Silo Busting: Equity and Inclusion as Drivers -- An Interdisciplinary Assessment Approach Using Transparency in Learning and Teaching (TILT)

CK Pai, Professor of Chemistry, STEM Division, Manchester Community College CT

Kim Hamilton Bobrow, Professor of Humanities, Division of Creative and Liberal Arts, Manchester Community College CT
Objectives of this Presentation

• Provide an overview of a Narrative and Reflective Teaching model along with the TILT method
• Provide a list of TILT strategies
• Explain the TILT approach to a colleague or student
• Use the TILT approach to improve student learning
Higher education continues to welcome an increasingly diverse student body. It also faces historic opportunities to implement inclusive and transparent teaching practices.

A narrative and reflective model of continuous improvement engages faculty in assessment for learning. The TILT method strengthens that welcome.

Transparency in teaching and learning using the TILT method and inclusive assessment has been a powerful combination for assignment design and assessment.
Narrative and Reflective Teacher’s Initiative (NT)

**Narrative Teaching** uses self-reflective practices to explore and assess one’s teaching and to identify areas for growth.

**Participation** in this activity requires two mindsets:

1. the willingness to reflect at least once a week in writing on your teaching

2. the willingness to meet with other participants formally once a month as a group
Research has shown that the following features of narrative and reflective teaching connect to inclusive teaching using the TILT method:

-- intentionally engaging student learning outcomes and TILT assignment design
-- examining, framing, and attempting to solve dilemmas of the classroom
-- frequent questioning of one’s personal assumptions, values, and beliefs about teaching and learning.
--An understanding of the inclusive classroom, careful consideration to what is to be taught and how it is to be taught (rather than who is to learn)

• Tazin Daniels, Shana Schoem, Preparing Inclusive Educators Through Transformative Learning, New Directions for Teaching and Learning, 10.1002/tl.20418, 2020, 163, (83-90), (2020).
• Kristina R. Stefaniak, Merrie K. Winfrey, Anna C. Curtis, Sarah A. Kennedy, Implementing an Iterative and Collaborative Approach to Inclusive First-Semester General Chemistry Laboratory Redesign, Journal of Chemical Education, 10.1021/acs.jchemed.0c00487, (2020)
• Sarah A. Kennedy, Rachel M. Chapman, Green chemistry as the inspiration for impactful and inclusive teaching strategies, Integrating Green and Sustainable Chemistry Principles into Education, 10.1016/B978-0-12-817418-0.00001-2, (1-30), (2019).
What is TILT approach? Transparency in Learning and Teaching

Transparency and Problem Centered Learning Project has identified three criterion of assignment design and assessment:

Purpose – What Knowledge and Skills?

Task – What and How to do?

Criteria – What is/are the expectation(s)?

Enhancing students’ success, especially that of first-generation, low-income, and underrepresented college students.

Transparency and Problem-Centered Learning project (www.aacu.org/problemcenteredlearning) (Tia McNair, Ashley Finley, and Mary-Ann Winkelmes as the coinvestigators)
Transparency in Teaching

Transparency in Teaching is achieved by having:

1. A single dedicated course coordinator for each course.
2. This coordinator meeting with full-time and adjunct faculty three times per semester.
3. Common curriculum, course objectives, student learning outcomes, and assignments are discussed.
4. A common course syllabus template.
5. A final common outcomes assessment done every semester.
6. Assessment that support timely interventions that enhances student learning.
Transparency for Learning

Transparency for Learning is achieved by

1. Using checklists that support student understanding of assignment benchmarks

2. Providing rubrics that support student understanding of how they will be evaluated and graded

3. Written specific student learning outcomes (SLOs)

4. Backward design alignment of these SLOs with each assignment.

Use one question as a driver asked by researcher Mary-Ann Winkelmanes,” If I was to change one thing about my teaching, what would it be?”
1. **Less Transparent Assignment**

Using an example from your day to day routine/real life, write down and explain the eight steps involved in scientific method that we studied from Chapter 1 in today’s lecture session. (10 points)
More Transparent Assignment Example

**Purpose:** The eight steps involved in the scientific method makes us aware of how to approach everyday situations with this foundational scientific literacy.

