
DISCOVER YOUR COUNTRY


CONQUER YOUR HESITATION


ENGAGE YOUR MIND


EXCEED YOUR POTENTIAL


EXPERIENCE YOUR EDUCATION

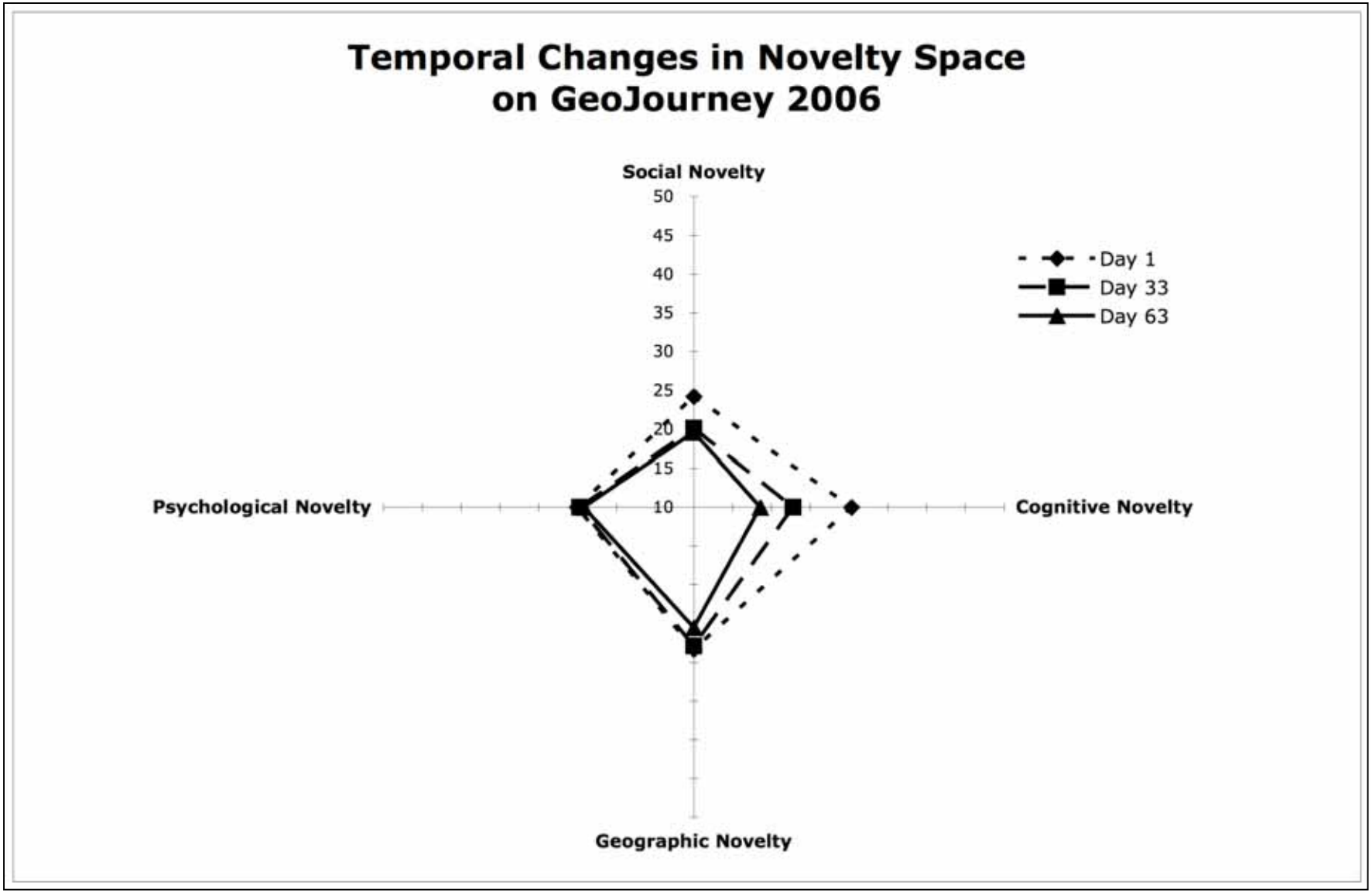

Figure 1 is a plot that connects of the data from the Novelty Space Survey as a polygon. The areas of the polygons are determined by the sum of the average responses for each item within the novelty domains. The area of the polygon represents the average Novelty Space for the 27 students that participated in GeoJourney 2006. Note that the polygons (representing Novelty Space) gets smaller with time.

