

Making it Big: Strategies for Success [^] in Large Courses *and survival!*

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MAY 2, 2024

**Great
Teaching
Ideas**



**Great
Big
Courses**

1. students teaching students
2. teamwork as a pedagogical and logistical tool
3. student-generated data
4. standardizing TA grading

Students teaching students

Barb Vanderbeld



There is no better way
to learn than to teach.

Benjamin Whichcote

quote fancy

Jigsaw Strategy: Biotech Challenge

Bio athletes travel from their teams (“Home Groups”) to one of four training camps (“Expert Groups”).

Training Camps [*Expert Groups*] ~ 30 minutes

Work together to complete training sheets for one topic:

- components of a gene
- restriction enzymes
- DNA cloning
- primers and PCR

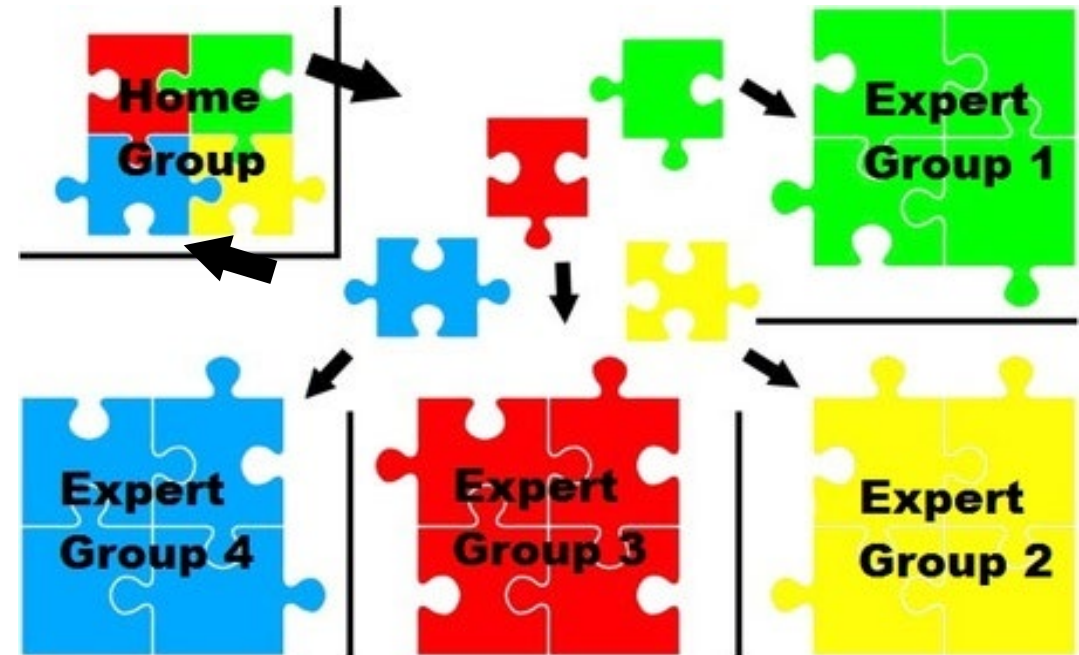
Team Practice [*Home Groups*] ~ 30 minutes

Members teach teammates about their respective topics.

Competition ~20 minutes

Teams answer questions/solve problems posted on the projector screen.
The team to provide the first correct response most often wins!

- 1st year Biology
- 1200 students
- 20 students / lab section
- 1.5-hour lab sessions
- last lab of the term



Scoring

Team Competition Success

1st place team: 4/4 +

2nd place team: 3.9/4

other teams: 3.8/4



Individual Participation

possible deductions for:

- unrelated conversations
- not making a clear contribution to the team effort



Challenges and Solutions

- student absences resulting in uneven group sizes
 - TA readjusts groups as needed
 - two home group members may go to the same expert group
- students teaching each other incorrect information
 - expert groups = multiple students working together = built-in triple checking
 - TA supervision
- academic accommodations
 - all training material posted in advance
 - options and alternatives available

Teamwork as a pedagogical and logistical tool

Howard Teresinski



Teamwork as a Pedagogical Tool

- Second year laboratory methods course
 - **Groupwork as a means and an objective**
 - SASS groupwork page is an AMAZING resource
 - <https://sass.queensu.ca/resources/online/group-work>
- Team charter activity (highlight diverse skills).
- Teach strategies to work “**as a group**” not “**in a group**”.

