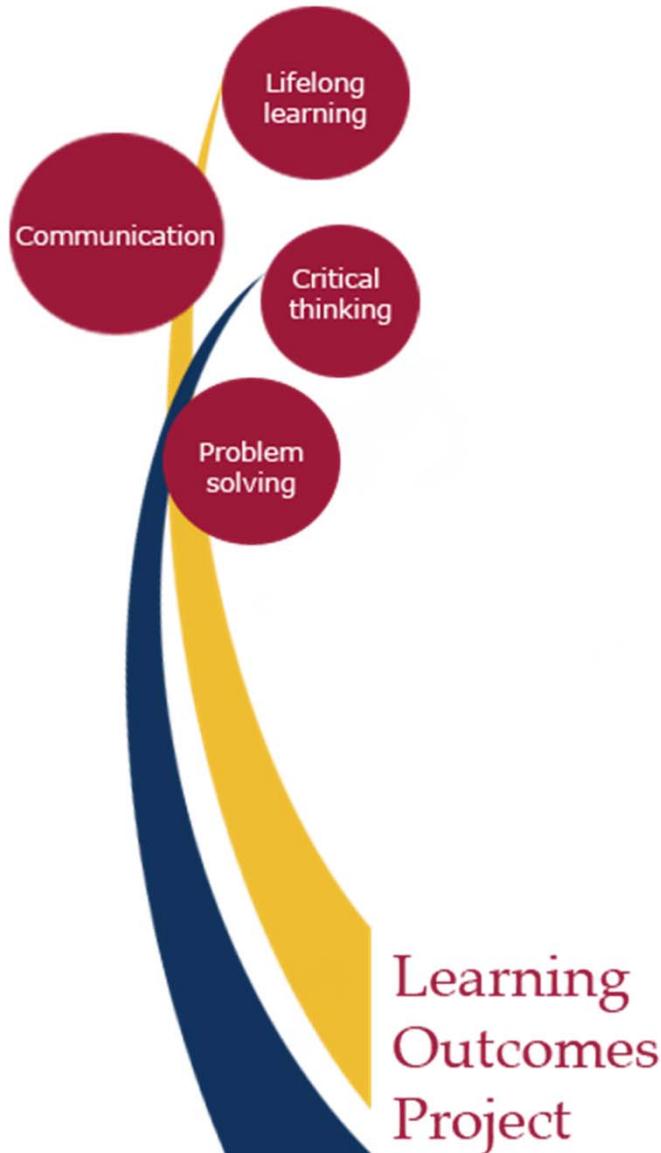


Transferable Learning Outcomes

1. Purpose
2. Assessment methods
3. Assessing Critical Thinking



AAC&U survey of 318 US employers:

93%

said demonstrated
capacity to
**think critically,
communicate clearly,
and solve complex
problems**
is more important than
knowing content





