APPENDIX H

Showing Evidence Tool Resources

The Toulmin Model of Argument

In his work on logic and argument, *The Uses of Argument*, Stephen Toulmin indicates three major, necessary parts of an argument, along with three additional, optional parts. The three major parts are the claim, the support, and the warrants.

Claim: This is the main point, the thesis, the controlling idea. The claim may be directly stated (usually at the first of a text, but sometimes at the end, especially for effect) or the claim may be implied. You can find the claim by asking the question, "What is the author trying to prove?"

Support: These are the reasons given in support of the claim; they are also known as evidence, proof, data, arguments, or grounds. The support of a claim can come in the form of facts and statistics, expert opinions, examples, explanations, and logical reasoning. You can find the support by asking, "What does the author say to persuade the reader of the claim?"

Warrants: These are the assumptions or presuppositions underlying the argument. Warrants are generally accepted beliefs and values, common ways our culture or society views things; because they are so commonplace, warrants are almost always unstated and implied. The author and audience may either share these beliefs, or the author's warrants may be in conflict with audience's generally held beliefs and cultural norms and values. Warrants are important because they are the "common ground" of author and audience; shared warrants invite the audience to participate by unconsciously supplying part of the argument. Warrants are also important because they provide the underlying reasons linking the claim and the support. You can infer the warrants by asking, "What's causing the author to say the things s/he does?" or "Where's the author coming from?"

Here's a visual representation and an example:

Claim	Support
Universities should reinstate affirmative action admissions policies.	Affirmative action provides equal access to education for all ethnic groups.

Warrant

Equality of access is a basic American value.

In this example, the claim that universities should reinstate affirmative action polices is supported by the reason that affirmative action provides equal access for all ethnic groups. It's generally acknowledged by most Americans that equality of access is a basic American value.

There are three additional parts to Toulmin's model of argument. Not every one of these is used in every argument, but only as need arises.

Qualifiers: Because argument is about probability and possibility, not about certainty, you should not use superlatives like all, every, absolutely or never, none, no one. Instead you may need to qualify (tone down) your claim with expressions like many, many times, some or rarely, few, possibly.

Rebuttal: When making an argument, you must take into consideration other conflicting viewpoints and deal with them fairly. You need to answer questions and objections raised in the minds of the audience; if you fail to do so, your own argument will be weakened and subject to attack and counter-argument. Sometimes rebuttal will be directed to opposing claims; other times rebuttal will be directed at alternative interpretations of evidence or new evidence.

Backing: Sometimes the warrant itself needs evidence to support it, to make it more believable, to further "back up" the argument.

These additional elements of argument may be added to our visual representation as follows:

(Qualifier) Claim		Support
(Rebuttal)	Warrant	(Rebuttal)
	(Backing)	

Qualifier: If a university does not have a diverse student body

Claim: ...it should use affirmative action admissions policies.

Support: Affirmative action policies provide equal access to education for all ethnic groups.

Warrant: Equality of access is a basic American value.

Backing: Equality before the law is a fundamental right of all Americans.

Rebuttal: Affirmative action policies do not result in "reverse discrimination" because they are only part of a process that attempts to ensure fairness in college admissions.

Five Categories of Claims

Argumentative essays are based on a claim, which almost always falls into one of the five following categories.

1. Claims of fact. Is it real? Is it a fact? Did it really happen? Is it true? Does it exist?

Examples: Global warming is occurring. Women are just as effective as men in combat. Affirmative action undermines individual achievement. Immigrants are taking away jobs from Americans who need work.

2. Claims of definition. What is it? What is it like? How should it be classified? How can it be defined? How do we interpret it? Does its meaning shift in particular contexts?

Examples: Alcoholism is a disease, not a vice. We need to define the term family before we can talk about family values. Date rape is a violent crime. The death penalty constitutes "cruel and unusual punishment."

3. Claims of cause. How did this happen? What caused it? What led up to this? What are its effects? What will this produce?

Examples: The introduction of the computer into university writing classes has enhanced student writing ability. The popularity of the Internet has led to a rise in plagiarism amongst students. The economic

boom of the 1990s was due in large part to the skillful leadership of the executive branch.

4. Claims of value. Is it good or bad? Beneficial or harmful? Moral or immoral? Who says so? What do these people value? What value system will be used to judge?

Examples: Doctor-assisted suicide is immoral. Violent computer games are detrimental to children's social development. *The Simpsons* is not a bad show for young people to watch. Dancing is good, clean fun.

5. Claims of policy. What should we do? How are we to act? What policy should we take? What course of action should we take to solve this problem?

Examples: We should spend less on the prison systems and more on early intervention programs. Welfare programs should not be dismantled. The state of Oklahoma ought to begin to issue vouchers for parents to use to fund their children's education. Every person in the United States should have access to federally-funded health insurance.

Adapted from Nancy Wood's *Perspectives on Argument*, 2nd ed. (pp.161-172)

Just about any given topic can lend itself to be stated as one of the five types of claims. For example, the topic of gun control could be approached from any of the five different types of claims:

Claim of Fact: There are serious restrictions on our Constitutional right to bear arms. (This essay will give facts, examples, and statistics relating to laws and policies that restrict the sale and use of firearms.)

Claim of Definition: Laws governing the sale of firearms such as assault weapons and handguns do not constitute an infringement on our right to bear arms. (This essay will focus on the Bill of Rights and its clause about the right to bear arms. It will argue for a particular definition that excludes the writing of laws that relate to ownership of firearms.)

Claim of Cause: Tougher laws governing the sale of handguns would mean a decrease in the number of homicides each year. (This essay will seek to establish a link between difficulty in obtaining a handgun and a

drop in the homicide rate. It will use statistics, facts, and analogies from other places where similar things have been done.)

