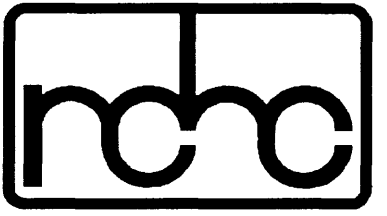
TEACHING AND LEARNING IN HONORS

Edited by
CHERYL L. FUIKS
and
LARRY CLARK

A Publication
of the
National Collegiate Honors Council



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TEACHING AND LEARNING IN HONORS: An Introduction

RINDA WEST

> First there must begin in the classroom a dialogue — a dialogue between professor and student, between student and student, but most importantly, between the student and himself. The dialogue must be open and frank... [It] must begin in the classroom, but it must extend into the entire life of the student.... Secondly, the classroom experience must pose a threat. The student must be threatened; he must be driven outside himself; he must be compelled to question himself and his values and the values of those among whom he lives.... This is not to say the classroom should breed insecurity; it means the student should be thrown into a state of creative tension in which the foundations for the only valid security can be laid, that security which rests on individual thought. Finally, the students must be shown in the classroom a vision. So often in a college course the individual sees only a textbook, a syllabus, a lecture, an hour quiz, the final exam and a passing grade. He must be led to see that...beyond the course and the daily preparation lies a discovery, the reward of which is far greater than a diploma or a Phi Beta Kappa key. (Norton F. Tennille in Robertson, 1966, p. 54)

This passage expresses the thoughts about honors education of Norton F. Tennille, an honors student at the University of North Carolina. It offers us as honors educators insight into the value to students of what goes on in our classrooms, the drive for challenge that spurs someone into an honors program, the intrinsic reward that satisfies longer and more thoroughly than any grade, prize or degree. Tennille also expresses a key quality of students who thrive in honors: they treat challenge as adventure, not as threat, and they seek to integrate new ways of thinking into their entire lives.

This monograph has grown out of the work of the NCHC Teaching and Learning Committee; it is intended as a basis for discussion among faculty members teaching honors courses. It provides honors directors a resource that may be given to new honors faculty members and a starting point for conversations in new honors pro-

grams. More than that, however, we believe that the articles included will stimulate all honors faculty members to thoughtful reflection and dialogue about their pedagogy.

Consistently, honors educators report that what they teach is thinking; this approach has come to be called "critical thinking," and it offers students the sort of challenge Tennille advocates, a challenge to the students' previous world views and their habitual ways of developing their ideas and opinions. Teaching students to think means teaching them to consider multiple points of view, to scrutinize evidence, to make meaning in a deliberate and responsible way. Many of us, as professionals, entered our fields because their ways of making sense of the world seemed natural. Our task as educators is to make what seems natural conscious so we can initiate those students to whom our disciplines are not self-evident and to make available to them the values, techniques, conventions, and assumptions that enable us to construct knowledge.

Perhaps the most consistent theme in this monograph is the double demand that honors education provide both challenge and support. Tennille emphasizes the challenge, but he does not discount the value of support. Building a community and a culture that value critical thinking can help students to come to *desire* to engage in critical thinking *even when to do so may threaten cherished ways of thinking.* Students — people — rise to challenges when they believe the community values them, will not let them founder, and offers them the help they need to succeed. Collaboration, intentional community-building, and consistency in community values stimulate students' intellectual, social, moral and emotional growth and support them as they integrate new values and practices into their lives.

The articles move from theory to practice. Grounded in recent research on honors students, the monograph considers theoretical issues in honors teaching and then moves to consider specific pedagogical techniques and disciplinary examples of honors courses. Throughout, we assume the value to honors faculty members individually and collectively of metaprocessing their teaching. We hope that this monograph will enable honors faculties to discuss the values and assumptions that underpin both their programs and their courses, to examine various goals and ideals of honors education, and to consider how these impact recruiting, rewarding, and evaluating honors students.

The Goals of Honors Education

While there are almost as many kinds of honors programs as there are programs, the Teaching and Learning Committee of the National Collegiate Honors Council has found significant agreement on the goals of honors education and some important similarities among faculty members teaching in honors. To provide students with a balance of challenge and the support they require to be able to respond to challenge, honors courses often embrace teaching strategies that empower students to take ownership of course material and that foster learning through active engagement. The goals of honors education direct the enterprise; they include developing students'

- self-reflectiveness;
- ability to reason;
- ability to express themselves in speech and writing appropriate to the discourse community while remaining authentic to the student's individuality;
- ability to integrate and contextualize information;
- passion for learning and sense of wonder;
- ability both to collaborate and to work independently;
- appreciation of the common humanity of all people and gratitude for human differences;
- capacity to commit to a position, recognize that it may change, and tolerate uncertainty and ambiguity.

That is, honors courses should contribute to students' intellectual, emotional, moral and social maturity. They should prepare people to excel in a competitive world and to become people who can make a new world.

Honors Faculty

Honors faculty members typically bring to their work characteristics, attitudes, and habits that enable them to connect with students and foster their growth. We find that honors faculty:

- let their passion for their discipline shine through their teaching. Such teachers remember what drew them to their subject as young people and stay connected with their own enthusiasm.
- show their students how the subject affects them as people, how they apply both the content and the approach of their discipline to their daily lives.

- respect students and see them as adults with interesting points of view.
- do not expect students to be reflections or clones of the professor.
- remember how it feels to be a learner, a novice.
- do not allow personal feelings to spill into favoritism in the classroom or grade book.
- enjoy a challenge from students and can say, "I don't know."
- take some risks.
- accept and incorporate criticism.

While the variations in honors programs and institutions are certainly wide, characteristically, the faculty, if not the courses, are interdisciplinary. Honors, therefore, offers to faculty members the opportunity to transgress boundaries, the risk and excitement of community, the synergy of sharing power. Honors is a form of faculty development. While some institutions have a designated "honors faculty," in most colleges and universities this community is more fluid, allowing for new individuals and new disciplines to enter the mix from term to term.

All these features mean that, when faced with the question, "Is there really a distinction between 'honors teaching' and good teaching?" we are likely to respond that honors presents a different configuration — within the classroom, in the curriculum, and in the blend of research and teaching. We hope that this monograph can provide a stimulus for further faculty development among honors instructors.

Teaching and Learning in Honors

The monograph opens with Larry Clark's study of the research on characteristics of honors students beyond their academic superiority. Clark uses personality measures to give us insights about the learning styles of honors students; other studies provide a look into the family background and personality characteristics of honors students. Clark's research strongly underscores the value of providing a supportive environment for honors students.

Larry Crockett's article on the hierarchy of Data, Information, Knowledge and Wisdom offers honors instructors a useful rubric for explaining different kinds of knowing to students. He locates honors teaching in the knowledge/wisdom end of the spectrum and speaks of ways to move students from mastery of information to the con-

struction of knowledge.

Linda Gillison's article, "Community Building in Honors Education", addresses the role the community plays both in supporting students intellectually and in providing them diversity that in itself challenges conventional ways of thinking. She points out, however, that "life in 'community' does not come any more easily to honors students than it does to many of us as faculty." honors students need to learn to "do" community.

Laird Edman's article on teaching critical thinking touches on developmental issues in honors education and discusses elements of critical thinking. He offers instructors a set of questions by which to assess the critical thinking skills and attitudes they wish to foreground in their courses and a number of strategies for teaching critical thinking, including Edman's Classroom Rules for Critical Thinkers.

The last four papers provide additional strategies for teaching honors courses. In "Cooperative Learning in Higher Education," Cheryl Fuiks offers some incentives and strategies for teaching honors students to "do" community. She distinguishes cooperative learning from competitive and individualistic learning and provides models for transforming traditional course material using cooperative models. William Taylor's "Promoting Critical Thinking through Classroom Discussion" argues that discussion in an honors classroom provides students "the opportunity to practice forming their own judgments, and to do so in an atmosphere that is safe, supportive, and instructive." His model of structured conversation and his advice on creating an effective classroom atmosphere can be used in any subject. Stewart Justman offers "Honors Composition: Thoughts on Pedagogy" in which he describes a "blend of counsel and criticism, allowance and rigor" in a course that demands weekly papers but only evaluates on a portfolio of revisions submitted at the end of the semester. Larry Clark and Larry Crocket provide some examples of using technology in the honors classroom: Web pages and the NCHC Satellite Seminars. Finally, Cheryl Fuiks and Linda Gillison have summarized articles from the National Honors Report that detailed specific instances of exemplary practice in honors education.

The monograph concludes with some important thoughts from Laird Edman on topics within the monograph and other areas for exploration. The authors have provided the reader with an extensive index of articles relating to teaching and learning in honors.

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A REVIEW OF THE RESEARCH ON PERSONALITY CHARACTERISTICS OF ACADEMICALLY TALENTED COLLEGE STUDENTS

LARRY CLARK

Introduction

One of the factors that contributes to the tension that many of us feel at the beginning of a semester is walking into that new class for the first time to be faced by a room full of strangers. During the early weeks of the semester, conversations in the class become more comfortable as we get to know our students as people and they in turn learn a bit about us. Knowing something about who we are talking to not only makes us feel more at ease, it also can help us to be more effective communicators.

Can we know something about our honors students as individuals, beyond their academic superiority, just on the basis of their honors status? That is, are there characteristics which honors students as a group share? Do some of these characteristics distinguish honors students from non-honors students? In this chapter some of the literature on academically talented students is reviewed in search of characteristics of this population that might provide suggestions for better serving them in a broadly defined learning context such as college.

The literature on characteristics of collegiate honors students is limited to a handful of publications. Even in this restricted empirical literature, generalizations must be made cautiously because of the diversity of honors programs. The National Collegiate Honors Council (NCHC) has consistently promoted diversity in honors programming. In its published recommendations for developing effective programs, the NCHC encourages administrators to reflect on the individual nature of their institutions in deciding upon the most appropriate form of honors program for their situation. One fundamental way that diversity is seen at the level of the programs themselves is in the criteria adopted for eligibility to join a program. These range from schools with honors programs that are open to anyone, to ones that invite application from students who meet certain criteria (that range broadly), to programs that require program participation of certain students (e.g., those who accept a pro-

gram-based scholarship). This recognition of programmatic individuality is good in that it encourages each institution to design a program that will most effectively capitalize on the resources and challenges in their own particular circumstance. At the same time diversity of eligibility criteria can obviously complicate any attempt to describe what honors students are like in that it can limit our ability to generalize across individual programs. Comparisons across studies are further complicated by the fact that some researchers provide little descriptive information about their subjects other than their status as honors students.

Returning to the basic issue of the small number of studies that have used collegiate honors students as the subject population, it was decided that the present analysis would flesh out this literature by including some studies of persons labeled as "gifted." The literature on the gifted, though far more extensive than the literature on honors students, yields no more consensus as to what constitutes giftedness than there is regarding what defines an honors student. This disagreement regarding the definition of giftedness should not be surprising given the long and contentious debate over the constitution of a parallel construct, intelligence. In their book *Conceptions of Giftedness*, Sternberg and Davidson (1986) presented seventeen widely divergent models of giftedness. Still, correlates of academic success, such as the standardized test scores and indicators of previous school performance most often used to select college students into honors programs, are commonly represented over the gifted literature as a whole. Thus the criteria used to select college students into honors programs appear to range broadly enough and overlap sufficiently with the criteria traditionally used to identify gifted students in academic domains to justify blending the research literature on these two populations. Two caveats temper this decision: 1) typically criteria used to identify "gifted" individuals are somewhat more selective than criteria used to identify "honors students" in that the gifted label is applied to a somewhat smaller percentage of the population and/or is focused on a fairly narrow set of skills (e.g., the mathematically gifted, the musically gifted); and 2) selection of gifted people, particularly in recent years, more often contains a significant subjective judgment on the part of one or more individuals who know the target person.

Another extension of the literature reviewed here, beyond the narrow domain of "college honors students," is the inclusion of selected literature on academically and/or creatively superior students at pre-college levels. When one considers the effects of the col-

lege experience on individuals, it is helpful to know what kinds of prior experience they bring with them. From a developmental perspective, the passages into and out of college are major life transitions. Different people, however, are influenced in different ways depending on what "type" of person they are and where they are in their own development when they encounter college. Thus looking at some of the literature on talented teenagers might help identify some of the precursors of life as talented college students.

Once we consider who we will be looking at, the next question is what do we want to know about them. The answer to this question may depend on the particular use to which this information is put. One broad approach to the question of "what are academically talented students like (other than their obvious academic prowess)," is to look at personality characteristics common to this group.

As noted previously, there is a long history of debate about what constitutes intelligence and giftedness. The construct of personality has a history no less contentious than that of intelligence/giftedness. Theories of personality have been developed within psychological frameworks as diverse as psychodynamic, learning, cognitive, trait, humanistic, and genetic to name just some of the more prominent ones. A variety of assessment instruments have been used to investigate personality characteristics of talented adolescents and adults. Complex relationships among the constructs on which these instruments are based make it difficult to integrate findings across studies. Variations in or lack of specificity of sample characteristics further complicates interpretation of results across this body of work.

It is helpful as we begin this look at the personality characteristics of talented students to remember that most research findings are reported in aggregate form and that considerable variability exists on most of these variables within talented groups. From our own dealings with honors students, we have known individuals who stood in marked contrast to the generalized portraits painted of them as a group. Our day-to-day interactions with our honors students require that we remain sensitive to their individuality; at the same time we can look to collective data to give us some sense of any underlying common elements and influences.

The Myers-Briggs Type Indicator

One of the personality scales used most often in the investigation of college honors students is the Myers-Briggs Type Indicator (MBTI).

This instrument characterizes personality along four dimensions: **I**ntroverted-**E**xtraverted (I-E), I**N**tuitive-**S**ensing (N-S), **T**hinking-**F**eeling (T-F), and **J**udging-**P**erceiving (J-P). Generating all possible combinations of dimensional leanings produces eight personality types identified by the end labels (e.g., INTJ for the introverted, intuitive, thinking, judging personality type). Isabel Briggs Myers and Mary McCaulley (1985) describe the end-points of the continua.

On the I-E dimension, Myers and McCaulley describe the *introvert* thusly: "The main interests of the introvert are in the inner world of concepts and ideas. [They] may develop some or all of the characteristics associated with introversion: interest in the clarity of concepts and ideas; reliance on enduring concepts more than on transitory external events; a thoughtful, contemplative detachment; and enjoyment of solitude and privacy." (p. 13) In contrast the *extraverted* person "may develop some or all of the characteristics associated with extraversion: awareness and reliance on the environment for stimulation and guidance; an action-oriented, sometimes impulsive way of meeting life; frankness; ease of communication; or sociability." (p.13)

On the N-S dimension *intuition* refers to "perception of possibilities, meanings, and relationships by way of insight.... Intuition permits perception beyond what is visible to the senses, including possible future events.... [People with intuition may be] imaginative, theoretical, abstract, future oriented, or creative." (p.12)

At the other end of the N-S dimension, *sensing* refers to "perceptions observable by way of the senses.... [P]ersons oriented toward sensing perception tend to focus on the immediate experience and often develop characteristics associated with this awareness such as enjoying the present moment, realism, acute powers of observation, memory for details, and practicality." (p. 12)

On the T-F dimension of the MBTI, *thinking* "is the function that links ideas together by making logical connections. Thinking relies on principles of cause and effect and tends to be impersonal. Persons who are primarily oriented toward thinking may develop characteristics associated with thinking: analytical ability, objectivity, concern with principles of justice and fairness, criticality, and an orientation to time that is concerned with connections from the past through the present and toward the future." (p.12)

The counterbalance to thinking on the T-F dimension is *feeling*, which is "the function by which one comes to decisions by weighing relative values and merits of the issues. Feeling relies on an understanding of personal values and group values; thus, it is more subjec-

tive than thinking.... [P]ersons making judgments with the feeling function...have an understanding of people, a concern with the human as opposed to the technical aspects of problems, a need for affiliation, a capacity for warmth, a desire for harmony, and a time orientation that includes preservation of the values of the past." (pp. 12-13)

Summary of the Research Using the Myers-Briggs Type Indicator

With these markers of personality according to the Myers-Briggs model now identified, consider what has been learned about talented adults using the MBTI. Looking at five studies (Randall, 1991; Randall & Copeland, 1986-87; Randall, Salzwedel, Cribbs, & Sedlack, 1990; Olszewski-Kublius & Kulieke, 1989; Wittig, Schurr & Ruble, 1986-87) in which different samples of academically talented high school or college students were all assessed with the Myers-Briggs Type Indicator, what can we conclude that we have learned? When using the same measure on similarly defined population samples, one would hope for some consistency of results. The variations in the findings of these five studies, all using the MBTI, make it apparent that distinguishing between more and less academically talented adolescents and adults on the basis of personality characteristics is not a simple task.

