WICOR: AVID's Foundation for High Engagement Teaching & Learning

AVID's proven learning support structure for middle and high school—and enhanced for higher education—is known as WICOR, which incorporates teaching/learning methodologies in the following critical areas: *Writing, Inquiry, Collaboration , Organization*, and *Reading to Learn*. WICOR provides a learning model that faculty can use to guide students to comprehend materials and concepts, and articulate ideas, at increasingly complex levels (scaffolding) within developmental, general education and discipline-based curricula in their major.

Furthermore, the WICOR model reflects and promotes the expertise and attitudes that will serve students well in life beyond college graduation. Surveys of employers indicate that they seek college educated employees who have strong interpersonal skills, communicate well, and have the ability to develop creative solutions to new problems in collaborative ways. AVID's scaffold of social and academic structures instills these qualities, while at the same time improving outcomes in academic performance, building critical reading and thinking skills for rigorous fields of study, using writing as a powerful thinking and communication tool, and fostering collaboration among students, teachers, and other professionals within higher education and the "real" world of working and living.

Writing is basic to thinking, learning and growth, requiring students to consider issues in new, complex ways, contributing to self-knowledge, and helping them to clarify and order experience and ideas. Writing consists of an essential, complex set of tools that enhance critical thinking—good writers tend to be good thinkers, and improving cognitive skill enhances one's writing ability. According to a survey of college students conducted by Richard Light (2001), students reported that the level of writing required was directly related to their engagement in their academic work. This relationship was stronger than the students' engagement in any other course characteristic.

Inquiry: "Critical thinking," is a term commonly used in higher education to refer to a generic set of complex but ill-defined cognitive processes. According to the Foundation for Critical Thinking, "thinking is not driven by answers but by questions," positioning inquiry as foundational to the higher level cognition required for college success. AVID's emphasis on inquiry focuses on the application of Costa's three levels of "intellectual functioning,"

whereby learning to ask progressively more complex questions is scaffolded and students become progressively more metacognitive—aware of their own thinking processes.

***Collaboration*:** Collaborative learning involves intentionally designed student groups engaged in "co-laboring" toward meaningful learning outcomes, using active engagement activities planned to maximize learning, and facilitating the sharing of the workload Barkley, Cross and Major (2005). AVID's high engagement learning strategies involve collaborative activities through which individual students help each other learn, thereby strengthen their own learning. Students are responsible for their own learning; faculty serve as facilitators in a learning community working together for the success of the group.

Organization: Because college students face competing priorities that are often overwhelming, organizational skills are critical to success in academic and social situations. According to Cuseo, Fecas & Thompson (2010), college students "who have difficulty managing their time have difficulty managing college." Management of time and energy and learning to set priorities can make the difference between success and failure for new college students. In addition, students must learn to plan effectively for academic assignments, organizing information and ideas for papers and projects. Consistent with its focus on promoting "individual determination," AVID provides support for the organization of materials, assignments, assessments, handouts and notes.

***Reading to Learn**:* College instructors consider reading a basic skill, one that all students should have acquired before entering college. However, students often neither complete assigned readings nor know how to effectively read assigned material—one of the most common challenges reported by college instructors (Gottschalk & Hjortshoj, 2004). AVID's approach to "critical reading" provides faculty with common-sense and research-based strategies designed to help students read more effectively. Skills such as "reading with purpose" can be scaffolded with more complex activities to ensure that students are connecting reading material to prior knowledge, understanding the structure of texts, and using text-processing strategies during and after reading to improve comprehension.

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Reading for Academic Success & Writing to Learn

Prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

Writing and reading are universally accepted as fundamental, foundational skill sets for learning in college. Even more critical, communication skills in general (including listening and speaking, as well as reading and writing) are required for job performance and career advancement, as well as satisfaction in work and in life. Today's graduates, according to the Partnership for 21st Century Skills, "need to be critical thinkers, problem solvers and effective communicators who are proficient in both core subjects and rapidly evolving 21st Century content and skills." Kick and Scott (2010) elaborate, insisting that such skills include "not only metacognitive learning and reflective thinking, but also literacy in information and communication technology (ICT), as well as career-based life skills." However, as critical as writing, reading and critical thinking skills are to their futures, far too many entering college students are woefully unprepared in these areas. Among ACT-tested 2011 high school graduates, for example, only 66 percent met ACT's College Readiness Standards (2008) in writing, and fewer than half met the standards established by ACT for reading. Furthermore, since 2006, those percentages in writing and reading have steadily decreased (ACT Profile Report, 2012).

Reading and writing skills are integrally related to each other and to increased cognition. David Conley (2006) states that "successful students connect reading and writing with thinking skills," characterizing reading as an active, rather than a passive process. Good readers think about what they read, which improves their reading skills; writing requires thinking, and better thinkers become better writers. Moreover, information literacy—the ability to find, analyze and use information—involves reading, writing and critical thinking. Reading and writing are integrally related as learning tools for school, college, and life. Alvin Toffler (1998) said that "the illiterate of the 21st Century will not be those who cannot read and write but those who cannot learn, unlearn and relearn." Thus, learning is the key. AVID focuses on deep, engaged learning, embedding reading and writing skills into teaching/learning strategies that have proven effective for over 30 years. Writing and reading are the anchors of WICOR, AVID's foundational curriculum framework. AVID focuses on "academic reading" and "writing to learn," thereby clarifying and enhancing what it means for students to read and write effectively. AVID's approach to teaching reading and writing has been to integrate these skills with each other and within the contexts of specific academic disciplines.

Academic Reading

Reading is the subject in which academic support is most important (Tinto, 2012), a conviction with which most college faculty would agree. However, student readiness for college-level reading is at its lowest point in more than a decade, according to ACT data (2006). Cox, Friesner & Khayum (2003), found that "students with a reading deficiency are more likely to have multiple academic deficiencies than other underprepared students." Adelman (2006) determined that reading was "the most serious remedial problem" because 70 per cent of students who took one or more remedial reading courses" failed to attain a college degree within eight years. Data based on 2005 ACT-tested high school graduates reveal that only 51 percent were ready for college-level reading. Furthermore, males, African Americans, Hispanic Americans, Native Americans, and students from families whose yearly income is below $30,000 are less likely than the ACT-tested population as a whole to be ready for college-level reading (Adelman, 2006). According to Adelman's research, eleven percent of postsecondary students are enrolled in remedial coursework in reading; however, if the institution did not require remediation in reading, no data were reported. An analysis of this apparent gap between the percentage of students unprepared for college reading (nearly half) and the percentage enrolled in developmental reading (11%), suggests that there are many students enrolling in college who neither have the requisite reading skills, nor are enrolled in courses designed to improve their reading proficiency—perhaps because the institution is less likely to require remediation in reading that in writing and mathematics.

ACT reports in *Reading Between the Lines*, a 2005 analysis of college readiness in reading, that "the clearest differentiator in reading between students who are college ready and students who are not is the ability to comprehend *complex* texts." The report describes a "complex text" as comprising the following characteristics: interactions among ideas or characters that are subtle, involved, or deeply embedded; highly sophisticated information conveyed through data or literary devices; and organizational structures that are elaborate and sometimes unconventional. In addition, authors of complex texts often use intricate elements of tone and language; demanding, intricate and highly context-dependent word choice; and implicit and often ambiguous intent or purpose. Clearly, these characteristics require that students approach a text with a set of skills that enables them to decode and analyze the text itself—as well as the author's purpose—and to explore possible meanings and applications.

AVID *for* Higher Education provides a powerful set of critical reading strategies, specifically designed to improve academic reading. They can be used by faculty in any college-level course or discipline and address the characteristics of "complex" texts. These strategies include reading with a purpose, marking and annotating texts, summarizing and charting texts, learning and using academic and discipline-based language, and identifying

and evaluating an author's "claims." By supporting strong reading skills throughout the core curriculum, postsecondary campuses can prepare students for the even more rigorous reading assignments that they will face as upper classmen and in their careers.

Writing to Learn

In the 19th Century, university freshman composition was considered a remedial course. Students were expected to enter the university with all the skills required to write in response to complex issues, ideas and assignments. Currently over one-third of students entering college are not prepared for a college level composition course (Adelman, 2006). Writing is considered the most important skill set required not only for achievement in college, but also for professional success. Cuseo, Fecas and Thompson (2013) describe a study by Worth (1990) in which college alumni were asked, more than ten years after graduation, about the importance of different skills to their current work responsibilities. Over "90 percent of these alumni ranked the 'need to write effectively' as a skill they considered to be of 'great importance' to their current work." Light's (2001) findings confirmed that writing "plays a pivotal role in the academic lives—and the academic success"—of most students. The graduating seniors included in his study identified the courses "that had the most profound impact on them as courses in which they were required to write papers" for their fellow students, as well as their professors. Results of the National Survey of Student Engagement (2008) support this position, finding that "when courses provided extensive, intellectually challenging writing activities, students grappled more with course ideas both in and out of the classroom. These students also reported greater personal, social, practical, and academic learning and development."

