Mar 28th, 2:00 PM - 2:45 PM

Effects on Teaching of an Intensive Summer New Faculty Workshop

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Effects on Teaching of an Intensive New Faculty Workshop

Delena Bell Gatch, Michelle Cawthorn, and Joy Darley
Georgia Southern University
Think–Pair–Share

- If you were going to conduct a new faculty workshop on your campus, what would be the learning outcomes for your workshop?

- What challenges would you face in implementing a new faculty workshop at your institution?
Summer Workshop

- Participants: New faculty to the College of Science and Mathematics at Georgia Southern, 8 participants

- When: 4 Weeks in July, Monday – Friday

- Goal: Guide faculty through the process of course development while sharing best practices in teaching and learning

- Product: Fully developed semester course including: syllabus, schedule, lectures, activities, and assessment materials
Filling Up Your Pedagogical Toolbox: How to Excel at Teaching and Learning

- Week 1: Engaging Learning Experiences
- Week 2: Classroom Assessment Techniques
- Week 3: Technology in the Classroom
- Week 4: Presentation of Lessons Developed by Participants
Key Components of Course Design

- Significant Learning
  - Learning Goals
    - Teaching and Learning Activities
    - Feedback & Assessment
      - Active Learning
      - Educative Assessment

- Situational Factors
  - In-Depth Situational Analysis
Surveys about course preparation
  ◦ Pre and post for participants
  ◦ At the end of one semester of teaching for participants and non-participants
  ◦ Likert scale and free response questions

Pre and post surveys about knowledge and comfort with different pedagogical tools (participants only; Likert scale)
Data Collection

- At the end of one semester of teaching for participants and non-participants
  - Video Classes and Analyze
  - Survey Students
    - One Minute Paper Summaries of Class
    - Likert Scale Questions Pertaining to Workshop Goals
Participants Previous Teaching Experiences

- How many year(s) have you taught in higher education?
  - All Participants listed 2–6 years experience as Graduate Teaching Assistant
  - 2 Participants had experience teaching courses Part Time
  - 3 Participants had taught 1 year as Visiting Professors
Have you ever attended a seminar(s) and/or workshop(s) about teaching?

- 5 Participants had previously attended workshops
  - Higher Education Teaching Certificate (9 credit hours)
  - NSF Faculty Institute for Reforming Science Teaching (70 hours)
  - Various Teaching Assistant Workshop offered by Centers for Excellence in Teaching on local campus
  - Process Oriented Guided Inquiry Learning (POGIL) Workshop
How would you go about planning and developing a new course?

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre-Workshop Participant (N=8)</th>
<th>Post-Workshop Participant (N=7)</th>
<th>Post-Semester Participant (N=6)</th>
<th>Post-Semester Non-Participant (N=5)</th>
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<td>Situational Factors</td>
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<td>Learning Goals</td>
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<td>Assessment</td>
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</table>
Engaging Learning Experiences

- Writing Course Learning Outcomes
  - Backward Course Design
  - Bloom’s Taxonomy

- Designing a Student Centered Classroom
  - Active Learning
  - Cooperative Learning
  - Inductive Teaching and Learning
  - Flipping Your Classroom

- Building a Syllabus and Schedule

- Studied from
  - Dee Fink’s *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses*
  - Barkley’s *Student Engagement Techniques: A Handbook for College Faculty*
What is student centered teaching?

- Pre-Workshop Participant (N=8)
- Post-Workshop Participant (N=7)
- Post-Semester Participant (N=6)
- Post-Semester Non-Participant (N=5)
Classroom Assessment Techniques

- Designing Formative and Summative Classroom Techniques
  - Concept Maps
  - Creative Exercises
  - Rubrics
  - Performance Assessments
  - Multiple Choice Questions

- Building a Classroom Assessment Plan and Developing Assessment Materials for One Unit

- Studied from Angelo and Cross’s *Classroom Assessment Techniques: A Handbook for College Teachers*
How will you determine whether or not your students are learning?

