

# Transparent Instruction and Its Impact on Learning

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## Did you know?

- UNLV researchers demonstrated in a national study that transparency around academic assignments enhances students' success -- especially that of first-generation, low-income and underrepresented college students -- at statistically significant levels (with a medium-to-large sized magnitude of effect for underserved students). [Winkelmes et al., Peer Review 2016]
- When faculty make the purpose, tasks and criteria of an academic assignment clear before students begin to work on it, students are more likely to experience greater academic success with that assignment, developing the knowledge, disposition, and skills necessary to succeed both at school and in life (in comparison to when students experience less clarity around purpose, tasks and criteria for their academic work). [Winkelmes et al., Peer Review 2016]
- For UNLV students, benefits also included a significantly higher rate of returning to college the following year. [Gianoutsos and Winkelmes, PADE Proceedings 2016].
- An inclusive learning environment benefits all students and offers more equitable learning opportunities for underserved students. Research on student learning links college students' academic confidence and sense of belonging with higher GPAs, persistence and retention rates [Walton and Cohen, Science, 18 March, 2011].
- College students increased their test scores when supported by a system that advocated the belief that intelligence is not fixed but rather malleable. A year later, these students were 80% less likely to drop out of college [Aronson et al, Journal of Experimental Social Psychology, 38, 2 (2002)].

## WHAT STUDENTS CAN DO:

**Before you begin working on an assignment or class activity, ask the instructor to help you understand the following. (Bring this document to help frame the conversation.)**

### Purpose

- Skills you'll practice by doing this assignment
- Content knowledge you'll gain from doing this assignment
- How you can use these in your life beyond the context of this course, in and beyond college

### Task

- What to do
- How to do it (Are there recommended steps? What roadblocks/mistakes should you avoid?)

### Criteria

- **Checklist** (Are you on the right track? How to know you're doing what's expected?)
- **Annotated examples of successful work**  
(What's good about these examples? Use the checklist to identify the successful parts.)

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**Sample A**

1. Select a professional in your prospective academic discipline and/or career field that is considered an expert in an area in which you are interested.
2. Secure an interview with the professional for a date and time that is convenient for both of you.
3. Prepare 8-10 questions to ask the professional about their knowledge of a particular academic discipline/career field.
4. Conduct a 20 – 30 minute, face-to-face interview to gather knowledge that will help you make an informed decision about the major/career you are considering. You will want to audio/video record the interview with the interviewee's permission.
5. Prepare a typed transcript of the questions and answers using the audio/video recording
6. Write a 400 – 500 word reflection paper in which you address the following items:
  1. Who you selected and why?
  2. What you learned from them that is most interesting?
  3. What this assignment helped you learn about your major/career decision?
  4. What questions you still have?
7. Submit the typed transcript and reflection paper to your instructor.

**EXAMPLES: Less Transparent**

**Sample B**

For the given function  $y(x)=x^{5/3}-3x^{2/3}$

Find and simplify the first derivative

Identify any critical points

Find and simplify the 2<sup>nd</sup> derivative

Identify any inflection points

Indicate where the function is increasing/decreasing, concave up/down (ie. Make a sign diagram)

Make a rough sketch of the shape of the graph, and label the critical points and inflection points (x value only)



**EXAMPLES: More Transparent**

University of Nevada, Las Vegas

COLA100E, Interview Assignment  
Used by permission of Katharine Johnson



**Due dates:**

- Sept 30 - Draft Interview questions
- October 15 - Transcript of interviews
- November 17 - Report

**Purpose:** The purpose of this assignment is to help you make an informed decision about the major/career you are considering.

**Skills:** This assignment will help you practice the following skills

- that are essential to your success in school and professional life:
- Accessing and collecting information from appropriate primary and secondary sources
- Synthesizing information to develop informed views
- Composing a well-organized, clear, concise report to expand your knowledge on a subject in your major.

**Knowledge:** This assignment will also help you to become familiar with the following important content knowledge in this discipline:

- Issues facing professionals in a field
- Scholarly research formats for documenting sources and creating reference pages (i.e., bibliographies).

**Task:** To complete this assignment you should:

1. Select two professionals in your prospective academic discipline and/or career field who are considered experts in an area in which you are interested.
2. Secure an interview with the professionals for a date and time that is convenient for both of you.
3. Prepare 8-10 questions to ask the professionals about their expertise in a particular academic discipline/career field. The questions must be based on a review of the field using 5 credible sources as defined by the librarian in our research module. Sources should be cited using APA formatting.
4. Conduct a 20-30-minute, face-to-face interview with each professional to gather knowledge that will help you make an informed decision about the major/career you are considering. You will want to audio/video record the interview with the interviewee's permission.
5. Prepare a typed transcript of the interviews.
6. Compare and contrast the information provided by both professionals in an 8-page (1.5 spaced, 12 point Times New Roman font, 1 inch margins) report that documents the advantages and disadvantages of a career in the selected field.