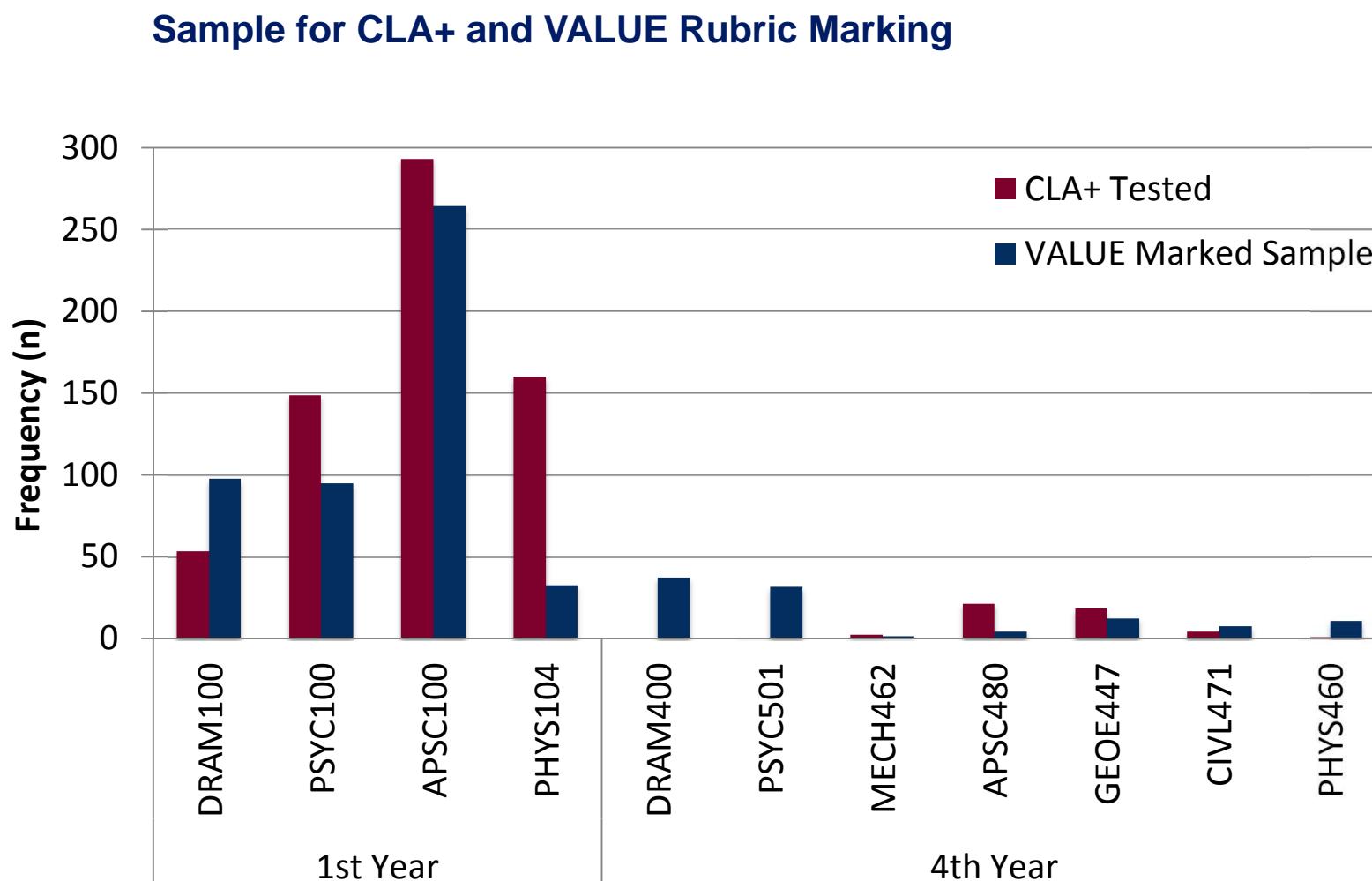
ASSESSMENT

Longitudinal study of intellectual skills development undergraduate students



WORKING WITH FOUR DEPARTMENTS:

DRAMA; ENGINEERING; PHYSICS; PSYCHOLOGY

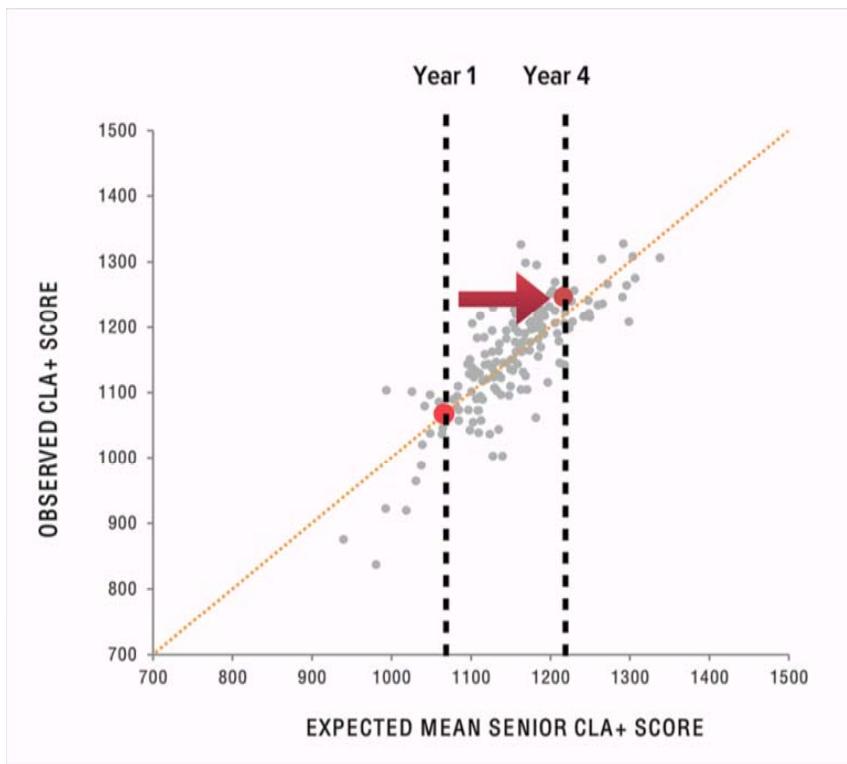




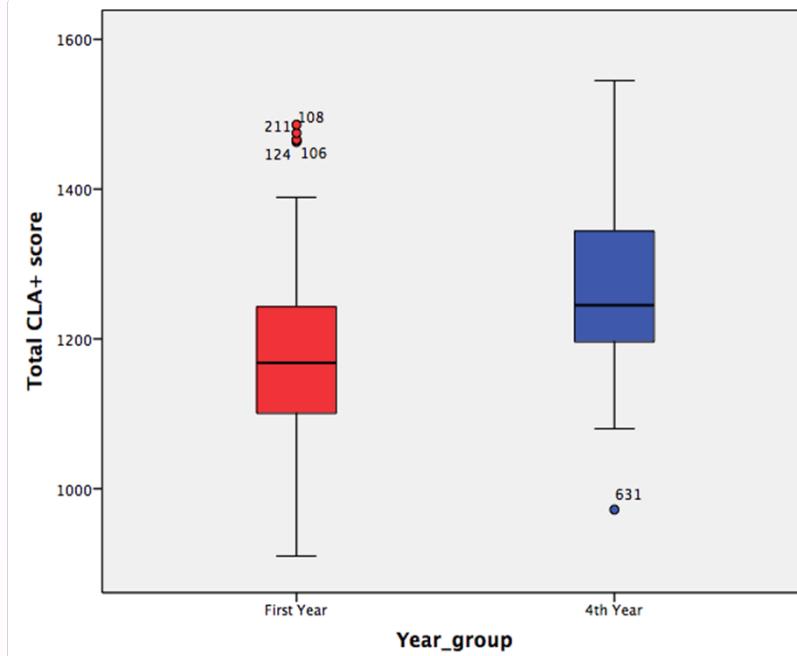
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CLA+ VALUE ADDED