Because writing is a significant source of self-expression, the ability or inability to write has a direct impact on one's sense of self. Writing as a form of self-expression is also a source of self-efficacy and self-advocacy. Furthermore, expressing oneself in written form is intimately related to one's ability to learn. Writing and thinking skills, for example, are reciprocal. We can't write well without thinking critically about our audience, our purpose, or subject matter; and writing helps us become better thinkers because it involves a series of intentional acts. AVID approaches writing as learning, consistently referring to it as "writing to learn." This phrase, according to Cuseo, et al. (2013), is intended to capture the idea that writing is "not only a communication skill learned in English composition classes," but also a "learning skill that can deepen understanding of any academic subject or life experience." AVID has developed a series of very effective strategies for integrating writing into a variety of teaching/learning situations—including assignments that may be as brief as a "minute paper," or as demanding as a comprehensive research paper. In fact, in addition to those activities designed specifically for writing, it would be difficult to find

any AVID strategy that does not incorporate writing. Most integrate all WICOR elements, but both writing and reading are truly the anchors of AVID's effectiveness.

Keeling and Hersh, in *We're Losing Our Minds: Rethinking American Higher Education* (2011) assert that "too many college graduates are not prepared to think critically and creatively, speak and write cogently and clearly, solve problems, comprehend complex issues, accept responsibility and accountability, take the perspective of others, or meet the expectations of employers." This may appear a harsh assessment of the current state of higher education; however, most professionals in colleges and universities would not argue with the authors. AVID *for* Higher Education provides a variety of robust, high engagement, deep learning strategies that faculty can use to enhance the reading, thinking and writing skills of their students. These activities and approaches to teaching and learning are not discipline-specific, but can be used in any academic setting to develop students into effective, creative, life-long learners.

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Inquiry-Based Teaching

Research brief prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

> *In genuine inquiry, the topic itself matters far less than the attitude [students and instructors] take toward it. If they are moved to ask* ***why****, to wonder who thinks otherwise, to explore what other strange things just might be connected to this one little problem, then they are in an inquiry space*. (Clifford and Marinucci, 2008)

Questions unite people, and answers divide them. (Elie Wiesel)

Inquiry is the "I" in WICOR, one of the five foundational characteristics of AVID's system of college readiness and success. Inquiry—the asking of questions—makes us wonder, driving us to seek knowledge and understanding. The power of using inquiry in the classroom, particularly with new college students, is that it stimulates exploration of issues and ideas, asking them to consider why they hold certain opinions. As they learn to develop and respond to compelling questions by looking more deeply into an issue or subject, students become curious and begin to experience the excitement of investigating questions that have no right or wrong answer. Ultimately, they realize that they can find answers themselves—thereby creating their own learning. As students learn to assume responsibility for their own learning, they become more successful academically, and are more likely to persist to graduation. Inquiry is central to AVID methodologies, integrated regularly into reading and writing tasks, often the focus of collaborative activities, and key in helping students learn to organize information and ideas. Questioning is a critical component of Cornell Notes, for example, as well as the central focus in Socratic Seminars and Philosophical Chairs.

Inquiry is perhaps the oldest documented form of teaching, tracing its roots back to the fourth century BCE when Socrates engaged fellow Athenians in philosophical conversations in public and private gatherings, using questioning as his primary investigative tool. Inquiry persisted in Western universities through the Middle Ages and survives today as the primary method of conducting tutorials in the great British universities. However, its preeminence in higher education has given way to lecture as the primary delivery method in American undergraduate education. According to Ambruster (2000), 80% of class time in college is dominated by students listening to lectures. In the face of the apparent decline of cognitive abilities of college students and, indeed, college graduates, in the 1980s, educators began to focus on the concept of "critical thinking" and how to teach students to develop cognitive skills. In 1941, Glaser proposed that the ability to think critically involved a disposition to thoughtfully consider problems and subjects,

knowledge of methods of logical inquiry and reasoning, and skill in applying those methods. In recent decades, however, faculty and administrators in higher education have come to use the term "critical thinking" to refer to a generic set of complex but ill-defined cognitive processes.

In the literature, particularly since the 1990s, scholars and educators have worked to remedy this by identifying the cognitive processes that comprise our individual and collective abilities to think "critically." Bok (2006) lists the following abilities as the "indispensable means of making effective use of information and knowledge:" asking pertinent questions, recognizing and defining problems, identifying the arguments on all sides of an issue, searching for and using relevant data and arriving in the end at carefully reasoned judgments. Cuseo (2003) defines critical thinking as "all forms of thinking that *are more complex, deeper, and require a greater degree of reflection* than that associated with mere acquisition of knowledge via *memorization* and *rote* recall of *factual* information," suggesting that the pedagogical model of lecture/note-taking/exam is unlikely to teach students to think critically.

"Inquiry"—which derives from the Latin *quaerere*, meaning to ask or to seek—has been identified as a key, if not the central, component of critical thinking. The derivation of "question" is "quest"—to seek answers. According to the Foundation for Critical Thinking, "thinking is not driven by answers but by questions. . . . Only students who have questions are really thinking and learning. Moreover, the quality of the questions students ask determines the quality of the thinking they are doing." Clifford and Marinucci (2008) believe that one of the "central characteristic of inquiry is that it evokes powerful, stimulating questions that lead to other questions." Derek Bok says that the best teachers challenge their students with "interesting questions and forms of active learning." Palmer (1998) describes the transformative power of collective inquiry. Finkel (2000) defines "inquiry" as the "*process* of attaining knowledge," suggesting that it lies (or should lie) at the foundation of any seat of higher learning. In their observations of inquiry in a 5th grade classroom, Clifford and Marinucci found that inquiry "encouraged students to develop rigorous habits of mind. Their engagement with the topic demanded that they push their own thinking—hard." Bain (2004) found that the best teachers create "natural" learning environments where curiosity is rewarded and the student develops his or her ability to ask "probing and insightful questions about the thinking of other people." These natural environments involve an intriguing question or problem, helping students understand the significance of the question as they learn how to answer it, and focusing them on the next question. In his analysis of the work of Lev Vygotsky, Soviet developmental psychologist and social constructivist, Wells (2000) goes farther, suggesting that inquiry, and the "energizing power" of real questions, should be at the heart of the curriculum—the "organizing principle," in fact, of curricular activity. He goes on to argue that questioning

forms the foundation of how knowledge is constructed, and that social interaction in the form of dialogue is an essential ingredient for the creation of knowledge. The importance of inquiry to learning, and inquiry as a social enterprise, has been advocated by some of the most noteworthy educators in Western philosophy, including John Dewey, Lev Vygotsky, and Paulo Friere. Clifford and Marinucci (2008) insist that "genuine inquiries" require that understanding develop in a public space, as did Socrates' dialogues, where "each person's abilities, interests, perspectives and talents help move everyone else's thinking forward."

While this approach to teaching and learning evolved from the tradition of Socratic questioning, the work of Benjamin Bloom and his colleagues in the 1950s has been instrumental in motivating educators to refocus on questioning as critical to teaching and learning. In 1956, Bloom published *Taxonomy of educational objectives.* These objectives for student learning were divided into three "domains"—cognitive, affective and psychomotor—the last of which was further separated into six levels, revised in 2000 into *remembering, understanding, applying, analyzing, evaluating* and *creating*. Each of these cognitive processes describes learning at progressively higher levels—using verbs—and is dependent on the student having attained prerequisite knowledge and skills at lower levels. As a component of his model of cognitive coaching, Costa (2001) revised Bloom's taxonomy by collapsing it into three levels of intellectual functioning, which AVID has adopted. These levels provide an easily accessible foundation for incorporating inquiry into teaching/learning activities and helping students develop what Conley (2005) refers to as "cognitive skills and habits of mind" that increase critical thinking abilities and that "may be more important in college than content knowledge." It is not enough for the faculty member to pose a question. According to Clifford and Marinucci (2008), changing a classroom into an inquiry-based environment demands that the instructor develop the "attitudes of a scholar." AVID has integrated Costa's levels into many teaching/earning strategies, helping faculty train students to ask the questions. Students are taught to identify level one questions, and then to write and ask level two and three questions as part of their training in note taking, writing, reading—both individually and collaboratively. For example, instead of posing a question that requires them to define or describe (level one), they are asked to develop questions for which explanation (level two), or hypothesis (level three) is required. As one good question leads to others, inquiry takes over the learning environment.

The process of teaching inquiry by starting with level one questions and proceeding to develop higher level questions is a form of "scaffolding," an educational paradigm that AVID has adapted and applied to student learning as a primary method of maintaining fidelity to their philosophy of "rigor with support." Scaffolding is integrated throughout AVID's system in the development of all WICOR skills. Based on the work of Vygotsky, scaffolding theory was first introduced in the late 1950s by cognitive psychologist Jerome

Bruner, who used the term to describe young children's oral language acquisition. While Vygotsky (1934) never used the term "scaffolding," he created the concept of "zones of proximal development (ZPD)," defined as the difference between what a learner can do without help and what he or she can do with help. Scaffolding, then, is a process through which a teacher or more knowledgeable peer helps the student in his or her ZPD as necessary, and tapers off this aid as it becomes unnecessary, much as a scaffold is removed from a building during construction. Level one questions become the foundation of the inquiry scaffold; as students become increasingly confident and skilled in asking higher level questions, they become less reliant on level one questions to get them started. For example, in a unit on the federal separation of powers in a political science course, a level one question might be "Who is the head of the judicial branch of government?" This basic information could then provide the basis for questions such as "What different roles do the three branches of government play in making a law?" (level two) or "Why did the writers of the U.S. Constitution include provisions for separation of powers?" or "What might happen if the authority of the President to nominate Supreme Court justices were revoked by constitutional amendment?" (level three). Either of these higher level questions could be an "essential question" in taking Cornell Notes on a lecture or as an opening question in a Socratic Seminar, varying according to the text. According to Cuseo (n.d.), King (1995), found that by using "guided peer questioning" students learned to generate their own higher level questions and were "more likely to display higher-level thinking in group discussions and on course examinations" when they listened to a presentation and individually generate 2-3 relevant questions pertaining to the presentation.

