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The Value of Competitive Debate as a Vehicle for Promoting Development of Critical Thinking Ability

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Demands for educational accountability have become increasingly widespread in higher education (Conrad and Wilson). Accountability demands may emerge from campus administrators, from within academic disciplines, or from students (Hill; Bogue and Saunders). University systems and state governments also have begun to impose accountability demands (Bogue and Saunders). Although accountability demands may be motivated by educational, political, or ethical concerns (Bogue and Saunders), financial concerns which have imposed an era of "unprecedented austerity" on education will remain a primary impetus for educational accountability (Zemsky and Massey). Failure to meet accountability demands can result in serious programmatic consequences; it can prevent implementation of new programs or force existing programs to be significantly cut back, restructured, or terminated (Barak; Conrad and Wilson).

Meeting educational accountability demands remains a significant concern for the debate community. As Sillars and Zarefsky explain, because of the immense pressures for educational accountability, we no longer can assume our programs will "survive as ends in themselves or simply through the force of tradition" (84). Rather, they say, "[a]s programs are evaluated, it legitimately will be asked to what extent they advance educational goals" (84).[1] Additionally, some have persistently questioned the educational

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[1] Sillars and Zarefsky were certainly not the first to raise the concern about our ability to meet educational accountability demands. Kenneth Andersen prophetically noted eighteen years ago that the educational mission of debate programs would come under closer scrutiny because of the "age of educational accountability," and others have, in various ways, echoed the spirit of this warning. Sillars and Zarefsky expanded upon Andersen's warning. Similarly, I have argued (Hill) that the CEDA debate community needs to develop a well-defined educational agenda in order to meet educational

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test/post-test design on a critical thinking test. Like Howell, Williams found gains in the direction of the improved critical thinking ability for those with debate experience but could not demonstrate that the gains were statistically significant. Beckman tested students in argumentation courses and students in discussion courses in 8 different colleges and universities. Beckman did not report significant differences between experimental and control groups within the same college or university but did find that differences in mean gain between colleges were significant. Jackson tested debaters at 9 different colleges and found that in 5 colleges, debaters made significantly higher gains in critical thinking than non-debaters, while in 4 colleges the non-debaters outgained the debaters. Cross studied high school students across their first semester of debate and found that on two of the sub-tests of the critical thinking instrument, those debaters classified as "high participators" registered statistically significant gains in developing critical thinking ability when compared to a control group of non-debaters. He did not report statistically significant results for either low or non-participators.

While these studies suggest that there may be a relationship, they do not convincingly demonstrate that participating in debate significantly promotes development of critical thinking ability. Each study used the Watson-Glaser Test of Critical Thinking as its measurement instrument. However, no study reported that in each of its sub-samples training in debate promoted development of critical thinking skills. In fact, all studies reported that in some of the sub-samples, no effect or the opposite effect occurred. Although Howell, Williams, and Cross report an overall effect which suggests that training in debate promotes development of critical thinking ability, they were not able to demonstrate that it was significant.

Both Brembeck and Beckman report statistically significant gains, but they were able to achieve significance only by adding scores across all sub-samples. In Brembeck's study, 11 total sub-samples were analyzed and the experimental students outgained the control students in 8 of those sub-samples. However, in 6 of those 8 sub-samples, the difference in mean gain was not significant. In Beckman's study the experimental group did not achieve significant gains in any of the sub-samples. It is also the case that neither Brembeck nor Beckman made an effort to control the instructional methods nor content across sub-samples of students in the argumentation and discussion classes. However, the way an instructor teaches may be an important factor in promoting development of critical thinking ability (McMillan), and the content of a course might reasonably be expected to influence the skills students developed. Thus, one cannot assume that the sub-samples were functionally equivalent. Finally, it is problematic to assume that instruction received in either a semester-long argumentation or discussion class approximates the training and experience one receives by participating in competitive debate. Thus, the results of both of these studies must be interpreted cautiously.

