

Teaching Methodologies

2.3.1: Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences

The teaching methodologies in geology besides involving the

1. Traditional chalk and board method incorporates
2. Innovative Teaching-Learning Practices which are mentioned below

a. *Field based Assessment*



Geology been a field-based subject, students are exposed to field training at various places of geological interest within and outside the state of Goa. The training includes field mapping and exposure to the different aspects of Structural Geology, Petrology, Mineralogy, Stratigraphy

b. *Collaborative learning strategies such as Team-Pair-Solo, Group Projects, Round robin. Fish Bowl*

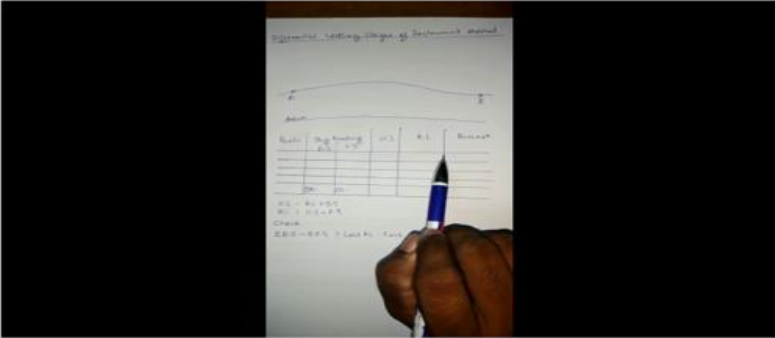


Team-Pair Solo

Three-Step Interview

Round Robin

c. Uploading Facultyself-createdvideos on YouTube



Differential Leveling by height of instrument method

404 views

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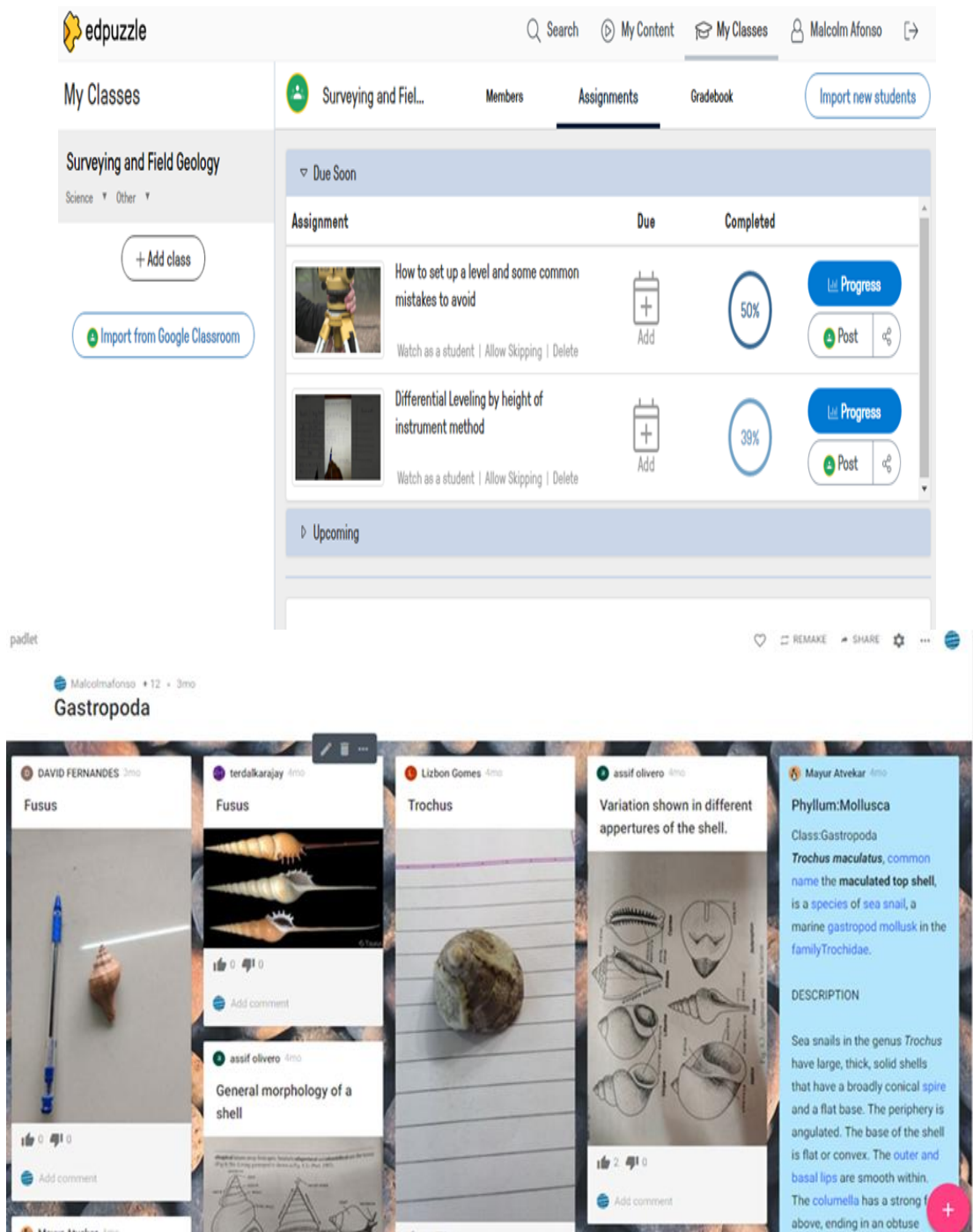
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Malcolm Afonso
Published on Dec 7, 2017