AVID proposes strategies designed to make lecture more effective as a teaching/learning tool, such as the 10-2 Lecture Model where the instructor lectures for ten minutes, then has students interact with the material or their notes for two minutes, before proceeding to the next ten-minute segment of lecture. One option for using the two minutes is to have students—individually or collaboratively—develop a level two or level three question regarding the lecture. Faculty need to be intentional about developing and using inquiry-based teaching/learning strategies. Wells, et al. (1994) suggests that this means "reconstituting classrooms" as "communities of inquiry" where "dialogic knowledge building and an inquiry-oriented curriculum" become "essential and interdependent components" of the educational system. Clifford and Marinucci (2008) suggest that inquiry "invites attention to the ways in which understanding is developed and held collectively." Supporting their view that faculty need to develop the "attitudes of a scholar," Wells advocates for the instructor being involved as a "co-inquirer" with the students in the topics that they have chosen to investigate. Inquiry, he says, is an "approach to the chosen themes and topics in which the posing of *real questions* is positively encouraged, whenever they occur and by whoever they are asked. Equally important as the hallmark of an inquiry

approach is that all tentative answers are taken seriously and are investigated as rigorously as the circumstances permit.

A foundation of AVID's philosophy is that inquiry is as fundamental as reading and writing to rigorous teaching and deep learning. In fact, Clifford and Marinucci believe that students "trained in the habits of inquiry have much less fear that making a mistake reveals their own personal ignorance and are much more interested in the quality of their thinking, part of which involves a commitment to rigor on behalf of the topic." Inquiry strategies coupled with collaboration are even more powerful. Cuseo (n.d.) tells us that "research has consistently revealed that, when college students are required to engage in face-to-face discussion of course concepts with their peers, they are more likely to develop critical thinking skills than by merely listening to lectures and recording course notes." Cuseo strongly suggests that providing explicit learning structures is critical for first-year college student and, citing Chaffee, that critical thinking skills should be introduced at the beginning of the college experience. Faculty need to incorporate the teaching of inquiry in first-year seminars, developmental courses, and first-year general education courses. Maxwell (2009-2011) believes that in an environment where people are questioned in friendly, respectful and useful ways, they are "empowered" and come to value good questions as well as the process of questioning. The Socratic Method creates a safe intellectual environment, leads to collaborative learning, creates curiosity, builds confidence and self-efficacy among participants, and develops the capacity to be accountable for creating one's own learning. For new college students, learning through inquiry can be exciting, opening stimulating pathways to knowledge and leading to the application of fresh understandings and questions. Student motivation increases with active engagement with other students, faculty, and ideas, thereby making students more likely to achieve academically and persist in college.

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Collaborative Learning & Teaching

Research brief prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

> *What does our society need from higher education? It needs stronger, more vital forms of community. It needs an informed and involved citizenry. It needs graduates able to assume leadership roles in American life. It needs a competent and adaptable workforce. It needs very high quality undergraduate education producing graduates who can sustain each of these goals.* (Report of the Wingspread Group on Higher Education, 1993)

Collaborative teaching and learning lie at the very heart of AVID's foundational elements through WICOR (Writing to Learn, Inquiry, Collaboration, Organization and Reading). Collaboration is a powerful methodological approach to teaching, strongly supported by learning theory, as well as by two decades of research focusing on reform in postsecondary teaching and learning. The history of AVID's success is largely based on an insistence that collaboration is essential to student learning ,and is embedded in all the high engagement strategies that have been proven effective in schools and colleges. Collaboration, in fact, *is* "engagement." The potential impact of collaborative pedagogies, however, is far broader than success within the education sector. When collaboration becomes a fundamental form of human interaction, significant change can occur in workplaces, local and global communities, and even families. Colleges and teachers that integrate collaboration into classrooms and their broader intuitional environments stimulate student learning through increasing student personal validation, self-efficacy, social integration and self-awareness—resulting, in fact, in AVID's "individual determination." This philosophy and approach to higher education finds support in over four decades of research and commentary on higher education reform.

In the early 1970s, for example, Uri Treisman investigated the reasons for poor performance of African American students in calculus at the University of California at Berkeley. His hypothesis was that the poor performance of African American students was caused by a variety of factors—low income, low motivation, poor academic preparation and or lack of family support. In the results of this now famous study, Treisman (1992) found that his hypothesis was wrong. While Chinese calculus students, for example, studied collaboratively, African American students worked alone, without peer support. When African American students were trained and supported in collaborative study groups, differences between their calculus performance and that of their Chinese counterparts disappeared. During the same period, Alexander Astin was studying student learning at UCLA, where he developed his theory of student involvement. Astin (1993) asserts that cooperative learning "may be more potent than traditional methods of

pedagogy because it motivates students to become more active and more involved participants in the learning process." Subsequently, Light (2001) conducted a study at Harvard in which he used student interviews to determine how undergraduates learned and were impacted by their collegiate experience. He found that learners who "get the most out of college, who grow the most academically, and who are happiest, organize their time to include interpersonal activities with faculty members, or with fellow students built around substantive, academic work."

An expansive research study of higher education sponsored by the Carnegie Foundation for the Advancement of Teaching in the mid-1980s, found "a house divided," as reported by Boyer in 1987. Across the board, findings included faculty who were often torn between obligations to research and teaching, persistent tensions between creativity and conformity in the classroom, and an absence of vigorous intellectual exchange in the undergraduate curriculum. According to Boyer, the study generated three provocative questions, which clearly resonate into the 21st Century:

1. Is it possible for students, during this era of mass education, to become independent, self-directed learners?
2. How can faculty improve their teaching so as to encourage creativity and critique?
3. How can all resources for learning, on and off the campus, be connected?

In 1993, the Wingspread Group on Higher Education, a Wisconsin-based foundation, avowed that education is the essential key to success for a society that values community and civic involvement. Moreover, they suggest that this is a connection that we have apparently lost, and which has become a "disturbing and dangerous mismatch" between "what our society needs from higher education what it is receiving." Recent demands for reform in higher education have focused on retention and graduation rates, accountability, the role of faculty, and a dramatic shift within the academy from teacher-centered to student-centered communities of learning. In this context, Barr & Tagg's 1995 article in *Change* ("From Teaching to Learning: A New Paradigm for Undergraduate Education") initiated an influential movement toward rethinking the nature of teaching and learning. Student engagement, highlighted by analyses of results of the National Survey of Student Engagement (NSSE) as well as CCSSE, its community college counterpart, has emerged in the literature and in practice as central to achieving Barr and Tagg's "paradigm" shift. From this perspective, what constitutes good teaching is being redefined as faculty search for instructional philosophies and methodologies to engage their students more fully.

A reasonable response of colleges and universities to Boyer's queries would be to create and nurture environments that support teaching and learning, are student-centered, hold students to high expectations in general education as well as in the academic disciplines, and integrate the curriculum with the co-curriculum. Collaborative learning

strategies address these issues and are consistent with how good teaching has come to be defined, in both theory and practice. Chickering and Gamson (1987), in a report for the Wingspread Group, suggest that good learning is like good work—"collaborative and social, not competitive and isolated." In order to learn, they say, students "must talk about what they are learning, write about it, relate it to past experiences." They should also apply it to their daily lives, making what they learn part of who they are. Tagg (2003) identifies collaborative learning as the one "strand" of pedagogical reform that has transformative potential, in that it requires student interaction and performance. Similarly, Bruffee (1993) believes that knowledge is "something people construct by talking together and reaching agreement." Teachers, he says, are "agents of cultural change" who, as such, are changing our "understanding of what teachers do when they teach." Educator bell hooks (2010), agrees, suggesting that we must all realize that collaboration is the practice that will most effectively enable everyone to dialogue together, to create a new language of community and mutual partnership. According to Bruffee (1995), "constructive conversation" is the "particular experience that educates." In his view, students learn by joining transition communities in which people construct knowledge as they talk together and reach consensus. What teachers do is set up conditions in which students can learn." Working together, he says, does not come naturally, but is "something we need to learn how to do." AVID's model of Socratic tutorials is intentional, structured, and incorporates the best aspects of Socratic dialogue into collaborative inquiry Collaborative learning, however, should not be discussed without including the power of peer influence, which lies at its very heart. Numerous scholars (Pascarella and Terenzini, 1991; Astin, 1968; Chickering, 1972; and Cuseo, 2003) assert that the influence of peers within learning environments has a positive effect on student attitudes, values, persistence in college, satisfaction and motivation for learning. In true collaborative environments, students and teachers learn from one another. Most recently In reporting the results of his study of the "best" college teachers, Bain (2004) states that the "best teaching creates a sense that everyone is working together," suggesting that students learn most effectively when they are trying to answer their own questions—directly linking inquiry with collaboration.

A number of higher education scholars address the distinctions frequently made between *cooperative* and *collaborative* learning. Both have their epistemological roots in social constructivism (Millis & Cottell, 1998; Cuseo, 2002; Barkley, Cross & Major, 2005), which contends that knowledge is believed to be socially constructed by consensus among knowledgeable peers and is best achieved through a collaborative instructional design in which students accept responsibility for their learning. The two terms are often used interchangeably. According to Bruffee (1995), collaborative and cooperative learning are two versions of the same thing—the essential difference being the age of the student ("cooperative" learning more commonly being used in elementary and secondary education, while "collaborative" learning appears more frequently in the higher education

literature). Cuseo goes further, suggesting that cooperative learning is a subcategory of collaboration. Nonetheless, according to Barkley, et al., all forms of group learning share two fundamental purposes by (1) engaging students actively in their own learning (2) within a social context that is both supportive and challenging.