- Pre/post test
- Exams
- Quizzes
- In Class Assignments
- Class Discussion
- Homework Assignments
- Surveys

- Formative Assessment
- Clicker Questions
- Performance Task
- Concept Maps
- System Diagraming Exercises
- Assess Group Work
- Evaluate Critical Thinking Skills & Higher Order Thinking Skills
- Ability to Apply, Analyze, and Evaluate Scientific Information
Technology in the Classroom

- Investigated Technology Best Practices in the Classroom
  - WINGS Training
  - Google Training
  - IClicker2Training
  - Desire2Learn Training
  - Audio & Video Capture Training

- Building Technology Components of Course

- Studied from Manning and Johnson’s *The Technology Toolbelt for Teaching*
Do you plan to incorporate technology into your new classroom? If so, how?

- Course Management Systems
- Discipline Specific Software
- PowerPoint Presentations
- Clickers
- Videos

- Google Chat for Office Hours
- Google Drive for Drawing System Diagrams
- Course Management Systems for Just-in-Time Teaching
- Concept Maps on Bubbl.US
- Podcast
- Web-quest
- PhET Simulations

Pre-workshop participants and Non-participant

Post-workshop participants
How well prepared were you to teach your course(s) at the beginning of the semester?

- Participants
- Non-participants
What was your level of stress due to course preparation at the beginning of the semester?

![Bar chart showing stress levels for participants and non-participants.](chart.png)
Student Responses to Questions about Faculty

Participants (N=345)  Non-participants (N=332)

Likert Scale Value

- Engaged in class
- Engaged outside of class
- Frequency of assessment
- Technology used beneficially

* Indicates significance.
Interdisciplinary Research Collaborations Emerged among Workshop Participants

Workshop Participants were viewed as more Research Productive during First Semester at GSU

Less Complaints were Elevated to Department Chairs concerning Workshop Participants Teaching Styles

Workshop Participants were Involved in CTLS Activities on Campus
  ◦ Reading Round Tables
  ◦ Faculty Learning Communities
Know chemical formula, bonding type, and physical characteristics of ten rock-forming minerals

Laboratory Exercises 1.1 and 1.2

Earth Materials: Minerals

Mineral Building Blocks

- Crystallization
- Cations and Anions
- Atoms
- Bonds

Foundational Knowledge

Physical Properties of Minerals

- Cleavage
- Fracture
- Crystal Habit
- Streak
- Luster
- Density
- Hardness
- Color

Foundational Knowledge

Chapter 3 Earth Materials: Minerals and Rocks
Earth Materials: Minerals
For your information

Atomic Structure
http://www.youtube.com/watch?v=lP57gEWCisY
http://phet.colorado.edu/en/simulation/build-an-atom

Cations and Anions
http://phet.colorado.edu/en/simulation/build-an-atom

Chemical Bonding
http://bcs.whfreeman.com/thelifewire/content/chp02/02020.html

Mineral Crystallization Video
http://www.youtube.com/watch?v=Jd9C40Svt5g

Physical Properties of Minerals
http://www.galleries.com/Mineral_Properties
Think–Pair–Share

- If you were going to conduct a new faculty workshop on your campus, what would be the learning outcomes for your workshop?

- What challenges would you face in implementing a new faculty workshop at your institution?

- How would you address the challenges to ensure your learning outcomes are addressed?
Anticipated Changes to Schedule

- An Hour Added to Each Day allows for No Friday Sessions,
  - Encouraged to Focus on Research Establishment

- Structured Afternoon “Working” Sessions
  - Ensure Full Development of Course Materials
    - Participants will set daily goals
    - Scheduled breaks will be taken
    - Participants will evaluate daily goals
Conclusions

- New Faculty Exited Workshop with
  - Syllabus
  - Course Schedule
  - Classroom Activities
  - Lectures
  - Assessment Materials
  - Classroom Technology Skills

- Participants were Equipped to
  - Develop a Student Centered Classroom
  - Utilize Formative & Summative Assessment Techniques
  - Creatively Incorporate Technology into their Courses
Thanks to the COSM Dean’s Office for Financially Supporting the Workshop
Week 1: July 9-13, 2012