Cross did find that students with high levels of participation in debate significantly outgained non-debaters; however, his results are tenuous. Cross reported gains for students with high participation in debate on two of the five sub-tests of the Watson-Glaser Critical Thinking Appraisal. Follert and Colbert convincingly argue that the results of this study are "equivocal" at best (7), since the two sub-tests of the Watson-Glaser Critical thinking instrument cannot be considered independently stable. Their argument is legitimate. Modjeski and Michael argue that the stability of test scores is a significant concern with the Watson-Glaser test.[7] Berger has also noted that the test authors do not encourage using part-scores on the test to evaluate sub-skills.[8]

Jackson's results also must be interpreted cautiously. While Jackson reports a statistically significant gain for experimental students in 5 of the 9 sub-samples he analyzed, he also reports that in the 4 other sub-samples, the control students outgained the experimental students. Additionally, Jackson was not able to demonstrate either that the amount of debate competition a student had or that the competitive success the student achieved contributed to the development of critical thinking ability.

Follert and Colbert performed a meta-analysis of the results of the studies by Howell, Brembeck, Williams, Beckman, and Jackson and concluded that the reported results were not sufficient to demonstrate with any degree of certainty that debate training promotes development of critical thinking ability.[9] Follert and Colbert analyzed the 47 paired comparisons (experimental group versus control group) reported across these

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[7] According to their study, 10 of the 12 panel members suggested that the stability of test scores had not been demonstrated.

[8] Berger states, "The authors rightly point out that 'they do not encourage efforts to utilize the part-scores on the test to evaluate individual attainment in the sub-skills, since the part-scores are based upon a relatively small number of items and therefore lack sufficient reliability for this purpose. It is feasible, however, to utilize these part-scores to analyze the critical thinking abilities of a class or larger group and to determine in light of such analysis the types of critical thinking training most needed by the group'" (1692).

[9] Follert and Colbert did not include the results of Beckman's study in their meta-analysis. As I will argue later, however, we cannot presume in our research that the educational outcomes in an argumentation and debate course are equivalent to those in competitive debate. Thus, Beckman's study should be omitted because the evidence it provides bears no necessarily direct relationship to meeting educational accountability demands for competitive debate programs.

studies. In 28 of the comparisons, the researchers reported that, to varying degrees, the experimental subjects (debaters or those in argumentation and debate classes) gained more on the critical thinking test (measured by pre-post test comparison) than did the control subjects (non-debaters and students not in the argumentation and debate course). However, in 19 of the comparisons, the control subjects gained more than the experimental subjects. Follert's and Colbert's statistical analysis of these paired comparisons indicated that there is "an 88% chance that these results could be accounted for by chance" (8). According to Follert and Colbert, "This research cast substantial doubt on the claimed relationship between debate training and critical thinking skill improvement" (8). They went on to explain the implication their research has on the educational mission of debate. They write:

> While this research may not prove that there is not a relationship between critical thinking skills and debate training, it shakes the foundation upon which this long-standing assumption has existed. If this relationship is not firmly established, a radical re-evaluation of our purpose is required. This is not to say that the debate activity does not offer many educational benefits and skills to individual participants. However, additional research which statistically demonstrates critical thinking benefits is clearly warranted (10-11).

When Follert's and Colbert's findings are considered with the mixed results reported in the studies they analyzed, their conclusion seems abundantly justified: until we generate more conclusive evidence, we have insufficient data to demonstrate that debate training significantly promotes development of critical thinking ability.

Since Follert and Colbert "shook our foundation," only two studies which investigated the presumed relationship between debate training and development of critical thinking ability have been reported. Colbert, using samples of both NDT and CEDA debaters, found that the combined debater samples (CEDA plus NDT) significantly outgained non-debaters on the critical thinking test. He also found that NDT and CEDA debaters differ significantly in terms of gains in development of critical thinking ability but concluded that his data did not justify identifying which group (NDT or CEDA) was significantly better.[10] Whalen compared students in an argumentation course with a co-curricular requirement of participating in debate, students in an

[10] The NDT sample outscored the control group by a 7.95 mean difference, while the CEDA group outscored the control group by a 4.39 mean difference.

argumentation course with no such requirement, and students in a basic speech class. Whalen was not able to demonstrate that students in an argumentation course with a co-curricular debate requirement made any significant gains in critical thinking ability. In fact, Whalen reported precisely the opposite; the students in the argumentation course with the co-curricular debate requirement actually achieved lower scores on the post-test than they had on the pre-test.[11]

