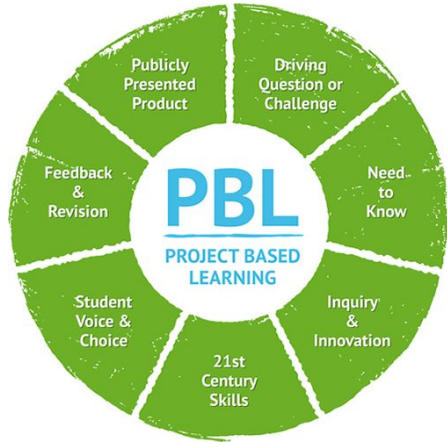
Critical Thinking

Creative Thinking

Technology Integration

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# Project Based Learning



Technology application through context.

Project based learning is an instructional approach that poses challenging questions or presents real-world problems that are personally meaningful to students, and has them investigate these issues and propose viable solutions.

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# Benefits to Technology Integration and Project Based Learning

- interdisciplinary activities target learning objectives from multiple subject areas
  - simulates real problems to have students actively devise solutions
  - creates learning opportunities based upon student interest and strengths
  - engages learners by offering a meaningful learning activity
  - offers multiple ways for students to participate and demonstrate their knowledge
  - accommodates different learning styles
  - encourages the mastery of technological tools
  - prompts students to collaborate
  - offers a learning experience that draws on creative and critical thinking
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# Instruction

## Prioritize Instruction

Excellence—Technology can be an effective tool, but it remains just that, a tool. Educators provide the foundation of the student's learning experience.

A teacher should always have concrete answers to these questions:

- What capabilities do I want my students to develop? In what specific ways is my instructional design relevant, and goal oriented?

- Relevance? Relationships? Clear objectives?

Consider a specific digital tool, asking the following:

- o How does this digital tool support the development of the capability I want to develop in my students?

- o Is my teaching, using this tool, still \_\_\_\_\_ as structured, rigorous, and relevant as it would be without this tool?

# Need

Identify Student Needs Around Use of Digital Tools—Information should not be confused with knowledge of evaluating digital tools.

- Knowledge is the recall of information, discovery, observation, or naming.

Teachers should be able to define what knowledge (not information) students will need to apply when using a digital tool.

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# Plan

## Create a Plan for Managing Student Use of Classroom Technology and Online Tools

Before introducing a digital tool into a learning context, teachers should understand the following:

How will they support students in using a tool that might be unfamiliar?

- How will each student be able to manage it independently?
  - How will they take advantage of students' diversity and inclination toward building community online?
  - How will students and the instructor connect, sometimes across great distance?
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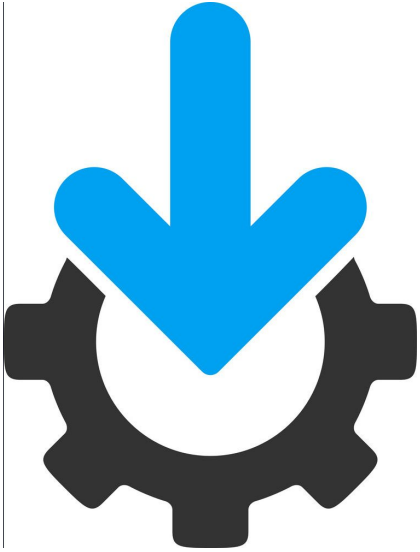
# Feedback

Maximize Opportunities for  
Diverse Forms of Feedback.

Rather than relying on feedback  
or evaluation models suited to  
outdated models of assignments,  
have teachers ask these  
questions:

How will this online tool allow me to hone  
in on each student's thought process and  
provide targeted, formative feedback  
that can be immediately and usefully  
applied?

- How can my feedback help pave the  
way for next steps in learning and in  
reaching established, articulated, or  
modeled goals?
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## Implementing Integration Strategies Helps Students:

- See the connectivity and interaction among disciplines;
  - Choose appropriate activities;
  - Examine organizational patterns;
  - Develop research skills;
  - Attack multi-levels of activity and challenge;
  - Assume authentic responsibility;
  - Engage in active learning;
  - Work collaboratively with others and
  - Refine their technology skills.
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# Applications

Digital Storytelling

Expression (writing/creating)

Problem-Solving

Interacting

Visualization (multimedia->VR)

Questioning

Research

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“computers belong in the classroom where children can use them in any number of ways in individual and group projects”  
(Davis and Shade, 1999)

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## TIMS: Technology Integration Matrix: Levels of Technology Integration into the Curriculum

Entry

Teacher uses technology to deliver curriculum content to students.

Adoption

Teacher directs students in the conventional use of tool-based software. If such software is available, this level is recommended.

Adaptation

Teacher encourages the adaptation of tool-based software by allowing students to select and modify a tool to accomplish the task at hand

Infusion

Teacher consistently provides the infusion of technology tools with understanding, applying, analyzing, and evaluating learning tasks.

Transformation

Teacher cultivates a rich learning environment, where blending choice of technology tools with student-initiated investigation, discussion, compositions, or projects, across any content area is promoted.

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Technology is the only way to dramatically expand **access to knowledge**. Why should students be limited to a textbook that was printed two years ago, and maybe designed 10 years ago, when they could have access to the world's best and most up-to-date textbook? Equally important, technology allows teachers and students to access specialised materials well beyond textbooks, in multiple formats, with little time and space constraints. Technology provides great platforms for collaboration in knowledge creation where teachers can share and enrich teaching materials. Perhaps most importantly, technology can support new pedagogies that focus on learners as active participants with tools for inquiry-based pedagogies and collaborative workspaces.

OECD (Organisation for Economic Co-operation and Development)

[https://www.oecd-ilibrary.org/education/students-computers-and-learning\\_9789264239555-en;jsessionid=yb8u1hks9r6.x-oecd-live-02](https://www.oecd-ilibrary.org/education/students-computers-and-learning_9789264239555-en;jsessionid=yb8u1hks9r6.x-oecd-live-02)

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## What about the Home?

Most US students had access to a computer at home or in school in 2015. Across states and jurisdictions, access to computers at home ranged from 77% to 97% for students in 8th grade, while access to computers in school ranged from 78-100%. Students without computer access at home tended to perform worse on National Assessment of Educational Progress (NAEP) assessments in 2015.

Lower- and higher-performing students differ in how often they use computers for practicing and building academic skills in the classroom.

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