Objectives/Goals: Presentation of Pedagogical Toolbox

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
<th>Location</th>
</tr>
</thead>
</table>
| Monday       | 9 am - Noon   | Introductions / Ice Breaker  
Broad Overview of Workshop / Expectations  
Pre-Assessment | Joy Darley, Michelle Cawthorn, Delena Bell Gatch | Math/Physics Rm 2023         |
|              | 1pm – 4 pm    | Presentation of Pedagogical Toolbox: The Many Faces of Inductive Teaching | Delena Bell Gatch             | Math/Physics Rm 2023 |
| Tuesday      | 9 am - Noon   | Creating Significant Learning Outcomes to Support Student Learning (Backward  
Course Design, Bloom’s Taxonomy & Student Learning Outcomes) | Judith Longfield              | Math/Physics Rm 2023 |
|              | 1pm – 4 pm    | Departmental Meetings  
(Presented with Schedule, Textbooks, Other Instructor Resources, Departmental Syllabi and Policy,  
Departmental Learning Outcomes for Necessary Courses, and Information on Common Exams) | Department Chairs (or Designated Person) | TBA             |
| Wednesday    | 9 am - Noon   | Introduction to Students at GSU Learning Styles | Chris Caplinger, Delena Bell Gatch | Math/Physics Rm 2023 |
|              | 1pm – 4 pm    | Building a Syllabus and Schedule  
One Hour from My Class | Delena Bell Gatch, Jim Reichard | Math/Physics Rm 2023 |
| Thursday     | 9 am - Noon   | Google Training (Mail, Calendar, Documents, Sites, and Google Plus) | Daniel Rivera | COE Rm 2151 |
|              | 1pm – 4 pm    | Independent Development of Syllabus and Course Schedule |                               |                 |
| Friday       | 9 am - Noon   | Course and Lesson Design (Dee Fmkn’s “Creating Significant Learning Experiences”) | Cynthia Alby | Math/Physics Rm 2023 |
|              | 1pm – 4 pm    | Flipping the Classroom  
Student Engagement  
What Can I Do Besides Lecture | Cynthia Alby | Math/Physics Rm 2023 |
**Week 2: July 16-20, 2012**

**Objectives/Goals:** Formative and Summative Classroom Assessment Techniques

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Monday</td>
<td>9 am - Noon</td>
<td>Continued Independent Development of Syllabus and Course Schedule</td>
<td></td>
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<tr>
<td></td>
<td>1pm - 4 pm</td>
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<tr>
<td>Tuesday</td>
<td>9 am - Noon</td>
<td>Reflection on Syllabus and Schedule Overview of Formative and Summative Classroom Assessment Techniques Rubrics Performance Assessment</td>
<td>Delena Bell Gatch Michelle Cawthorn</td>
<td>Math/Physics Rm 2023</td>
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<td></td>
<td>1pm - 4 pm</td>
<td>Levels of Assessment Across the University Developing Questions Item and Exam Analysis</td>
<td>Joy Darley</td>
<td>Math/Physics Rm 2023</td>
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<tr>
<td>Wednesday</td>
<td>9 am - Noon</td>
<td>Folio (Desire2Learn) Basics, Video &amp; Audio Capture (using a headset, camera, SMART phone), and Uploading Files to YouTube and Folio</td>
<td>Daniel Rivera</td>
<td>COE Rm 2151</td>
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<tr>
<td></td>
<td>1pm - 4 pm</td>
<td>Continued Investigation of Audio &amp; Video Capture and Uploading</td>
<td>Daniel Rivera Michelle Cawthorn Joy Darley Delena Bell Gatch</td>
<td>COE Rm 2151</td>
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<tr>
<td>Thursday</td>
<td>9 am - Noon</td>
<td>Independent Development of Classroom Assessment Plan</td>
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<td></td>
<td>1pm - 4 pm</td>
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<tr>
<td>Friday</td>
<td>9 am - Noon</td>
<td>Classroom Assessment Techniques Introduction to Book (Classroom Assessment Techniques)</td>
<td>Cynthia Alby</td>
<td>Math/Physics Rm 2023</td>
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<td></td>
<td>1pm - 4 pm</td>
<td>Authentic Assessment</td>
<td>Cynthia Alby</td>
<td>Math/Physics Rm 2023</td>
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**Week 3: July 23-27, 2012**