INSTITUTIONAL



PROGRAM

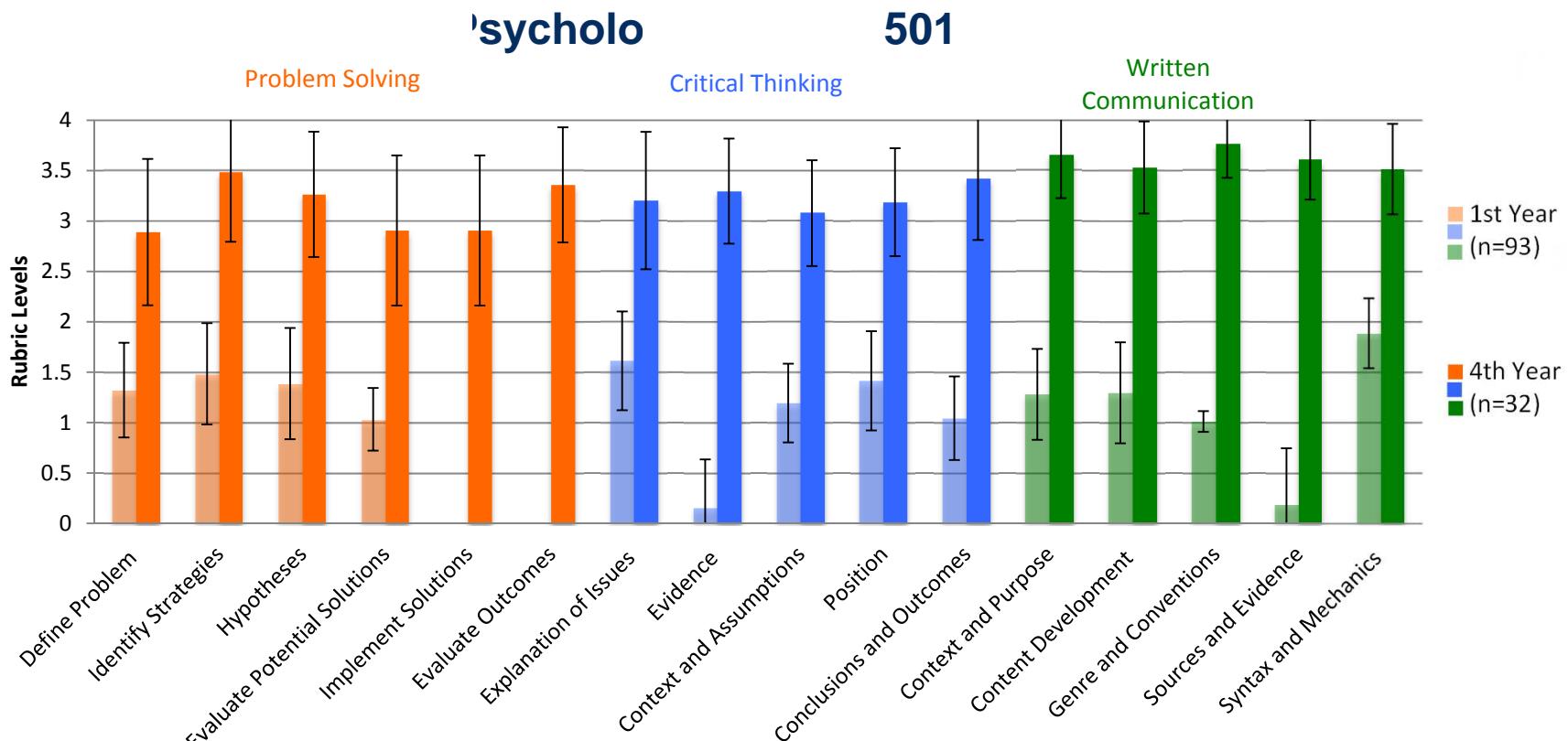


CLA+ total score boxplot for 1st year (n=232) and 4th (year n= 50) engineering sample



VALUE RUBRICS

1ST Year to 4th Year Cross Sectional Mean Scores





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Using the VALUE Rubrics

(work with a partner; see Work sample and rubric handouts)

1. Become familiar with the **rubrics** and language
2. Understand the **work sample**
3. Look for **evidence**- dimension by dimension
4. Decide on the level based on the evidence. Discuss any rating differences and come to a common understanding (**calibration**)

STUDENT WORK SAMPLE



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Design the best possible research study in to determine whether drinking alcohol has an effect on conformity (peer pressure).