Considered jointly, the results of these two studies do not provide the evidence Follert and Colbert so clearly demonstrated that we need. First, taken at face value, the results of the studies are contradictory; while Colbert finds debate training does result in significant gains in critical thinking ability, Whalen found that a decrease occurred.[12] Second, both researchers suggest that additional research is necessary to demonstrate that participating in debate promotes development of critical thinking ability. Colbert, for example, reports that although his results are statistically significant, they offer only "preliminary proof" about the relationship.[13] He further suggests: "Replication of these results with larger samples are later needed to firmly establish a case for contemporary debate practices." Whalen makes the point more emphatically. Writes Whalen,

> many authors have suggested educational benefits other than critical thinking enhancement resulting from participation in intercollegiate debate (Colbert and Biggers, 1985). The data in this study begin to suggest that support for

[11] The pretest mean for those in the class with the debate requirement was 60.3 and the post-test mean was 59.82. Whalen concluded: "The mean, having slightly declined in this group, made any further analysis unnecessary as no significant increase was made" (395).

[12] I am not assuming that the studies are methodologically equivalent. Colbert has more clearly defined samples, larger samples, and employed different versions of the Watson-Glaser Test of Critical Thinking to account for differences in the difficulty level between versions.

[13] Colbert also notes limitations of his study that further emphasize the preliminary nature of this conclusion. In particular he notes that the experimental and control groups were not randomly assigned, many of the CEDA debaters had previous NDT experience and could not be used in the comparison between NDT and CEDA groups, no evidence is offered to distinguish between the selection phenomena—those with better critical thinking skills choose to debate—and the actual effect debate training had on critical thinking skills (200).

such a justification for a co-curricular requirement might be better sought through research into some of these other benefits (396).

While not attempting to argue that the results are conclusive, Whalen is apparently convinced that the prospect of convincingly demonstrating that participating in debate promotes development of critical thinking ability is remote.

We have not substantially improved our position since Follert and Colbert sounded the first notice that the results of our research are, at best, inconclusive. Taken as a whole, the available evidence neither demonstrates that debate does not affect development of critical thinking ability, nor that it does. Even though some evidence suggests that there is a relationship between debate training and development of critical thinking ability, we are not able to demonstrate convincingly that the relationship is significant. As a result, it is clear that we are ill-prepared to meet educational accountability demands by claiming that our activity promotes development of critical thinking ability.

Suggestions For Future Research

Developing critical thinking ability is widely regarded to be an important educational goal. Developing critical thinking ability is argued to be important for adults in their personal relationships, the workplace, and in public decision-making (Brookfield). The importance of critical thinking ability is also thought to increase as technology and information increase (Cierzniak). McMillan cites a number of factors which suggest there is a national movement to promote development of critical thinking ability.[14] Understandably, Colbert argues that developing critical thinking ability is central to the goals of higher education generally,[15] and Katula and Martin argue that developing

[14] These factors include recent nationally funded reports on critical thinking, university graduation requirements, and the attention the issue has received in major scholarly and educational journals.

[15] Colbert cites the following works to support his claim: Linda Annis, and David Annis, "The Impact of Philosophy On Students' Critical Thinking Ability," *Contemporary Educational Psychology* 4 (1979): 219-26; Paul A. Fritz, and Richard Weaver, *Teaching Critical Thinking Skills in Public Speaking Courses: A Liberal Arts Perspective*. ERIC ED 249 556; and Richard A. Katula, and Celest A. Martin, "Teaching Critical Thinking in the Speech Communication Classroom," *Communication*

critical thinking ability is one of the major contributions speech communication can make to a student's education. As a result, if we can demonstrate that competitive debate significantly contributes to the development of critical thinking ability, we can forge a very compelling educational justification for our activity. Future research might productively utilize two important principles—clarification and diversification.

Clarification

Clarification is important in future research in two very different ways. First, we need to define more clearly the construct we propose to teach and to study. "Critical thinking" is not a precise concept. Ennis and Landis and Martin suggest that scholars have very diverse views about how to conceptualize "critical thinking ability." McPeck characterized these differences as "very real" (19).[16] Thompson and Melancon note that the diverse ways in which the construct is defined "pose serious impediments" (1224) to research about critical thinking ability.