If one had to place predictive money on one dimension of the MBTI to distinguish among people of varying academic ability, the best bet would be the N-S dimension. More capable students tend to land at the intuitive end of the scale compared with the population at large. All five studies report this finding.

Regarding the introversion-extraversion scale, Randall (1991) and Wittig et al. (1986-87) report college honors students to be more introverted than non-honors students. The results reported by Randall et al. (1990) apparently provide qualified support for this finding. However, Randall and Copeland (1986-87) found no difference between honors and non-honors students on the I-E dimension. Additionally, looking at gifted high school students, Olszewshi-Kubilius and Kulieke (1989) found females to be evenly distributed on this dimension and a majority of the males to be *extraverted* like their less gifted peers. So while the general trend is for the MBTI to show academically talented students as more introverted than less talented students, this finding is not consistent across studies.

On the thinking-feeling dimension of the Myers-Briggs measure, there is some tendency for academically able students to be more of the thinking type. However, women in general tend more toward the feeling end of this continuum compared to men, so when honors-type groups are disproportionately female (as is reported in the Wittig et al. study and may be true in other honors programs), the group as a whole may test more feeling oriented. Results on the perceiving-judging dimension are too conflicted to call.

Other Measures Related to MBTI Dimensions

Since Intuition is the characteristic most consistently attributed to academically talented college students by the Myers-Briggs, it deserves a closer look. A similar personality dimension is measured by the Siegels' Educational Set Scale (ESS) (Siegel and Siegel, 1967). Using the Educational Set Scale both Siegel and Siegel (1965) and Seay, Gottfried, Cordon, and Schafer (1986-87) found that college honors students tend to score toward the "conceptually-set" end of this continuum. "Conceptually-set" students see facts as smaller elements in a larger scheme; they prefer to learn principles, theories, and relationships that link separate facts together. This would appear to be consistent with the "intuitive" characterization of academically able students on the MBTI.

Employing Cattell's Sixteen Personality Factor Questionnaire, Seay et al. (1986-87) found both honors (H) and honors eligible (HE) college students to be relatively abstract and non-honors students to be relatively concrete. This again would appear to be consistent with the findings of honors-caliber students being more Intuitive on the MBTI and more "conceptually-set" on Siegel's Educational Set Scale.

One final bit of evidence regarding the thinking styles of academically talented students comes from a study of over 900 National Merit Scholarship students by Warren and Heist (1960). They compared these students to unselected college freshman using the Omnibus Personality Inventory. Of the 13 scales on this instrument, by far the biggest group difference was seen on Thinking Introversion (TI) where the National Merit students scored higher. The authors report that high scorers on this scale "show a liking for reflective thought, particularly thought of an abstract nature, and are interested in ideas and concepts; they tend to be less influenced by external conditions and commonly professed ideas than are low scorers" (p. 332).

In sum, there is consistent evidence using a variety of measures that academically more able people not only have greater capacity to function at higher intellectual levels, but also have more of a predilection to do so; that is, they have greater preference to engage in abstract, reflective, conceptual, and integrative thought than do less academically capable people. This finding has significant implications for Larry Crockett's ideas on the Data-Information-Knowledge-Wisdom (DIKW) hierarchy presented in this volume. In terms of both ability and interest, honors-type students tend to operate more at the upper levels of this system (knowledge and wisdom) more than people in general do.

On the Introversion-Extraversion dimension some studies using the Myers-Briggs measure revealed a tendency toward introversion among more talented adolescents and adults, some reported more complex relationships, and one study reported more talented males to be more extraverted. Lewis Terman (1925) provided some support for the majority finding of greater introversion among intellectually talented people. In his classic study of gifted children, Terman found that children with IQs of 140 or higher had somewhat greater preference to engage in activities that are lower in sociability (e.g., ride bicycle, knit) as compared to high sociability activities (e.g., play tag, baseball) than did children of more average intelligence.

At the college level Palmer and Wohl (1972) provide evidence of greater introversion-like characteristics among honors students compared to non-honors students. They found male and female honors students to be higher in "autonomy" as measured by both the Edwards Personal Preference Schedule (EPPS) and the Adjective Check List (ACL), and lower on "affiliation" on the EPPS. Female honors students were also lower on affiliation as measured by the ACL.

Additional support for the greater introversion among more highly talented college students comes from a study by Faunce and Loper (1972). Using the Minnesota Multiphasic Personality Inventory, they found that high ability women compared to more average female students were "more socially shy and personally sensitive...more dependent, serious, timid, and naive as well as retiring, with some personal reserve. Such adjectives as modest, circumspect, self-controlled, and conventional also describe them" (p. 502).

Warren and Heist (1960) provide some evidence contrary to the majority finding of greater introversion among more academically

talented students. On the Social Introversion scale of the Omnibus Personality Inventory male National Merit students actually had *lower* scores than unselected freshman males. The female National Merit students did not differ from the less talented females. These findings parallel those obtained by Olszewshi-Kubilius and Kulieke (1989) with talented high school students using the MBTI.

Further questions about the introversion-extraversion dimension are raised by Clark, Veneziano, and Clarkson (1995). They found that while college honors students did indeed score higher on introversion than non-honors students on the MBTI, the results were decidedly more mixed on three other personality measures purported to assess some variant of the introversion construct (the Eysenck Personality Questionnaire, the NEO-PI, and Pedersen's Privacy Questionnaire). These findings reiterate the need to be mindful of the specific ways a construct like introversion is operationalized in different measures. Traditionally at least, the role of the successful college student involved a fair amount of independent study. That may be changing with the relatively recent emphasis on collaborative learning and the increasing focus on developing communication skills. Furthermore, it may be difficult for us to reconcile the tendency of our honors students to appear as introverts on paper-and-pencil personality measures with their habit of holding a disproportionate share of leadership positions on campus. Social predispositions, such as the ones personality measures assess, are not the same as social skills. It might well be that academically talented people are also socially talented people capable of very effective social interaction while still having a *preference* for more introvertive pursuits. Remember too that focusing on group differences can hide important within-group variation. It might be instructive to look for possible subgroups within the honors population. How might honors students who fall toward the introvert end on any one measure differ from honors students who fall at the extravert end? The most interesting findings on the social tendencies of the intellectually talented may still await us.

Positive Personality Characteristics

One of the more consistent general findings in the study of gifted/talented people is that they tend to have more positive personality characteristics than the population at large. In volume 2 of Lewis Terman's famous series on *The Genetic Studies of Genius*, Catherine Cox (1926) studied the early characteristics of 300 rec-

ognized geniuses (e.g., Mozart, Voltaire, Goethe). She found most of them to be above average in 67 "good" traits. These included persistence, intellectual energy, originality, and ambition. In combination these characteristics represent the ability-drive-creativity combination that characterizes the highest level of intellectual achievement. (It might be noted that this positive characterization did not extend to "absence of an occasional liability to extreme depression" and "absence of the liability to anger," a point not lost on parents, teachers and others who have struggled with gifted individuals.)

Earlier findings by Terman (1925) and Cox (1926) that accomplished individuals are generally more broadly talented and more personally stable than the population at large have been replicated in more recent studies. These studies have reported similarly positive personality constellations as common among intellectually talented adolescents and adults. Olszewski-Kubilius and Kulieke (1989) administered the High School Personality Questionnaire (HSPQ) in addition to the Myers-Briggs Type Indicator and several other measures. When compared to a same-aged norming group with the genders combined, the HSPQ revealed the Talent Search youth to be higher in warmth, emotional stability, dominance, cheerfulness, conformity, and self-sufficiency, and lower in apprehension and tension.

Androgynous Characteristics

One interesting facet of the personalities of talented males and females that has surfaced in a few studies is a tendency toward androgynous characteristics. Sandra Bem (1974) has promoted the construct of "androgyny" as representing personalities comprised of both characteristics that have been traditionally defined as feminine (e.g., nurturance) and characteristics that have been traditionally defined as masculine (e.g., competitiveness). Bem believes that the androgynous individual is the most fully functional person because he or she is able to draw upon personal qualities that are most useful in a particular circumstance irregardless of the "appropriateness" of the behavior relative to one's gender.

Using Jackson's Personality Research Form (JPRF), Csikszentmihaly, Rathunde and Whalen (1993) found that, when compared to average teenagers, male and female adolescents talented in mathematics, science, athletics, music and/or art scored higher on Understanding (intellectual curiosity) and Endurance (willingness

to persevere to attain goals) as might be expected. Additionally, the JPRF revealed the talented females to be higher in Dominance (preference to lead others and control events) and Achievement (desire to excel) than average females teens, and lower in Orderliness. The talented males were higher than average male teens in Sentient (receptiveness to information) and Harm Avoidance (preference to avoid unusual physical risks), and lower in Change (preference for change over stability). Csikszentmihaly et al. interpreted these findings as indicative of androgynous tendencies on the part of talented youth.

Additionally Csikszentmihaly et al. suggest that the higher Harm Avoidance and lower Change scores of the talented males indicate a greater tendency toward conservatism compared to less talented males. The latter interpretation is interesting in light of the lament common among some honors faculty regarding the academic conservatism of many honors students expressed, for example, in their resistance to trying courses outside of their established areas of mastery. Yet, it would seem necessary to take risks ("push the outside of the envelope") at least within their established domains of ability if students are being challenged to the high levels of success that many of our honors students achieve.

Summary of Research on the Personalities of Talented People

The generally positive personality constellations found among accomplished people should not be too surprising. A stable, well- integrated core self would certainly be an asset for consistently performing at a high level. Highly competent students often continue to excel in the academic realm even as other segments of their lives are in chaos. They may channel their energy into specific tasks as a way of escaping threats from other domains. Indeed, success in an area of proven strength, like school, may become even more important as one experiences "failure" in some other venues. Such defensive achievement, however, may be difficult to maintain over the long haul. A stable, healthy personality is a better foundation for sustaining excellent performance.

The relatively few studies to date reporting androgynous characteristics in academically talented students suggests a cautious interpretation of these findings. The particular findings of Csikszentmihaly and his colleagues (1993) make some sense, however, in relationship to achieving success in the formal education system. The Jackson Personality Research Form revealed both diversely talent-

ed males and females to be higher than average teenagers in intellectual curiosity (Understanding) and willingness to persevere to attain goals (Endurance), two necessary attributes for success in most domains. Additionally the Jackson measure depicted talented females as having greater preference for leading others and controlling events (Dominance) and greater desire to excel (Achievement) than the average for adolescent females. Whether these characteristics are thought to be innate predispositions that in combination with potential talent lead to greater success, or whether they are seen as products of differential socialization in response to early recognition of potential talent, their contribution to eventual achievement is evident. The tendency of talented males to be more "conservative" (higher than average in preference to avoid unusual physical risks and lower in preference for change over stability) might make them better able to work within the social system that has nurtured the development of their special talent. Collectively, then, perhaps we could say that the "more gender-appropriate" (in a traditional sense) of these correlates of success are adequately developed through the typical socialization process, whereas the "less gender-appropriate" characteristics, which are every bit as important for maximizing one's capabilities to their fullest, requires going beyond the bounds traditionally set for one's own gender.

Honors students as a group consistently end up at the intuitive end of the Intuition-Sensing dimension on the Myers-Briggs measure. Other measures also indicate that honors students are more "conceptually-set" and abstract in their thinking. This characteristic is capitalized on by the integrative, interdisciplinary framework that is the core of many honors programs. It also allows a higher, more abstract treatment of subject matter that can lead to fresh insights into information already familiar at a more concrete level. As noted previously, these findings raise interesting implications for honors teaching relative to the Data-Information-Knowledge-Wisdom hierarchy that Larry Crockett discusses in this volume. It seems that honors-type students not only have a capacity for functioning at a higher point on the DIKW dimension, but also a preference for doing so. With this knowledge in hand, we can explore ways in which our teaching of honors students can more effectively address the qualities those students bring to the learning enterprise.

On the Introversion-Extraversion dimension, honors students tend to fall at the introversion end, though there is some variabili-

ty between subject samples and on measures other than the Myers-Briggs. Contrasting these findings with the common observation that many honors students tend to be more involved in organizations and functions on campus than are non-honors students raises some questions regarding this personality dimension in this population. What exactly does it mean to be introverted and how does that vary from measure to measure? Is it possible to be "introverted" and still be very socially involved, even to the point of assuming leadership roles? Traditionally academic success required some degree of solitary, reflective work; how do we factor that in? This dimension might yield some interesting recommendations for honors programming from classroom exercises to residential arrangements, but first we need to have a clearer idea of what it is telling us.

The Thinking-Feeling dimension is interesting because another factor (gender) seems to play at least as big a role in its expression as does academic ability. This provides us with a good reminder that academic capability is only one of many factors that has had a significant influence on the development of our honors students as individuals. As prominent as their status as honors students is in our educational system, there are likely many factors that are more prominent to them in their own personal systems.

The fact that females tend toward the "feeling" end of the Thinking-Feeling dimension and males toward the "thinking" end is consistent with research into the reasoning styles of each gender by Carol Gilligan. Gilligan and Attanucci (1988) note that while males and females use both "justice" and "care" perspectives when solving moral dilemmas, females tend more toward care orientations and males tend more toward justice orientations. Gilligan argues that Lawrence Kohlberg's widely adopted model of the development of moral reasoning, which touts justice-based reasoning styles as developmentally superior to care-based styles, is biased because Kohlberg established his model largely on data drawn from male subjects. Gilligan believes that the gender difference in reasoning styles reflects socially defined gender roles rather than advanced intellectual development among males.

In summary, this brief overview of the personality characteristics of honors/gifted students reveals some interesting findings. We must be cautious about interpreting the results too finely at this time, however, because of the methodological issues noted previously. If we are really serious about trying to establish a sound foundation of knowledge regarding who our honors students are from which we can make decisions about how to educate them most ef-

fectively, we need to be more systematic in how we lay that foundation. We need to select the best available measures to assess the constructs we feel are most pertinent to our educational tasks rather than reaching for the most readily available tests. We need to be more consistent in our attention to factors like subject sample characteristics so that we can generalize across individual studies with greater assurance. Certainly our descriptive foundation must include information on more than just the personality characteristics of honors students; as suggested by the literature on gifted students, we would probably benefit from looking at the family backgrounds, motivational profiles, emotional stability and other attributes of our students. With such a sound descriptive foundation in place we can build an effective honors pedagogy with more confidence.

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FUNDAMENTAL ISSUES IN HONORS TEACHING: Data, Information, Knowledge, and Wisdom on the Wired Campus

LARRY CROCKETT

> The single most important distinction between honors and non-honors courses are the honors students: dedicated, motivated, fascinated students with solid foundations in prior work and with new and creative insights. They spark each other (and the professor) and learning takes on a whole new dimension.... The essence of honors programs, I believe, is putting gifted people in touch with one another (Donna Birdwell-Pheasant, 1997).

Since teaching is a performing art, it is easier to identify it when it is happening than it is to define it in the abstract. Any attempt to define a performing art abstractly eventually fails in the face of the fluid range of expression and exploration that constitute a performing art. Flights of the human spirit, it seems, resist capture in linguistic formula. If this is right, then honors teaching, *a fortiori*, is even more resistant to definition since it presumably involves a performing art practiced by the better prepared, the more committed and, often, the more gifted. Consequently, we are faced with the vexing question of whether it is even feasible to consider fundamental issues in honors teaching. Perhaps we should reluctantly agree with the most influential philosopher of the twentieth century, Ludwig Wittgenstein (1960, 7), who offered the enigmatic suggestion, "What we cannot speak about, we must pass over in silence."