EDIT VIDEO

Differential Leveling by height of instrument method. Solved problem and instrument setup.

d. Besides the above-mentioned methods Gobbet, Padlet, Case studies. Student mentors for slow learners is also incorporated on consistent basis.



e. Teaching with Google Earth

Google Earth is a free, downloadable application that works as a browser for all sorts of information on Earth. Google Earth provides an immersive and interactive experience for students to learn about our earth. We have used Google earth platform to cover the topic ‘‘Morphology of the ocean floor’’ for the students of Marine Geology Course.

Methodology

Google earth platform was used to study the bathymetry of the ocean floor. The imagery provided insights into the shape, size and features present in the ocean basins, the locations of

various ocean features such as mid-ocean ridges, seamounts, locations of hotspots, trenches, ocean islands, and volcanic arcs were very apparent in the imagery provided by Google earth.

Vector Layers of earth surface model, plate boundaries, recent earthquakes, volcanoes in KML format were then overlaid on base map to study relationships of these ocean features to their tectonic settings.

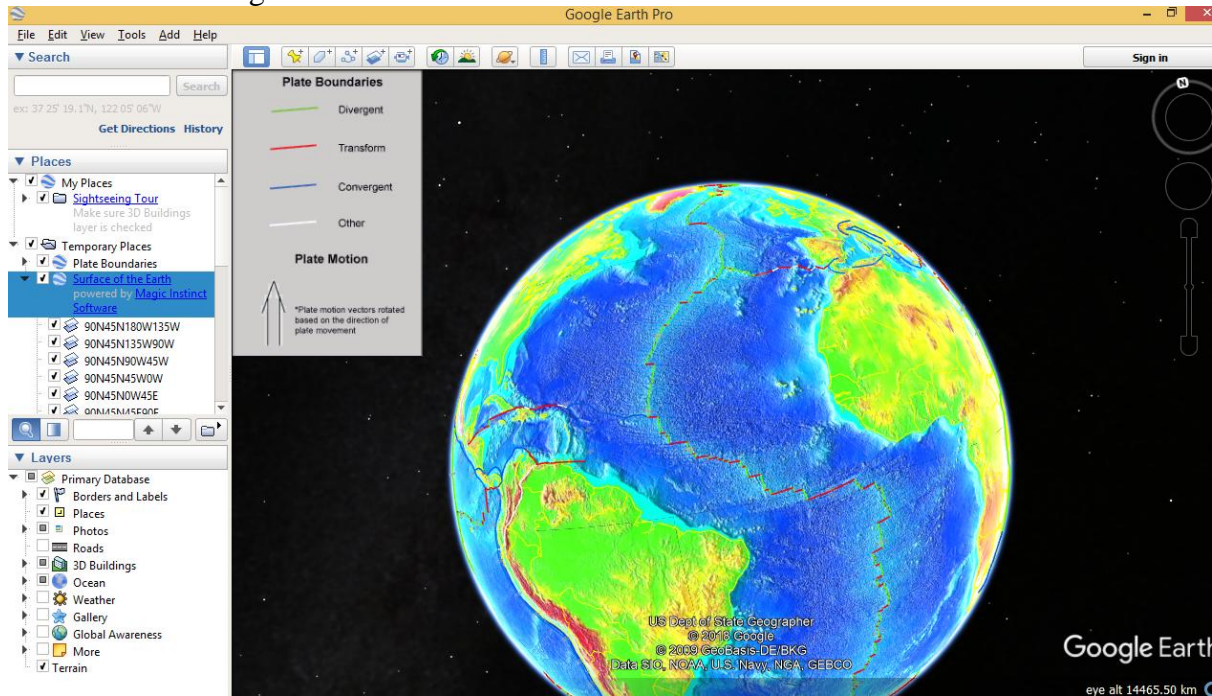


Figure 1: Mid-Ocean ridges. Earth surface model and plate boundary kml overlaid on Google earth depicting plate boundaries and their relation to ocean features