As a field, we have not attempted to define with any precision what the construct means. Some of our writers speak of "critical thinking ability" without making any effort to specify what the construct means. For example, Freeley identifies developing critical thinking ability as one of the educational outcomes debate is "specifically designed to achieve" (21), but offers no explanation of what critical thinking involves other than

Education 33 (1984): 160-67.

[16] An interesting explanation of these various points of concern can be found in John E. McPeck, *Teaching Critical Thinking: Dialogue and Dialectic*, New York: Routledge, Chapman and Hall, 1990. McPeck identifies at least three major perspectives on what critical thinking is. Particular issues about which theorists disagree are: whether the ability to make value judgments should be included within the critical thinking construct; whether critical thinking can be considered as a general ability or as a set of specific skills; to what degree critical thinking should be dependent upon formal logic versus more informal notions of "good reasons;" and whether critical thinking should be viewed as content free or content specific. Additional sources which touch on portions of these issues include: Robert H. Ennis, "A Concept of Critical Thinking," *Harvard Education Review* 32 (1962): 81-110; Mary M. Barabeck, "The Relationship Between Critical Thinking Skills and Development of Reflective Judgment," *DAI*, 41 (May, 1981); Tony W. Johnson, "Philosophy for Children: An Antidote to Declining Literacy," *Educational Forum* 48 (1984A): 435-41.

referring to some unspecified "principles of critical thinking" those participating in debate can expect to enhance. Perhaps in response to the imprecise nature of this construct, or perhaps partly due to methodological expediency, researchers in our field (Howell; Brembeck; Williams; Beckman; Jackson; Cross; Huseman, Ware, and Gruner; Follert and Colbert; Colbert; Whalen) have consistently used the operational definition of "critical thinking" contained in the Watson-Glaser Test to explain the construct.[17]

The Watson-Glaser Critical Appraisal presumes that critical thinking is a composite of five abilities. They include: 1) the ability to define a problem; 2) the ability to select pertinent information for the solution of the problem; 3) the ability to recognize stated and unstated assumptions; 4) the ability to formulate and select relevant and promising hypotheses; and 5) the ability to draw valid conclusions and judge the validity of inferences (McPeck). While these appear to be abilities we might reasonably associate with critical thinking, there are two potential problems with this operational conception. One problem is that these abilities have not been demonstrated to be the constituents of critical thinking. Writes McPeck:

> How do Watson and Glaser know that there are true "abilities" at work here? Answer: because they took them from a list provided by Dressel and Mayhew in a government document. But how do Dressel and Mayhew know that there are "abilities" corresponding to these descriptions? Answer: because they "*appear* to be related to the concept of critical thinking." Thus, we have one person's "appearance" serving as the next person's "reality," which has subsequently served as the basis for hundreds of empirical studies in the area. We have here in microcosm the chronology of how a casual phrase ("critical thinking abilities") can become a recurrent piece of educational jargon, which is eventually *reified* into a cognitive ability—in this case, a latent trait (57).

[17] My intention is not to singularly indict those in our field who have conducted studies which simply borrowed the Watson-Glaser definition. Certainly, this has also been a tendency with researchers in other fields. See for example, David Annis and Linda Annis, "Does Philosophy Improve Critical Thinking?" *Teaching Philosophy* 3 (Fall 1979): 2; and Robert E. Young, "Editor's notes: Critical Thinking—a Renewed Interest," Ed. Robert E. Young, *New Directions for Teaching and Learning: Fostering Critical Thinking*, San Francisco: Jossey-Bass, 1980.

Similarly, Helmstader noted "disappointment" that "the construct validity of this trait and its measure [as used in the Watson-Glaser test] has not been explored more thoroughly and systematically" (1693).