Definitions of collaborative teaching and learning in the literature are strikingly similar. Cuseo (2002) defines cooperative learning, collaborative learning, and team learning as "student centered pedagogies where two or more learners . . . work *interdependently* toward a *common goal*, on a *common task* that culminates with a *consensual decision* or creation of a *common product*." Barkley, et al. (2005) define collaboration as "a structured learning activity' that involves students actively and "engages all students by valuing the perspective each student can contribute from his or her personal academic and life experience." Collaboration also incorporates major features intended to improve student learning, including (1) involving students actively; (2) preparing them for careers by providing opportunities to learn the team-work skills valued by employers; (3) helping students appreciate multiple perspectives while developing skills to collaboratively address the common problems facing a diverse society; and (4) engaging all students through valuing the perspective each one can contribute from his or her personal academic and life experience. The overall design must be intentional, learners must work together (co-labor) actively toward clear learning goals, and meaningful learning must take place (Barkley, et al., 2005). If these features are present, Barkley and her colleagues believe that group learning will contribute to content mastery, critical thinking, and problem solving. In addition, this learning supports the development of interpersonal skills and other non-cognitive factors that are valued in careers and citizenship, echoing the 1993 conclusions of the Wingspread Group.

Collaborative learning environments are most powerful when designed to both challenge and support students' efforts. Bruffee (1993) and Tagg (2003) agree that true collaboration involves not only interactions among students, but between instructor and students, when the teacher becomes a learner as well. Bruffee believes that it is "not up to the teacher to monitor group learning, but rather the teachers' responsibility is to become a member, along with students, of a community in search of knowledge." Tagg states that, if teachers want students to be collaborators who join "together to negotiate the meanings of their learning and their work," then teachers must do the same. Common characteristics of collaborative learning have been identified by educators such as Kagan (1989-90), Johnson, Johnson & Smith (1991), Meyers & Jones (1993), Bruffee (1995), Smith (1996), Millis & Cottrell (1998), Cooper (2003), Cuseo (2003), and Barkley, Cross & Major, 2005)). In general, the literature supports six essential elements for successful cooperative or collaborative learning. These are:

1. **Positive interdependence**, wherein the success of the individual is linked to the success of the group
2. **Promotive interaction**, where resources are shared and students encourage, support, and value the contributions of one another
3. **Development of teamwork, interpersonal and small group skills**
4. **Individual and group accountability**, where each member is responsible for the outcomes of the group
5. **Group processing**, including reflection on the group learning process
6. **Reciprocal responsibility**, where students take greater ownership of their learning

In addition, Millis and Cottrell (1998) stress that collaborative activities result in higher levels of problem-solving than are possible with individual effort alone and that, in this context, "genuine paradigm shifts" occur in students' thinking. Bruffee (1995) calls for "reacculturation" in teaching and learning, thereby modifying or renegotiating our participation in the cultural elements of the communities they are trying to join, which, he says, are "extremely difficult to accomplish alone." Bruffee further insists that collaborative learning assumes that "resisting the task, rebelling against the teacher, and questioning each others' views within a group may be inevitable and often necessary aspects of learning." In any case, such behaviors should be recognized as inevitable (and welcome) elements of rigorous academic expectations for student performance, further underpinning AVID's belief in academic rigor.

According to Barkley, et al. (2005), key elements in successfully implementing collaborative learning include: orienting the student, forming groups, structuring the learning task, facilitating student collaboration, and grading and evaluating collaborative learning. The need to intentionally structure the learning task is supported in Kagan's work (1989-90) where he describes "structures" (as distinguished from "activities") as "content-free ways of organizing social interaction" in the classroom. Structures can be used repeatedly with almost any subject matter at any level at various points in a curriculum. Furthermore, they can be "combined to form 'multi-structural' lessons in which each structure—or building block—provides a learning experience upon which subsequent structures expand, leading toward predetermined academic, cognitive and social objectives," as well as transfer of knowledge. AVID refers to this practice of constructing "building blocks" as scaffolding—where supports are provided as the student develops and learns and are then removed as they are no longer required.

Structures vary, according to Kagan (1989-90, 1994), in terms of function, learning objectives, and the instructional situation, which includes the academic discipline. The teacher designs or adapts a structure based upon how it best fits the learning situation and supports the learner. Barkley, et al., (2005) agree with Kagan that it is essential to design

"an appropriate learning task," and structure procedures to "engage students actively in performing that task." Generally, they suggest, learning tasks should be "open-ended, requiring critical thinking with supporting evidence or arguments." In addition, "tasks should promote controversy, result in some type of group product, and be directed toward a learning goal of the course." Models of collaboration in and outside of the collegiate classroom are supported by recent scientific research on learning and the brain, suggesting that collaborative activities (and structures) help students make essential neurological, cognitive and social connections. For example, Kagan (1994) insists that systematic use of these structures implements some of the most important principles of brain-compatible learning and multiple intelligence. The brain, he says, seeks social interaction, psychological safety, novelty, stimulation, patterns and feedback. Brains are emotional; they process information as well as constructing meaning and require time to process all this input. Cuseo (2002) supports Kagan, asserting that structures "effectively implement several key principles of brain-compatible learning. These include (a) active mental engagement in the learning process—which is associated with an alpha brain-wave state of consciousness that is conducive to learning; (b) social communication; (c) variations in sensory stimulation; and, (d) physical movement."

AVID Postsecondary Strategies for Success, a resource for faculty and other higher education professionals, contains numerous collaborative strategies for teaching and learning. In fact, nearly all involve collaboration or lead to effective collaborative activities. In addition, a number of other resources on collaborative teaching and learning in postsecondary environments are available to college faculty. Kagan has published handbooks on both cooperative learning (1994) and multiple intelligences (1992). While these were designed for secondary teachers, they translate very well into higher education. Cuseo's "Taxonomy" of Cooperative Learning Structures and Collaborative Learning Strategies(2003) is an extremely valuable resource for college faculty and other higher education professionals interested in stimulating engaging group work with students. Barkley, Cross and Major (2005) have provided a handbook for college faculty that furnishes a rich array of collaborative strategies referred to as "CoLTs" or Collaborative Learning Techniques. Finally, Millis and Cottrell ((1998) have edited a series of articles that outline how collaboration has and can be used in a number of academic disciplines. This is an exciting time for students and faculty in colleges and universities. AVID's support and resources can help them help each other toward discovery of self and of subject. Ultimately, teaching and learning are both about constructing knowledge. Collaborative practice not only enhances that process, but leads our graduates toward greater participation in our democracy as well as within increasingly global communities.

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Organization

Research brief prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

Introduction

Students entering postsecondary institutions often find themselves in dramatically unfamiliar living, working and learning environments. They are exposed to many competing activities and responsibilities that must be prioritized—classes and homework, employment and social life, financial requirements and family obligations. Additionally, students must navigate among myriad programs and services as well as sometimes confusing academic and matriculation requirements. New college students—particularly first-generation college students—often have little experience in the cultural and academic environment in which they now find themselves. The development of organizational skills is essential because these students will need to make the most of their time as they adapt to their new surroundings. While adult learners may be somewhat more skilled in dealing with planning and priority setting, the new academic and social situation will also present significant challenges for students who are 24 and older, who are returning veterans, or who are returning to college after some time away from academia.

Organization is an essential part of WICOR (writing, inquiry, collaboration, organization and reading), AVID's foundational curriculum framework. In its standards for high school seniors, AVID indicates that students who practice good organizational skills are better prepared for advanced level courses, participate more during instructional time, interact more constructively with instructors, effectively schedule time for homework, and manage their time through prioritizing and goal setting (AVID Elective Standards, Grade 12). At the college level, however, the need to develop significant organizational skills becomes even more critical: the college environment is more complex and demanding, and faculty and staff expect students to be independent, bringing all the necessary management skills with them. In addition to understanding and coping with the differences between high school and college, the most critical skills for new students include:

- management of their time and energy;
- organizing materials, information, ideas and assignments;
- managing resources for navigating the "hidden curriculum"; and
- planning effectively for academic assignments and projects while also setting long-term educational, employment and social goals.

Students can most effectively be introduced to and asked to apply each of these components of organization and career considerations during a first-year seminar, reinforced by the advising process. AVID *for* Higher Education provides a full curriculum for a first-year seminar course and many of the strategies and activities focus on areas such as time-management, study skills, goal setting and self management: all important attributes of well-organized students.

College "Shock"

Students who come to college directly from high school often have difficulties adjusting because they assume that their new academic environment won't be unlike their secondary experience. An initial key to success for this group is to understand how different "college" is, and to develop skills that will help them successfully maneuver within its parameters. In *College Knowledge* (2005), Conley argues that American education consists of two systems—secondary and postsecondary—that developed in isolation from each other with distinctly different goals and purposes. Most high school students, he found, view college "as some sort of extension of high school." In his interviews of Harvard students, Light (2001) found that a significant source of trouble for many who struggle lies in the fact that they tend to continue to "organize their work in college the same way they did in high school." Conley (2010) reported among his findings that major differences in high school and college courses are that college instructors:

- move at a more rapid pace,
- have different goals and higher expectations for student performance,
- expect students to produce work consistent with the requirements outlined in the course syllabus,
- expect more frequent writing assignments,
- expect students to work independently, ask for help when they need,
- tend to be intolerant of late work, poor excuses, or any form of academic dishonesty, and
- expect students to employ high levels of cognition and evidence-based support.