**Task:** Using an example from your day-to-day routine, apply and explain the eight steps involved in Scientific Method that we have studied from chapter 1 Section 1.1 in today’s lecture session. (Total = 10 points)

**Criteria:** A checklist is provided as guide to complete this assignment. The attached rubric will be the basis to grade your assignment. This rubric will be the feedback after the assignment is graded.
Results of the NT/TILT approach

CHE 111 CONCEPTS OF CHEMISTRY

% of C or better grade

% of C or better grade

CHE 121 GENERAL CHEMISTRY-I

% of C or better grade

% of C or better grade
Results of the NT/TILT approach

CHE 122 GENERAL CHEMISTRY-II

% of C or better grade

OVERALL RESULT OF ALL THE CHEMISTRY COURSES

% of C or better grade
Narrative and Reflective journaling in conjunction with the TILT approach helps build an inclusive and equitable classroom.

It matches the teaching and learning expectations of both students and teachers.

Professor Hamilton-Bobrow will now present the TILT approach as applied to a first year humanities course.
Inclusive teaching, using the TILT method, matches the teaching and learning expectations of both students and teachers.
Transparency and Problem Centered Learning Project has identified three criterion of assignment design and assessment that demonstrably enhances students’ success, especially that of first-generation and historically underrepresented college students in multiple ways at statistically significant levels, with a medium to large magnitude of effect.

Transparency and Problem-Centered Learning project (www.aacu.org/problemcenteredlearning) (Tia McNair, Ashley Finley, and Mary-Ann Winklemes as the coinvestigators)
Inclusive Assessment and Transparency in Learning and Teaching
The Humanities teach us to engage and respond critically and logically to subjective, complex, and imperfect information
Ethical Reasoning is reasoning about right and wrong human conduct. It requires students to be able to assess their own ethical values and the social context of problems, recognize ethical issues in a variety of settings, think about how different ethical perspectives might be applied to ethical dilemmas and consider the ramifications of alternative actions. Students’ ethical self-identity evolves as they practice ethical decision-making skills and learn how to describe and analyze positions on ethical issues.
Introduction to the Humanities – HUM 101:

Making pedagogy visible: Why I chose the AAC&U VALUE rubric.

Teach and discuss the rubric with students.

Explain succinctly the principles of backward design – let’s start with the rubric and then align the rubric with SLOs for this Humanities assignment – a case study.

Describe what benchmarks look like in action.

Making those benchmarks transparent using models and examples.

TILT’s process --
Transparency in Teaching and Learning

**PURPOSE**: Communicate to students the knowledge and skills they will gain from completing the assignment and how that knowledge or skill will be valuable to students.

**Knowledge**:  
1. What knowledge will students gain from completing the assignment?  
2. How does that knowledge relate to other topics in your course or other courses?  
3. How will the knowledge be relevant for students in their lives beyond your course or beyond college?

https://tilthighered.com/tiltexamplesandresources
TILT’s process
Transparency in Teaching and Learning

TILT’s Skills
1. What skills will students practice while doing the assignment?

2. How do those skills relate to other contexts or examples where these skills were important -- within your course? Potential impacts in an integrative, multi-disciplinary, or interdisciplinary course.

3. How will these skills be valuable to students in their lives beyond your course or beyond college?
TILT’s TASK: Communicate the steps that students should take to complete the assignment.

1. Are each of the steps needed to complete the assignment laid out clearly? If any steps are implied, consider making them more explicit.

2. What are the common pitfalls or bottlenecks that students encounter with this assignment? How can you help them avoid those pitfalls?