The other, and more serious, problem is that, even assuming it is well-grounded, Watson's and Glaser's operational definition does not provide a sufficient basis to explain our education mission with respect to critical thinking. In order to meet educational accountability demands, we must identify the general educational outcomes we attempt to achieve and specific abilities our students must develop en route to achieving those outcomes (Andersen; Sproule; Sillars and Zarefsky; McMillan). Specificity is necessary because the more clearly we can define the construct, the more fully we will understand what we seek to do, the more capable we will be to explain that mission to others, and the better suited we will be to develop research which provides a meaningful measure of the degree to which we accomplish the objectives we have established. However, Watson and Glaser do not identify the specific skills our students must develop in order to increase their critical thinking ability. Watson and Glaser treat the abilities they identify as though they are unidimensional.[18] However, the abilities they identify may, themselves, actually be multidimensional or composites of a number of additional sub-abilities. For example, the "ability to define a problem" is a composite of a number of sub-abilities such as the ability to identify a controversy, the ability to ascertain the scope of the controversy, the ability to characterize the nature of the controversy, and the ability to determine causal relationships, as is the ability to "select pertinent information for the solution of a problem," which includes the ability to identify issues relevant to the resolution of a controversy, the ability to ascertain general types of information that may shed light on the controversy, and the ability to determine what specific types of information are preferable to resolve the controversy. Thus, for our purposes, Watson's

[18] McPeck says these "abilities" are not "unitary."

and Glaser's list of "abilities"[19] is incomplete; it oversimplifies both the scope and complexity of what *we* might consider "critical thinking" to be.[20]

The second way we can incorporate clarification is to more clearly understand our research objective. In order to meet educational accountability demands we must be able to explain and justify the educational mission of *competitive debate programs*. There are many operational models of "competitive debate programs." Although virtually all competitive debate programs share some general characteristics, each model also offers students a potentially different educational focus and type of experience. Colbert correctly differentiated between major models of competitive debate programs (NDT versus CEDA). To be meaningful, future research on critical thinking ability must account for the specific educational and experiential characteristics of the particular model(s) studied (CEDA model X versus CEDA model Y versus CEDA model Z, or NDT model N versus NDT model M versus NDT model O). Put simply, it is problematic to assume that students in all competitive debate programs experience the same educational outcomes to the same degree.

Research also must clearly distinguish the educational outcomes produced through competitive debate from those generated through regular classroom instruction. Although that point seems obvious, we have assumed that the educational experience of students in an argumentation course is analogous to that of students in a competitive debate

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[19] McPeck presents an interesting analysis which suggests that defining a problem, selecting pertinent information for the solution of the problem, recognizing stated and unstated assumptions, formulating and selecting relevant and promising hypotheses, and drawing valid conclusions and judging the validity of inferences are not "abilities," but rather are "achievements." He explains that the abilities "are all descriptions of *achievements*—in each case something has been successfully accomplished. Notice further that achievements do not necessarily *describe* corresponding abilities. For example, the statements 'He reached the summit of the mountain' and 'He crossed the finish line' both describe achievements, but in neither case do you know *how* it was done" (58, emphasis his).

[20] One could argue that each of the "sub-abilities" I have identified are, in fact, "composits" of additional sub-sub-abilities, and that is probably the case. My intention, however, is not to suggest that we must identify every sub-ability until we can identify no more. Rather, my argument is that we need to be able to explain *how* we accomplish our objectives and that requires that we more clearly define the abilities we which *we propose* to be the constituents of "critical thinking."

program and thus, have included within our "body of research about critical thinking" those studies which tested students in argumentation classes.[21]

However, the educational experience a student gets in an argumentation course does not necessarily replicate the educational experience a student gets in a competitive debate program. One important difference is the nature of the student-teacher interaction. Students in a competitive debate program are likely to interact more closely and intensely with their instructor (coach) than would students in a traditional classroom setting. As a result, the instructional strategies used by the coach might be more influential with the student than would those of a classroom teacher with which the student had less frequent and prolonged interactions. This difference is important because research seems to suggest that the instructor and instructional strategies interact with the development of critical thinking ability (McMillan).

Research also seems to suggests that students in a competitive debate program and students in an argumentation class do not necessarily make gains on the same types of skills presumed to be related to critical thinking. Howell found that high school debaters improved most on Tests C and F of the Watson-Glaser Critical Thinking Appraisal, while Brembeck found that argumentation classes also improved on Test F, but actually showed a negative gain on Test C. In addition, argumentation students registered their second greatest gain on test B-SP which Howell found debaters did not improve upon.[22] Nor

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[21] Freeley, Follert and Colbert, Colbert, and Whalen are illustrative of such inclusion.