Overall, college faculty expect students to "take care of themselves in significant ways through independent action and self-initiative" (Conley, 2010). So, in addition to entering a social environment that is dramatically different from what they are used to, learners coming directly from high school are likely to be shocked at the academic rigor, the disciplined behaviors expected of them, and the complexity of their new environment. It all adds up, and pretty quickly, to a daunting mixture. The more complicated and demanding that world is, the higher the level of organization required to navigate it. Whether coming

directly from high school, transferring from another institution, returning to college, entering college after military service, or as a working adult, all students are likely to encounter a variety of obstacles.

AVID *for* Higher Education provides some techniques for students so they can break down their academic assignments and better manage complex academic tasks. These skills include analyzing prompts, determining the "point of confusion" regarding a task or assignment, establishing objectives, and effectively working within learning communities to economize their study time.

Management of Time and Resources

Light (2010) reports that one major source of academic trouble is poor management of time. Sophomore interviewees "who had a great first year" identified time allocation and time itself as a "scarce resource." Upcraft, Gardner, Barefoot & Associates (2006) state that students, for better or worse, "appear to set in place in their first semester the pattern of time allocation that will serve them across their years at college." With these skills, students are able to construct an "architecture" of planning and organization strategies that will serve them throughout their lives. Unfortunately, too many students never learn how to manage time fully, and study time, for example, is seldom allocated properly.

While the organization of time and energy is undoubtedly fundamental, management of self is at least as important, for this ability underlies all successful endeavors. Closely related to the AVID program's focus on "individual determination," and supported by the emphasis of student development theories on self-efficacy, self-management may lie at the very heart of successful organization. Conley (2010) suggests that once self-efficacy increases, students are far more likely to assume responsibility for their own learning. One essential and related aspect of self-management is reflection, a "habit of mind" that AVID stresses as crucial to student success throughout its educational spectrum.

Organizing Materials, Information, Ideas and Assignments

College faculty have high expectations of students, assuming that they will function as independent learners, and be able to manage complex projects and assignments with a high level of critical thinking (Conley, 2010). Concurring with AVID's philosophy of "rigor with support," Tinto (2012) stresses the value of holding students to high expectations which, he says, are "a condition for student success," whereas low expectations are a "recipe for failure." Over time and with sufficient reinforcement and guidance, the skills, attitudes and behaviors that support these expectations become powerful organizational tools, including effective study practices; preparing for tests, exams and other assessments;

and managing large projects or papers that require critical thinking skills and supporting behaviors. AVID has long advocated the use of the Cornell note-taking system for students at any academic level. It is, in fact, one of the cornerstone AVID strategies and comprises a set of essential organizational tools. While there are a number of good methods for organizing and recording material from lectures, class discussions or readings, Cornell Notes provides a complete *system* that takes the student through the cycle of learning—questioning, summarizing, reflecting, reviewing, and assessing. Establishing the habit of regular review of notes from readings or lecture not only enhances memory, it also eliminates the tendency that many students have to "cram" before a test or exam.

Plannng and Goal Setting for Projects, Major and Career

One of Stephen Covey's (1989, 2004) "seven habits of highly effective people" is to *begin with the end in mind*. This concept provides a foundation for effective life planning and provides an important starting point for the student in establishing educational and career goals. One of the hallmarks of AVID's system is helping students organize their academic lives through setting and managing goals—a skill set that's critical at the college level. According to Cuseo, Fecas and Thompson (2010), over two-thirds of new students change their major during their first year of college. Prolonged indecisiveness can lead to serious problems in the second year. Research conducted by Hunter, Tobolowsky & Gardner (2010) tells us that many students struggle to identify a major, even during the latter part of their sophomore year when they need to have made a decision. In their second year, students may not be able to make decisions simply because they're paralyzed by the number of choices available, suggesting that, as Lemons & Richmond (1987)state, identifying and developing a sense of purpose as a student may be a major developmental task. Once again, this underscores the need for students to learn to actively consider and apply their strengths, preferences, abilities, etc., to their learning throughout the first two college years with assistance from advisors and faculty members.

Part of the AVID *for* Higher Education set of services includes participation of mentors/tutors who assist students in determining their "point of confusion." AVID tutors do not do tell students what is wrong with their work, but rather, use the Socratic method of instruction to help students figure out both what they don't understand and also how they can use what they do know to solve their problem or confusion.

Faculty and Administrator Responsibilities

The ability to *organize*, in all its stages and forms—time management, management of ideas and assignments, using available resources, and career and life planning—is essential for the success of new college students. In this connection, Light (2001) cites an administrator who affirmed that the strategy at his college was to "admit a talented group

of students and then just 'get out of their way'." Light, however, insists that this should be the exception to the rule, and that colleges need to do just the opposite—"they should make a thoughtful evidence-based, purposeful effort to get *in* each student's way in order "to help that young adult evaluate and re-evaluate his or her choices, always in the spirit of tying to do just a bit better next time." All his research suggests strongly that when colleges are intentional about assisting students with developing their organizational and planning skills and abilities, they experience higher rates of student persistence, graduation and student satisfaction. AVID *for* Higher Education supports institutions with planning for and developing strong First-Year programs and extending supporting services through graduation. These services include far more than the First Year Seminar curriculum, but include other components that are proven student success strategies, such as advising, tutoring and learning communities.

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The Cornell Note-taking System

Research Brief prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

Experts on college study skills and student success agree that effective note-taking is an essential skill for good college students. Nist-Olejnik and Holschuh (2007) describe good lecture notes as the "meat and potatoes of learning." Staley (2011) contends that being a good student is about "being a full participant in what you're learning, not just a spectator." She says that "getting the most out of class means reading, listening, asking questions, participating, and taking good notes." Marzano, Pickering and Pollock (2001) identify note taking as one of a number of research-based strategies for increasing student achievement. However, note taking has not been widely studied, as Boch and Piolat (2005) suggest, "because of its functional complexity and the need to develop methods in order to carry out such studies." The major purpose of note taking is to record information in a way that it can be retrieved for future use—in the case of college students, to prepare for assessment or evaluation. Belluck (2011) says that when we retrieve information we "are organizing it and creating cues and connections that our brains recognize." Boch and Piolat go farther, stating that the power of reflection is often overshadowed by the storage aspect of taking notes. Reflection, they say, "contributes to the carrying out of a range of intellectual processes, such as making judgments, resolving issues, and making decisions."

Clearly, memory is a key component of note-taking as the first step in a process of recording information that can later be retrieved and used. Kornell (2011) uses the term "stability bias" to refer to the tendency to act as though one's memory will remain stable in the future, whereas "human memory is anything but stable." This suggests the need to develop strategies that will enable us to retrieve information from memory in ways that we can use it. Metacognition, which involves drawing inferences, reflecting on the notes, and using experience to identify mnemonic cues is critical, Kornell says, in memory retrieval. In discussing the implications of "stability bias," Boch and Piloat (2005) state that notes "allow interim pieces of information to be 'stabilized' for use at a later stage in the task, thereby easing the load on the working memory. Effective note taking clearly involves a complex set of tasks involving, according to Stahl, King & Henk (1991) at least three skills: "comprehension through note taking, producing notes, and the conscious management of the activity as a whole." They agree with Boch and Piolat that these skills need to be taught, that learning to take notes well undoubtedly takes as much time as learning to writing in a relatively experienced way" (Boch and Piolat).

Understanding how complex effective note taking is, AVID supports a system that engages the whole student, using all WICOR skills (writing, questioning, collaborating,

organizing and reading). While there a number of good note-taking models, AVID has adopted the Cornell Note-taking System as a cornerstone strategy for student success in college. Cornell Notes engages students not only in the recording of notes, but also requires reflection and a proven system of reviewing that involves both retrieval and application of cognitive skills to mastery of content. The Cornell Note-taking System was developed at Cornell University in 1949 by education professor Walter Pauk who, frustrated by his students' poor test scores, designed a process of taking notes that his students could later use as effective study guides. Now considered "one of the most influential professors in the field of developmental education and study" (Kerstiens, 1998), Pauk described this system in his hallmark study skills text, *How to Study in College,* first published in 1962, and now in its ninth edition. This system has been continually refined and enhanced by Pauk and others, incorporating research on memory, learning theory and brain function. Stahl, Kind, and Henk (1991) suggest that "encoding, which occurs as the brain processes information by transferring it into a different format" is the most important aspect of note taking. According to Jacobs (2008), the Cornell system—which he describes as an encoding process—is more "learner-directed" than other systems because, rather than prompting the student for information, it requires a high degree of processing on the part of the student. The Cornell Note-taking System needs to be explicitly taught by instructors and consistently practiced by students. "Taking effective notes requires work; it requires time; and it forces you to be actively engaged in what you're reading or listening to" (Pauk & Owens 2008). Cornell Notes is not intended to change how instructors deliver information, but rather how students record and interact with that information

The Cornell Note-taking System (sometimes referred to as "split-page" notes) requires the student to use a format in which the paper is divided into three sections as follows: the right-hand two-thirds of the page are used for taking notes from lecture or text; the one-third on the left-hand side is reserved for "cues" (Pauk, 1993), where the student later creates questions from the notes, writes down important terms, and notes areas that need clarification. The bottom fourth of the page is used during the review process to summarize and reflect on the notes. Pauk (1993) recommends that the student review and interact with the notes at least three times in order to master the material, which also serves to eliminate "stability bias." This critical process includes (1) reading over notes immediately after class to identifying main ideas; (2) converting key ideas into questions; and (3) writing a summary of the notes. Writing a reflection on the notes is an additional step that Pauk says is "perhaps the most powerful learning tool . . . , thinking about and applying the facts and ideas" contained in the notes. Faculty familiar with Cornell Notes often use Costa's Levels of Intellectual Functioning to teach students to write increasingly complex (level one, two and three) questions, thereby providing a cognitive scaffold for students. AVID encourages instructors to intersperse their lectures with

opportunities for students to share notes with their classmates and discuss points of confusion or those that need further elaboration, thereby engaging students in the material through collaboration. Another modification that AVID has made in the Cornell Note-taking System is the introduction of the "Essential Question." It is always important for students to have a clear idea of the purpose of a reading or lecture before they begin their reading assignment or start taking notes in class. AVID encourages faculty to provide a question at the beginning of their lectures and when they make assignments, so that students can take and review notes using the essential question as a focus.