3. Are there opportunities for students to get feedback on parts of the assignment before the larger assignment is due? If not, provide such opportunities.
TILT’s CRITERIA: Well before the assignment is due, share with students the rubrics or checklists that you will use to evaluate their work.

1. Would a rubric or a checklist be most appropriate for evaluating your assignment?

2. If you use a rubric on this assignment, is it written in such a way as to be clear to a student? Have you taught and review the rubric with students?

3. Are there opportunities for students to evaluate their own work or other student work using the rubric or checklist that you have provided? If not, consider providing such opportunities.
Is the universality of art a pernicious concept, a form of “cultural strip mining,” or is it an acknowledgment of art as part of our common humanity? Should works of art be repatriated to their countries of origin and is that always the right decision? These are big questions, and our answers depend on whether we believe a work’s original context is paramount.

Respond directly to this question and make it relevant to the controversy surrounding ownership of the Parthenon Frieze.

Be sure to include at least three perspectives from our course readings surrounding the controversy also known as The Elgin Marble debate.

Students should integrate a clear and engaging thesis, a central claim, that marks your position. Students should integrate two direct quotations from the OERs and/or course materials that are relevant to the controversy surrounding the Parthenon Frieze.
Humanities Case Study 1: More Transparent Assignment

**Purpose:**
To practice and demonstrate ethical reasoning complete with an ethical claim, a thesis.

**Criterion:** First, we’ll review and discuss the AAC&U VALUE rubric definition of ethical reasoning.

**Task:** Is the universality of art a pernicious concept, a form of “cultural strip mining,” or is it an acknowledgment of art as part of our common humanity? Should works of art be repatriated to their countries of origin and is that always the right decision? These are big questions, and our answers depend on whether we believe a work’s original context is paramount. [continued]
More transparent assignment: Humanities Case Study 1

Be sure to include at least three perspectives from our course readings surrounding the controversy also known as The Elgin Marble debate.

One source that is required are the UNESCO resolutions.

After the thesis workshop, students will put forth their strongest claim in the first paragraph of the assignment. The thesis is a central claim that marks your position.

Students should integrate two direct quotations from the OERs and/or course materials that are relevant to the controversy surrounding the Parthenon Frieze.
Trends

HUM*101 AD Trends, 2017-2020

1. Apply key concepts, terminology, and methodologies in the analysis of literary, performing, visual, and other arts forms.

2. Identify works of visual, performing, or literary art within historical, social, political, cultural, and aesthetic contexts.

3. Articulate ways in which literature, performance, the visual arts and related forms respond to and influence society and culture.

4. Actively engage with the literary, performing or visual arts and other cultural forms through experience or creative expression.

5. Articulate the ethical dimensions surrounding the creation, circulation, and interpretation of works of visual, performing, or literary art.

1 is “Not competent” and 4 is “Highly competent”
Transparency: Teaching and Learning Expectations

Talk to your students about the norms of your discipline, even if they seem obvious to you.

For example:

--Formatting, research, and citation conventions
--Why word count or assignment length is important
--The role of the rubric in teaching and learning
We welcome your outreach and feedback! Please contact us by email.

CK Pai, Professor of Chemistry, STEM Division, Manchester Community College CT
cpai@mcc.commnet.edu

Kim Hamilton Bobrow, Professor of Humanities, Division of Creative and Liberal Arts, Manchester Community College CT
Khamilton-Bobrow@mcc.commnet.edu

For power points and handouts of this presentation click on this link:
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Silo Busting: Equity and Inclusion as Drivers an Interdisciplinary Assessment Approach Using TILT (Transparency in Learning and Teaching)

Abstract
When considered within an institutional framework of faculty development, the assessment of student learning with inclusion and equity as drivers position the TILT framework as an effective and sustainable method that optimizes both faculty engagement with semester assessment projects as well as improved student outcomes at the course and program level.