Even if satisfactory definitions of honors teaching are likely to elude us, however, among all educators honors practitioners in particular should recognize the dialectical value of considered reflection on honors teaching. Clarity is not likely the starting point of such deliberations but perhaps may emerge – incompletely, tentatively, and often prematurely, to be sure – if we take the time to explore basic questions about what it is we are doing when we engage in honors teaching. Even the silentious Wittgenstein, we should remember, wrote two books.

This chapter will take up four specific issues related to fundamental issues in honors teaching. Part I will develop an epistemological taxonomy, what I call the DIKW hierarchy. "DIKW" is an acronym for "Data, Information, Knowledge, Wisdom," and I will argue that the DIKW hierarchy, which provides an Internet-aware epistemological taxonomy, is a helpful way to reach some clarity about honors teaching on what is increasingly becoming a wired campus.

Part II will consider some of the implications of the critical thinking movement, which has gained such currency over the last few years, for honors teaching. At first pass, honors students, of all students presumably, ought to be students who self-consciously practice critical thinking; they should be the more astute students who engage in thinking about thinking. I will use the DIKW hierarchy to explore what it means to think about thinking and what it means to assess issues and explore questions critically and reflectively in the age of computing.

Part III will explore aspects of the computing and communications revolution that is passing through collegiate campuses like a tidal wave. Discussions of technology, and the appropriate use of technology, dominate both paper and Web-based periodicals, and no discussion of honors teaching would be complete without consideration of this potent new phenomenon.

Part IV will conclude with an exploration of the intriguing yet vexing issue of how honors teaching differs from non-honors teaching. Honors programs have long labored with the issue of how to affirm the distinction between honors and non-honors pedagogy without appearing elitist and, pragmatically, offending faculty who might conclude that honors programs pilfer good students from non-honors courses. Honors pedagogy, as Birdwell-Pheasant suggests above, involves the establishment of a community of people who share commitments, capabilities and passions. In particular, the DIKW hierarchy and the computing revolution bring into relief the special calling that constitutes honors teaching today.

The DIKW Hierarchy

The computing and communications revolution, with the latter being even more important than the former, will inevitably shape discourse about honors pedagogy in the years ahead. Elizabeth Anne Viau (1995, 3), in "Technology and the Nature of Knowledge," frames a similar set of epistemological terms to what I have es-

poused for several years — though she does not use the term "DIKW hierarchy." The hierarchy consists, as mentioned above, of Data, Information, Knowledge and Wisdom. It is a hierarchy both epistemologically and normatively. Data, as we will see, are epistemologically shallow while the depths of wisdom resist empirical test. Normatively, the higher components, knowledge and wisdom, should comprise the heart of the academic enterprise while data and information might warrant only occasional attention.

Data consists of distinguishable marks on a page. A string of 1s and 0s, to use the obvious example, such as "100000110," uninterpreted, is simply marks on a page that could be interpreted any number of ways. Any other set of distinguishable marks, such as "<>>>><<>," would work just as well. Data in other words, consist of bits, which can, if we wish, be interpreted as something with greater meaning, such as a character. Binary data lends itself to rapid transmission and manipulation since bits map precisely onto electronic circuits, which use on/off switches. Raw data are comprised of 1s and 0s and are devoid of suggestion of how the 1s and 0s should be taken. If you have ever subjected yourself to the distinctly unpleasant screeches and pops of a modern transmission, you understand all too well the meaninglessness of raw data.

Information is one step up on the DIKW hierarchy because it is data augmented by an interpretation. For instance, "01000001" uninterpreted is simply data. It is not one more than one million since that presupposes a base-ten interpretation of the digits. Interpreted as an ASCII character, it is the binary representation of the letter "A". Information contains, as a result, both data and an interpretation that reflects some kind of intentional system, in this case, ASCII. Notice that no significant theoretical component is an ingredient in information; rather, it contains enough interpretation so that the data are more than distinguishable marks on a page. Strictly speaking, "1" is not the integer one unless it occurs in some kind of interpreted context, either explicit or implicit. That mark can just as easily be a character, for example, in the word "letter." Interpretation makes distinguishable marks into information. That the letter "A" is represented by the binary string "01000001" is not true by virtue of empirical discovery but by convention; the inventors of the ASCII code decided this was to be true. Notice that no ambiguity attaches to information that is true by convention. This means that computers are well suited to manipulate information because information is ambiguous and theoretically inert.

Knowledge typically includes information but also includes ingredients such as theoretical constructs and some kind of warrant between the world and propositions expressing claims about the world. A widely accepted philosophical definition in the twentieth century was that knowledge is "justified true belief." While this pithy definition is in its inevitable decline, epistemological issues, especially those associated with science, have dominated philosophy in the last three centuries, edging out ethics and the classical "love of wisdom." Knowledge about the world is never certain since it is always corrigible in the face of new evidence or developing consensus in a practicing scientific community. Born as it is in a cauldron of method, politics and social consensus, knowledge is a significant jump up the DIKW hierarchy.

Wisdom is knowledge plus ingredients that resist easy characterization but typically are based in the long experience of communities. With the Enlightenment, Western philosophy largely abandoned discussions of wisdom. But the East has long prized the pragmatic virtues, and there are fresh signs that Western philosophers are returning to their roots in the Socratic pursuit of wisdom. People have capacities, abilities and dispositions that require cultivation; cognition is more affective than prepositional since our brains embody eons of quick choices successfully made in complex environments. Capacities, capabilities and powers require sustained cultivation in tradition-rich communities before we can discern, think, love and navigate complex situations that defeat the most sophisticated algorithmic approaches. Wisdom, therefore, is the pinnacle of the DIKW hierarchy.

Notably, knowledge claims lend themselves to empirical test over shorter periods of time while wisdom, to the limited extent it can be propositionally articulated at all, is tested only in longer historical time frames as social and cultural structures propagate or fail to propagate. At this juncture in history, we often place knowledge claims that are amenable to test in shorter time frames in the domain of science while the precepts of wisdom fall more naturally in the domains of ethics, philosophy, literature and religion.

Critical Thinking and the DIKW Hierarchy

Philosopher Bruce Reichenbach (1998, 29) offers surprisingly pragmatic definitions and explorations of what it means to think critically. He labels it "nexus or group of interconnected skills." Such skills include the ability to clarify the ambiguous, to make infer-

ences from evidence to conclusion, and to employ effective strategies since critical thinking is a "goal-oriented skill." Such skills are interrelated and not readily distinguished, bound up as they are with a range of human faculties. Moreover, since critical thinking involves skills, a student becomes better at it with practice. Michael Jordan practiced his basketball skills, which involve critical thinking as Reichenbach understands it, so the critical thinker must practice and exercise, as it were, the muscles of critical thought.

Reichenbach also suggests that critical thinking involves *dispositions* as well as skills. Such dispositions include curiosity, the ability to persist in the pursuit of goals, open-mindedness, and, perhaps most importantly, implicit skepticisms about the claims people make. Effective critical thinkers intuit the limitations inherent in our ability to understand the world and, therefore, appreciate the "role of personal judgment in the knowing process."

In DIKW terms, what does it mean to engage in critical thinking? First, it means an appreciation for the differences in the levels themselves. Information is more than data and knowledge is equivalent to neither information nor wisdom. Information is not just lots of data, and information requires an epistemologically complex ingredient, namely theory, in order to become knowledge. Phone books are information-rich and knowledge-poor while books of John Donne's poetry and sermons are rich in wisdom and subtle understanding of the human condition. Consequently, we rightly recycle the former but cherish the latter. Donne's work is not so much information-poor as it is information-indifferent.

Second, the honors classroom, arguably more than non-honors classrooms, should be most exercised by the KW part of the hierarchy. All but a few facts – to the extent that they involve only information or uncontested assertions such as "water weighs more than 8 pounds a gallon" – are unsurprising, mundane, and, therefore, are unworthy of our deliberations. There is no *philodata or philoinformation* but *philosophia* is the heart of the academy's pursuit; the heart of the academy is where we ought to find honors students clustered in spirited debate of overarching issues that are a little oblivious to facts.

How should the honors enterprise be shaped by critical thinking in DIKW terms? Since I am fond of saying, "rules, schmules," I am not enamored of the formulaic approach to critical thinking – the only rule seems to be that, finally, there are no eternal rules. Nonetheless, I like to underscore some tools and practices that can act as catalysts as we attempt to think critically. First, we're in an

age of science and, despite the fact that honors teaching will concern itself most with the KW part of the DIKW hierarchy, evidence will still find a place in academic work. It might be textual evidence, it might be an image of a vibrating atom, or it might be the results of a political poll; but if our claims about the world are to be corrigibly effective, we will have to traffic in appeals to evidence. Not all facts are evidence since "evidence" is a theory-laden term. So we do not descend very far down into the DI area even here.

Second, despite the fact that most logic texts warn against appeals to authority, much of scholarly work will consist of appeals to work done by respected scholars. Those appeals will, of course, not be uncritical appeals since the work of the most distinguished scholar is just as open to challenge as that of a first-term freshman. But much as it is impossible for a person to do quantum mechanical experiments in experimental isolation, it is impossible for one person to do academic work in intellectual isolation. Academic work is inexorably social, if only in an intellectual sense.

Third, informal and formal logic can be helpful at times. The world is far more subtle and slippery than any logical system, of course, but occasionally, for example, we can be faced with two candidate explanations of a phenomenon. A steady stream of evidence against one candidate explanation counts as evidence for the alternative: if either a or b, and evidently not a, then therefore b, logic tells us. The relationship of evidence to conclusions, as suggested above, is subtle and slippery – but a little logic can be a good thing.

Fourth, since academics is applied dialectic, critical thinkers should anticipate objections to their own point of view. To render the outdated metaphor in computational terms, we ought to avoid setting up "straw robots" that are easily knocked over. Underdetermination means that knowledge (empirical claims) and wisdom issues never admit of proof, but consensus, from time to time, will emerge as we advance points of view and anticipate objections expressed in their strongest form. In the honors critical mass that Birdwell-Pheasant described in the quotation that began this paper, such dialectic should be particularly intense and, therefore, productive.

Fifth, honors students should be in the business of scouring the conceptual landscape for sustainable distinctions. The critical thinker is always on the lookout for distinctions, which can help our language to map onto a subtle, slippery world more adequately. A good distinction can bring clarity to an argument, which an inad-

equate terminology would hopelessly muddle. At times I am inclined to oversimplify and say that "the academic game is the distinction game" and, while this is too simple, it captures a surprising amount of academic truth. Drawing distinctions is a conceptual activity deep in the KW part of the DIKW hierarchy (Crockett, 1997).

In sum, critical thinking has occupied center stage recently in many discussions of education, both K-12 and collegiate education. Critical thinking in an honors context means self-conscious immersion in the KW part of the DIKW hierarchy and an unapologetic, Moynihanian "benign neglect" of the DI part. Even if housed in a state-of-the-art honors lab, as is the case with the honors program at Augsburg College, honors program pedagogy inevitably sees *techne* as a means to *philosophia* and never as an end in itself. As we will see in the next section, that is becoming a much taller order with the emerging computing and communications revolution.

The Computing Revolution and the DIKW Hierarchy

Two misconceptions are often expressed in the face of the emerging computing and communications revolution. The first misconception supposes that computers and networks are so capable that they will replace us at some point. This is the "we'll be lucky if they keep us around as pets" view. The second takes the opposite tack and claims that computers are impressive tools but are tools nonetheless. Tools never replace skilled members of any kind of guild so, on this view, too much is being made of the "computing and communications revolution."

Taking the second misconception first, the view that computers are "tools" or that "computers do simply what we tell them to do" is too simple since it is on a par with "people are determined by their genes and therefore are not free." To dismiss computers as "tools" is to miss the fact that computers (or machines driven by computers) are software driven. Software is fluid, flexible and malleable in a way that machines and tools are not; to use tool-talk in the same breath with "software" is to fail to appreciate that a difference of degree has become a difference of kind. Something quite new is happening with computing such that nineteenth-century machine conceptions are misleading. If someone can build a hammer that can, on command, morph into a radial arm saw when you need to cut a board, then into a 21-speed bicycle when you want to tour the foothills, then I will agree that tool-talk is appropriate.

What is unique about computers is that the "tool" they are at any given moment is a function of the software that is driving them. What is significant about computers is not what you can touch but what you cannot touch, the software. "Computer science," therefore, should be called "software science."

For all this unprecedented flexibility, and to illustrate why we ought not take the "we'll be lucky if they keep us as pets" view seriously, computers are good at manipulating the first two levels of the DIKW hierarchy but fare badly, at least to date, at higher levels. Of course, this claim turns on the current state of artificial intelligence, which has made little substantive progress in recent years. More exactly, computers are good at information storage, transmission and transformation, but have shown little facility for the development of theories or the cultivation of wisdom. In a word, they are not critical thinkers and their forte is DI, not KW (Dreyfus and Dreyfus, 1986).

A good way to illustrate where we are currently if we hope to know how far up the hierarchy computing can take us, consider the sexy little idea of a *knowbot* or *infobot* (http://www.hypernews.org/liberte/computing/agents.html) There has been much talk about knowbots in recent years in a variety of places, from *Scientific American* to *Popular Science.* Knowbots are software agents that roam the Internet and other systems, looking for information, services and software that would interest the knowbot's owner.

But as we ascend the DIKW hierarchy up into the knowledge that a *know*-bot would presumably need, computing appears destined to be much less helpful. Knowbots are software agents, it is claimed, with some smarts. Another way to understand this is to see knowbots as perched somewhere between information and knowledge on the DIKW hierarchy. The problem that a knowbot faces is the attempt to encode a measure of judgment about human interests and activities. This presupposes some understanding on the part of the knowbot. Barring a solution to a number of perennial problems in artificial intelligence, most notably the *frame problem,* however, there does not seem to be much reason to hope that genuinely helpful knowbots will be feasible (Crockett, 1994). Understanding human issues, bound up as they are with human history, language and folklore, presupposes a flexibility that software simply has not displayed so far. As a result, there is insufficient reason to conclude that knowbots will prove pivotal to our use of computing for KW tasks as some imagine.

Here's the relevant question: what will our much vaunted computing prowess do for us in terms of increasing our knowledge and wisdom? I think the answer is mixed in the following way. Computing will facilitate our acquisition of knowledge and wisdom primarily indirectly and not as much directly as might have been hoped earlier in the twentieth century, when artificial intelligence emerged in the first euphoria over the invention of the digital computer.

The claim made here is that computing, largely or completely restricted as it seems to be to the first two levels of the DIKW hierarchy, will not do much directly for us in the formation and assessment of knowledge and wisdom claims. Theory formation and assessment, in other words, appear not to be computable functions. On the other hand, in terms of the remarkable data storage, transmission and transformation capabilities of computers, communications will play an extraordinary role indirectly enhancing our exploration of the world and the generation of at least some knowledge and some wisdom. A Net-savvy philosopher or sociologist in the making, for instance, will find exceptional resources that can be screened in powerful ways using some of the advanced search facilities of the major Internet search engines such as Hotbot Supersearch (http://hotbot.com/?SM&MCT=super.x= 161&super.y=9). Let me put it directly. I believe the dynamically linked web page will replace the conventionally published academic paper, and I am convinced that web pages and their sundry "plug-ins," such as streaming audio and video, in terms of sheer bandwidth, will become the primary means of human communication in the future. Third-millennium sensibility will be wired sensibility with, in principle, complete access to every idea, every experience and every viewpoint. As Negroponte (1995) is given to saying, "space is abolished." If it is important or deemed important it will be on the Net. Our ideas of "published" will change dramatically; it will no longer mean widely accessible but will have to do with being juried and accepted by a recognized web publisher. In a word, it is the fiber-linked, dynamic network, providing real-time access to whatever is linked to the network that will shape the pedagogical enterprise in the future, not artificially intelligent computers.