Response:

First we will want to make operational definitions of peers, and decide what conformity means for this experiment. We will define peers as people of similar ages in the same social institution. For this experiment the subjects will be university students aged 19-21. Conformity will be coming to the same consensus on the task they are working on. On a list of university students of the desired age, the students will be selected at random for each group. The list will be divided by gender first to ensure equal numbers of girls and boys are in each group to reduce confounding variables (variables outside what is being tested that may impact results.) By choosing students at random, we should be reducing bias. The two groups will be split up and sent to different rooms so they can't see what is happening to the other group. If they see the other group they may act differently if they guess what is being studied. Each group will need to be give informed consent once they are aware of the possible risks, and not be forced into participating. Ethics and the well-being of participants, and minimizing harm is very important to psychological research.

Group A will be given alcoholic beverages until they blow the same rating on a breathalyser test – just above the legal limit for driving. It is important the subjects don't come to any harm. The group will then be given a series of pictures depicting a scene and will need to decide what order they need to be put in to make the best story. They will be told they are competing against the other group to see who makes the best story. Group B will be given the same cards and be told they are competing against group A, they will just not be given any alcohol. Each session will be video recorded. A set of evaluators will review the tapes and time how long it takes Group A vs B to decide on how to order the cards to make a story. For best results this will be a double blind study where the subjects don't know the true purpose of the experiment, and the evaluators don't know which group was supplied the alcohol.

By now, we have defined our question which is whether alcohol leads to greater conformity. We have also created our hypothesis and null hypothesis. The hypothesis is: H1 = supplying alcohol to a peer group will impact conformity. The null hypothesis is: H0 alcohol has no impact on conformity among peers. The hypothesis is two-tailed as we are not sure if alcohol will increase or decrease conformity. The experiment has been designed, and will need to be

executed. Once that is done, we will need to analyze results. If the hypothesis is correct, we will see statistically significant differences in the time it takes group A vs Group B to come to a consensus on the story. Statistical significance means that the results are great enough that they aren't due to chance. The experiment will need to be repeated a few times to ensure that the first result wasn't due to the specific group being tested and because the sample size is small so mistakes are more likely. If the average time of the A groups is different than the average time of the B groups, we can say that alcohol impacts conformity. We would expect the results to be similar in order for the test to be reliable, and if other tests exist on peers and alcohol influencing conformity, we would need them to have similar results for the test to be reliable. In our analysis we would want to verify our experiment truly measured what we wanted it to in order for it to be valid. Once we determined that there were similar results across trials (test-retest reliability), the observers same to the same results when watching the other tapes (inter-tester reliability), the experiment tested what it was designed to test, and our results are similar to other measures testing the same thing, and the results are statistically significant, we would publish the paper for the scholarly community.

3:00

What level of EXPLANATION OF ISSUES Did the evidence in the sample suggest?

- A. Benchmark 1
- B. Milestone 2
- C. Milestone 3
- D. Capstone 4



EXPLANATION OF ISSUES



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- Defines the problem, describes some key terms (e.g. null and alternate hypothesis)
- Clarifies the circumstances under which the hypothesis will be proven
- Does not provide background on alcohol consumptions or conformity, thus leaving aspects of the problem unexplored.
- Further defines an issue; describes accountability for reliability

EXPLANATION OF ISSUES



	Capstone 4	Milestones 3 2		Benchmark 1
Explanation of issues <i>Selecting and using information to investigate a point of view or conclusion</i>	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
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Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

What level of EVIDENCE
Did the evidence in the sample suggest?

- A. Benchmark 1
- B. Milestone 2
- C. Milestone 3
- D. Capstone 4



EVIDENCE



Did the task prompt student's to consider evidence?

Was there any reference to sources?

Ratings may be either *not applicable* (NA), or *not demonstrated* (ND)

	Capstone 4	Milestones 3 2		Benchmark 1
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
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Not demonstrated

What level of CONTEXT AND ASSUMPTIONS

Did the evidence in the sample suggest?