[22] Brembeck explains the four sub-tests: "(1) Test B-SP, a test of logical reasoning in the area of social problems, which measures ability to recognize whether conclusions drawn are soundly deduced from the premises which are given, regardless of personal bias for or against the conclusions themselves; (2) Test C, an inference test, is designed to measure ability to judge the probable truth or falsity and the relevancy of inferences drawn from given statements of fact. Students are asked to judge whether the inference drawn is true, false, probably true, probably false, or whether it should be labeled insufficient data; (3) Test E, a discrimination of arguments test, asks students to judge whether the arguments presented on opposing sides of ten questions are weak or strong; (4) Test F, an evaluation of arguments test, attempts to measure appreciation of the following four principles relating to proof in argument: (a) If certain premises are accepted, then valid inferences which follow from those premises must be accepted; (b) Crucial words or phrases must be precisely defined, and a change definition will produce a changed conclusion, although argument from each definition is logical; (c) The validity

does research support the conventional wisdom which suggests that if a semester-long argumentation class could be shown to improve critical thinking ability, then surely one could expect even more development through participation in a combined argumentation course-competitive debate program, or even in a competitive debate program without additional training in an argumentation course. Whalen's research suggests there is no significant increase in development of critical thinking skills for students involved in *both* an argumentation course and competitive debate when compared to students involved only in the argumentation course. Brembeck's research at least indirectly supports this finding because it demonstrates that gains in critical thinking ability for students with prior debate training who were enrolled in an argumentation course and students with no prior debate training who were enrolled in an argumentation course were not significant.[23] Jackson's research is also at least partially relevant because it casts doubt on the implicit assumption that "if a little training is good, more training is better." Jackson did not find that the amount of debate experience a student had contributed significantly to development of critical thinking ability.

Although tentative, these research findings suggest a number of important issues which should help us clarify the focus of our research. I will mention two here. First, we should not presume that an argumentation course and a competitive debate program promote development of the same sorts of critical thinking skills (Howell; Brembeck). Doing so compromises our ability to justify the resources expended to support competitive debate programs and undermines the degree to which our research can accurately assess the unique educational outcomes achieved by participating in competitive debate. Rather, we should attempt to delineate the unique educational experiences each offers. Ultimately, if we know enough about their differences, we may be able to fully explain and productively utilize their similarities. Second, we should not assume that the more training one has in debate/argumentation, the greater one's critical

of an indirect argument depends upon whether all the possibilities have been considered; (d) A logical argument cannot be disproved by ridiculing the arguer, or his arguments, or by attacking his motives" (178).

[23] Brembeck concludes that "debate training does not help in the study of those principles in the argumentation course which are covered by the tests any more than other factors—i.e., maturation, other college experiences, etc" (183). Brembeck does qualify this conclusion by noting that because debaters scored higher on the pre-test they did not have as much "range for improvement" as did the non-debaters who scored lower of the pre-test (183).

thinking ability will become (Jackson; Whalen). Meeting educational accountability demands requires a reasonable assessment of the educational outcomes we achieve. Knowing when participating in our activity no longer contributes to particular educational outcomes is part of a *reasonable* assessment. It is also vital information our community needs to ensure that students who make a long-term commitment to our activity achieve educational rewards commensurate with that commitment.[24]

Diversification

The second major principle we need to incorporate in future research is diversification. We need diversification in both the empirical methodologies used and the types of research we conduct. Researchers in this area have utilized very similar designs and methodologies; generally, experimental studies intended to measure the degree to which debate training produces gains in critical thinking ability as measured by pre and post scores on the Watson-Glaser Critical Thinking Appraisal.[25] While using similar approaches across studies enhances the possibility of replication, it may be advisable to incorporate more diverse approaches in two particular respects.

First, researchers should consider utilizing other tests to measure gains in critical thinking ability. Although across disciplines the Watson-Glaser Critical Thinking Appraisal is the most widely used test (McPeck), some question its validity and reliability. The test is argued to measure the same general ability as an IQ test (Kurfiss; McPeck; Helmstader) and to measure little more than reading comprehension (McPeck). The latter concern is particularly important for researchers in our field to consider because much of the critical thinking presumably involved in debate occurs about information that is presented orally. Assuming that critical thinking through reading and critical thinking through listening are the same is problematic. Berger notes it is not clear "as to whether people taking a similar test of critical thinking through listening

[24] The obvious implication of this point is that we must have a broadly based educational agenda which includes significant components other than developing critical thinking ability.