What will it mean to have, in principle, full access to galaxies of information and every idea, every experience and every viewpoint? This networked cacophony will in some ways be the new "vast wasteland," to use the term that was applied to broadcast television some years ago. Epistemologically, it will tend to push

us down the DIKW hierarchy, to flatten the hierarchy in the direction for DI. Particularly if we rely on knowbots and spiders, whose capabilities may prove inexorably tied to DI-manipulation, to do our searching, the act of selecting what to attend to, perhaps the most critical of the liberal arts judgments, will be rendered a DI-computable judgment. With Net content growing at 10% a month, we will, to some extent, have to rely on this KW-challenged software. The great appeal of the Net is prodigious access; the great danger is degradation of philosophical sensibility. Plato's dialogues and the Buddha's "Sermon at Benares" are easily obtained by a knowbot but they manipulate bits in a world which tends to view all bits to be equal in value. If space is abolished, then epistemic geography is flattened and a sense of history is dragooned into a multimedia present. As a result, it will be much more difficult to get our bearings and make perceptive judgments.

How Does Honors Teaching Differ from Non-Honors Teaching?

Honors teaching on the wired campus of the twenty-first century must heed Birdwell-Pheasant's call to see honors teaching as "putting gifted people in touch with one another." Putting gifted people in touch with one another means a specific call to resist the computational culture's natural tendency to push us pedagogically down the DIKW hierarchy (Postman 1992). As a professor of computer science, admittedly, I am greatly enamored of the computing and communications revolution and welcome its arrival on the college campus; the four phone lines into my house, the six computers that populate my house (a 1.5 computer-to-person ratio), and our two Internet accounts that are active many hours a day underscore this digital dalliance. Yet as Director of the Honors Program at my institution, and with a graduate degree in philosophy, I worry that the fiber optic lines, the packet-switching technology and the streaming audio will jeopardize the great philosophical traditions. It is surely a Faustian bargain to trade Milton's *Paradise Lost* for a Java-enabled browser if playing with the browser means a promising young scholar never gets around to deep study of the exceptional text. To recast Milton's most famous line, some DI-enamored technophiles might be pushed into behaving as if "it is better to rule the bits than serve the ideas."

Honors teaching in this new computational environment has a special calling as never before. Honors teaching is critical mass teaching with students who are prepared and committed to assess-

ing all phenomena critically, in light of the greatest insights and greatest voices the academy has come to cherish. Critical thinking is not just an activity, a useful craft; it is *vocatio* for the honors enterprise. Archbishop Lefevre, the anti-Vatican II archconservative, once observed that "our future is the past." This tidy little maxim is a theological *reductio ad absurdam,* of course, but it is perhaps a useful corrective in our time-flattened Internet age. One need not be a theological reactionary or a technological Luddite to insist that critical thinking – and, therefore, honors teaching – must entail a conversation that traverses both the centuries and the cultures.

Theodore Roszak (1986, 87) argues: "No matter how fast information is sent, packets of information are never the substance of thought." We do not generalize from information to ideas, he reminds us; rather ideas emerge from the play of the human imagination in the vagaries of human history and relationship. In terms congenial with the DIKW scheme I have advanced here, he draws a distinction between *ideas* and *master ideas.* Ideas have a closer relationship to data and information than master ideas, as Roszak (91) sees it, because the latter *"are based on no information whatsoever."* We have the facility, occasionally, of generating master ideas that are far more than extrapolations from experience. Instead, they originate in the free-ranging human imagination, and they are at the heart of what makes us both human and potentially humane. We are at our best when we immerse ourselves in spirited conversation about master ideas.

Master ideas are not derivable only from sense experience. They are neither testable by science nor computable in software. Instead, with Roszak's master ideas, we are in the domain of civilizational and cultural wisdom. Master ideas shape how we perceive the world; as we immerse ourselves in them, they literally shape the synaptic organization of our brains so that we inhabit a different world. Master ideas shape our construction of the valuable, our deliberations about the ethical and even our identification of the factual. At this level, the top of the DIKW hierarchy, where we can freely engage in Socratic dialectic about knowledge and wisdom, we find our noblest calling. Honors teaching, since it presupposes students who not only are able to assess critically master ideas but have a romantic commitment to them, involves precisely this dialectical immersion in master ideas.

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COMMUNITY-BUILDING IN HONORS EDUCATION

LINDA W. RUTLAND GILLISON

"tis all in peeces, all cohaerence gone"
John Donne
"An Anatomy of the World" (1611) 228

Modern occidental mainstream society has historically enshrined the ideal of the autonomous individual. In the American West, where I live and teach, mythology is filled with him (out here, almost always male): the cowboy or lawman of the frontier, even the pioneer who set out from the crowded eastern seaboard and halted on the prairies of Kansas to dig a sod house into the ground and half-bury himself (and his wife and children) in the earth until their hard — sometimes, literally, killing — labors could resurrect them into a new life of freedom from the controls and constrictions of society. Even within a more thickly populated and (some would say) more complexly organized milieu, though, the test of the mature personality has been self-reliance, self-determination, and individuation.

During the last two decades or so, however, thinkers in many disciplines have begun to talk in terms of community and co-operation. Language itself, after all, which makes us human, is communal; knowledge, which can make us better, is born only in society. While there will always be a place for the solitary artist, scholar, or scientist, more and more it is an accepted fact that the social and the communal are not just frills of human life but the very womb in which human life and endeavor as we know them are born and nurtured and the only matrix in which they can flourish.

Considering the interdependence between education and political life in its broadest terms, Seyla Benhabib (1992, 140) advocates an "enlarged thought, which morally obligates us to think from the standpoint of everyone else," so that "the voice and the perspective of others, often unknown to us, can become expressed in their own right." Although, as Thomas Haskell (1977, 67) noted, the student of the new research university of the late nineteenth century had to "exchange general citizenship in society for membership in the community of the competent," Stephen Toulon (1982, 254) traces within the very university a new tendency toward the whole and

beyond the narrow "communities of competence," with the dawning realization that the limits and boundaries which we have placed on scientific disciplines are historical constructs and may no longer serve us well. Even psychotherapy, historically the most individual- and inward-centered of disciplines, has begun to re-evaluate itself and its (dis)function in a world community (Hillman and Ventura, 1992; Markowitz, 1997). Most surprising, perhaps, is the shift in our "myth" of the American West and its heroic expansion: the historian-narrators of a recent mini-series based on Stephen Ambrose's *Undaunted Courage* repeatedly emphasized the unfailing teamwork which alone made possible the success of Lewis and Clark's "Corps of Discovery." The "Corps" apparently thought of itself in that very way: as a body with diverse members who all had to work together in order to survive and achieve the goal (Duncan and Burns, 1997).

Speaking more directly to the curricular and methodological concerns of higher education in late-twentieth-century America, Martha Nussbaum (1997, 9-11) has recently articulated what she calls "a classical defense of reform in liberal education." Nussbaum draws up a short list of "capabilities" which we as educators ought to try to develop in our students as they face the world of a new millennium. If we wish to "cultivate humanity" (using both terms in their most encompassing senses), we must support and stimulate in our students: 1.) the capacity for critical examination of oneself and one's traditions; 2.) the ability to see oneself not simply as a citizen of a local region or group but also, and above all, as human beings bound to all other human beings by ties of recognition and concern; and 3.) the ability to think what it might be like to be in the shoes of a person different from oneself — what Nussbaum labels the "narrative imagination." Nussbaum (58) pointedly urges the reasoned argument as the surest intellectual basis for the student's critical examination of the powerful but controversial western cultural tradition. "The invitation to consider ourselves citizens of the world," she warns, "is the invitation to become, to a certain extent, philosophical exiles from our own ways of life, seeing them from the vantage point of the outsiders and asking the questions an outsider is likely to ask about their meaning and function."

Nor is Nussbaum alone in pondering the possibilities and challenges of higher education in our time and place. Already in 1961, Lewis Mumford (plate 56) described the place of the university in the twentieth-century city and the simultaneous urbanization of the university: "[T]he university," he lamented, "has pushed to the

point of caricature many of the worst aspects of the historic city: intense vocational compartmentalization, over-specialization, and hierarchic subordination under a pervasive bureaucratic discipline." In remedy, he called for "an inner transformation: from...detachment to commitment."

Robert Bellah (1992, 174) and his collaborators look for alternatives to the current "education industry" model and urge teachers to help their students "become part of a community of interpreters...or a community of inquirers." Humanist Robert Proctor (1988) notes the picture of the self — "extensive" and grounded in relationship rather than "intensive" like our own Enlightenment — one which emerges from study of the Greek and Latin classics and suggests it as a paradigm for consideration by our students. A few years ago, an issue of *Forum for Honors* (22 1, Spring/Summer 1994) dedicated to the theme of "New Civic Ideals" brought the discussion on community full front into the honors arena.

Since the concept of "community" is complex and differently understood by thinkers of various persuasions, its definition for purposes of this essay requires clarification. By "community," I intend a group of people who work intentionally together toward various goals which may be external to the group, but also toward an aware, committed life in the group. By this measure, an honors college or program will not necessarily be a community, as "community" will require an explicit intentionality of group life in common and shared undertakings.

Students in such a college or program may, however, become a community, and there are excellent reasons for promoting that process. Social adjustment to university life can be eased through interaction with other bright, motivated students who want to make the most of educational opportunities, and academic experience can be enriched through interaction in classroom situations with other students eager to challenge themselves and each other as they approach specific subject matter. Campus and neighborhood can benefit richly from the focused efforts of such a student group. If one of the characteristics of a fully-developed honors college is a functioning student association of some kind, those are some of its benefits.

In this essay I want to focus on the relationship between the "here" of honors education and the "beyond" for which honors students are preparing. I maintain that honors education is the best possible space in which to help academically talented students to learn and do "community" — to be and think of themselves as part

of an intentional grouping of diverse individuals who live together (a college) in a committed way — as a preparation for the *praxis* of living and being and doing "community" in the larger world in which they will function after graduation.

Honors students are good at a multitude of things. They attack many kinds of tasks with relish and usually complete them in a timely way and in excellent form. They tend to have a determination and stamina and intellectual curiosity which makes them a joy to teach and can lend a special tone to any class in which they enroll. They enjoy challenging themselves and others. Nonetheless, all of us who worked together on this project and many other faculty colleagues around the country have observed that honors students do not necessarily work well in groups — in community. There may be many reasons for their hesitation and discomfort. (Please refer to Larry Clark's piece on the characteristics of honors students earlier in this volume, specifically the section on introversion) Experience in high school classes may have taught them well that they, as "bright" students, will carry most of the load for an entire group's project. They may have felt uncomfortable in high school, never really fitting into any group because of their unusual intellectual abilities and their often intimidating record of academic success. They may have become frustrated with the sometimes bumbling efforts requisite for organization and completion of a group project. At last, they may well have come to trust their own private efforts as likely to bring results without the delay and confusion and sometimes disagreement of collaboration.

For any or all of these reasons and perhaps others, work and life in "community" do not come any more easily to honors students than they do to many of us as faculty, and they may even be at a particular disadvantage in this regard. Seeing themselves accurately as capable, successful individuals, they may not have honed the skills of working in community which some others of their age group have. Honors education offers a chance for them to exercise in an area of interaction which will be crucial to their success in an interdependent, diverse, and rapidly changing world.

Many voices in the discourse around higher education concur on some essential points. They agree that the world which greets today's honors students will be diverse, interdependent, and marked by rapid change. Take as exemplary Stephen Toulmin's (1990, 186) comment that, "in an age of interdependence and historical change, mere stability and permanence are not enough.... Our intellectual and social procedures will do what we need in the years ahead,

only if we take care to avoid irrelevant or excessive stability and keep them operating in ways that are adaptable to unforeseen — or even unforeseeable — situations and functions."

Seconding that call for flexibility and community, the annual meeting of the Association of American Law Schools (*Chronicle of Higher Education*, 1998) recently was challenged to "have a global outlook, attract diverse students, prepare them for non-traditional jobs, and offer more practical, hands-on experience and a better grounding in ethics."

Now, granting that notions of community and collegiality are gaining respect or at least increasing notice in higher education, why or how can honors education specifically be an appropriate venue for learning and doing community? Honors classes are small, capped, at my university, at twenty students. Honors education is interactive, a potential locus of low- or no-boundary interaction between students and professors, among students, between professors, where students can be part of a holistic learning and living activity which encourages learning and teaching by and from every member of the group (Hogner 1995). Honors education can engage with the world outside the classroom and become the perfect stage for discussion of and involvement in real world communities of various sizes. Perhaps most significantly, honors education can offer many opportunities for students from across the disciplines to work together at the posing and solution of problems, each bringing to bear a specific area of expertise and its particular approach to the question. In an honors classroom, we are, temporarily at least, committed to each other and to the subject and its problems, and in such a classroom students can most comfortably practice choosing together in the face of complexity. If we so design, our honors classrooms can, better than most, evoke for the student a sense of the wholeness of human experience. (Braid, 1995)

Often etymology can yield valuable insights into a problem and may do so in this case. The Latin base of the word "honors" is *honos*, "public office." Now, election to public office in Rome was an important distinction, as we would probably consider such election today. It reflected a certain position attained in the community, theoretically based on previous services and success (by individual or family) in public office. The essence of the *honos*, however, was not only the distinction but also the public duty — the responsibility toward the community. One could not hold an *honos* in isolation: *honos* marked the *honoratus* out as a member of the community encumbered with clearly delineated duties to the group. Now, honors

students are in a similar situation. Having made some success of earlier academic endeavors, they have received an *honos*. That *honos,* though, not only *entails* responsibility: its essence is responsibility. Generally we seem to view the honors student in the paradoxical situation common to the elected or chosen: set apart, distinguished, elect, elite, enjoying extraordinary opportunities. But the election carries with it significant responsibilities.

Honors education seeks to provide its students with the greatest possible number and degree of skills well honed for use in the university and beyond — the very best that our respective educational institutions can offer. Small, interactive, intellectually challenging classes which emphasize oral and written communication skills can allow the student to engage any subject matter in a deep and probing way and respond thoughtfully and creatively. They can carve out time for students to make the imaginative leaps which so commonly advance the frontiers of knowledge and creative activity in unexpected ways. Students in such classes will be academically and intellectually prepared to make of themselves the very best at their chosen endeavors. That we expect of honors students and can rightly expect.

But we will not, I think, want our students to make the choice that Haskell set for them: between general citizenship in the society and membership in the community of the competent. Education in our country has, from the first, directed itself toward production of a capable, informed, citizenry. Only a citizenry which is able to work together in diversity, to deliberate and analyze and then "make choices together in the face of unyielding uncertainty, can increasingly, in a rapidly changing global and local community, achieve our motto, *e pluribus unum*"(McKenzie 1994, 14).

Honors students ought to take away from their undergraduate experience not only education for the professions which they choose but also the foundation of "liberal arts," the basis of American higher education. Honors students will learn to name, to analyze, to synthesize, and to understand. They will have intensive and extensive instruction and practice in the foundational skills of writing, oral communication, math, and foreign languages that empower in today's world. They will acquire the tools requisite for further progress as needed in each of those areas.

But consider how many of those skills really are only useful in community. Whether the "audience" is a professional public like a scientific community, or a general public which will be called on to deliberate and decide matters of social and political policy, we

want our students to be able to speak (orally or in writing) to the condition of their audience, to be able to listen to that audience with care, evaluate its claims, and make further response. We want them to be well-informed participants in the reasoned public debate that is the basis of a healthy society, whether general or professional.

Honors students must be able to think, read, and write critically. But how do we suggest they approach critical thinking? How do we train them to think critically? Laird Edman addresses this issue in the next section of this monograph. In his *Forum* article, cited above, Robert McKenzie (12) reports a common concern among his colleagues that "critical thinking is taught too often as an individual skill, not also as a group endeavor," and that "colleges and universities should train students in deliberative discussion and group problem solving." Sections in this monograph by William Taylor and Cheryl Fuiks provide additional information on discussion and collaborative learning, respectively. While massed students and packed syllabi can preclude those activities in a regular classroom, the honors classroom is a perfect laboratory. Rather than send students home to read material and respond, solitary, neither challenged nor supported by fellows, we have the opportunity to facilitate their joint engagement with a text or problem and choose a course as best they can.

