

Supplemental Material

CBE—Life Sciences Education

Drinkwater *et al.*

Australian version of the Teaching Practices Inventory

This is a version of the Wieman and Gilbert (2014) Teaching Practices Inventory modified for Australian use.

Teaching Practices Inventory

Inventory of Teaching Practices for the 2015 BSc Review

This inventory was devised from a list of the various types of teaching practices that are commonly mentioned in the literature. We recognise that these practices are not applicable to every course, and any particular course would likely use only a subset of these practices.

We have added places that you can make additions and comments and we welcome your feedback. It should take only about 10 minutes to fill out this inventory.

Survey Information

This survey has ethical approval from the Behavioural & Social Sciences Ethical Review Committee at UQ (approval number 2015000345). [Click here to read the Study Information sheet.](#)

1. Consent: I have read the information provided above about the research, and give my consent to participate in this study based on the understanding that: -

1. I am aware of the general purpose, methods and demands of the study, and
2. My participation in this study is voluntary and I am free to withdraw from the study or refuse to take part at any time, without any negative consequences.

(Yes/No)

I. Course Information

This inventory is specifically focused on the "lecture" contact of your course, which can include a range of activities. For example, lecturing, "lectorial", workshops, discussions, student-led activities, problem-solving, and the 'flipped classroom' model. This survey is not asking about tutorials or practical class contact.

2. Please fill out the inventory for the CURRENT SEMESTER, LECTURE contact hours only.

Course Code: Course Title:

Name of course coordinator:

Total number of students (approximate):

3. Course information provided to students. (check all that occurred in your course or none as appropriate)

- List of topics to be covered
- List of topic-specific competencies (skills, expertise, ...) students should achieve (what students should be able to do)
- List of competencies that are not topic related (critical thinking, problem solving, ...)
- Affective goals – changing students' attitudes and beliefs (interest, motivation, relevance, beliefs about their competencies, how to master the material)
- Other (please specify)

If you selected other, please specify:

II. Supporting materials provided to students

4. Supporting materials provided to students (check all that occurred in your course)

- Student wikis or discussion boards with little or no contribution from you, tutors or other academics.
- Student wikis or discussion boards with significant contribution from you, tutors or other academics.
- Solutions to homework assignments
- Worked examples (text, pencast, or other format)
- Practice or previous year's exams
- Animations, video clips, or simulations related to course material
- Lecture notes or course Powerpoint presentations (partial/skeletal or complete)
- Other instructor selected notes or supporting materials, pencasts, etc.
- Articles from scientific literature
- Other (please specify)

If you selected other, please specify:

5. Check all that occurred in your course:

- Students asked to read/view material on upcoming class session
- Students read/view material on upcoming class session and complete assignments or quizzes on it shortly before class or at beginning of class
- Reflective activity at end of class, e.g. "one minute paper" or similar (students briefly answering questions, reflecting on lecture and/or their learning, etc.)
- Student presentations (verbal or poster)

III. In-lecture features and activities

6. In-lecture features and activities. Give approximate average number.

- Average number of times per lecture: pause to ask for questions
- Average number of times per lecture: have small group discussions or problem solving
- Average number of times per lecture: show demonstrations, simulations, or video clips
- Average number of times per lecture: show demonstrations, simulations, or video where students first record predicted behavior and then afterwards explicitly compare observations with predictions
- Average number of discussions per semester on why material useful and/or interesting from students' perspective
- Comments on above (if any):

7. Fraction of typical lecture period you spend lecturing (presenting content, deriving mathematical results, presenting a problem solution, ...)

- 0-20%
- 20-40%
- 40-60%
- 60-80%
- 80-100%

8. Considering the time spent on the major topics, approximately what fraction was spent on the process by which the theory/model/concept was developed? (E.g. presenting the significant experiments and how they were interpreted and refined to lead to our current understanding.)