Claim of Value: The right to bear arms is still an important civil right in the United States. (This essay will appeal to people's sense of the value of gun ownership. It will probably appeal to authorities, such as the Constitution, to history, and to long-held customs.)

Claim of Policy: The sale of assault weapons in the United States should be banned. (This essay will use a variety of motivational appeals and value proofs, analogies, facts and statistics, cause-and-effect arguments, and appeals to authorities to prove that this is a favorable course of action.)

Source: Swadley, Charles. "Argumentation." Retrieved from http://students.ou.edu/S/Charles.R.Swadley-1/argumentation.htm

Who is Toulmin?

Stephen Toulmin was born in London, England, on March 25, 1922. He received a Bachelor of Arts degree in mathematics and physics from King's College in 1942. He earned a Master of Arts degree in 1947 and a Doctorate of Philosophy degree in 1948 from Cambridge University, but he has spent most his life teaching at universities in the United States.

Toulmin published *Uses of Argument* in 1958. Philosophers in England were critical of the book as they were more interested in the study of formal logic; so, at the time, the book was received poorly in England. However, it was well received in the United States within the departments of Speech and English, or at Schools of Law, because of its application to practical reasoning. His work has been influential in contemporary rhetorical theory and argumentation theory.

For additional information on Stephen Toulmin and his theories on argumentation, visit:

Stephen Toulmin
www.willamette.edu/cla/rhetoric/courses/argumentation/Toulmin.htm

Evaluating Arguments

Creating and defending effective arguments is not something learned in one lesson. Discuss throughout the project what constitutes a strong—as well as a weak—argument. Consider problems that could occur in evidence while constructing an argument:

Problem	Example
The conclusions do not follow logically from the evidence given.	The candy bar was here on the table last night. This morning, it's gone. Johnny must have taken it.
The argument is based on analogy that doesn't work.	Baseball bats can be as deadly as guns, but we don't ban bats.
Fact and opinion are intermingled, opinions are presented as facts, or it is not clear which is which.	People who regularly wear seatbelts are more responsible and have fewer accidents.
Celebrity is used as authority.	Film star endorses new diet
Vague sources are used in place of specific references.	"Leading doctors say ... ," "science has shown that ... ," "compared to some other states ... ," "the scientific community recommends that ..."
Care is not taken to guard against deliberate or subconscious distortion, in self-reported opinions or information.	"In a survey of our college students, 87% are rated as 'above average.'" No notice is given that it was a self-reported survey with no outside confirmation.
No mention is made, in evidence said to come from an experiment, of control groups very much like the experimental group.	Scientific studies proved that the new drug was effective for treating depression.
Graphs are used that distort the appearance of results.	Chopping off part of the scale, using unusual scale units, or using no scale at all
Categories are over-generalized—implying that all members of a group have nearly identical characteristics.	All "teenagers," "consumers," "immigrants"
Average results are reported, but not the amount of variation around the average.	The average income of college graduates from private universities exceeds the average income of college graduates from public universities.
A percentage or fraction is given, but not the total sample size.	"9 out of 10 dentists recommend..."
Absolute and proportional quantities are mixed.	"We had 3,400 more robberies in our city last year; whereas, other cities had an increase of less than 1 percent."

(Continued)

Problem	Example
Results are reported with misleading preciseness.	Representing 13 out of 19 students as 68.42 percent. Using the percentage distorts the fact that the actual sampling is a very small number.
Explanations or conclusions are represented as the only ones worth consideration, with no mention of other possibilities.	The experimental data proves that aluminum is the best conductor (when only 3 conductors were tested).

Argumentation References

Bell, P. (n.d.). *Using argument representations to make thinking visible for individuals and groups*. Retrieved from www.oise.utoronto.ca/cscl/papers/bell.pdf

Driver, R., Newton, P., & Osborne, J. (2000). Establishing the norms of scientific argumentation in classrooms. *Science Education.* 84 (3), 287–312.

Jiménez-Aleixandre, M.P., Rodríguez, A.B., & Duschl, R.A. (2000). "Doing the lesson" or "doing science": Argument in high school genetics. *Science Education*, 84, 757–792.

Kuhn, D. (1992). Thinking as argument. *Harvard Educational Review*, 62(2).

Lizotte, D.J., McNeill, K.L., & Krajcik, J. (2004). Teacher practices that support students' construction of scientific explanations in middle school classrooms. In Y. Kafai, W. Sandoval, N. Enyedy, A. Nixon & F. Herrera (Eds.), *Proceedings of the sixth international conference of the learning sciences* (pp. 310–317). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

McNeill, K.L., Lizotte, D.J, Krajcik, J., & Marx, R.W. (2004, April). *Supporting students' construction of scientific explanations using scaffolded curriculum materials and assessments.* Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Means M.L., & Voss, J.F. (1996). Who reasons well? Two studies of informal reasoning among children of different grade, ability, and knowledge levels. *Cognition and Instruction*, 14, 139–178.

Passmore, C., & Stewart, J. (2002). A modeling approach to teaching evolutionary biology in high schools. *Journal of Research in Science Teaching*, 39(3).

Reznitskaya, A., & Anderson, R.C. (2002). The argument schema and learning to reason. In C. C. Block, & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 319–334). New York: The Guilford Press.

Suthers, D., Girardeau, L., & Hundhausen, C. (2002, April). *The roles of representations in online collaborations.* Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New Orleans. Retrieved from http://lilt.ics.hawaii.edu/lilt/papers/2002/Suthers-et-al-AERA2002.pdf

Toulmin, S. (1958). *The uses of argument*. Cambridge, UK: Cambridge University Press.

Voss, J. F., & Van Dyke, J. A. (2001). Argumentation in psychology: Background comments. *Discourse Processes*, 32(2&3).

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