- A. Benchmark 1
- B. Milestone 2
- C. Milestone 3
- D. Capstone 4



INFLUENCE OF CONTEXT AND ASSUMPTIONS



First we will want to make operational definitions of peers, and decide what conformity means for this experiment. We will define peers as people of similar ages in the same social institution. For this experiment the subjects will be university students aged 19-21. Conformity will be coming to the same consensus on the task they are working on. On a list of university

students of the desired age, the students will be selected at random for each group. The list will be divided by gender first to ensure equal numbers of girls and boys are in each group to reduce confounding variables (variables outside what is being tested that may impact results.) By choosing students at random, we should be reducing bias. The two groups will be split up and sent to different rooms so they can't see what is happening to the other group. If they see the other group they may act differently if they guess what is being studied. Each group will need to be given informed consent once they are aware of the possible risks, and not be forced into participating. Ethics and the well-being of participants, and minimizing harm is very important to psychological research.

how long it takes Group A vs B to decide on how to order the cards to make a story. For best results this will be a double blind study where the subjects don't know the true purpose of the experiment, and the evaluators don't know which group was supplied the alcohol.

- Begins to question the assumption that constructs are universally understood
- Identifies multiple circumstantial, environmental and ethical factors that may complicate or influence the problem within the given context
- States an assumption of the researcher relating to desired results

INFLUENCE OF CONTEXT AND ASSUMPTIONS



	Capstone 4	Milestones 3 2		Benchmark 1
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
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No t d e m o n s t r a t e d

What level of STUDENT'S POSITION Did the evidence in the sample suggest?

- A. Benchmark 1
- B. Milestone 2
- C. Milestone 3
- D. Capstone 4



STUDENT'S POSITION



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will be coming to the same consensus on the task they are working on. On a list of university students of the desired age, the students will be selected at random for each group. The list will be divided by gender first to ensure equal numbers of girls and boys are in each group to reduce confounding variables (variables outside what is being tested that may impact results.) By choosing students at random, we should be reducing bias. The two groups will be split up and

- Accounts for one possible confound, but does not consider the confounds that may be remaining

consensus on the story. Statistical significance means that the results are great enough that they aren't due to chance. The experiment will need to be repeated a few times to ensure that the first result wasn't due to the specific group being tested and because the sample size is small so mistakes are more likely. If the average time of the A groups is different than the average time of the B groups, we can say that alcohol impacts conformity. We would expect the results to be similar in order for the test to be reliable, and if other tests exist on peers and alcohol influencing conformity, we would need them to have similar results for the test to be reliable. In our analysis we would want to verify our experiment truly measured what we wanted it to in order for it to be

- Begins to acknowledges different sides of the issue but position remains simplistic

STUDENT'S POSITION



	Capstone 4	Milestones 3 2		Benchmark 1
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Not demonstrated

What level of CONCLUSIONS AND RELATED OUTCOMES

Did the evidence in the sample suggest?

- A. Benchmark 1
- B. Milestone 2
- C. Milestone 3
- D. Capstone 4



CONCLUSIONS AND RELATED OUTCOMES



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breathalyzer test – just above the legal limit for driving. It is important the subjects don't come to any harm. The group will then be given a series of pictures depicting a scene and will need to

similar in order for the test to be reliable, and if other tests exist on peers and alcohol influencing conformity, we would need them to have similar results for the test to be reliable. In our analysis we would want to verify our experiment truly measured what we wanted it to in order for it to be valid. Once we determined that there were similar results across trials (test-retest reliability), the observers same to the same results when watching the other tapes (inter-tester reliability), the experiment tested what it was designed to test, and our results are similar to other measures testing the same thing, and the results are statistically significant, we would publish the paper for the scholarly community.

- Demonstrates awareness of the ethical impacts of a study involving alcohol, but does not discuss the ramifications.
- Conclusion is tied to information presented throughout; some related and relevant implications and outcomes are identified (e.g. reliability, publishing for scholarly community).

CONCLUSIONS AND RELATED OUTCOMES



	Capstone 4	Milestones 3 2		Benchmark 1
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Not demonstrated

Lessons...

- Resource implications
 - Tools
 - Time
 - Marking- consistency achieved through calibration
- Logistical challenges
- Differences between disciplines
 - Validity of sample and data matching

