

Introduction

The Case for Interactive Classrooms

Technology has transformed modern society and is slowly transforming the modern classroom. When technology was first introduced in schools in the 1980s, it was expected to revolutionise the classroom structure. Alan November explained in his book *Empowering Students with Technology* (2001) that we are at the “beginning of a cultural shift toward collaboration and learning empowerment” where global learning allows students to construct genuine relationships across the globe. The shift moves us from a classroom isolated from the outside world to one collaborating with it. The introduction of technology into the classroom makes this possible. Technology empowers students to construct their own knowledge and become more motivated and engaged (Pflaum, 2004).

The focus in the classroom is on how teachers use technology as an instructional tool, and how they integrate technology into their existing curriculum so that students can learn how to use technology to enhance their learning.

Of course, just having computers, software and various other forms of technology in our classrooms does not guarantee student success. This comes only when teachers are effective in the way they integrate these tools into teaching their subject matter. No Child Left Behind requires teachers to be highly qualified, but that does not necessarily mean highly effective. Highly effective teachers plan instruction and assessment based on anticipated student outcomes and student interests. Teachers must begin to listen to the needs of their students and understand student culture.

Some states in the US have already begun to listen to their students. Virginia, New Mexico, Louisiana, Idaho, West Virginia, Arkansas, Georgia and Pennsylvania are examples of states that have developed statewide, technology-rich programs to address student needs in an effort to increase student achievement. The programs are so successful that they are outlined in the National Technology Plan (US Department of Education, 2004). Other states have taken notice of the impact interactive videoconferencing has on closing the achievement gap and are establishing statewide video networks.

SKILLS AND LEARNING

Mathematics

Numbers and Operations

- Count with understanding and recognise “how many” in sets of objects.
- Use multiple models to develop initial understandings of place value and the base-ten number system.
- Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections.

Algebra

- Analyse how both repeating and growing patterns are generated.

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English

- Students adjust their use of spoken, written, and visual language (e.g. conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

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UNIT GOAL

To celebrate the 100th Day of School by counting and sharing activities.

LESSON OBJECTIVES

After completing this lesson, students will be able to

- count to 100 by 1s, 2s, 5s and 10s;
- describe a pattern and determine what comes next; and
- describe an activity or project to an interactive audience.

DURATION

Multiple 30-minute sessions on the 100th Day of School (varies organisation to organisation).

PRIOR KNOWLEDGE REQUIRED

Students should have an understanding of

- 100s charts,
- colour patterns, and
- a 100th Day activity selected by teacher (see Activity 2).

Discuss answers to the Exploring Insects worksheet using a presentation tool (such as PowerPoint) to summarise and document answers to student questions.

Question/Answer or Discussion

During this time students can ask questions about insects in general or specific questions about the Madagascar hissing roaches. This session will last 5–10 minutes.

Evaluation

Use the Exploring Insects worksheet to evaluate student participation.

Videoconference – Day Two

Topic: *Life cycles and characteristics of butterflies.*

Teacher Materials

- Life cycles presentation
- Butterfly display
- Butterfly diagram
- Life cycle wheel sample

Student Materials

- 9-inch paper plate
- Three to five small shell pasta (representing eggs)
- 3-inch brown or green pipe cleaner (representing larva)
- One large macaroni noodle (representing pupa)
- One bow-tie noodle (representing adult butterfly)
- Crayons or markers

Introduction

Present the butterfly display that shows many brightly coloured butterflies and ask, “Where do butterflies come from?” Accept all answers and discuss anything students remember from previous learning about life cycles.



Life cycle wheel

Activities and/or Presentation

Use the life cycles presentation to introduce all stages of the life cycle, discussing each stage in great detail.

Use the butterfly diagram to discuss all characteristics and body parts of an adult butterfly. Make sure to include the following: head, thorax, abdomen, six legs, forewings, hind wings, antennae, compound eyes, scales and proboscis.

Check for understanding by reviewing life cycles using review questions.