Now in use in other larger 300-400 student courses.

- 2nd year Biology
- 120 students
- 40 students / lab section
- 4 students / group
- 3-hour lab sessions



Laura E. Hernández

Teamwork as a Logistical Tool



- **Logistic benefits of groupwork:**
 - Do more (learning) with less (time, money).
 - Builds comradery and collegiality.
 - Efficient use of TA time (less grading).
- **Things to watch out for**
 - Add/drop dates.
 - Accommodations and considerations.
 - Strong syllabus – clear expectations.
 - Group complaints (team charter helps).

Student generated data

Anna Rooke



Students collect data: during lab, in tutorial, on field trip, at home, synchronously, asynchronously

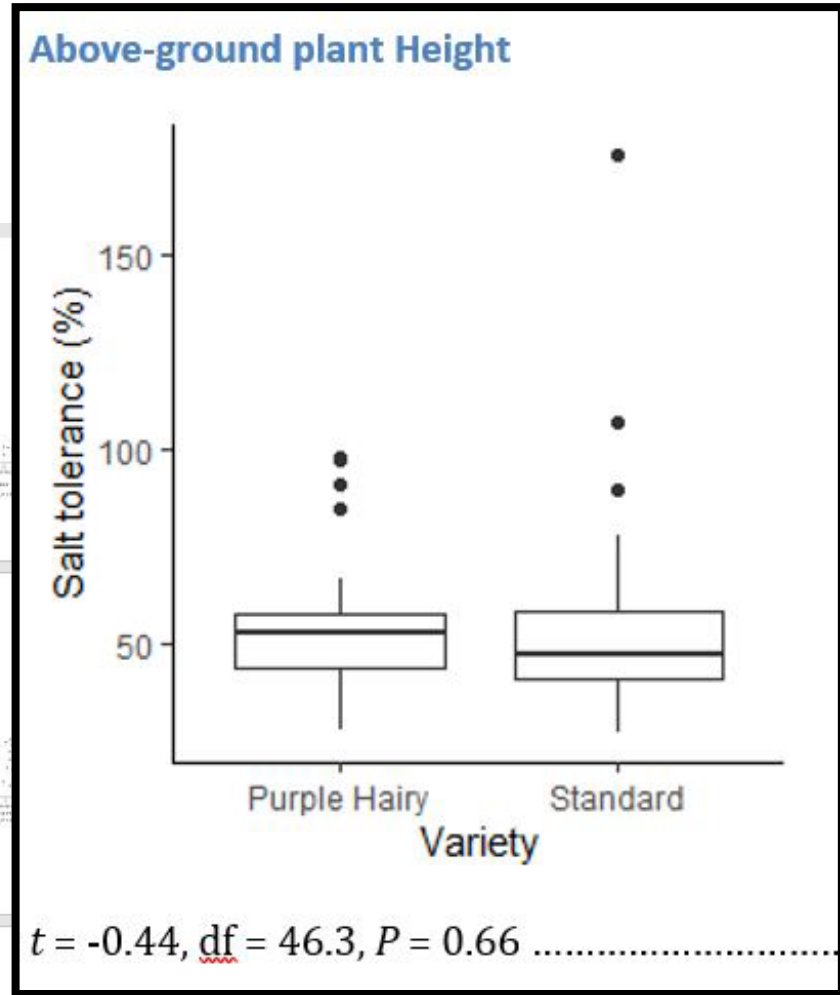
Advantages

- **Increased engagement, collaboration & investment** by students
- **Unique answers** for each group/ class section (reduces academic dishonesty across sections)
- **Exciting to teach** (never know what you will find)

Disadvantages

- Can be **logistically complex** to get good quality data
- **Multiple unique answer keys** required for grading which means extra preparation time every year
- **Scary to teach** (never know what you will find)