Bright, well-prepared students in a small group who know each other well can become mutual springboards of ideas and mutual questioners of claims which are the best spurs to good critical thinking and writing. In a sense, fellow students can embody the "counter arguments" which teachers of expository writing persistently attempt to drag up into the consciousness of the student writer. Having begun to learn that the arguments of others are shaped by their personal perspectives, the student is ready to confront the most essential of challenges in critical thinking and communication: the demand that she step outside herself to think of herself as someone else, to think what it would be like to be someone quite different.

Focusing specifically on his experience in writing programs, James Crosswhite (1996, 92) forcefully seconds the basic claim made by Nussbaum from a somewhat broader philosophical vantage. Considering the demands which writing education makes upon students, he asserts that "to learn is to change and...to learn to argue means learning to take the questioner's position." Honors students as a group have many advantages (academic success, perhaps

social skills, confidence in their abilities and in the accuracy of their perceptions) which paradoxically can ground them in a certain complacency. Thus the particular difficulty of the request to assume a critical distance from the self. The more often, however, a student is called on to practice this "narrative imagination," the higher her comfort level in the practical complexities of professional and civic life.

There is a second advantage of the honing of "narrative imagination." Perhaps the most significant focus of "critical thinking" is the self — the presumptions and preconceptions which govern our approach to any body of material and of which we must become aware if we are to engage appropriately in scholarly, or any, conversation. In this connection, Nussbaum's comment (62) that we must consider our traditions from the perspective of the outsider and begin to respond to questions concerning their meaning and function has a particular pertinence. The "standing outside" position is essential in that it permits understanding of the "other"; even more importantly it permits greater understanding of the self. Nussbaum's statements about "membership in the world community" and education for "world citizenship" apply equally well to membership in the professional community and citizenship in a profession. In their broadest and richest terms they speak to us all as honors educators:

> Attaining membership in the world community entails a willingness to doubt the goodness of one's own way and to enter into the give-and-take of critical argument about ethical and political choices.... Participants in such arguments should gradually take on the ability to distinguish, within their own traditions, what is parochial from what may be commended as a norm for others, what is arbitrary and unjustified from that which may be justified by reasoned argument.... Above all, education for world citizenship requires transcending the inclination of both students and educators to define themselves primarily in terms of local group loyalties and identities.

It is not enough, then, to understand the questioner and her position; rather, the student must enact the questioner, must question herself. Such practice, never easy or comfortable, will best prepare the student for broad critical analysis of a situation or problem and a decision taken in concert with a community of inquirers.

Not all honors classrooms will participate equally in the process of "community-building." Honors faculty are a diverse group, capable, determined, fairly self-assured, like many of our students. Many of them may not choose to take up the added challenge of helping students to create community in their own classrooms in order to prepare students for their future university undertakings and beyond. Many others will respond that, of course, this is the way classes already function.

But faculty who find the proposal engaging and exciting enjoy a valuable opportunity to prepare honors students in a special way for future contributions in both professional and public-political life. For many of us faculty, this idea of "community" and its implementation in our work did not come naturally, since we may not have learned its skills much in the course of our own education and professional training. We will need to join our students to become a learning community of "mutually intelligible interpreters" (Bellah, 172).

Those of us who would respond that our classrooms already, at least sometimes, work on the model of community building (interaction, respectful communication over important issues, decision-making even when certainty is beyond grasp) likely claim to believe that education is a two-way street and thus justify our interactive approach. We may with equal sincerity assure our students that improved written and oral communication skills will empower them for the remainder of their lives in formal education and beyond. But we need to acknowledge something else that we are about, if, indeed, we are: we need to speak out to students explicitly about the importance of "community," diversity, and reasoned (public or professional) debate in the lives which will be theirs.

Alexis de Tocqueville (1994, 2) saw a tendency amongst Americans toward individualism resulting from life in our busy, mobile world that "disposes each member of the community to sever himself from the mass of his fellows, and to draw himself apart with his family and his friends; so that, after he has thus formed a small circle of his own, he willingly leaves society at large to itself." Tocqueville's concern that the citizen be involved *qua* citizen *(polites)* in the "society at large" is very, very old in our tradition. Protagoras (Guthrie, 319A) perhaps best expressed the goal of higher education when he asserted that his student could expect to learn "the proper care of his personal affairs, so that he may best manage his own household, and also of the State's affairs, so as to become a real power in the city, both as speaker and man of action."

Like any other faculty member or student, Protagoras brought his own presuppositions about the world into his "classroom." For instance, he used the masculine pronoun in reference to his students and their later impersonations as citizens. He certainly would not have imagined that one day women would be among the university's talented and promising students, much less that they should become "real power(s) in the city" in speech or in action.

We also must prepare our students (and ourselves) for a surprising world of diversity immeasurably beyond the ken of Protagoras and probably even our own — a world where change, challenge, and possibility will arise from every direction. Individualism taken to the lengths which Tocqueville described, is unlikely to serve us well in such a world. We who teach small, interactive honors courses filled with bright, self-confident and motivated students have a rare opportunity to engage them in a new diverse and exciting world, universal "community of inquirers." Can we afford to let it pass?

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TEACHING CRITICAL THINKING IN THE HONORS CLASSROOM

LAIRD R. O. EDMAN

Definitions

There are many different missions for honors programs and colleges across the nation, many different structures, types of students involved, levels of participation, numbers of credits required, and types of courses and experiences offered. This monograph addresses the most common feature of honors programs and colleges — honors courses. And while honors courses take an impressive variety of shapes and sizes, the pedagogical goal that may be most common across honors courses is that of teaching thinking. Central to most honors pedagogy is the desire to help students become better critical thinkers.

The goal of teaching critical thinking skills is neither unique to honors nor new to education. From Socrates to John Dewey, teachers and educational reformers have called for an approach to education which goes beyond memorization to teaching what Dewey called "reflective judgment." In the late 1980's, the National Governors' Association, headed by then-Governor Bill Clinton of Arkansas, incorporated critical thinking (CT) among its recommendations for national education goals, a recommendation adopted by the federal government in 1990 as a part of National Goals 2000. By 1995, most colleges and universities had included educating for CT in their goal statements, and many accrediting agencies included measurable gains in CT skills into their accreditation criteria (e.g., the National League of Nursing in 1990, the Western Association of Schools and Colleges in 1990, the North Central Association of Colleges and Schools in 1992.)

Part of the problem with attempting to teach students to be critical thinkers, however, is the myriad of approaches to and definitions of the topic. The term has been absorbed into the common vernacular of educators, policy makers, businesspeople and the public, and is used widely, but often ambiguously. Most textbooks include CT sections or prefaces or appendixes or sidebars, treating CT as an optional add-on. Instructors (and some theorists) often confuse CT with other types of higher order thinking, such as problem-solving, scientific reasoning, statistical reasoning, informal logic, or

creative thinking. Articles and books and conferences have focused on defining terms, delineating components, and discussing pedagogical techniques. Philosophers and psychologists have wrangled over appropriate approaches to discussing and understanding CT (Ennis, 1989; Kurfiss, 1988). Some theorists have even suggested that the concept of CT is a chimera, an attempt to generalize something that has no general form and which only exists in unique forms within specific disciplinary contexts (McPeck, 1990; Norris; 1992). In the light of all of this, it is imperative in any discussion of teaching CT that a working definition be proposed.

William Taylor (this volume) incorporates a number of commonly noted elements in his definition of CT. Taylor notes the need for a critical thinker to withhold judgment until sufficient evidence has been gathered and then to make judgments on the basis of appropriate evidence. He also includes the ability to clearly communicate one's reasons for one's judgments as a component of CT. Finally, Taylor posits the willingness to commit to positions on which one is only relatively certain, while remaining willing to change one's mind in the face of new, convincing evidence as a component of CT. Taylor's definition is a good place to start to develop an approach to teaching CT in the honors classroom.

Reasoned judgment is fundamental to many definitions of CT. In order to be considered a critical thinker, a person must habitually, carefully, and reasonably consider "the evidence" when making judgments. This seems to be at the core of several influential definitions of CT, such as those by Robert Ennis (1987), John McPeck (1981), Richard Paul (1993), Matthew Lipman (1988), and Harvey Siegel (1988). Just what is involved in making reasoned judgments, however, might vary by discipline, context, and topic. Even so, some theorists in CT have developed taxonomies of just what is included in "reasoned judgment," taxonomies which can be quite helpful in understanding what we mean when we say "reasoned judgment."

The APA Taxonomy of Skills

The most recent taxonomy of CT skills is one devised as a result of a two-year Delphi study sponsored by the American Philosophical Society. This study convened a panel of forty-six recognized experts in the field of CT theory who worked together to develop a consensus definition of CT, one which is thorough yet rather concise: "We understand critical thinking to be purposeful, self-regulatory judg-

ment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione 1990, p.3).

The taxonomy of CT skills presented in this report can be quite useful for practitioners of CT instruction. The APA report acknowledges that the skills involved in "purposeful, self-regulatory judgment" can be grouped in a number of different and useful ways, thus the list presented is meant to be neither exhaustive nor conclusive. The skills listed, however, are valuable and vital for CT:

1. Interpretation
    - Categorization
    - Decoding significance
    - Clarifying Meaning
2. Analysis
    - Examining ideas
    - Identifying arguments
    - Analyzing arguments
3. Evaluation
    - Assessing claims
    - Assessing arguments
4. Inference
    - Querying evidence
    - Conjecturing alternatives
    - Drawing conclusions
5. Explanation
    - Stating results
    - Justifying procedures
    - Presenting arguments
6. Self-Regulation
    - Self-examination
    - Self-correction

(p. 12)

For anyone interested in examining taxonomies of CT skills and dispositions, I would recommend looking at the complete Delphi report (Facione, 1990) as well as Robert Ennis's taxonomy (1987).

Dispositions

There are more components involved in CT than this somewhat sterile list implies, however. Taylor's definition, for example, in-

cludes in CT a willingness to make commitments based upon one's judgments while also reserving the potential to change one's mind in the light of new evidence. This reflects an epistemological stance that is influenced by individual cognitive and emotional development. This implies CT is much more than a set of reasoning and communication skills. CT seems to reflect an approach to life. And it is in this that the genius of honors education can work its transformation on students in the realm of CT.

Most work in CT theory and pedagogy during the past decade and a half has included something about the attitude or disposition to think critically. It is not enough that someone have the skills to use reason when considering ill-defined problems (problems which do not have a set procedure or algorithm for coming to a correct answer). A critical thinker must also desire to use CT skills even in situations in which reasonable reflection may lead to discomfort or difficult decisions on the part of the thinker. That is, the thinker must be willing to use critical thinking skills "against" even her or his own opinions and biases. This is what it means to be intellectually honest or to have intellectual integrity, an often-cited CT dispositional trait (Ennis, 1987; Facione, 1990; Paul, 1993). Other important CT traits include intellectual humility, intellectual courage, intellectual empathy, intellectual perseverance, a faith in reason, and fair-mindedness.

These traits, or dispositions, reflect a commitment on the part of the thinker to continually improve her or his thinking. It is obvious that people don't simply "have" or "not have" either the CT skills or dispositions. The skills and dispositions exist on a continuum and are often context dependent. The goal of honors education, however, is to foster growth in students along the continua of CT skills and dispositions throughout their education, to help them transfer the use of these skills and dispositions to other courses and to the whole of their lives, and to foster a desire in students to continue to grow along these continua. No one "gets there" on this side of paradise, not even senior faculty. The goal is to continue "higher up and farther in!"

These traits reflect the kind of thinkers we hope our students will become, thinkers who are intellectually curious and thus persevere in truth seeking. Thinkers who value evidence, reason, and research. Thinkers who seek to understand their own limitations and biases, and therefore are willing to listen to other viewpoints and honestly consider them. This truth seeking, honesty and civility is something desperately needed in academia, politics, and busi-

ness today. Thus instruction that emphasizes CT is far more than teaching students reasoning skills and informal logic. It is instruction that teaches the core values of education, and this is why CT instruction is so often at the center of honors programs.

Developmental Issues

The final theoretical issue to consider before we begin to explore specific ways of teaching CT is the issue of development. Almost all faculty, at some point, experience the frustration of discovering that what students hear is sometimes far different from what the faculty member said. Two truisms of educational theory apply in these situations: the most important thing governing what a student can learn is what the student already knows, and material presented is not synonymous with material taught. Students arrive in our classrooms and programs with at least a dozen years of educational experience under their belts, and this experience carries with it not only a great deal of information and conceptual understandings and misunderstandings, but also a host of educational expectations, strategies, and epistemological assumptions. These expectations, strategies and assumptions play an important part in students' ability to even understand the issues involved in CT, much less to grow as critical thinkers. Therefore a course or sequence of courses that tries to teach students CT skills and dispositions may fail miserably if the instructor takes no heed of the students' developmental positions. Understanding what one wants to teach is not enough. One must understand how to teach *this* topic to *these* students at *this* time.

Several different developmental schemes have been proposed concerning student growth in critical thinking skills and dispositions (Belenky, Clinchy, Goldberger, & Tarule, 1986; King & Kitchener, 1994; Perry, 1970). These schemes all share a basic framework for understanding how people's view of knowledge changes and how this change influences their ability to engage in critical reflection and thought. These developmental frameworks posit that people view the world from several different positions or perspectives (all of these theorists avoid the loaded term "stages.") The number of positions posited varies with the theory, but they all move in roughly the same manner. People in the early positions tend to see "truth" as dualistic, monolithic, and presented by authority figures who tell us the right and wrong answers. Those in the middle positions tend to see truth as completely relative, to see

all positions as equally valid, and to interpret academics as a game. Those in the later positions understand that the process of inquiry is fallible and the justification of one's beliefs must be based upon a rational process that uses evidence and rules of inquiry appropriate for the issue at hand, and that knowledge statements must be evaluated as more or less approximations of the truth, open to the scrutiny of other rational people.

College seniors tend to be farther along the epistemological sophistication continuum than first-year students, and graduate students tend to be farther along than college seniors (Kitchener & King, 1994). The danger for teachers of honors courses is to assume that honors students are automatically farther along this developmental continuum than their non-honors counterparts. The fact is many honors students are honors students not because they are more sophisticated thinkers, but because they are better stenographers than their non-honors counterparts.

Some honors students, just like their non-honors counterparts, will look to the professor to impart truth to them and will be quite frustrated when the professor seems to focus on ambiguities and questions. These students tend to ask, after a professor has explored several different interpretive possibilities of an issue, "But which one is the *right* one?" Unfortunately, too many professors will oblige them with a "right" answer, or even worse, never bring up the questions and ambiguities of the discipline under consideration in the first place.

Some honors students will, with a knowing wink, proclaim the equality of all positions and ideas. They end their declarative statements with "That's just my opinion," and refute any attempts at evaluation of ideas with "That's just your opinion." For these students, opinions are neither good nor bad, better nor worse, they just are. A professor's call for evidence and rational justification is somewhat mysterious to them. These students think that to get a good grade one must learn the professor's opinion and parrot it back (and they are correct about that far too often).

Some honors students will understand the need for evidence as established by the discipline in question, but only in some disciplines or in some situations. Some students will be able to use good thinking skills in history but not in biology, in anthropology but not in literature, in philosophy but not in psychology. They may be able to engage in reflective judgment in the classroom, but not in the dorm, in trying to decide on a major, but not in deciding whom to marry.

The key issue about all of this for the instructor is that research into epistemological development tends to show that students are unable to understand or even to correctly hear presentations or arguments which call for them to use a level of thinking more than a few "steps" beyond their current level. Thus when students do not seem to have heard the salient points of a class discussion or presentation, it may not be an issue of attention, but rather an issue of development. Any competent CT pedagogy must take into account the developmental position and path of the students in the classroom, the fits and starts and regressions of students along that path, and the often painfully slow progress of students in developing competence in CT. Fortunately, most experienced master teachers understand this automatically. It is a part of good teaching to know where your students are, to meet them there, and then to guide them further along the road. It usually does no good to stand at your destination and call for students to join you there. Unless they are almost there already, they will not be able to hear you.