**Criteria for success:** Please see the attached rubric.

Science 101  
Exercise 3: Scientific Evidence



Alison Sloat

**Purpose:** The purpose of this assignment is to analyze a past poster to help you research, design, and create your own effective poster with sufficient scientific evidence that supports your conclusion.

**Skills/Knowledge:** As a result of completing this assignment, you will be able to identify and judge the success of the important parts of a scientific poster:

- the sources of scientific information,
- the interpretation of the results, and
- the scientific merit of the conclusion.

**Task:** Read through your example scientific poster and answer the following questions. You will be graded based on how completely you address the following:

1. Identify the ethical question that is being asked.
2. List the evidence the authors provide in support of and in opposition of their question.
3. Examine the pieces of evidence listed in #2 above. Identify whether they are from popular (Pop), scientific peer-reviewed (SPR), or non-scientific peer-reviewed (NSPR) sources, and note each statement above as (Pop), (SPR), or (NSPR). Do you think there is enough scientific evidence from peer-reviewed articles? Why or why not?
4. Describe how the pieces of evidence are presented (e.g., numbers, graphs, tables, figures).
5. Explain how the pieces of evidence are analyzed in the Discussion section.
6. Identify the ethical conclusion.
7. After analyzing the content of the poster, do the pieces of evidence support their conclusion? Explain why or why not.
8. After assessing the scientific merit of their evidence, are you convinced of their ethical conclusion? Explain why or why not.
9. List the questions you still have after reading this poster. What could they have done better?

**Criteria for success:**

Your responses should be as complete as possible. After completing this assignment, you will have increased your understanding of how to identify the essential parts of a scientific poster and how to evaluate its use of evidence.

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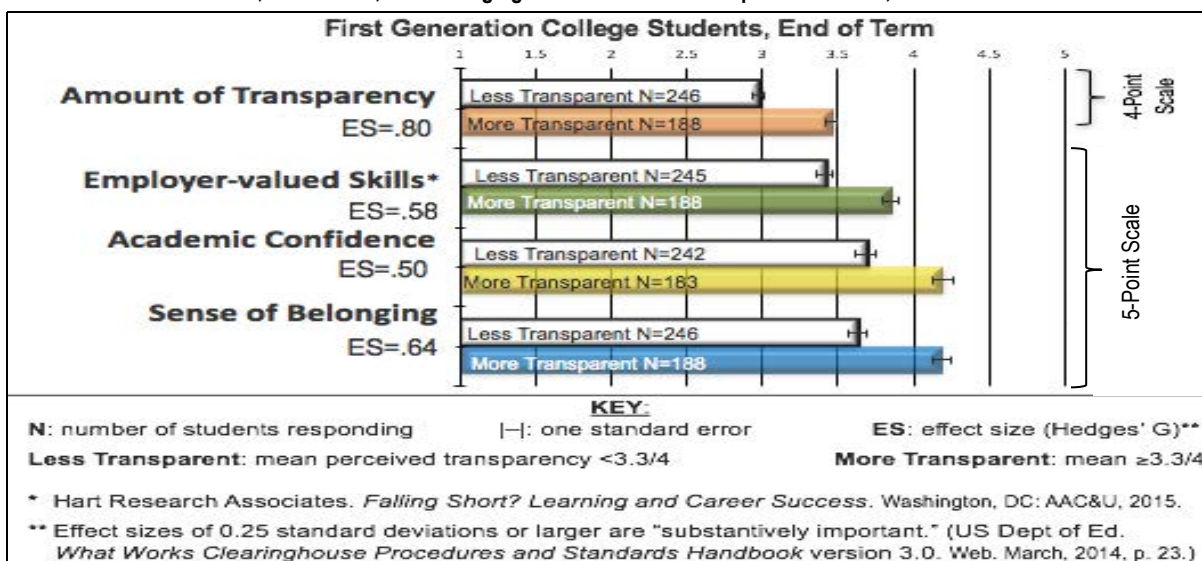


## Recent Findings: Transparency in Learning and Teaching in Higher Education

A 2015 study (Winkelmes, et al., ([Peer Review](#), Winter 2016) identified transparent teaching about problem-centered learning as an easily replicable teaching method that produces learning benefits already linked with students' success. This simple, replicable teaching intervention demonstrably enhanced the success of first-generation, low-income and underrepresented college students in multiple ways at statistically significant levels, with a medium-to-large sized magnitude of effect. The results offer implications for how faculty and educational developers can help their institutions to right the inequities in college students' educational experiences across the country by contributing to efforts to increase underserved students' success, especially in their first year of college (when the greatest numbers drop out).