Videoconference

Topic: *Genocide*

Content Providers: *Gregory Stanton, Director of Genocide Watch (Cambodia, Rwanda)*

Colin Thomas-Jensen, International Crisis Group (Sudan)

Julia Speigel, Policy Analyst, ENOUGH Project (Uganda)

Elvir Camdzic, Director of Government Relations, Bosnian American Advisory Council (Bosnia)

Alan Moskin, World War II veteran (Germany)

Clara Knopfler, Holocaust survivor, Auschwitz (Germany)

Introduction

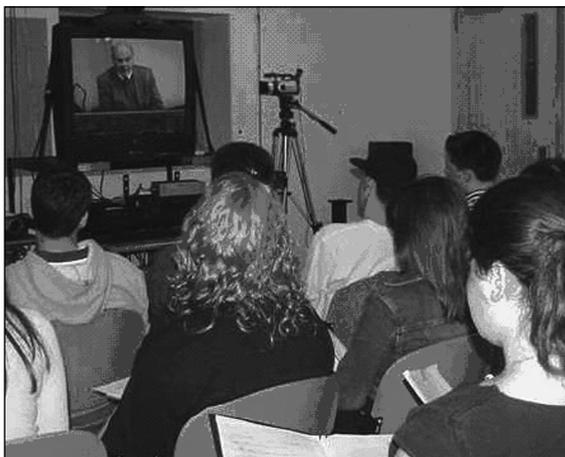
Mike Griffith of Global-Leap, based in the UK, serves as the moderator of the videoconference. Each expert is introduced to the students, and a brief biography of each individual is presented. (*Please note: Each videoconference covers one country.*)

Activity and/or Presentation

Each expert provides a general overview of the country they are speaking on. They specifically address acts of genocide within those countries. Students from each site then have the opportunity to ask questions of the experts. These can be questions previously researched and planned or impromptu questions as a result of the presentation. Students also have the opportunity to ask questions of each other at the end of the conference.

Question/Answer or Discussion

After the expert completes the general overview, he or she turns it over to the students for their questions (10–15 minutes). Mike Griffith then turns to each of the sites for further questions or comments from the students. If a site is not ready at that time, Mike moves the discussion along and returns at a later time. Each site has at least two separate opportunities to pose questions of the experts. At the end of the conference, Mike asks for closing comments or reflections from each of the sites.



Genocide study videoconference

Pre-Conference Activities

Activity 1 • Understanding Water Usage

Instructional Objective

Students research household water usage statistics and prepare a spreadsheet that calculates water usage for a given household.

Procedure

In groups of four, students brainstorm all the ways an average household of four uses water on an average Saturday when everyone is at home. Students send the teacher their responses via a classroom connection tool, and the teacher compiles a list.

In groups, students use the Internet to research water usage statistics, finding average numbers of litres of water used for each activity on the compiled list. Students should note the sources they use and cite them on the spreadsheet they will create.

Students create a spreadsheet that lists the various brainstormed activities that use water. Using their research, they create formulas that will calculate litres of water used for each activity, for a family of four.

The teacher visits each group and has the group explain how they created each formula.

The teacher uses a projector or teacher/connection program to illustrate to students the various formulas that were created. Through consensus, the class determines what the best formula is to use.

Students return to their work using the final formula to calculate total water used for all activities. As a class, students discuss their results to make sure every group's spreadsheet is returning reasonable amounts. Are students surprised at how much water a family of four uses in one day?

As homework, the students will prepare a letter inviting an expert in the field of water management to join them as a class. (Although this will have been pre-arranged, a secondary cross-curricular activity can be injected into the unit.) Additionally, students should each prepare 3–4 questions that they plan on asking during the question/answer period of the videoconference.

Preparation for Videoconference

- Overview behavioural expectations for students during videoconference.
- Create and display a sign noting school name and location.
- Develop student questions (be sure to write them out and review with class the procedure for interaction).