Features of Courses Which Foster CT

There are many approaches to teaching CT. These include 1) stand-alone courses in which CT is the topic; 2) seminars concerning some disciplinary or multi-disciplinary issue in which one of the core goals is for students to grow in their CT; 3) regular disciplinary courses which seek to infuse CT instruction into the approach of the course; and 4)` regular disciplinary courses which assume learning CT will simply come automatically with disciplinary mastery. Since the process of teaching CT is long and involved, and the goal of CT instruction is so integral to the goals of most honors programs, the best approach is most likely a combination of approaches. CT instruction should be explicitly taught and infused into our pedagogy across disciplines and courses. In designing courses and programs, however, it is important to distinguish between teaching *for* thinking, teaching *about* thinking, and the teaching *of* thinking (Morgan, 1995).

Teaching *for* thinking includes teaching strategies, student activities and curriculum materials that engage students in thinking. Teaching for thinking is an important component of good teaching, but it is essential for instructors to understand that getting students to think is not the same as helping students learn to think better. This is the error of many disciplinary textbooks that include "Questions for critical thinking" in sidebars or chapter conclusions.

Simply asking provocative questions does little good if students are not taught how to evaluate their answers.

The teaching *of* thinking involves identifying specific thinking skills involved in good thinking, and those skills themselves may become the content of the course. This is often the focus of stand-alone CT courses and is the approach taken by most CT textbooks. This also is an important part of teaching CT and is the approach which tends to be favored by philosophers. Identifying specific thinking skills and practicing them, however, may do little to help students transfer those skills into different contexts or develop the necessary dispositions to use the skills outside of the particular course in which they are taught. This is the error made by many who advocate a single stand-alone CT course to meet a program's or institution's CT goals.

Teaching *about* thinking involves making students more aware of the executive processes they use during thinking. This is essentially the teaching of metacognitive strategies that help students manipulate and evaluate their thinking processes. Cognitive and educational psychologists tend to favor this approach (see Halpern, 1998; Perkins, 1995), and this approach is reflected in Richard Paul's recent short definition of CT: "thinking about your thinking while you are thinking in order to make your thinking better" (1993, 462). This approach to CT instruction may hold the most promise in helping students transfer what they are learning to other contexts.

Joann Kurfiss (1988) has identified several common principles of thinking-centered courses that span disciplinary boundaries and contexts. The honors instructor and program director, in designing courses that seek to teach CT, should keep these in mind throughout the planning and teaching process. In thinking-centered courses:

1. Critical thinking is understood as a learnable skill, and the instructor and peers are resources in developing CT skills.
2. Problems, questions, or issues are the point of entry into the subject and a source of motivation for sustained inquiry.
3. Challenges to think critically are balanced with support tailored to students' developmental needs.
4. Students' developmental needs are acknowledged and used as information in the design of the course.

5. The course is assignment centered rather than text and lecture centered. Goals, methods, and evaluation emphasize using content rather than simply acquiring it.
6. Students are required to formulate and justify their ideas in writing and in other appropriate modes.
7. Students collaborate to learn and to stretch their thinking.
8. The course nurtures students' metacognitive abilities.
9. The thinking standards appropriate to the course are made explicit, and students are taught how to achieve them.

These common principles of thinking-centered courses make clear the important elements of CT instruction: an understanding of developmental issues, a focus on explicit, rationally justified thinking about the questions, problems, and issues of a subject, explicit metacognitive awareness, and explicit standards by which both one's thinking processes and the products of that thinking are evaluated. Good CT pedagogy includes these things.

Good CT pedagogy also approaches all disciplinary content as a mode of thinking (Paul, 1993). One of the most common complaints heard about infusing CT instruction into a curriculum is the claim by professors that they already have too much to cover to include teaching thinking too. This attitude about teaching thinking (that it is something to be "added" to a course) reflects a mistaken notion about the nature of critical thinking and disciplinary content. If we can assume the goal of any course is to increase students' mastery and understanding of the topic of the course, that very mastery and understanding automatically includes *thinking* about the topic of the course. One can hardly imagine a course that consists entirely of memorizing facts, formulae, rules, and/or vocabulary. If the instructor's goal is for students to be able to understand and use the facts, formulae, rules, and/or vocabulary, such understanding and manipulation require thought. And whenever thought processes are part of the instructional goals of a course, critical thinking should be a part of the instructional goals of the course.

For us to understand this distinction further, it is important that we understand something about the nature of any academic discipline. All disciplines are made up of, not a collection of facts, but a system of types of questions, acceptable methods for answering the types of questions appropriate to the discipline, and rules of evidence for evaluating the answers generated by those methods. Any discipline is called a discipline because it is a particular, dis-

ciplined way of thinking about something. Botany is a disciplined way of thinking about plants. Literary criticism is a disciplined way of thinking about language-based works of art. Psychology is a disciplined way of thinking about human thought and behavior. Philosophy may share an overlap in topics with psychology (human thought and behavior), but the questions asked in philosophy and the methods used to answer those questions and evaluate those answers are quite different from those of psychology. There are also examples of good and bad thinking in every discipline. What constitutes good thinking in a discipline is that thinking which is "reasoned judgment" using the criteria for evidence established by the discipline. Good thinking in a discipline is critical thinking in that discipline.

Thus, when one teaches a topic within a discipline, in order for students to understand the topic, they must understand and be able to use the methods (the thinking) appropriate to that topic. While rote memorization is important in most disciplines (for example, one needs to memorize vocabulary and parsing rules to begin to learn another language, or one needs to memorize the parts of a cell to begin to learn cellular biology), no discipline is simply a collection of facts to be memorized. Anyone who *only* learns the parts of a cell, along with a host of facts about living organisms, can hardly be said to have learned (as in understood) biology. Teaching a topic means teaching students the modes of thinking appropriate to that topic and helping students to understand that all the declarative statements in a discipline are answers to previously asked questions. To teach a course well, in such a way that students understand the topic and can take that understanding and build on it in subsequent courses and in their lives outside of the classroom, one *must* teach thinking. Raw facts are meaningless without the thinking that created them and uses them. Therefore the features of thinking-centered courses listed above can be incorporated into any course. They should be especially descriptive of honors courses.

Creating a Thinking-Centered Course

There are many different course structures and teaching tactics available for those who wish to design courses that teach CT. Several strategies are presented in this volume, such as William Taylor's article on classroom discussion, Cheryl Fuiks's article on cooperative learning and the structured controversy model, and Stewart Justman's article on honors composition. For an instructor to

teach CT well, however, that instructor must make sure he or she is not resorting to a "bag of tricks" approach to CT instruction — adding a few techniques to an old course design in the hope of adding "thinking" to the course. Giving essay exams, requiring independent or group research papers or presentations, engaging in active learning techniques, having group discussions or projects, replacing lecture-centered pedagogy with discussion-centered pedagogy — all of these techniques are laudable and often are important parts of thinking-centered courses, but they don't ensure thinking centered courses. Engaging our students in their learning is important, but engagement does not mean we are teaching our students to be critical thinkers. Many things engage our students, but few things teach them to think better. Active learning may ensure our students are learning, but they may simply be learning more meaningless facts rather than the need for and skills to use appropriate reasonable reflective judgment.

Therefore, professors who wish to design or revise courses to teach CT should review their course goals in order to design assignments and assessments that focus on teaching the thinking of the topic in question. With the components of CT in mind, as well as the principles of thinking-centered courses mentioned above, instructors should ask themselves:

- What are the most important critical thinking skills my students will need in the future that are a part of my discipline?
- What are the main units in my course?
- What are my main learning objectives for each of these units and for the whole course? What are the chief concepts and principles that I want students to learn in each unit?
- What thinking skills (i.e., ways of observing, habits of mind, questioning strategies, use of evidence, etc.) am I trying to develop within each unit?
- What thinking skills do I now test but not teach as I would like? What are the most difficult aspects of my course for students?
- What aspects of critical thinking can I realistically handle and enthusiastically teach in this course?
- If I could change my students' study habits, what would I most like to change?

- What differences do I want my course to make in my students' lives — in their sense of self, their values, their ways of thinking? What is my unique stamp on this course? Ten years later, what do I want students to most remember about my course? (Bean, 1996; Paul, 1993)

Obviously, working through the questions on this list represents a great deal of time and a commitment to course revision that may involve a complete redesign of one's course, not something any instructor would attempt lightly. This is one of the advantages of honors programs for the institutions in which they are housed: professors are able to attempt new approaches to teaching and new course designs which can then translate into course revisions across the curriculum. In the honors program, instructors can try out their CT approaches in courses that usually have a small number of particularly bright, motivated students. Such courses lend themselves to a safe but intense atmosphere in which the instructor and students work together to explore the thinking involved in the topic at hand and strategies for learning that thinking. And such courses enable the instructor to more effectively engage in what is perhaps the single most important strategy for teaching CT: modeling.

Modeling CT skills and dispositions is essential in CT-centered courses. Students need to see their professors actively engaged in the types of thinking the professors are trying to teach. Students so often see not the processes of professors' thinking, but the products. If our goal is to teach them the processes, rather than get them to memorize the products, we need to show them those processes. Instructors need to think out loud for their students and guide their students while the students think out loud. Instructors also need to make sure the criteria for good thinking are explicit and reinforced regularly in the classroom.

Explicit thinking criteria are essential for the teaching of CT. Far too often the instructor's working definition of CT in operation in the classroom is "Critical thinking is thinking the way I think," and students discern this very quickly. Thus, when students begin sounding like the instructor in class discussions or on essays, the instructor assumes the student must be thinking well. Instead of this faulty, and potentially damaging approach, instructors who wish to teach CT must make explicit the standards of thinking expected in student discussion and student assignments, and the instructor must model those standards for the students. Those standards should include the appropriate skills expected, the criteria for

judging evidence and reasoning, and the dispositions expected of good thinkers. For students beginning this process, the instructor should also regularly reiterate and reinforce those standards.

Good CT instruction should lead students to be self-evaluating. Almost every definition of CT available includes a "self-regulating" or "self-reflection" component. For students to grow in their CT, they must be able to evaluate their own and other's thinking. Without this, there is no hope for transfer outside of the narrow confines of the honors classroom. And without explicit standards by which to evaluate their thinking, students can only glean the evaluative criteria from instructor comments and peer reactions. Establishing the criteria for the thinking expected in the course in question is, perhaps, the most difficult, but also most important, work in designing instruction for CT. Because one cannot teach "all" of CT in one course any more than one can teach all of biology or all of psychology in one course, the instructor needs to decide what the most important thinking skills, criteria, and attitudes for *this* course are and make those skills and attitudes explicit. Students must then be taught those skills and criteria and shown those attitudes, students must be given assignments that call for them to use those skills and criteria, and students must be assessed on those skills and their use of the criteria. Then students can begin to evaluate their own and other's thinking.

Clearly establishing the criteria for judgment appropriate for the topic of the course also enables the instructor to help students avoid making snap evaluations. This is something professors too often encourage by asking students for their reactions or opinions about a topic or reading or presentation before the students are questioned to make sure they understood what they are reacting to. Helping students withhold judgment until they are sure they both understand the issue and have the necessary evidence and tools to judge the issue is an important part of teaching CT.

Specific Strategies for Teaching Critical Thinking

(I) Essay exam criteria generating

As noted previously, there are many strategies for teaching CT in the classroom. At the core of CT instruction is making explicit the skills and criteria for good thinking appropriate to the course at hand, giving the students many opportunities to practice using those skills and criteria on first other's thinking and then on their own thinking, and evaluating students based on those explicitly stated criteria. One way of doing this is to hand out several essay

question answers of varying quality to the class. Have the class grade the answers (perhaps in groups). Then have the class generate the criteria on which they based the grades given to the essays. With guidance, the class should be able to generate a good set of criteria for what makes an excellent answer to an essay question in this topic. Then individually (or in groups, but individually probably works better for this) have the students answer another essay question. After this, have the students, again individually or in groups, apply the class criteria to their own essay answers, and perhaps have them grade each other's essays as well (but the essays must be anonymous or the students will tend to be too nice). If necessary, the instructor can then grade a few of the essays out loud, using an overhead, for the class. This entire process makes explicit some of the thinking criteria for the course, gives students practice in using the criteria to evaluate others and themselves, and allows the professor to model using the criteria. This exercise will greatly increase the quality of student essay exam answers. This process can also be used for papers, but the longer the papers or essays involved, the more difficult and time-consuming this is.

(2) Seat-of-the-pants modeling

Since modeling thinking skills is so very important to teaching CT, instructors need to set up situations in which they can think out loud in front of the class. One strategy for doing so, albeit a risky one, is for the instructor to learn something new with the students — that is, the instructor should present something to the class that neither the instructor nor the class has seen before. Then the instructor can work with the class on, or simply model in front of the class, the thinking processes the instructor uses to understand and evaluate this new information or idea. For example, in a poetry class, students are often frustrated by their inability to understand some poems and are discouraged by the seeming ease with which the instructor explicates the poems under consideration. What students often do not know is that the instructor's explication is the result of a great deal of time studying the poem. The students do not see that process, only the product. Therefore, the instructor should risk "not understanding" in front of the students by carefully reading and explicating out loud a poem new to the instructor. This is a strong reinforcement of the thinking the instructor is trying to teach the students.

Classroom Rules for Critical Thinking

Encouraging students to develop the CT dispositions is as important, and is perhaps more important for transfer, than teaching students specific CT skills. The dispositions are taught primarily through establishing classroom climates that expect and nourish them, by faculty and peer modeling, and by challenging students (in a safe environment) to stretch their epistemic assumptions. If students are challenged in a threatening environment, they are just as likely to retreat into their current assumptions as develop more advanced dispositions toward thinking and knowledge. One way to encourage the dispositions is to establish and regularly refer to explicit "classroom rules" toward that end. For example, *Edman's Classroom Rules for Critical Thinkers:*

- Because you are not God, it is inevitable some of the beliefs and viewpoints you firmly hold are completely wrong. Therefore, beware of intellectual arrogance.
- Until you understand the viewpoints of those who disagree with you, you do not understand your own viewpoint very well.
- Until you can summarize another viewpoint so well those who hold it agree with your summary, you do not understand that viewpoint.
- If you wish to be considered a critical thinker, you must be willing to seriously consider alternatives and to change your mind.
- Always assume those with whom you disagree are as intelligent as you are and have motives as noble as you do.

John Bean's strategies for designing CT tasks

John Bean (1996) asserts that courses that seek to teach CT must focus on problems and questions rather than on the transmission of declarative knowledge. To that end, he presents several strategies for designing CT tasks:

- Think of tasks that let students link concepts in your course to personal experience or prior knowledge.
- Ask students to teach difficult concepts in your course to a new learner.
- Think of problems, puzzles, or questions you could ask students to address.

- Give students raw data and ask them to write an argument or analysis based on the data.
- Think of opening "frame sentences" for the start of a paragraph or short essay; students have to complete the paragraph by fleshing out the frame with generalizations and supporting details.
- Have students role-play unfamiliar points of view or "what-if" situations.
- Select important articles in your field, and ask students to write summaries or abstracts or precis of them (or to do the same of your lectures).
- Think of a controversy in your field, and ask students to write a dialogue between characters with different points of view.

Develop cases by writing scenarios that place students in realistic situations relevant to your discipline, where they must reach a decision to resolve a conflict. (pp. 131-132)

Focusing on the structural aspects of problems or arguments

Since teaching CT is a worthless enterprise if students do not transfer what they learn to other courses and other contexts outside of the classroom, it is important to teach for transfer. In order to teach for transfer, the CT instructor must help students see the structures of problems and arguments that are common across contexts and help students practice using critical thinking skills in a variety of contexts. Diane Halpern (1998) lists several questions to ask students in order to help them attend to the structural aspects of problems or arguments in order to aid transfer. Students can be asked:

- To draw a diagram or other graphic display that organizes the information.
- To decide what additional information they would want before answering the questions
- To explain why they selected a particular multiple-choice alternative. Which alternative is second best? Why?
- To state the problem in at least two ways.
- To determine which information is most important? Least important? Why?
- To categorize the findings in a meaningful way.
- To list two solutions for the problem.