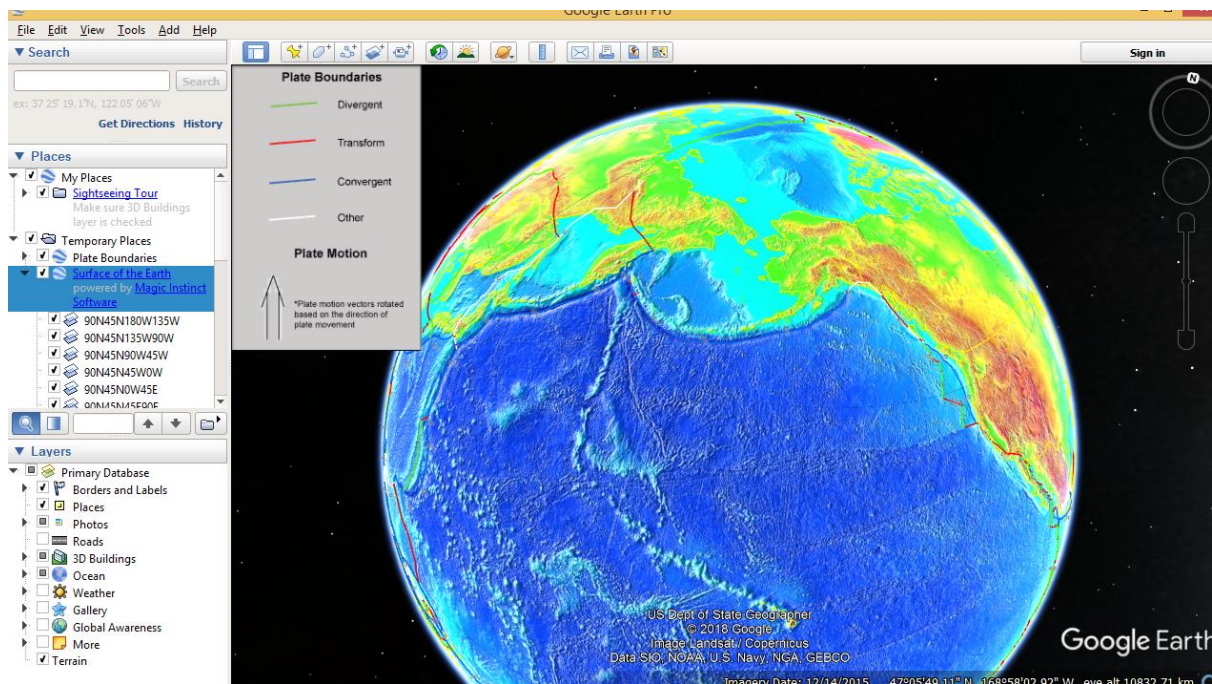


Figure 2: Linear chain of ocean islands and Volcanic arc. Earth surface model and plate boundary kml overlaid on Google earth depicting plate boundaries and their relation to ocean features