- 0-10%
- 11-25%
- more than 25%

Personal Response System (PRS)

9. Personal Response System (PRS). If a student response system is used to collect responses from all students IN REAL TIME IN LECTURES, what method is used? (check all that occurred in your course or none as appropriate)

- electronic with student identifier
- electronic anonymous
- coloured cards
- raising hands
- written student responses that are collected and reviewed in real time
- Other (please specify)

If you selected other, please specify:

10. Indicate number for each (if used).

- Number of PRS questions posed followed by student-student discussion per lecture
- Number of times PRS used as quiz device (counts for marks and no student discussion) per lecture

IV. Assignments

11. Assignments (check all that occurred in your course or none as appropriate)

- Problem sets/homework assigned or suggested but did not contribute to course grade
- Problem sets/homework assigned and contributed to course grade at intervals of 2 weeks or less
- Paper or project (an assignment taking longer than two weeks and involving some degree of student control in choice of topic or design)
- Encouragement and facilitation for students to work collaboratively on their assignments
- Explicit group assignments
- Other (please specify)

If you selected other, please specify:

V. Feedback and testing; including grading policies

Feedback from students to academics during the semester

12. Feedback from students to academics during the semester (check all that occurred in your course or none as appropriate)

- Mid-semester course evaluation
- Repeated online or paper feedback or via some other collection means such as clickers
- Other (please specify)

If you selected other, please specify:

Feedback to students

13. Feedback to students (check all that occurred in your course or none as appropriate)

- Assignments with feedback before grading or with opportunity to redo work to improve grade
- Students see graded assignments
- Students see assignment answer key and/or grading rubric
- Students see graded mid-semester exam(s)

- Students see mid-semester exam(s) answer key(s)
- Students explicitly encouraged to meet individually with you
- Other (please specify)

If you selected other, please specify

Testing and grading

14. Exams and grading.

- Number of mid-semester exams
- Approximate percentage of exam mark from questions that required students to explain reasoning

15. Approximate breakdown of final course mark (% in each of the following categories)

- Final Exam
- Mid-semester Exam(s)
- Homework assignments
- Paper(s) or project(s)
- In-class activities
- In-class quizzes
- Online quizzes
- Participation
- Lab component
- Other

16. If you selected 'other' in last question, please specify

VI. Other

17. Check all that occurred in your course (or none as appropriate).

- Assessment given at beginning of course to assess background knowledge
- Use of lecturer-independent pre-post test (e.g. concept inventory) to measure learning
- Use of a consistent measure of learning that is repeated in multiple offerings of the course to compare learning
- Use of pre-post survey of student interest and/or perceptions about the subject
- Opportunities for students' self-evaluation of learning
- Students provided with opportunities to have some control over their learning, such as choice of topics for course, paper, or project, choice of assessment methods, etc.
- New teaching methods or materials were tried along with measurements to determine their impact on student learning

VII. Training and guidance of Tutors

18. Training and guidance of tutors (check all that occurred in your course or none as appropriate)

- No tutors for course
- Tutors must satisfy English language skills criteria
- Tutors receive ½ day or more of training in teaching
- There are course coordinator-tutor meetings every two weeks or more frequently where student learning and difficulties, and the teaching of upcoming material are discussed
- Tutors are undergraduates
- Tutors are graduate students
- Other (please specify)

If you selected other, please specify:

VIII. Collaboration or sharing in teaching

19. Collaboration or sharing in teaching (check all that occurred in your course or none as appropriate)

- Used or adapted materials provided by colleague(s)
- Used “Departmental” course materials that all academics of this course are expected to use

20. Rate each prompt on the 5 point scale (1 Never; 2; 3; 4; 5 Very Frequently)

- Discuss how to teach the course with colleague(s)
- Read literature about teaching and learning relevant to this course
- Sit in on colleague's lectures (any lecture) to get/share ideas for teaching

IX. General

21. Please write any other comments here. If this inventory has not captured an important aspect of your teaching of this course, or you feel you need to explain any of your above answers please describe it here.

22. Approximately how long did it take you to fill out this inventory? Please respond in minutes.

23. Before submitting your responses, would you like any of the following? (Yes/No)

- Enter me in the draw for a Coles Group and Myer voucher
- Send me a summary of the results

- Invite me to the seminar when these data are presented
- If yes, please include your work email address

Thank you for taking the time to fill out this inventory Click the SUBMIT button below to send your responses

Table S2: Total and category TPI scores for different subsamples.