Course	mean pre	mean post	%g	ES	tstat	tcrit
IFP'03	52.3	64.9	0.26	1.32	5.00(99%)	2.82
IFP'04	55.6	63.1	0.17	0.57	3.04(99%)	2.82
IFP'05	47.8	64.2	0.46	1.85	3.64(99%)	2.92
GJ'04	44.7	62.1	0.32	1.48	8.12(99%)	3.89
GJ'05	50.2	60.9	0.22	1.27	5.43(99%)	2.81
GJ'06	46.7	53.7	0.13	0.80	3.18(99%)	2.80
All field-based intro.geology	49.9	61.2	0.22	1.12		
GEOL 100	40.7	46.4	0.04	0.22	2.07(95%)	1.99
Libarkin (total)	43.0	47.0	0.07	0.36	unavailable	unavailable
Libarkin (small n<30)	44.8	53.5	0.16	0.87	unavailable	unavailable
Libarkin (field component)	50.9	56.9	0.12	0.48	unavailable	unavailable

Table 1. This table shows statistical data from the Geoscience Concept Inventory administered to field-based and classroom-based introductory geoscience courses. %g is percent gain. For effect size (ES) the pre test score is treated as the control; the post test score is experimental

Interpreting Effect Size, from Cohen, 1988: .20 is small .50 is medium, .80 is large

Using the iPod During Travel Time

It is common practice in campus-based courses to use electronic visual aids such as educational documentaries, animations, and PowerPoint presentations to teach abstract geologic concepts such as plate movement, paleogeography, mountain-building events, and marine transgressions/regressions. Students on field trips have limited access to the electrical grid, the telecommunications network, or the internet. While there is no substitute for field experiences to observe geology in context for instructional purposes, introductory students can benefit from the visualizations common-place in classrooms to better understand the occurrence of rocks and landforms as they are observed in the field.

The video iPod is a portable personal media device that is capable of supporting a wide range of course materials. Its size, memory, cost, and compatibility with a wide range of after-market accessories make it a excellent choice for use on field trips for supporting course materials used in lecture halls. The replay-ability on the iPod gives students access to and control of electronic course materials when they want it. Unlike campus-based classrooms where student exposure to visualizations is controlled by the instructor, the instructional materials on the iPod can be accessed at times when students prefer and can be replayed and paused as needed.

The primary place that we envisioned students using the iPods was in the vehicles during travel time between field stops. Travel time is an unavoidable component of field trips and can vary from as short as a few hours on weekend trips to as long as days for geology field camps. GeoJourney is a nine week field-based program that uses national parks and public lands, Indian reservations, and public works and industrial sites as the bases to teach introductory-level geology courses. The 63 day, 14,500 mile itinerary results in an exceptional amount of time traveling in vans for students participating in GeoJourney. Additionally, because the courses are introductory-level, abstract geologic concepts typically introduced in campus-based classrooms in the form an introductory lecture are commonly introduced once the caravan arrives at the field stop with the use of a dry-erase board. This results in several outcomes that we find less-than desirable: 1.) too much time spent lecturing on the outcrop 2.) time spent lecturing reduces the time that could be spent observing landforms and rocks and 3.) time in the vehicles is down-time that is under-utilized for academic purposes. We wanted to use travel time to introduce these concepts and increase time in the field for observations and focus student attention on the upcoming field stop.

Course Credit

Five general education courses that are interdisciplinary, introductory-level field-based courses in the following subjects: geology, environmental studies, American culture studies, and Critical Thinking. The courses are taught concurrently in fall semesters as part of a nine-week traveling field program across the United States called "GeoJourney".

- GEOL 250- Field-based Physical Geology (5)
- GEOL 251- Field-based Historical Geology (5)
- ACS 252- Indigenous Cultures of North America (3)
- ENVS 253- Environments in Context (3)
- HNRS 300- GeoJourney Critical Thinking (2)

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- TYPES OF FIELD STOPS
  - National Parks and Public Lands
  - Industrial Sites
  - Regional Museums
  - Large-scale Civil Engineering Projects
  - Privately-owned Natural Attractions
  - Indian Reservations
- LEARNING ACTIVITIES
  - In-camp lectures
  - Campfire discussions
  - Field Notebooks
  - Impromptu Field Lectures
  - Geologic Mapping Projects
  - Focus Questions
  - Podcasts
  - Field Projects
  - Topographic Exercises

GeoJourney's interdisciplinary curriculum