[25] Tame, and Huseman, Ware, and Gruner also study critical thinking. Tame, however, looks at the relationship between critical thinking scores and contest debate performance while Huseman, Ware, and Gruner look at the predictive function critical thinking scores might have about debate ability. As a result, neither study is directly related to the issue discussed here.

would obtain a score comparable to the one obtained through reading" (1692). Limiting our research methodologies to instruments which tap only written communication is inconsistent with the fundamental importance our discipline attributes to listening skills (Rosenfield and Berko).

Modjeski and Michael also shed light on the validity and reliability of the Watson-Glaser Critical Thinking Appraisal. They had a panel of twelve psychologists who actively study critical thinking evaluate both the Watson-Glaser and Cornell critical thinking tests on 10 essential validity standards and 5 essential reliability standards established for educational and psychological tests. Although the Watson-Glaser was generally rated higher in both validity and reliability,[26] Modjeski and Michael concluded that, "it would appear that a considerable amount of research and developmental effort needs to be expended to improve the reliability and validity of the Cornell and Watson-Glaser. It is recommended that consideration be given to revising both scales in the near future" (1196).[27]

My point is not to "nitpick" the Watson-Glaser Critical Thinking Appraisal, because it may be unrealistic to expect to find a better instrument (Follert and Colbert). However, I suggest that it is precisely because no perfect instrument is available that it does not make sense to rely exclusively on *any* single measurement. Additionally, using other instruments could help us better understand the construct. No two critical thinking tests purport to measure exactly the same thing. Critical thinking instruments are generally composed of a series of sub-tests. Across instruments there is certainly some overlap among sub-tests: however, there are also noticeable differences in degree of specificity, if not in complete subject matter.[28] Because the results obtained by any

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[26] The Watson-Glaser test was favorably evaluated on 5 of the 10 measures of validity while the Cornell test was favorably evaluated on 2. The Watson-Glaser was favorably evaluated on 4 of 5 standards for reliability and the Cornell was favorably evaluated on 2.

[27] They raise the same concern about the Cornell (CCTT) test.

[28] For example, the Watson-Glaser Critical Thinking Appraisal and the Curry Test of Critical Thinking each contain five sub-tests, and one of those sub-tests is related to recognizing or making an assumption. However, the remaining four sub-tests of the Watson-Glaser instrument include inference, deduction, interpretation, and evaluation of arguments, while the remaining sub-tests on the Curry Test of Critical Thinking include fact and opinion, false authority, inadequate data, and improper analogy. Thompson and Melacon provide a complete enumeration of the sub-tests. They also identify the basic sub-areas of the Cornell Critical Thinking Test, whether a generalization is warranted, whether a hypothesis is justified, whether a reason is relevant, the ability to judge reliability of authority, whether a statement follows from premises, the ability to identify assumptions, and the relevance of information in deduction. Clearly, differences between the Cornell Test and both the Watson-Glaser and Curry test are apparent. Thompson and Melacon also provide preliminary support for the construct validity of a new test composed of six sub-tests: identification of information relevant to testing a given hypothesis; discrimination between fact versus opinion; discrimination between primary and secondary source; inference skills; detecting assumptions implicit in statements; and deduction skills (1225). Again, a test with noticeable differences compared to the other tests.

[29] They also argue that because it "remains somewhat ambiguous," additional measurement instruments may help define the critical thinking construct.