The two cornerstones of TILT are:
1. Promoting students' conscious understanding of how they learn
2. Enabling faculty to gather, share, and promptly benefit from current data about students' learning by coordinating their efforts across disciplines. TILT Higher Ed

Using the TILT method, an assignment’s purpose, task, and criteria are made considerably more transparent, inclusive, and actionable.
Examples of less transparent and more transparent assignments

1. Less Transparent Assignment
Scientific Method
Using an example from your day to day routine/real life, write down and explain the eight steps involved in scientific method that we studied from Chapter 1 in today’s lecture session. (10 points)

2. More Transparent Assignment Example
Using any example from your day to day routine write down a detailed report and explain the eight steps involved in Scientific Method that we have studied from our chapter 1 Section 1.1 in today’s lecture session. (Total = 10 points)
Format: Use Microsoft Word or similar computer software to type your report. Use 1 inch space on all side of the page and double space, font size 12 and Times New Roman font. On the top right hand side of the page type the assignment name, number, today’s date, your name, course number, section number, and semester.
Please print your assignment on a white paper and staple all the pages in the top left hand corner.

**Due Date:** Next lecture on Wednesday at 8.00 am and submit it in the white bin on the instructors front desk. It is your responsibility to turn in this assignment on due date/time. There is a penalty of 10% per day for late submissions.

**Estimated total time** taken for this assignment: 2 hours.

1. **Purpose** of this assignment
2. **Task** involved in completing this assignment

**Skills practiced**
- Reading carefully.
- Writing down a report employing the eight steps involved in scientific method.
- Evaluate a peer and self-assessment of this assignment.

**Knowledge Gained**
- After answering this assignment you will be able to use the eight steps involved in scientific method to provide explanation to any question that comes to your mind after an observation of a phenomenon.

**Checklist** - Please put a check mark [✔] next to each item as you finish studying them each day

<table>
<thead>
<tr>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review lecture notes on Scientific Method</td>
</tr>
<tr>
<td>Review Chapter 1 Section 1.1 on Scientific Method</td>
</tr>
<tr>
<td>Read and Understand the assignment</td>
</tr>
<tr>
<td>Read and Understand the checklist</td>
</tr>
<tr>
<td>Read and Understand the grading rubric</td>
</tr>
<tr>
<td>Read and Understand the given sample example of a student</td>
</tr>
<tr>
<td>Start writing a draft of the assignment</td>
</tr>
<tr>
<td>Use the draft to write a detailed report of the assignment</td>
</tr>
<tr>
<td>Total time to answer this assignment 1.5 hours</td>
</tr>
</tbody>
</table>

3. **Criteria** used to grade this assignment

Rubric
<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
<th>Highly Competent</th>
<th>Competent</th>
<th>Minimally Competent</th>
<th>Not Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Question is accurately written</td>
<td>Question is partially written</td>
<td>Question is poorly written</td>
<td>Question is not written</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tentative explanation is formed and written</td>
<td>Tentative explanation is partially formed and written</td>
<td>Tentative explanation is incorrect</td>
<td>Hypothesis is not written</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Prediction of the experiment is given using if and then statement</td>
<td>Prediction of the experiment is given poorly using if and then statement</td>
<td>Prediction of the experiment is given without using if and then statement</td>
<td>No prediction</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Step by step testing is done and documented</td>
<td>Step by step testing is partially done and documented</td>
<td>Step by step testing is incomplete and poorly documented</td>
<td>No explanation given to perform testing</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Results are published in tabular form with correct sig figs and units</td>
<td>Results are published in tabular form with incorrect sig figs and units</td>
<td>Results are not published in tabular form with incorrect sig figs and units</td>
<td>Results not shown</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>If hypothesis is false then further test is recommended</td>
<td>If hypothesis is false then further test is partially recommended</td>
<td>If hypothesis is false then further test is poorly recommended</td>
<td>No further testing done</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ways to publish results are suggested</td>
<td>Ways to publish results are incomplete</td>
<td>Ways to publish results are sketchy</td>
<td>Results not published</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ways chemists will use the results are completely explained</td>
<td>Ways chemists will use the results are partially explained</td>
<td>Ways chemists will use the results are poorly explained</td>
<td>Others not using the results</td>
<td></td>
</tr>
<tr>
<td>Formatting</td>
<td>Perfect formatting following all the rules</td>
<td>Minor omissions in formatting</td>
<td>Serious omissions in formatting</td>
<td>No formatting</td>
<td></td>
</tr>
<tr>
<td>Conclusion</td>
<td>Sound logic in explanation/conclusion</td>
<td>Minor flaws in logic in explanation/conclusion</td>
<td>Serious flaws in logic in explanation/conclusion</td>
<td>No explanation/conclusion</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>____/10 points</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Provide an Excellent example