Cornell Note-taking is a complete *system* designed to enhance memory, guiding students through the cycle of learning—questioning, summarizing, reflecting, reviewing, and assessing—and incorporates all WICOR strategies. It includes not only the actual taking of notes, but also what students do with their notes after class. AVID has enhanced the Cornell Note-taking System by stressing inquiry, using collaboration and feedback for review and revision of the notes, and requiring students to summarize their notes as well as reflecting on them in writing. This is much more than a strategy for recording information. In a number of AVID postsecondary institutions, faculty teaching across the disciplines find that student achievement improved significantly when the Cornell system was used.

There are a number of variations of the Cornell system that can be effectively applied in certain situations. For example, Konrad, Joseph & Eveleigh (2009) reviewed several research studies on "guided notes," a process whereby the instructor provides students with an outline of the lecture with blanks where key concepts and terms are to be inserted by the student during the lecture. While these studies were conducted in grade schools, the researchers found that guided notes were particularly effective for students with disabilities. This method could be combined with the teaching of Cornell Notes as a first step in a scaffold built for postsecondary students who are unfamiliar with note taking or have disabilities that make using the standard Cornell method initially difficult for them. Pardini, Domizi, Forbes and Pettis describe "parallel" note taking as an effective and useful strategy for students who have difficulty using online notes, or "Webnotes." In this method, the student puts a printed copy of Webnotes in a three-ring binder and takes "parallel" notes on the back pages opposite the Webnotes, where a line has been drawn to create a "split page." These adaptations of Cornell Notes both honor the complexity of note taking, and incorporate review and reflection as part of the processes of making and interacting with notes.

At first students may resist using Cornell Notes because it forces them to think about their notes in unfamiliar ways. But students who persist in using this system, and faculty who support student use of the Cornell system over time, agree that it improves academic performance. Using the Cornell Note-taking System involves all five WICOR

strategies, continuously requiring students to write, organize, question, read, summarize, and reflect. Taking notes using the Cornell system is one of the most valuable, and valued, skills that students will develop. It works because it requires students to learn and apply a complex set of competencies and a series of steps designed to enhance not only memory, but understanding, transference of knowledge, and real-world applications. AVID's adaptation of the Cornell system provides faculty and students with clear and concise instructions and suggestions for practice, supported by a variety of handouts for students that have been refined and improved throughout the past three decades.

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The Socratic Seminar

Prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

The Socratic Seminar is a classic strategy used by AVID faculty that engages students in deep learning by providing them with structured opportunities to practice skills in critical thinking, reading, collaboration, inquiry and dialogue. Students continue to improve in solving complex problems as they develop these abilities, gaining confidence in more advanced levels of inquiry and discourse. Grounded in Socratic methodology, the Socratic Seminar is a rigorous, structured activity in which students pose and respond to questions regarding a text or artifact that raises complex issues.

The Greek philosopher Socrates believed that enabling students to think for themselves was more important than filling their heads with the right answers. Socratic questioning calls for a question to be answered with another question, as the participants gradually gain understanding of the complexities of an issue or idea. Socrates (469-399 BCE), the Athenian son of a stonecutter and a midwife, characterized his own profession in terms of his mother's midwifery—helping the students "deliver" their own learning (Maxwell, 2009-2011; Belenky, et al., 1986). Socrates engaged in philosophical conversations in public and private gatherings, using questioning as his primary investigative tool. According to Maxwell, he "became the student and made those he questioned the teacher." These conversations and their methodology became the subjects of Plato's best known Dialogues.

While Socratic questioning has long been accepted as the primary method of instruction in law schools, it also appears to be regaining broad credibility as an effective teaching/learning strategy in undergraduate education. It is particularly effective in the development of those cognitive strategies loosely referred to as "critical thinking." Derek Bok (2006), former president of Harvard University, lists the following abilities as the "indispensable means of making effective use of information and knowledge": asking pertinent questions, recognizing and defining problems, identifying the arguments on all sides of an issue, searching for and using relevant data and arriving in the end at carefully reasoned judgments. All of these skills are honed during a Socratic Seminar.

The Socratic Seminar is the embodiment of Socrates' belief in the power of asking questions, prizing inquiry over information and discussion over debate. Socratic Seminars acknowledge the highly social nature of learning and align with the work of John Dewey, Lev Vygotsky, Jean Piaget, and Paulo Friere (Filkins, 2011). The model for using the Socratic Seminar in contemporary schools and colleges was developed by Mortimer Adler

and the Paideia Group in the early 1980s. The Paideia Program is based on the belief that humanity is defined by the capacity and desire for learning and argues for a public education that is at once more rigorous and more accessible. In *The Paideia Proposal* (1982), Adler argued that education should be rooted in three goals: the acquisition of knowledge, the development of intellectual skills, and the enlarged understanding of ideas and values. The third goal, according to Adler, can be achieved through Socratic questioning and active participation using books (not textbooks), other works of art, or involvement in artistic activities.

The National Paideia Center defines a Socratic Seminar as a "collaborative, intellectual dialogue facilitated with open-ended questions about a text," which may be writing (fiction or non-fiction), a newspaper article, a poem, a journal, a speech, a work of art, or a piece of music (www.paideia.org). According to the Northwest Association for Biomedical Research (NWABR), good discussions in a Socratic Seminar occur when participants study the text closely in advance, listen actively, share their ideas and questions in response to the ideas and questions of others, and search for evidence in the text to support their ideas. The discussion is not about right answers; it is not a debate. Students are encouraged to think out loud and to exchange ideas openly while examining ideas in a rigorous, thoughtful, manner" (www.nwbmr.org).

Not only has the model developed by Adler been widely adapted at the high school level, it has been effectively implemented in leadership training and other diverse postsecondary settings. For example, the Aspen Institute's Socrates Program uses Socratic seminars to train emerging leaders, including Congressional staffers (www.aspeninstitute.org The NWABR employs Socratic seminars to examine ethical issues, such as stem-cell research (www.nwabr.org). AVID has long employed the Socratic Seminar as a foundational strategy, calling on students to engage with a text and with each other through writing, inquiry, collaboration, reading and organizing ideas and information.

Based on thirty years of experience with Socratic Seminars, AVID has developed a structured model for teachers, including a set of student materials. Beginning with the selection of a text or prompt, AVID's model incorporates writing, inquiry, collaboration, organization and reading—their foundation for deep learning (WICOR. Students are assigned to read (or otherwise respond to) the text or artifact, using critical reading skills such as marking the text and developing high level questions, using inquiry strategies which may include Costa's Levels of Intellectual Functioning. Taking Cornell Notes while studying the assigned text is also an excellent strategy to use in preparation for a Socratic Seminar. Before the seminar begins, students share their questions, and one is selected to start the seminar. Seated in a circle, students then ask clarifying questions and/or pose

responses; the seminar continues in this manner until all questions are answered or time is up. The instructor is involved as a facilitator, redirecting the dialogue as necessary, and monitoring the process. Following the seminar, the activity is debriefed and students are provided with an opportunity to make final comments; they are then asked to reflect on the experience in writing. In its guidelines for Socratic Seminars, Studyguide.org suggests that students should "respond to one another with respect by carefully listening instead of interrupting." Paraphrasing the essential elements of another's ideas before responding (which AVID also recommends) facilitates clear communication. Dialogue participants should "look each other in the 'eyes' and use each other's names," thereby enhancing socialization, reinforcing appropriate behaviors, and promoting team building (http://www.studyguide.org/socratic_seminar.htm).

James Maxlow, an AVID teacher, describes using Socratic Seminars in his classes, including guidelines for text selection. An effective source for a seminar, he believes, should provide stimulation for the "discussion of relevant moral, ethical or emotional issues" and should be relevant or "relatable" to the lives of the participants. He also stresses that a Socratic Seminar "should always be a discussion (the exchange of ideas for the purpose of enlightenment) and should never be a debate (the confrontation of ideas for the purpose of persuasion)." Facing History and Ourselves, a thirty-year old organization dedicated to combating bigotry and nurturing democracy through history education, describes the goal of the Socratic Seminar as "students helping one another understand the ideas, issues, and values reflected in a specific text." By facilitating discussion rather than asserting their opinions, students listen, make meaning, and discover common ground, "working together toward shared understanding."