[30] One example of such an analysis is that done by Leeman. Leeman uses Perry's nine stages of intellectual development to describe how a course in debate and argumentation can promote development of critical thinking ability.

instrument are necessarily limited to the particular sub-tests of the instrument, each difference becomes a potential "unique" component of critical thinking which the particular instrument with that sub-test "uniquely" measures. Landis and Michael performed a factorial validity comparison and found that both the Watson-Glaser and Curry tests loaded on at least one factor unique to the particular sub-tests. As they explain, "each critical thinking measure generated its own instrument-specific factor from sub-tests of that measure" (1165). Thus, by using a range of test instruments we can better understand which of the "unique" components of particular instruments should be included within our conception of critical thinking (Thompson and Melacon).[29]

Second, we should use more diverse types of research to examine critical thinking. We have relied almost exclusively on experimental studies to examine critical thinking. While results from these types of studies are surely necessary to meet educational accountability demands, they are not sufficient. Qualitative/descriptive analyses of the relationship between debate training and critical thinking ability are also important.[30] Such analyses are important in one sense because they can help generate better quantitative research. By attempting to describe how the learning experiences in debate *might* relate to development of critical thinking ability, we would be able to better develop and test theoretical explanations for why particular types of learning experiences

debaters have *should* contribute to development of critical thinking ability. As McMillan writes: "Such descriptions would help to improve the construct and external validity of the research" (14). Qualitative/descriptive research is important in another sense because it can help improve pedagogy. We have not adequately explored the pedagogical implications of attempting to promote development of critical thinking ability (Follert and Colbert). Porter posed an interesting question to our community when she asked, "How can we claim to be educators until we know what objectives, if any, we are meeting as we currently practice our discipline?" (98) I suggest that question has an equally interesting and relevant corollary: "Can we claim to be educators if we are unable to explain *HOW* we propose to achieve those objectives we seek?" Qualitative/descriptive research might help us better understand the "how's" related to this immensely important educational outcome. Ultimately, insight gleaned from such research can help us understand how our instructional methods might be better used to promote development of critical thinking ability.

Conclusion

Developing critical thinking ability has long been assumed to be one of the primary educational outcomes a student might receive by participating in competitive debate. While that outcome is presumptively important, the debate community has not generated sufficient research to demonstrate that participating in competitive debate promotes development of critical thinking ability to any significant degree. Future research about the relationship between debate training and development of critical thinking ability might productively incorporate two major principles—clarification and diversification.

There are many significant education benefits students can derive from participating in competitive debate. The CEDA debate community needs to develop an educational mission which reflects the diverse range of educational benefits participating in our activity potentially offers to students. We can no longer assume that our educational mission is apparent to those outside our community, or that others value its importance. Nor can we assume that our history and traditions are sufficient to ensure a prosperous future. Educational accountability is a very real demand the debate community will face. As we prepare to meet educational accountability demands, we should keep in mind one fundamental principle we try to teach our students: "They who assert must prove." We have the burden of proof to demonstrate the educational value of our activity.

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The Need for an Argumentative Perspective for Academic Debate

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After spending most of the weekend working on this essay, I came to my office Monday morning to find the April 15, 1993 edition of the CEDA executive secretary's report which contained a short essay by Michael D. Bartanen entitled "The Future of CEDA: A Pessimistic Assessment." He wrote: "CEDA is in desperate trouble. Our membership is in serious decline. The educational mission of the organization is fragmented and unclear. The level of civility in our debate rounds, awards assemblies and interactions with each other is lower than at any time since the founding of the organization. These problems overshadow the tremendous amount of good that happens as a result of our efforts."

I agree with Bartanen that debate is not healthy. At meetings and in forums like this one, people interested in the activity argue about the precise nature of the disease and about how it ought to be treated. Most of these arguments focus on the symptoms of the disease; the illness that infects debate cannot be treated merely by attending its symptoms. We must find its cause and discover appropriate methods of treatment.

Debate is in trouble because its practitioners have lost their focus on argumentation. Unfortunately, good people who value debate and who are trying to save it are concentrating only on its symptoms. These symptoms, such as debaters talking at incomprehensible rates or competitors occasionally being rude to one another, cannot adequately be dealt with until we treat the heart of the problem. In this case, treating symptoms and treating causes may not be mutually exclusive; however, we must be wary that having treated the symptoms we do not neglect to also treat the causes of the problem.

Bartanen offers five remedies which, I believe, involve treatments for the symptoms of our maladies: partitioning CEDA into categories of "academic competition" and "public communication," changing or eliminating the national tournament, refocusing our definitions of novice and junior divisions, recognizing diversity, and making the activity more humane. With a few exceptions I agree with Bartanen's suggestions; however, I believe the problems he seeks to address are, in part, symptoms of a larger problem—that we have lost our focus on argumentation as a method of persuasion.

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