In 2014-2015 a group of 7 Minority Serving Institutions launched [a pilot project](#) that included 1180 students and 35 faculty. Tia McNair and Ashley Finley at the Association of American Colleges & Universities (AAC&U) led the project in partnership with Mary-Ann Winkelmes at the University of Nevada, Las Vegas' [Transparency in Learning and Teaching in Higher Education Project](#) (TILT Higher Ed), with funding from TG Philanthropy. The main research goal was to study how faculty transparency about the design and problem-centered nature of student assignments would affect students' learning experiences and the quality of students' work. Faculty received training on how to make two take-home assignments in a course more transparent (accessible) and problem-centered (relevant) for students, and each instructor taught a control group and an intervention group of the same course in the same term. Results were measured via online surveys about students' learning experiences before and after each course, and direct assessment of students' work. Students who received more transparency reported gains in three areas that are important predictors of students' success: academic confidence, sense of belonging, and mastery of the skills that employers value most when hiring. While the benefits for all students in the aggregate who received more transparency were statistically significant, the benefits for first-generation, low-income and underrepresented students were greater, with a medium-to-large sized magnitude of effect. Important studies have already connected academic confidence and sense of belonging with students' greater persistence and higher grades ([Walton and Cohen 2011](#), [Aronson et al 2002](#), [Paunesku et al 2015](#)), and recent national surveys identify the skills that employers value most when hiring new employees ([Hart 2015](#) and [2013](#)).

**End of Term: Skills, Confidence, and Belonging - Less vs. More Transparent Courses, First Generation Students**



A study of 871 University of Nevada, Las Vegas (UNLV) students' retention rates the following year indicated that increases to academic confidence, sense of belonging and perceived mastery of employer-valued skills were indeed followed by greater persistence. 85.65% of UNLV first-time, full-time, first-year students in primarily transparent courses in Fall 2016 were retained as registered students in Fall 2017, in contrast to the average retention rate of 77.1% for first-time, full-time, first-year students. As in the AAC&U study, the gains were greater for underserved students.

TILT Higher Ed and the AAC&U continue to promote transparency and problem-centered learning. TILT Higher Ed participants include more than 25,000 students in hundreds of courses at over 40 higher education institutions in the U.S. and five other countries.

Publications and information about the Transparency in Learning and Teaching Project are at: [www.unlv.edu/provost/teachingandlearning](http://www.unlv.edu/provost/teachingandlearning)



## Checklist for Designing a Transparent Assignment

### PURPOSE:

#### Skills

- Does your purpose statement specify content knowledge that students will gain from doing this assignment?
- Does your purpose statement link that particular knowledge to the larger context of:
  - recent topics of class sessions?
  - this part of the course?
  - the whole course?
  - the major?
  - the discipline?
  - your institution's main learning outcomes?
- Does your purpose statement indicate the relevance and/or usefulness of this knowledge to the students' lives:
  - beyond the course? beyond the major? beyond college?

#### Knowledge

- Does your purpose statement specify a skill or skill set that students will practice while doing the assignment?
- Does your purpose statement link that particular skill/skill set to examples/contexts where this skill was important in the context of:
  - recent class sessions?
  - this part of the course?
  - the whole course?
  - the major? the discipline? your institution's main learning outcomes?
- Does your statement indicate the relevance and/or usefulness of this knowledge to the students' lives:
  - beyond the course? beyond the major? beyond college
- Would this assignment benefit from segmenting it into several assignments, each one focused on a discrete set of skills that should be mastered to insure students' successful completion of the next assignment in the sequence?

### TASK:

- Does your description of the task:
  - Identify the very first thing students should do when they begin working on the assignment?
  - The very next thing they should do?
  - The next, etc.
- Does your description of the task help students to avoid wasting their time on unnecessary steps, unproductive time expenditure?
- Does your description help students to focus their time efficiently on producing the highest quality work possible in the time given?
- Would students benefit from some practice exercises (in the form of a pre-task) in class to prepare them to perform the task outside of class on the graded assignment?

### CRITERIA:

- Can students use the criteria while they are working on the assignment to determine whether they are completing the assignment efficiently and effectively?
- Do the criteria take the form of a checklist students can use to evaluate the quality of their efforts while they are working on the assignment?
- Does the checklist specify characteristics of high quality work for this assignment?
- Can you help students apply the checklist to evaluating some sample work in class, so they understand how each criterion would look in practice?
- With your guidance, can the students collaboratively annotate several examples of work to indicate where/how the work satisfies the criteria? (These annotated examples may then be shared as a reference for students to use while they work on their own assignments.)
- Would a rubric ([AAC&U VALUE examples](#)) be helpful to students for this assignment?
- Does the rubric provide an amount of information that helps students at this phase in their learning?
- Does the rubric provide an overwhelming or counterproductive amount of information for students at this phase in their learning?
- Did you provide examples of good work, annotated to identify exactly where and how this work satisfies your criteria?
- Can you provide students with examples in class so they and you can test out your criteria checklist or rubric to be sure students know how to apply the criteria to multiple examples of work, and eventually their own work?