The Socratic Method has great potential for increasing college student persistence and success rates by addressing the "critical thinking" issues that Bok (2006) identified. Numerous critical thinking skills are integrated throughout the seminar process, including teaching students to engage in dialogue about abstract concepts, which promotes cognition through analysis of text, synthesis of ideas, evaluation of concepts, and inferential reasoning. Socratic Seminars also stimulate curiosity and leads participants to see that issues are more often shades of gray than right or wrong—a common characteristic of new college students. Additionally, this strategy affords opportunities for students to understand the complexities of a text, share ideas, and incorporate real world connections. Because there is often no right or wrong answer to a problem or question, students are motivated to take intellectual risks. The Socratic Seminar creates a safe intellectual environment, leads to collaborative learning, creates curiosity, builds confidence and self-efficacy among participants, and develops the capacity to be accountable for creating one's own learning. This powerful model can be used by faculty in any discipline to engage

students in discussing and evaluating concepts and texts in all content areas, be they musical scores, paintings, mathematical theorems, or scientific experiments.

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AVID's Socratic Tutorial in Higher Education Institutions

The AVID Socratic Tutorial Model is a collaborative learning environment to support student learning by asking probing questions. The AVID tutor facilitates the learning process by teaching and modeling the inquiry-based process to the students. The tutor's role includes listening, identifying composing problems, and helping the student solve those problems through posing a series of questions. Students prepare for the tutorial by taking Cornell notes in class, reflecting on their notes and identifying "points of confusion." In the collaborative setting, students ask and answer questions to resolve their "points of confusion." By developing the ability to think for themselves, students are empowered to take responsibility for their learning.

Review of Literature

Prepared for AVID *for* Higher Education by Harriet Howell Custer, Ph.D.

AVID's tutorial model has proven to be extremely successful as a powerful teaching/learning strategy at the middle and high school levels. This same model, which has its roots in higher education, has the potential for revolutionizing how colleges and universities deliver tutoring programs. The foundation of the AVID model is collaborative inquiry, rooted in Socratic methodology and the university tutorial— the earliest documented teaching methods. In an investigation of how closely eight California AVID Demonstration schools follow the AVID implementation model, AVID teachers "invariably listed tutors and the tutorial as the centerpiece of the program, the key ingredient to success" (Guthrie and Guthrie, 2002).

In medieval Western Europe, university students came from the nobility or clergy and were taught primarily by masters, or tutors, who were assigned to work with individuals or small groups of students. Before the invention of the printing press provided broad access to books, tutors also lectured to their students, expecting them to memorize or take written notes. Oral debate, or "formal disputation," was a more "vigorous activity, where one student, or a group of students, opposed one another in intellectual argument" (Scott, January/February 2006). The Socratic Method, in which the tutor uses questioning to help the student arrive at a correct conclusion, was often applied during tutoring sessions (Lasiewicz, 2008). The tutorial model became the primary methodology of the great English universities, where students lived and studied with their tutors or "dons," a model that persists today. Early American universities, such as Harvard College, were modeled after Oxford and Cambridge. However, as American higher education

expanded, tutorials gave way to more efficient and didactic methods such as lecture—a technique which, for a number of reasons, has outgrown much of its usefulness. It is somewhat ironic that AVID, whose proven central philosophy that all students can succeed in a rigorous, supportive learning environment, has successfully adopted the Socratic tutorial—an instructional model that all but disappeared as American higher education became democratized.

The Socratic Method is generally defined as a form of inquiry and debate between or among individuals with different viewpoints, wherein asking and answering questions stimulates critical thought and illuminates ideas. Socratic questioning, specifically, calls for a question to be answered with another question, as the participants gradually gain understanding of the complexities of an issue or idea. Socrates (469-399 BCE), the Athenian son of a stonecutter and a midwife, characterized his own profession in terms of his mother's midwifery—helping the students "deliver" their own learning (Maxwell, 2009-2011). Socrates engaged in philosophical conversations in public and private gatherings, using questioning as his primary investigative tool. According to Maxwell, he "became the student and made those he questioned the teacher." These conversations and their methodology became subjects of Plato's best known Dialogues. The "classic" Socratic Method is essentially "deconstructive," using creative questioning to dismantle and discard preexisting ideas in the search for knowledge. This pedagogy has evolved, however, into a more philosophically "constructive" model, where individuals are guided inductively (or guide each other) through questions that lead to knowledge in small steps. When an individual exposed to Socratic questioning admits to him/herself that an idea was wrong or inadequate, her or she is "freed from the constraints of the previous understanding" and comes to a place internally where giving birth to new ideas is possible (Maxwell, 2009-2011).

While Socratic questioning has long been the primary method of instruction in law schools, it also appears to be regaining broad credibility as an effective teaching/learning strategy in undergraduate education. Finkel (2000) defines "inquiry" as the "*process* of attaining knowledge," suggesting that it lies (or should lie) at the foundation of any seat of higher learning. In his study of excellence in college teaching, Bain (2004), found that creating a "natural" learning environment is an essential principle:

> "natural" because students encounter the skills, habits, attitudes and information they are trying to learn embedded in questions and tasks they find fascinating—authentic tasks that arouse curiosity and become intrinsically interesting; "critical" because students learn to think critically, to reason from evidence, to examine the quality of their reasoning using a variety of intellectual standards, to make improvements while thinking, and

> to ask probing and insightful questions about the thinking of other people (p. 99).

Five key elements comprise that natural environment: (1) an intriguing question or problem; (2) helping students understand the significance of the question; (3) engaging students in some higher-order intellectual activity; (4) assisting students in answering the question; and (5) leaving students with a sense of direction by asking "What's the next question?" or "What can we ask now?" (Bain, 2004). Bain's findings point to a student-focused pedagogy, where students are "helped" to discover answers to the question, but are not "given" the answers. Thus the teacher becomes a fellow learner (as was Socrates), rather than an "all knowing" repository of knowledge. Finkel, in *Teaching with Your Mouth Shut* (2000), says that "inquiry-centered teaching becomes more powerful when it emphasizes *group inquiry.*" He also asserts that inquiry is inherently democratic: it assumes no Authority. Furthermore, according to Finkel, inquiry requires trust in the individual's intellectual power as well as in capacity of the members of a group to engage with each other in intellectual discourse—in the process of obtaining knowledge (p. 57).

Maxwell (2009-2011) believes that in an environment where people are questioned in friendly, respectful and useful ways, they are "empowered" and come to value good questions as well as the process of questioning. They are "inspired to see questioning as a fundamentally important part of life." Palmer (1998) describes how collective inquiry transformed the education of medical students, resulting in improved medical ethics and bedside manner (pp. 128-129). Palmer also found that "communities of truth," such as those created by the medical students he studied, have "pedagogical power because they allow students to do their learning together" (p. 131). Hence, the Socratic Method creates a safe intellectual environment, leads to collaborative learning, creates curiosity, builds confidence and self-efficacy among participants, and develops the capacity to be accountable for creating one's own learning. According to Phillip Areeda, who studied Socratic methodology in the teaching of law, the "internalization of questioning" is the "essence of reasoning and the prize of the Socratic Method" (2006).

Cuseo (1991, 2010) writes extensively about the need for student learning to be approached holistically, addressing all aspects of human development—intellectual, emotional, social, ethical, physical, personal, spiritual and vocational. Reporting on the results of his study of how intellectual development is shaped by racial stereotypes, Steele (1997) found that the following strategies are effective for all students: optimistic teacher-student relationships, challenges versus remediation, and stressing the "expandability" of intelligence. The additional characteristics of a positive learning environment—such as nonjudgmental responsiveness and building self-efficacy—were also identified in this study.

While cooperative and collaborative learning have similar goals, there is a large body of literature that seeks to define and contrast these methodologies. Cooperative learning strategies were developed primarily for K-12 educational settings, whereas collaborative approaches were developed for application in colleges and universities (Bruffee, 1995). However, the two models can be viewed as sequential: "cooperative" learning focuses on teaching the processing steps necessary for fully "collaborative" work. According to Panitz (1996), the fundamental approach to cooperative learning is "teacher centered, whereas collaborative learning is more student centered." It's beyond the scope of this paper to analyze the distinctions beyond these two approaches, apart from what's been broadly outlined above. Clearly, a number of characteristics are common to both methods and so, for the purposes of this paper, "cooperative" and "collaborative" will be used interchangeably. From this perspective, Jones and Jones (2008) analyze the work done by Johnson, Johnson and Smith (1991), finding that their identification of the "five pillars" of cooperative learning translates well into the college classroom. According to Johnson, Johnson and Smith, cooperative learning is a relationship developed among a group of students that requires positive interdependence, individual accountability, interpersonal skills, face-to-face promotive interaction, and subsequent processing. Jones and Jones go on to enumerate research findings indicating that, compared to other forms of instruction, cooperative learning helps students become better listeners and communicators, stronger team members, and more effective leaders. Students learn to work with others to accomplish mutual goals, thereby gaining social skills and appreciation of diversity. Additionally, students who engage in cooperative or collaborative learning come to value self-reflection and accurate self-assessment (pp. 62-64). All these elements of student growth are components of holistic development as defined by Cuseo (2010).