- To determine what is wrong with an assertion that was made in the question.
- To present two reasons that support the conclusion and two reasons that do not support the conclusion.
- To identify the type of persuasive technique that is used in the question. Is it valid, or is it designed to mislead the reader? Explain.
- To develop two actions they would take to improve the design of a particular research study. (p. 454)

Teaching for metacognition

Helping students think about their thinking is an essential part of helping them to become self-assessing. Students need to consider what they know and do not know about an issue, and use that information to direct and improve their thinking. Foregrounding the thinking processes involved in solving a problem or thinking about an issue or question is one way of teaching students metacognitive skills (Halpern, 1998). After being given a problem or question to consider, students should be asked metacognitive questions about their process, such as 1) how much time and effort is this problem worth? 2) what do we already know about this? 3) what is the goal or reason for working on this problem or question? 4) how will we know when we have solved this or come to a conclusion? 5) what thinking skills are likely to be most useful here? As the students work on the problem, they should regularly be asked to assess their progress, and reassess the process. Once the task is completed, students should evaluate their process and how well they did at using the appropriate thinking skills in this situation.

Conclusion

The honors classroom can be the perfect place to teach for critical thinking. Honors courses often have limited enrollments. They also may deal with controversial, difficult and/or multi-disciplinary topics, involve a great deal of engagement and interaction, allow the professor to try novel pedagogical approaches, and challenge students to take more control over their own education. These characteristics can lead to a classroom experience which is particularly effective in helping students discover and challenge their own assumptions, explore alternatives with their peers, and challenge and be challenged to excellence in their thinking.

Of all the strategies and approaches to teaching CT, however, one thing is certainly needed in every course that attempts to teach CT: an instructor who is seriously attempting to grow in her or his CT. Almost everyone *believes* they are a good critical thinker. The irony about CT is that students and faculty and administrators who do not know the skills of CT nor the standards involved in good thinking assume they are good thinkers. It is not until one begins to become a critical thinker that one can see the faults in one's own thinking, and thus only critical thinkers can tell when they are not thinking critically. Anyone who has spent much time on a college or university campus knows there are faculty and administrators whose CT abilities and dispositions are suspect. Without a critical thinker teaching a course, however, the level of thinking attainable by the students in that course will be governed by the level of thinking they had when they began the course. Therefore, the final recommendation for teaching CT is that the teacher must be a critical thinker.

Our students are busy preparing for a world that we have difficulty imagining, given the current pace of change. They will most likely still be in the workforce in 2050, and will see the decades 2060 and 2070. Many of them will work at careers that do not exist now. These students are facing a world of great uncertainty. What is certain, however, is that in a time of accelerating change and "information overload," teaching our students the ability to carefully evaluate and judge is essential. As we are more and more confronted with a variety of choices, some of which have disastrous consequences for individuals, whole communities, and perhaps the entire human race, we desperately need reflective and reasonable thinking that is focused on deciding what to believe or do. Teaching thinking is our central educational imperative.

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COOPERATIVE LEARNING IN HONORS EDUCATION

CHERYL L. FUIKS

A common element in honors courses is the emphasis on active, rather than passive, learning modes in the classroom. Few successful honors courses are primarily lecture. A brief examination of the *National Honors Report* shows numerous reports of classroom activities, all of which actively involve students in their learning process. This paper will provide a brief overview of cooperative learning, including two ways that this technique can be implemented in the classroom.

Cooperative learning is the instructional use of small groups whereby students work together to maximize their own and their group's learning (Johnson & Johnson, 1992, 120). Teachers have used small groups for assignments for many years, but true cooperative learning is more than just a "group project." A major project could be a cooperative learning experience, but only if the students truly work together to solve some problem or work through difficult concepts. A project where each member does a piece and then the group merely assembles the pieces into a finished product results in the group learning more about specialization and division of labor than developing problem-solving and critical thinking skills. In cooperative learning the group integrates and synthesizes data and other information into some cohesive and logical framework to complete the assigned task.

Cooperative learning contrasts significantly with competitive and individualistic learning. Competitive learning involves students working against each other to attempt to "achieve a goal only a few can attain." (Johnson & Johnson, 1992, 121) In individualistic learning students "work by themselves to accomplish learning goals unrelated to those of the other students" (122). Both competitive and individualistic learning modes are acceptable for certain types of learning tasks (Johnson & Johnson, 1991, 81-125), but for most honors courses, cooperative learning systems are much more effective in achieving the types of learning and skills acquisition typically expected in an honors course. For example, for students to develop critical thinking skills, they must have exposure to a variety of ideas and experience interchange about these ideas. Through a cooperative learning activity, they can discuss various points of view on an

issue to allow them to evaluate and refine their own beliefs, values and opinions. As evidence of this notion, Johnson and Johnson (1992, 122) cite several studies and meta-analyses about the effects of cooperative learning on a variety of learning dimensions. They compared cooperative learning with competitive and individualist learning modes. They report that cooperative learning promotes higher achievement, greater mastery and retention of content, greater transitions to higher levels of cognitive and moral reasoning, higher order reasoning and more critical thinking than is seen in either competitive or individualistic learning experiences.

Cooperative learning is ideal for honors students because it reinforces the high level of motivation to succeed that we typically see in honors students. Thus any fear that students may have that their teammates will not "pull their weight" should be diminished among honors students. Structuring a course in a cooperative learning environment encourages students to be more prepared for class, to be better prepared and more willing to participate in group discussion and to take more responsibility for their own learning.

Types of Cooperative Learning

Constructive Controversy

The constructive controversy method of cooperative learning is one way to encourage students to think critically about an issue *and* to teach them ways to analyze divergent views and data to develop a conclusion. Constructive controversy differs from a debate in that debate involves a judge who determines the "winner" of the conflict. Constructive controversy also does not involve concurrence-seeking behavior which can limit the discussion by avoiding disagreement. Instead, in constructive controversy the group must come to a conclusion about the issue only after both perspectives have been explored and discussed in depth. This approach is well-suited to an honors course for the benefits given above and the emphasis on critical thinking. Honors courses frequently are populated by honors students from diverse backgrounds and different academic disciplines. As such, these students will naturally have different perspectives to bring to the variety of issues which could be addressed through the constructive controversy approach.

The process of constructive controversy involves several steps, which may be altered to fit classroom needs. The students or instructor chooses an issue that has at least two distinct viewpoints. Issues could include, for example, the elimination of affirmative

action laws or the legalization of drugs. Once the topic is chosen, the group must be given guidelines as to the structure of the assignment. Again, the assignment could be highly specific or more general depending on the class. For the constructive controversy method to be effective in a class with several different groups, it is important for the students to understand the expectations of the instructor and their peers as they begin the process. The members of the group are assigned (or volunteer for) "sides" of the controversy (Johnson & Johnson, 1992, 129-132).

After thoroughly researching the topic, each group of students advocates their position to their opponents. The other side takes notes and asks clarifying questions. After both sides have presented their views, the two sides openly discuss the issue, evaluating the opposing position and rationale and looking at the strengths and weaknesses of the information on both sides. Then the groups switch sides and attempt to argue the other group's positions, using notes taken during the first part of the discussion. Finally, the group makes a decision by consensus, writing and presenting a paper detailing the group's joint position with supporting evidence and rationale. Often this consensus report develops a third position that is less severe than the original two (Johnson & Johnson, 1992, 132-134).

Johnson and Johnson (1992) cite several benefits of the constructive controversy approach. First, related to content, students have greater mastery and retention of content matter and a greater ability to apply theory to different situations. Second, in terms of critical thinking, students develop higher quality decisions and solutions for the types of issues used in this approach. Other benefits are more related to social skills. Students better understand the perspectives of others, develop more positive relationships among their group and enjoy greater perceived academic support from their peers. Evidence also exists that students develop a higher academic self-esteem (126-127).

Team Learning Model

The Team Learning Model (TLM), as developed by Larry Michaelson and Robert H. Black (1994), is a comprehensive, group-based format that significantly redefines the roles of faculty and students in the educational process. This model operates in an environment where the instructor becomes a "course designer and the manager of the overall instructional process." The nature of the performance

evaluation and the learning activities in the course create a willingness on the part of the students to share in the responsibility for their learning. The four components of developing this learning environment are the course design, the classroom management techniques, the composition of the student teams and the schema for performance evaluation.

The course design should embody a framework that "ensures that individual course components are mutually supportive" (Michaelson & Black, 1994, 3). The instructor must **first** determine the desired educational outcomes from the course, including both technical skills and higher level cognitive skills such as critical thinking. Once the objectives are determined, the instructor can define the content of the course that will give the students the skills to reach the objectives.

Another facet of the Team Learning Model is way the class itself is conducted. The two pieces of classroom management are the Readiness Assurance Process (RAP) and applications-oriented assignments. The RAP begins as the students are tested over required readings, first individually and then in their teams, prior to any class discussion or presentation on the material. This process motivates students to take responsibility for learning some of the basic nature of the content; adequate preparation is rewarded with higher scores on the Readiness Assessment Tests (RATs). Through this process, the students receive multiple exposures to content through the reading, through the individual RAT, through discussion with team members on the group RAT and through oral feedback from the instructor on any material the students may not yet understand after the tests are scored and returned. The Readiness Assessment Process ensures that the students are adequately prepared to use the content in more applications-oriented assignments (Michaelson & Black, 1994, 5-10).

The second component of effective classroom management is the development of assignments designed for students to apply the concepts they have learned through the Readiness Assessment Process. These assignments should involve higher order skills and address the issue of whether the students can effectively use their knowledge of the content in more complex situations. These assignments could range from case studies to scientific inquiry to literary criticism and should promote group cohesiveness (so students must work together rather than divide the task). Groups should use a significant amount of their time together talking, discussing, developing frameworks and the like as opposed to writing. Certainly the pro-

ject must have a tangible component (a paper or presentation), but the benefits of group learning is in the formulation of ideas and strategies, and thus the activity should be focused to that end (10-11).

The third part of the Team Leader Model, performance evaluation, is designed to encourage students to take more responsibility for their learning. As such it includes evaluations of individual performance and group performance and peer evaluation. The individual assessment portion of performance evaluation motivates the student to complete assigned readings and gives the instructor data on the student's ability to use course concepts in the completion of an application-oriented project or exam. Michaelson and Black argue that the group performance component encourages students to work together and to "justify putting effort into group work" (12). The final piece, peer evaluation, provides an incentive for the students to participate in group discussions and allows a grading differential for differential contribution to the group assignments and projects. The weights assigned to each of the components must be high enough so that students take them seriously and they "must be responsive to student concerns for fairness and equity" (12).

The final part of the Team Learning Model is the formation and development of the Learning Teams. According to Michaelson and Black, "the Team Learning Model relies on the group dynamics that naturally develop in properly managed, permanent and purposefully heterogeneous Learning Teams. As the Learning Teams become more cohesive over time, their norms provide an increasingly powerful source of motivation to prepare for class and participate in group work" (14). The student assets should be evenly distributed among the groups and groups should be formed in such a way that there will not be any external barriers to group cohesion (such as previously established close relationships). Instructors should be open about how the groups were formed to prevent any suspicion about "any ulterior motives the instructor may have about the eventual composition of the groups" (14).

Conclusion

Honors courses should provide students numerous opportunities to share information and ideas, to develop critical thinking skills and to encourage students to take more responsibility for their learning. Active learning processes should provide the focus of any honors course. The course should also provide a "laboratory" for faculty to

use innovative course designs and to move away from a passive lecture format. The two examples of cooperative learning above are all of this. The approaches allow students to interact in many different ways; the cooperative learning settings promote significant active learning, encouraging students to develop critical thinking and problem-solving skills. Through these approaches, the faculty member becomes a facilitator of learning rather than a lecturer.

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HONORS COMPOSITION: Thoughts on Pedagogy

STEWART JUSTMAN

If it is to be something other than gimmickry, pedagogy should be kept simple, should never become an end in itself, and above all, perhaps, should prove itself in practice. During some twenty years of teaching composition to honors students, I have evolved a pedagogy that, I feel, satisfies these principles. Alone among my courses, Honors Composition seems actually to work.

The axiom of Honors Composition is that writing is a skill, a demanding and yet at the same time enabling technique, that calls for practice. As with other skills, like violin-playing or platform-diving, only by doing, only by practice will improvement come about. Teaching writing is not a matter of awakening some ability that lies slumbering in the student, but of patient work on both sides. Honors Composition students accordingly do a good deal of writing — roughly a paper per week over an entire semester. I set a minimum length of 500 words but discourage skirting as close as possible to the statutory minimum to see how little the student can get away with doing, a practice contrary, in my view, to the spirit of honors work. Students who do get into the spirit of Honors Composition, and in my experience that is most of them, quickly realize that the important thing is to do justice to their topic, not to satisfy the letter of a requirement. And just as violinists feel and know that they owe something to the music itself — that if they play badly they fail it — good students in Honors Composition will gain a sense that they owe it to the language to use words well. They will take care with what they say, a discipline not just constraining but enabling, for only so can they begin to use language with effect. Only those who respect the craft can make it a means of expression.

The first principle of Honors Composition as I teach it, then, is self-evident: writing is a skill, a proficiency that can only be acquired in practice. I do not lecture to the class about writing (though I do put faulty sentences on the board and draw students into the work and play of overhauling them). My second pedagogical premise is that student writing must respond to readings — readings of a high order. Writing and reading are correlative acts. The way to begin internalizing a sense of the way written language is used and not used is to study what authors of merit do with it; conversely,

the way to write vacuously is to write in the absence of the written word itself — in a vacuum. What violinist listens to no one but himself? Actually, few of the authors read in my course are stylists, and one — Tolstoy, a perennial favorite with the students — tries to write as unpretentiously as possible. So it isn't tricks of style that students learn from their readings so much as a respect for the word. Above all, by challenging students to think, the readings give meaning to the weekly papers that might otherwise become so many rote performances.

I said readings should be of a high order, and in Honors Composition so they are: a story by Nadine Gordimer, an excerpt from Hannah Arendt's study of Eichmann, an essay on medical ethics by Sissela Bok, and other readings equally acute and provocative, culminating in Tolstoy's *The Death of Ivan Ilych*. The text I use, Gerald Levin's *The Educated Reader* (1988), contains all the readings. Unfortunately, but characteristically, it has gone out of print. Nothing we read is written down to the reader. None of it was intended for any primer. No student in Honors Composition complains of having nothing to write about; if any did, it would be a confession that they did not belong in the course. As the weeks go by, students start catching on to the fact that the readings tie together, concerned as almost all of them are with crises of conscience and the burden of moral decision. I prefer to let students make the discovery for themselves.

Even if students are writing weekly papers, even if the papers are keyed to readings both demanding and inspiring, a course like Honors Composition will still not amount to much unless a third element is in place. The instructor has got to meet with each and every student regularly in conference. Simply sitting down with students in private to go over their work, sentence by sentence if need be, demonstrates the importance placed on that work. Furthermore, through the years I have found that no matter how diligent and diplomatic my pencil comments on papers may be, half are ignored or misunderstood; the only way to bring them home to the writer is to go over them in conference. Without conferences, I would simply be talking to myself. Among the ground-rules for the course is that one of the weekly essays will be developed into a term paper. It is in conference, too, that students work out the topic, the lines of approach and argument, and the research requirements of that paper. It goes without saying that the class has got to be small enough — say no more that 20 students — to allow for tutorials.

Once you've conducted a course in two venues, the classroom alone seems one-dimensional. (In Honors Composition there is constant carry-over from class to tutorial and from tutorials to class.) But the tutorial system, the keystone of my pedagogy, also brings up some of the weaknesses of Honors Composition. While students begin the course with a natural dread of the person who is going to be cutting up their work, private meetings with the instructor diminish that feeling to the point where many do not mind me at all. They are content to have me point out faulty wording, punctuation errors, undeveloped paragraphs time and again — all the more because weekly papers are not graded. I don't see the point of slapping their early papers one after the other with F's, a practice that amounts to academic hazing. Only the final submissions are graded. I require students to submit a final paper of some length, generally a research paper, along with two or three revisions of shorter, weekly papers.