**Objectives/Goals:** Technology in the Classroom

<table>
<thead>
<tr>
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<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
<th>Location</th>
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<tbody>
<tr>
<td>Monday</td>
<td>9 am - Noon</td>
<td>Cognitive Learning Group Work</td>
<td>Joy Darley</td>
<td>Math/Physics Rm 2023</td>
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<tr>
<td></td>
<td>1 pm - 4 pm</td>
<td>Policies, Procedures, and Methods that Enhance Student Academic Behaviors</td>
<td>Marshall Randson</td>
<td>Math/Physics Rm 2023</td>
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<td>Service Learning</td>
<td>Delena Bell Gatch</td>
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<td>One Hour from My Class</td>
<td>Michelle Cawthorn</td>
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<tr>
<td>Tuesday</td>
<td>9 am - Noon</td>
<td>Assessment Practices in the College Science Classroom (Concept Maps, Creative Exercises, and Flow Charts)</td>
<td>Jessica Orvis</td>
<td>Chemistry Rm 2241</td>
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<tr>
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<td>1 pm - 4 pm</td>
<td>One Hour from My Class Reflection on Assessment Techniques Overview of Technology Best Practices in the Classroom</td>
<td>Jeff Orvis</td>
<td>Chemistry Rm 2241</td>
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<td>Michelle Cawthorn</td>
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<td></td>
<td>Joy Darley</td>
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<tr>
<td>Wednesday</td>
<td>9 am - Noon</td>
<td>Folio (Desire2Learn) Intermediate, IClcker2, and Specific Course Management Systems</td>
<td>Daniel Rivera</td>
<td>COE Rm 2151</td>
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<tr>
<td></td>
<td>1 pm - 4 pm</td>
<td>Independent Development of Classroom Instruction Plans and Activities</td>
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<td>Thursday</td>
<td>9 am - Noon</td>
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<td>1 pm - 4 pm</td>
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<td>Friday</td>
<td>9 am - Noon</td>
<td>Encouraging Students to Read Assigned Texts</td>
<td>Cynthia Alby</td>
<td>Math/Physics Rm 2023</td>
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<td>1 pm - 4 pm</td>
<td>Improving Discussions Reviewing</td>
<td>Cynthia Alby</td>
<td>Math/Physics Rm 2023</td>
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Week 4: July 30 – August 3, 2012

Objectives/Goals:

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<th>Location</th>
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<tr>
<td>Monday</td>
<td>9 am - Noon</td>
<td>Independent Preparation of Active Learning Lessons</td>
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<td>July 30</td>
<td>1pm – 4 pm</td>
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<td>Tuesday</td>
<td>9 am - Noon</td>
<td>Teaching Portfolios</td>
<td>Judith Longfield</td>
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<td>1pm – 4 pm</td>
<td>One Hour from My Class</td>
<td>Delena Bell Gatch</td>
<td>Rm 2023</td>
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<td>Wednesday</td>
<td>9 am - Noon</td>
<td>Continued Independent Development of Classroom Instruction Plans and Activities</td>
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<td>August 1</td>
<td>1pm – 4 pm</td>
<td>Presentations of Active Learning Lessons</td>
<td>Workshop Participants</td>
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<td>Rm 2023</td>
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<tr>
<td>Thursday</td>
<td>9 am - Noon</td>
<td>Continued Independent Development of Classroom Instruction Plans and Activities</td>
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<td>August 2</td>
<td>1pm – 4 pm</td>
<td>Presentations of Active Learning Lessons</td>
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<td>Friday</td>
<td>9 am - Noon</td>
<td>WINGS Training</td>
<td>Valerie Kasay</td>
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<td>August 3</td>
<td>1pm – 3 pm</td>
<td>Post Assessment of Workshop</td>
<td>Karin Scarpinato</td>
<td>Math/Physics</td>
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