Category	N	Total	I Course information	II Supporting information	III In-class activities	IV Assignments	V Feedback	VI Diagnostics	VII Tutor Training	VIII Collaboration
		M (SD)	M (SD)	M (SD)	M(SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Year Level										
First	30	33.03 (9.10)	5.17 (0.99)	4.77 (1.43)	5.67 (2.97)	2.77 (1.72)	5.87 (2.11)	2.83 (2.64)	2.00 (1.34)	3.97 (1.35)
Second	36	29.67 (6.31)	4.92 (1.18)	4.19 (1.26)	5.75 (2.89)	2.44 (1.81)	5.22 (1.81)	2.19 (2.08)	2.03 (1.32)	2.92 (1.56)
Third	63	29.25 (7.00)	5.00 (1.34)	3.94 (1.38)	5.16 (2.74)	3.08 (1.60)	4.83 (1.72)	2.30 (1.76)	2.05 (1.18)	2.90 (1.60)
Class Size										
15-69	43	28.07 (6.96)	4.93 (1.32)	3.58 (1.42)	5.26 (3.02)	3.05 (1.63)	4.93 (1.74)	1.91 (1.51)	1.86 (1.26)	2.56 (1.64)
70-189	43	30.44 (7.78)	5.09 (1.17)	4.19 (1.12)	5.51 (2.67)	2.74 (1.73)	5.09 (1.92)	2.63 (2.26)	2.02 (1.32)	3.16 (1.53)
190-1425	43	32.23 (7.22)	5.02 (1.18)	4.84 (1.34)	5.56 (2.84)	2.70 (1.74)	5.51 (1.94)	2.65 (2.33)	2.21 (1.17)	3.74 (1.40)
Discipline										
Biological	45	32.42 (7.41)	5.20 (1.08)	4.27 (1.37)	6.00 (3.00)	3.31 (1.70)	5.09 (1.50)	3.00 (2.25)	2.13 (1.34)	3.42 (1.57)
Physical	41	28.29 (7.19)	4.95 (1.28)	3.80 (1.38)	5.34 (2.88)	2.73 (1.70)	4.95 (2.04)	2.20 (1.44)	1.68 (1.27)	2.63 (1.44)
Mathematical	24	29.92 (8.25)	4.88 (1.39)	4.50 (1.38)	4.88 (2.21)	2.96 (1.40)	5.75 (2.27)	1.58 (2.00)	1.92 (1.14)	3.46 (1.84)
Psychology	17	30.24 (5.90)	4.88 (1.27)	4.53 (1.33)	4.94 (2.95)	1.76 (1.68)	5.29 (1.76)	2.71 (2.62)	2.76 (0.83)	3.35 (1.37)
Department										
1	15	32.47 (8.89)	5.60 (0.51)	4.53 (1.41)	5.67 (2.89)	3.13 (2.23)	5.20 (1.66)	2.20 (2.40)	2.20 (1.08)	3.93 (1.67)
2	12	34.33 (6.40)	5.17 (1.11)	4.25 (1.76)	6.83 (2.59)	3.92 (0.79)	5.42 (1.38)	3.58 (2.19)	2.25 (1.48)	2.92 (1.73)
3	10	34.50 (8.09)	5.40 (0.52)	3.70 (1.49)	7.90 (2.51)	3.20 (2.10)	5.20 (1.55)	3.70 (2.36)	2.20 (1.40)	3.20 (2.04)
4	18	26.56 (5.93)	5.00 (1.14)	4.06 (1.21)	4.00 (2.40)	2.39 (1.69)	4.33 (1.64)	2.22 (1.63)	1.72 (1.23)	2.83 (1.42)
5	9	30.22 (4.82)	5.44 (0.73)	3.44 (1.24)	4.00 (1.80)	3.89 (1.62)	6.11 (2.09)	2.44 (1.33)	1.89 (1.36)	3.00 (1.00)
6	12	27.50 (7.98)	4.58 (1.83)	4.08 (1.31)	6.08 (3.34)	2.83 (1.40)	4.08 (1.73)	1.92 (1.24)	1.50 (1.24)	2.42 (1.38)

7	28	30.32 (7.87)	4.82 (1.33)	4.18 (1.44)	5.79 (2.51)	2.79 (1.29)	5.89 (2.27)	1.86 (1.96)	1.68 (1.16)	3.32 (1.83)
8	17	30.24 (5.90)	4.88 (1.27)	4.53 (1.33)	4.94 (2.95)	1.76 (1.68)	5.29 (1.76)	2.71 (2.62)	2.76 (0.83)	3.35 (1.37)

For each category, the mean scores are given first with the standard deviations in parentheses.

Table S3: Significance levels for correlations between predictor variables.

Variable	Year Level	Class Size	Discipline
Year Level (3 categories)	-		
Class Size (continuous)	$<10^{-9}$	-	
Discipline (4 categories)	0.041	0.0083	-

We tested for correlations between the categorical variables (discipline and year level) using a chi-square test and between each of the categorical variables and the continuous class size variable with an analysis of variance test. The table shows the adjusted p values for the respective test.