Collaborative teaching methods, particularly those that involve Socratic inquiry, are designed intentionally to create structured environments in which students learn from each other. Collaboration is defined by Barkley, et al. (2005), as "a structured learning activity that addresses major concerns related to improving student learning. It involves students actively . . . and engages all students by valuing the perspective each student can contribute from his or her personal academic and life experience" (p. 10). Moreover, Steele (1997) adds an important element to this definition when he argues that Socratic strategies provide a "safe teacher-student relationship in which there is little cost of failure." According to Barkley and her colleagues, group learning advantages students who are both well-prepared (who benefit from having to formulate their thoughts and articulate them to others) and underprepared students (who benefit from the learning of their peers). They also make the case that collaborative learning environments are particularly beneficial to non-traditional students, an effect documented in a number of research studies. For example, Treisman (1985), in his well-known study at Berkeley of African American math and science majors, found that the five-year retention rate was 65 per cent for those

involved in collaborative learning groups, compared with 41 percent for those who were not. Millar (1999), reporting on a study of the effectiveness of learning groups at the University of Wisconsin, describes the following finding: students who learned through intensive group work with difficult problems and instructors who functioned as guides were twice as likely as other students to earn a "B" or better in calculus. The movement toward collaborative teaching and learning as a primary engagement strategy in colleges and universities suggests a positive trend. In fact, according to Bruffee (1995), an important goal of collaborative learning is the "structural reform and conceptual rethinking of higher education."

When it's effective, tutoring is a form of collaborative learning—whether it involves a tutor and one student or a group of students. In a few private liberal arts institutions, such as St. Johns Colleges and Williams College, the group tutorial has been retained as a primary teaching/learning strategy, generally supporting small seminars. However, elsewhere in higher education, tutorials have often been relegated to a service for students who are underperforming and identified as needing assistance. In many colleges, tutoring is content-based, where the tutor (often a peer) relates content information to the student being tutored or, in the case of a discipline such as mathematics, works with the student in problem solution. Jim Nelson, CEO of AVID, writes that "the tutor's role is not one of an 'answer giver,' but instead is one of a guide, using probing questions to lead students to the answer. Through this process, students are taught analytical and critical thinking," a skill that they can apply in other academic settings (Nelson, Summer 2009). In their study of Socratic and didactic tutoring, Rose, et al., found that students learn more effectively when they are given the opportunity to discover knowledge for themselves. Additionally, a prominent component of effective tutoring was found to be collaborative dialogue between student and tutor (Rose, et al., ND).

Many colleges have established centers where tutoring in writing and mathematics are provided and Supplemental Instruction has been successfully implemented as a group learning strategy. In reporting the results of their study of twenty "strong-performing" colleges and universities identified as Documenting Effective Educational Practice (DEEP), Kuh and his colleagues found that these institutions take tutoring very seriously—meaning a "great deal of responsibility and a great deal of training for tutors" (2005, p. 196). Barefoot, et al. (2005), in their study of first year college programs, found that, because both writing and mathematics tutoring lend themselves to group work, "much of the training [of tutors] is in the area of collaborative learning" (p. 133). As an example, they describe the program at Kalamazoo College, where math tutors guide students rather than tell them how to solve problems. They follow a format of asking students to "identify the starting point of solving a problem, then ask that students work on problems individually and in pairs" (p. 132).

However, while many excellent institutions—the DEEP colleges, for example—promote strong support for out-of-class collaboration among students, tutoring (including peer tutoring in many writing centers) appears to be limited, for the most part, to a didactic, rather than a collaborative model. As Barefoot, et al., stress, the training of tutors is critical to a strong program. Tutors, particularly peer tutors, cannot be expected to create either a Socratic or a collaborative learning environment for students without extensive training and support in which a specific set of skills is intentionally taught and evaluated. Furthermore, tutoring itself has positive learning effects for the tutor, which would be enhanced by substantive training and support. Annis (1983) found that peer tutoring appears to be a "potentially powerful technique for increasing all levels of student learning." In her study, "tutoring resulted in significantly greater content-specific and generalized cognitive gains than being tutored" (p. 39), a particularly powerful incentive for interactivity in purposeful inquiry.

AVID's tutorial model marries the intellectual rigor of the Socratic Method with the cognitive and interpersonal goals of intentional collaborative learning environments. According to Contreras et al. (2009), AVID's model (which requires a minimum of sixteen hours of training for tutors) is based on four principles adapted from the work of Reigstad and McAndrews (1984) who developed a structured, inquiry-based system of conducting college tutorial writing conferences, which included an intensive tutor training system. Freedman (1987) writing about her application of this model reflects that the important components are students thinking about and analyzing their own writing and verbally articulating their thoughts. The tutor's roles include listening, identifying composing problems, and helping the student solve those problems through posing a series of questions. The principles as adapted by AVID are to (1) establish and maintain rapport with the students; (2) make sure the students do the work; (3) remember that tutors do not have to be experts; and (4), establish three forms of tutorials--student centered, collaborative, and teacher-centered (pp. 98-99). AVID's modifications incorporate essential AVID teaching/learning principles: writing, inquiry, collaboration and reading (WICR). While reading and writing are important parts of the student's preparation for the tutorial, the tutorial itself is characterized by a focus on inquiry and collaboration. Socratic questioning is the fundamental methodology used in a structured collaborative environment where students are guided by the tutor to help each other find answers to questions that each student brings to the tutorial session.

Inquiry is elementary to application of AVID founder Mary Catherine Swanson's central philosophy of "rigor with support." This approach to teaching and learning has evolved not only from the tradition of Socratic questioning, but from Bloom's taxonomy, as adapted by Costa, into three levels of intellectual inquiry. In 1956, Bloom chaired a committee of college educators who proposed a classification of objectives set for student

learning, published in the *Taxonomy of educational objectives: the classification of educational goal.* Educational objectives were divided into three "domains"—cognitive, affective and psychomotor—each of which was further separated into six levels, revised in 2000 into: *remembering, understanding, applying, analyzing, evaluating* and *creating*. Each of these levels describes learning at progressively higher levels and is dependent on the student having attained prerequisite knowledge and skills at lower levels. Verbs that describe the activity required at each level have also been developed and are widely used in curriculum development, as well as in creating learning outcomes and assessing of student learning. It is worth noting that one of Bloom's goals in creating the taxonomy was to create a more holistic form of education by motivating educators to focus on all three domains. As a component of his model of cognitive coaching, Costa (2001) revised Bloom's taxonomy by collapsing it into three levels of intellectual functioning. It is these three levels that AVID has adopted and that provides focus for teaching inquiry and training tutors. In this context, students are taught to write and ask Level Two and Three questions as part of their training in note taking, writing, reading, and many AVID classroom methodologies. For example, instead of posing a question that requires them to define a concept (Level One), they would develop questions for which explanation (Level Two), or hypothesis (Level Three) is required.

AVID's Socratic tutorial model is an example of intentional design, requiring certain preparation and activities on the part of the students and significant training for tutors. Collaboration is, AVID believes, the cornerstone of successful tutorials (Daws and Schiro, 2008). Students prepare for the tutorial by taking Cornell notes in class, reflecting on their notes and identifying material that they are having trouble with—or "points of confusion." The tutorial may be content-specific, or open to a problem in any class. Each student develops a Level Two or Three question from his or her reflection and prepares to present the question during the tutorial. The focus at this step is to develop students' ability to think for themselves and to stimulate metacognition by analyzing their levels of thinking. Typically, a student begins the tutorial by presenting a question to the group (which is made up of no more than seven students). The student begins the presentation by clearly articulating what they know about their question and how he or she arrived at the "point of confusion," making it clear to fellow group members that a thorough attempt to find the answer has been made. Group members and the tutor ask questions to guide the student presenter through the inquiry process and check his or her understanding of the presented question by asking further clarifying questions. These steps are repeated for all group members. At the conclusion of the tutorial, students write reflections on their learning, including both the content and the process. Students thus work together while taking responsibility for their own—and the group's—learning. The collaborative process provides an opportunity for students to discover new ideas and take ownership of their learning. The tutor serves primarily as a facilitator (as opposed to a content expert),

making sure that each student's question is addressed, and aids the group by posing questions that help to move the process along. With the encouragement of the tutor, students feel comfortable enough to openly share their ideas with their peers (Daws and Schiro, 2008). All WICR skills are addressed through these tutorials. In addition, students improve their listening skills and develop presentation skills. Tutors also help students to understand their own questions so that they can identify points of confusion, which frequently leads to more effective solutions, answers, and enhanced understanding.

The difference between AVID's model and other tutorial models at any level of education is that the design is intentional, the focus is on using Socratic questioning, and the process is fully collaborative with the support and guidance of the tutor. Training of tutors is an essential element of this model, whether the tutor has had experience with AVID or not. The process of creating and sustaining a collaborative environment and developing inquiry skills requires scaffolding, which even the most experienced teachers view as a complex foundation for learning. Whereas this model is used in AVID schools as a peer group activity, it can also be adapted for use in a one-on-one tutorial situation or in a teacher-student setting. Furthermore, once college students are comfortable with the process of inquiry-based collaboration (and the scaffolding has been removed), they can apply the model in their own study groups or pairs without the aid of a tutor. Residence halls and sites set aside for group learning, such as an AVID Center, provide excellent venues for such application of structured group inquiry. AVID's model of Socratic tutorial is intentional, structured, and involves the best aspects of Socratic dialogue with collaborative inquiry. AVID's success at the secondary level is well documented. According to Cuseo (2011), in fact, it would be difficult to "find any other educational support program—at any level of education—that has been subjected to more rigorous data analysis, and whose results have been more consistently replicated and disseminated than the AVID system." As Jim Nelson noted, AVID's tutorial system is designed to guide students to a place where they take responsibility for their own learning, creating lifelong learners. This is what Socrates intended with his dialogues and is, or should be, the very purpose of higher education.

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