Scientific Method
Assignment # 2
Date 7/23/21
Name Mary Jane/John Doe
General Chemistry-1
Section 10082
Summer 2021

Step 1 Question: Why is my flashlight not lighting up when the switch is moved to the on position?
Step 2 Hypothesis: The AA size batteries are dead therefore the flashlight does not light up. This could be True/False.
Step 3 Prediction: If I change the batteries then it will light up and help me see after dark. Here dependent variable lighting up of flashlight, independent variable are the AA size batteries, and controlled variables are the flashlight, switch and the bulb.
Step 4 Testing: Let me get three AA batteries. Remove and discard the old one properly and replace them with the new one. Properly insert the batteries with correct polarity. Now slide the switch on the flash light to see if it lights up.
Step 5 Result: Flashlight does not light up. This means that our initial hypothesis is false. Now another hypothesis is formed.
New hypothesis: The bulb of flashlight is fused therefore the flashlight is not turning on. This could be True/False.
New Prediction: If we change the bulb then the flashlight will light up.
Step 6 Further Testing: Now we change the bulb and turn on the switch and the flashlight lights up. This proves our hypothesis and prediction is true. We will perform the test again to make sure our results are valid and reproducible.
Step 7 Publishing: We can use YouTube, Facebook or other social media to publish our results so that our others can learn from our experience and experiment. In case of actual Chemistry research we would use peer reviewed Chemistry journals to publish our results.
Step 8 Chemist using your results: Other experimenters, scientists, and chemists will use our experiment to help them solve similar question(s).
Definition (VALUE Rubric -- Association of American Colleges and Universities)

Ethical Reasoning is reasoning about right and wrong human conduct. It requires students to be able to assess their own ethical values and the social context of problems, recognize ethical issues in a variety of settings, think about how different ethical perspectives might be applied to ethical dilemmas and consider the ramifications of alternative actions. Students’ ethical self-identity evolves as they practice ethical decision-making skills and learn how to describe and analyze positions on ethical issues.

Milestones: The Milestone Framework in the AAC&U VALUE Rubric on Ethical Reasoning

Student can recognize basic and obvious ethical issues and grasp (incompletely) the complexities or interrelationships among the issues. (3)

Student can recognize basic and obvious ethical issues but fails to grasp complexity or interrelationships.

Application of Ethical Perspectives/Concepts

Student can independently apply ethical perspectives/concepts to an ethical question, accurately, and is able to consider full implications of the application.

Student can apply ethical perspectives/concepts to an ethical question, independently (to a new example) and the application is inaccurate.

Introduction to the Humanities – HUM 101: Use the principles of backward design -- let’s start with the rubric and then align the rubric with SLOs

The VALUE Rubric on Ethical Reasoning, the Assignment, and Student Learning Outcomes

Making pedagogy visible: Why I chose the AAC&U VALUE rubric. Explain to students. What the benchmarks look like in action. Making those benchmarks transparent using models and by examples


To get in touch with the presenters via email

CK Pai, Professor of Chemistry, STEM Division, Manchester Community College CT cpai@mcc.commnet.edu

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