R Markdown: generates formatted answer keys for each set of data at a push of a button



Standardizing TA grading - collaboration

Baharul Choudhury



- ✓ **1st Year Biology**
- ✓ **Enrolled students: ~1,200**
- ✓ **Lab/Tutorial sections: ~65**
- ✓ **Students per lab section: ~20**

Activities

In-person group assignment

- Problem solving and quantitative skills
- Apply concepts to the real world

Challenges

- 18 – 20 TAs – different levels of experience
- Marking assignments uniformly across different sections

Step 1: Pre-marking exercise

- Sample assignment
- Detailed marking guide
- TAs send back marks and comments

Step 3: TA meeting

- Review marking guide/rubric
- Discuss marking approach
- Adjust marks



Step 2: Summarize

Diverse TA experience = Diverse marking approaches

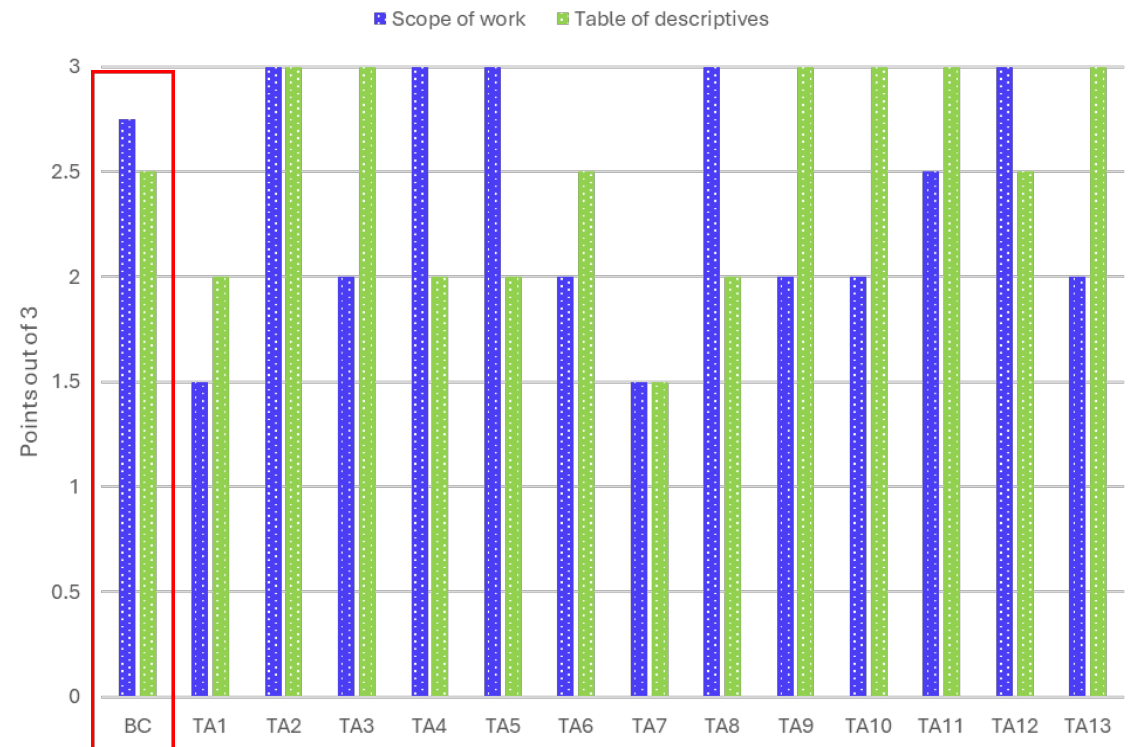


Fig: Points for two questions from pre-marking exercise

group writing

admin TAs

it's in the syllabus!

peer review

TA-generated answer keys

regrade requests

Making it Big: ^{and Survival!} Strategies for Success in Large Courses

- Don't underestimate the challenges of making it big, but don't despair!
- You can develop strategies to help make large classes feel smaller, both for your students and for yourself!

inquiry-based investigations

peer instruction

the "Student Information Tool"

alternative assessments

specialized TAs
mini proposal presentations