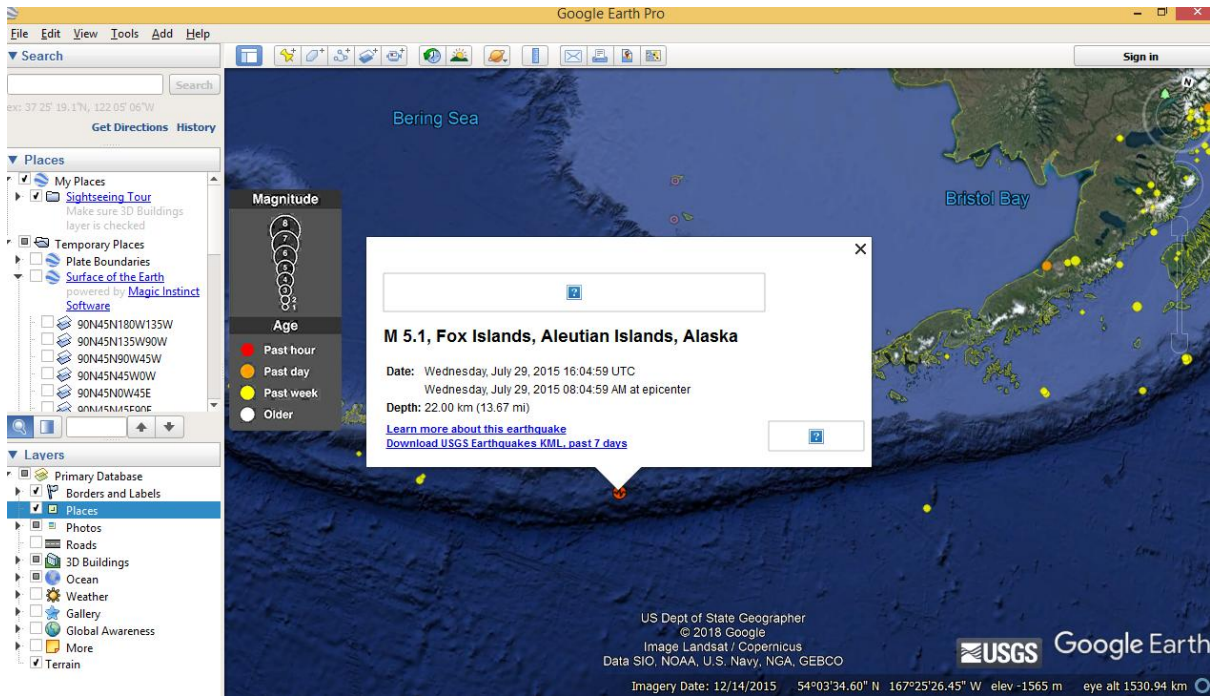


Figure 3: Imagery showing the location of epicentre of latest earthquake, kml updated by USGS.

5. YouTube Videos (Geologic Documentaries e.gHow the earth was made series)

Objective:

NOAA Educational Resources (Ocean exploration videos, multimedia education mission lessons and exercises)

1. <https://oceanexplorer.noaa.gov/edu/learning/welcome.html>
2. <https://www.noaa.gov/education/resource-collections>

USGS (e books and Google earth Kmlfilesfor plate tectonics and earthquakes)

<https://www.usgs.gov/>

Smitsonian Institution (Google earth Kml files showing location and type of volcanic activity)

<https://volcano.si.edu/>

NPTEL online course links for surveying

<https://nptel.ac.in/courses/105107122/>

Natural resources Canada (Fundamentals of Remote sensing)

<https://www.nrcan.gc.ca/maps-tools-publications/satellite-imagery-air-photos/tutorial-fundamentals-remote-sensing/9309>

Bhuvan

https://bhuvan.nrsc.gov.in/bhuvan_links.php

TEACHING LEARNING AND EVALUATION MODES

Geology Department

Teaching – Learning And Evaluation Modes

Field based Assessment



TEAM-PAIR-SOLO



THREE-STEP-INTERVIEW

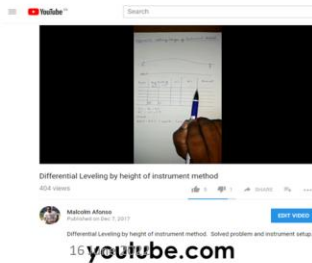


ROUND ROBIN

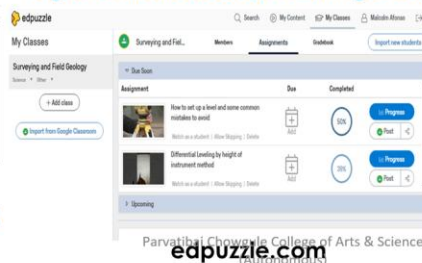
Collaborative learning techniques



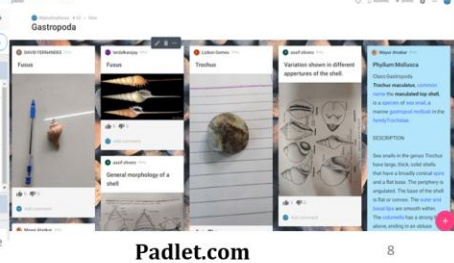
Digital Platforms Used For Teaching And Learning



16 youtube.com



Parvatibai Chowgule College of Arts & Science (Autonomous) edpuzzle.com



Padlet.com

8

Virtual Tools to facilitate teaching-learning process during pandemic COVID-19



16 June 2022

Parvatibai Chowgule College of Arts & Science (Autonomous)

Evaluation Methods

- Geological field based reports
- Portfolio
- Written test
- Assignments
- Presentations
- MCQ
- Gobbet
- Problem based learning
- Experimental
- Projects



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