I tell them, "I'm more concerned with the quality of your work when you leave than when you enter." Partly as a result of this system, but contrary to my intentions, some students turn their editorial responsibilities over to me. They seem happy with this arrangement. Around week eight or nine I start stressing the importance of "internalizing the editor," but to many, I imagine, it is just talk. It is my hope that by term's end students will have made some connection between the issues of responsibility they read and write about and, on the other hand, *their* responsibility for and to the written word. Not all do.

Another reason I do not want to grade student work as it comes in is that in spite of the importance of writing correctly — for that too is part of the craft — I believe good writing is more than a matter of abiding by the thou-shalt-nots of composition. The thou-shalt-nots are the minimal of writing, if that; and just as no good honors student is going to see how little effort he or she can get away with, no good writing is going to come of a pharisaic concern with correctness. Honors students, then, have got to assimilate the double message that correctness matters but it is not all that matters; it is a beginning, not an end. Some Honors Composition students make use of the weekly papers to experiment. Most manage by the end of the term to write correctly, even if not very expressively. For some, writing remains as unnatural as running with their feet tied together. In the same spirit, I ignore such formulas for dullness as "A paper has to have five paragraphs, the last one beginning 'In conclusion.'" No good writer has ever followed such dogmas. Occa-

sionally, when students are reluctant to let go of the five paragraph rule, I tell them it is time to remove the training wheels. That usually works.

As I have said, most of the readings concern crises of moral decision and default, Arendt's analysis of Eichmann's "crisis of conscience" being a powerful example. As the very word " morality" goes out of favor, taking on dark connotations of the punitive and the archaic, my students increasingly find themselves "not comfortable" with the discussion of moral questions. Too often in their papers genuine moral scrutiny gives way to feel-good effusions, and they find themselves saying things like "Eichmann would have behaved better if only he had received love as a child." (I ask them if they really know anything about Eichmann's childhood.) While students mishandle a lot of the material in this way, I still think it important to confront them with it. I think it important precisely because it lies outside their comfort range.

In spite of the difficulty and foreignness of many of the readings, in spite of their own hesitation before moral questions, many students in Honors Composition hand in at the end of the term genuinely strong, searching work. Recently one looked into the storm of controversy surrounding the Eichmann book (part of which concerned Arendt's way of expressing herself — another proof that language matters). Another I directed to a remarkable essay in Social Research, consonant with Arendt, on the incremental, step-by-step nature of the Nazis' killing program (Zukier, 1994). Several devoted papers to Tolstoy's novella, having read it with a kind of admiring care unusual at any level. Others spoke for or against the famous Milgram experiment on blind obedience (also among the readings). As papers near completion I set aside time in class for working drafts to be circulated, my hope being not only to acquaint students with the work of their fellows but to get them in the habit of viewing work, including their own, with an editorial eye. As students bring into the more public setting of the class papers that have evolved in conference, the course achieves a kind of full orchestration.

Though faculty, especially senior faculty, regard composition as drudge work, I consider this the most important of my courses. I teach it entirely by choice. Honors Composition is my plum. In part, perhaps, because it means something to me, it seems to mean something to the students also. Or maybe it's the blend of counsel and criticism, allowance and rigor that students meet with in Honors Composition that accounts for the good results. (That blend is

specific and unique to Honors Composition: I've been unable to transfer all of the components successfully it to any other course.) Maybe the sheer smallness of the class, an increasingly precious rarity on campus, makes it appreciated. When I read papers in other classes, there is no way for me to tell which students have had composition and *which* have not. My hope is that other teachers will be able to tell that students *have* actually been through Honors Composition.

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PROMOTING CRITICAL THINKING THROUGH CLASSROOM DISCUSSION

WILLIAM TAYLOR

The ultimate purpose of this paper is to describe a number of strategies for leading classroom discussions, discussions that not only produce learning, but also promote critical thinking. In the first section I discuss my perspective on critical thinking — and show how classroom discussion can promote such thinking. In the second, I describe different types of classroom conversations, showing how each of them can play a role in a class that is devoted to fruitful, productive discussion. In the process, I indicate the kinds of questions that can be used to initiate those types of conversations. Finally, in part three, I provide a list of strategies that I have found useful when leading class discussions.

Just What Is Critical Thinking?

The proliferation of definitions of "critical thinking" suggests that no one definition meets all needs or is appropriate for every discipline. The value of studying these definitions lies, not in the answers they provide, but in the questions they raise in our minds as we attempt to develop a working definition of our own, one that suits both what we teach and how we teach it.

By my current, always tentative thinking, a creative thinker is someone who:

- does not blindly accept the judgments of the "experts," but instead subjects those judgments to a rigorous analysis to determine the degree of their validity;
- considers the full range of existing data, including the judgments of the experts, in forming his or her own judgments;
- is able to clearly articulate the reasons why she or he has made a given judgment; and
- realizes that there are many questions for which there are no right or wrong answers, but is nonetheless willing, in the face of uncertainty, to commit to positions on those issues, while remaining open to a reconsideration of those positions in the light of new data or new points of view that he or she might encounter.

From my perspective, therefore, critical thinking has to do with making judgments, which itself involves an extensive process of clarification and discovery of meaning. This is quite different from simply "having an opinion," which I see as growing out of a cursory and incomplete consideration of the available information.

Simply put, the critical thinking movement, as I perceive it, is asking us not only to teach content, but also to teach our students how to think critically about that content; to teach them how to move beyond glib, superficial, received ideas into the making of intelligent, defensible judgments.

By itself, a classroom discussion about course content does not teach students how to think critically about that content. But what it can do, especially when coupled with direct instruction in how members of the discipline make their professional judgments, is provide students with the opportunity to practice forming their own judgments, and to do so in an atmosphere that is safe, supportive, and instructive.

The process of judgment-formation, it seems to me, involves four steps. The first is the formation by the students of an initial judgment, one that results from a careful analysis of text and data, including the range of judgments that have been made by the "experts."

Unfortunately, all too often the process stops here, resulting in a dogmatically held position that is blindly adhered to. We might be able to keep this from happening by making clear to the students the variety of legitimate, defensible positions that one can often find on a given issue. This reality should counsel the students to approach the process of judgment-formation with intellectual humility, realizing that the goal of this first step is not "Truth," but rather, "truth as I see it, at this point in time, given what I know." Intellectual humility dictates that the process of judgment-formation not stop with the initial judgment.

Thus, the second step is the student's articulation to the rest of the class of his or her initial, tentative judgment, along with the data and perspectives that inform it. This articulation initiates a discussion in which the other students can react to, and give feedback on, that initial judgment, thereby providing, in effect, new data to be considered.

The third step is an honest reconsideration by the student of his or her initial, tentative judgment in light of the new data and perspectives that emerged from the discussion. This can result in either a modification or a reaffirmation of the original judgment.

The fourth step continues the discussion as the student articulates his or her new tentative position on the issue, an articulation which carries with it an implied invitation to further advance the dialogue with new feedback and new perspectives. Ideally, this will prompt still further reconsideration and articulation until either a consensus is reached or the participants are clear on exactly why it is they cannot come to an agreement.

Classroom discussion is wonderfully suited to fostering this overall process of judgment-formation. But for this to occur the teacher needs to create an atmosphere that is safe, supportive, and non-judgmental. He or she must also operate out of a perspective that sees wisdom as residing in the class as a whole, rather than simply within him- or herself. Finally, the teacher needs to have the ability to conduct a purposeful class discussion.

The Role of Discussion in Classroom Conversations

Any class designed to generate thoughtful discussion will inevitably involve a variety of classroom conversations (Roby, 1989 and 1985). In order to be able to orchestrate such a discussion, the teacher needs to be aware of what these conversations are and how to move the class from one kind of conversation to another as the needs of the discussion dictate.

We can think of these conversation types as being unevenly distributed along a continuum based on who controls the conversation and who determines the "right" answers, the teacher or the students.

At the left end of the continuum, the teacher controls the conversation, either by delivering a monologue (i.e., a lecture) or by conducting a quiz show in which he or she asks narrow questions, with the teacher as the final arbiter. At the other end of the continuum is a bull session in which the students control the class. There are no right answers; instead, each "answer" (i.e., opinion) is considered of equal value since no one disciplines or focuses the conversation.

In the middle is the true classroom discussion, distinguishable from the other conversations by its commitment to shared control and serious efforts at fruitful, reflective interactions leading to self-criticism, both by the teacher and by the students, of the positions they articulate.

There is a value (and limit) to each kind of conversation. On any given day, in attempting to lead a true discussion, a teacher will probably end up initiating the full range of classroom conversations, depending on what is needed to get the discussion going, keep it on track, reinvigorate or rein it in, clarify points of confusion, or move to wider understandings. The means by which the teacher can orchestrate the appropriate shifts from one kind of conversation to another is the kinds of questions she or he asks.

Discussion, the conversation type most important for the development of critical thinking skills, is characterized by thoughtful and reflective conversation that involves a careful consideration and analysis of the variety of viewpoints represented in the class. The goal is to help the students develop and articulate their own judgments, as well as understand the judgments of others; assess the validity of the arguments and evidence offered in defense of the various judgments represented in the class; and reconsider their own position in light of what they learned from the discussion, either refining it if that seems appropriate, or recommitting to their original judgment if they feel that no better position emerges. Course "content" is clarified as the need arises.

Discussion seldom occurs spontaneously. (When it does, we should step back and let it go, being prepared to take control if it degenerates into a bull session.) Normally, it grows out of the teacher asking probing questions designed to get students thinking about and evaluating the validity of their own judgments, as well as those of their fellow students. This might include questions such as "Why do you think...?"; "Is there evidence to support what you're saying?"; "How does that differ from what Julie said?"

The other types of classroom conversation are employed by the teacher only to the extent that they serve the needs of true discussion. The role of the teacher is to orchestrate the conversations. Part of what's involved for the teacher in attempting to lead a class discussion is (1) deciding what kind of conversation to begin the class with, (2) being aware of the type of conversation that is occurring at any given point, and (3) asking the kinds of questions that will initiate the type of conversation he or she wants to occur.

Suggestions for Leading a Class Discussion

When we think of classroom discussion, the first image that probably comes to mind as an ideal is of students directly and energetically engaged with one another in an exchange of ideas and viewpoints, with the teacher minimally involved, and only when necessary. An alternative image is one in which the teacher is at the center of the discussion, orchestrating its dynamics by calling on students and pointing out the connections between what is being said.

The following suggestions are designed to help you conduct the latter type of discussion, in order that the former might eventually begin to occur spontaneously. That is, the type of orchestrated discussion that these suggestions are designed to foster can both model and teach the kinds of questions and behaviors that are appropriate in any serious discussion. In the end, the goal is for students to internalize the strategies contained in these suggestions so as to employ them when engaging in discussion in the "real world." Therefore, the strategies themselves should be seen as part of the content of the course, and the goal of the teacher should be, as it were, to put herself out of a job by gradually giving over to the class the responsibility for making the discussion a fruitful one. They are arranged in two sections. The first set relates to creating a classroom atmosphere that can enhance discussion. The second group of suggestions shows how to use discussion to facilitate the judgment-formation (critical thinking) process.

Creating an Effective Classroom Atmosphere

If you wish to use class discussion, it is important to do so from the beginning of the semester. If you establish a classroom culture in which you take full responsibility for what happens, as with lecture, you will find it very difficult to get the students to accept a change.

Decide whether, or how much, classroom participation should impact on the final grade. If you decide that you should not call on quiet students or penalize them for lack of vocal participation, but you want to grade participation, you can periodically collect the students' notes, written during a break in the discussion, to see how actively engaged they are.

Call on the students by name.

Classroom configuration and class size can have an impact on your ability to lead a class discussion. Try moving desks out of the

usual rows and into an inward-facing circle, so students can see each other as they speak.

Give all students an opportunity to speak out very early on in the semester (and perhaps in each class), but be sensitive not to push such students into participating against their wishes. Decide whether to call on students who do not volunteer. If the discussion focuses on content and each student must master it, each should understand that she or he will be expected to contribute in the classroom situation.

Deal with students who insist on dominating the discussion. Speak to them privately about the goal of class discussion, the needs of various kinds of students, the importance to all students of the process of arriving at answers. Let them know that, if they volunteer by raised hand, you will acknowledge their willingness to speak and call on them when it is appropriate. If a few students have more background knowledge than the others and can thus easily intimidate classmates, try beginning the class with a small-group discussion so that more students will have something to contribute. A reporter for each group will summarize for the class the points made in their discussion. This will give everyone a chance to participate. It will also give you a chance to identify the variety of views that you can explore further with probing questions.

Fight the tendency to favor only the bright or most likable students. To ensure against this I can only suggest that the teacher needs a mind set which says that wisdom resides in the class as a whole, not just in particular students, and that insights, or at least the beginning of wisdom, can come from any one of the students.

Move around the class. Moving closer to a student and looking into her eyes as she speaks affirms her as a person. Moving closer to students who have become distracted may help them refocus their attention, just as it may help draw out those who have not yet contributed.

Occasionally during the semester, give the students a few minutes at the end of class to write a note to you, letting you know how they feel about their level of participation and whether you can do anything to help them increase their participation, if they desire to.

Be sure to allow enough "wait time" after you ask a question. Also avoid the tendency to ask a different question if the first one does not elicit any response. Instead, try stating it in different words; or better still, ask if one of the students can reformulate it. When it becomes evident that the students' thinking is shallow,

ask leading questions that might open up areas of thinking they have not yet explored. If students do not understand clearly a necessary piece of information, initiate a quiz show with a few fact-finder questions. Only if clarity does not emerge will you want to give a brief lecture to lay groundwork for the rest of the discussion.

The *way* you ask questions or make comments can either encourage or discourage participation. Be supportive. Invite students to expand on what they say. If you do not understand the point, take responsibility yourself, asking for some help. Look for the kernel of truth in whatever a student might say and build on it rather than looking for what might be wrong.

Listen carefully to lead a class discussion. Monitor your own attentiveness to what the students are saying and take steps to remedy whatever obstacles there might be (distractions from the hall, disruptive students, personal fatigue) to your leading the discussion.

Facilitating the Judgment-Formation Process

Develop your questions ahead of time and give them to the students so they can begin thinking about them as they read the assigned material in preparation for class. (This is especially important for students who are not comfortable speaking up until they are sure they know what they want to say.)

In the early stages of the discussion, the goal is to get a variety of views out on the table and a number of students participating. So begin with inviting questions that solicit student responses broadly and permissively. This may result in a bull session, which is okay in the beginning because of the energy it generates.

As you reflect on what you hear, try to do so in positive terms (tone, facial expression), probing or prompting to help the student clarify and reconsider his thinking. You want the evaluation of ideas to emerge from the discussion itself. Your approval or disapproval can inhibit students from speaking who are unsure of what they have to say, and it can skew the discussion by preventing alternative perspectives from surfacing. When seeking alternative points of view, ask, "Does anyone have a different perspective or way of looking at this?" Certainly correct clear mistakes as they are made, if the students themselves do not do so.

If alternative points of view do not spontaneously arise from the class, the teacher will need to ask prompting questions designed to suggest possible alternatives. William Perry (1981) found that

many students enter college as dualists, convinced that there are right and wrong answers and that the teacher and text have the right answers and the student's job is to learn those answers. Such a student's assumption may well inhibit him or her from suggesting points of view different from those that are first presented.

Identify the major perspectives that have emerged in response to your broad inviting questions and then steer the conversation into the direction of a true discussion by asking probing questions that require the students to examine the validity of their positions. Questions can deal with such issues as point of view, the nature and validity of supporting evidence, the possibility of fallacious thinking, and the exploration of alternative viewpoints.

Restate the points being made by the students, perhaps even fleshing them out a little or substituting more technical terminology for their less precise words (to give them a little help in learning the vocabulary of the discipline). This is what psychologists call active or emphatic listening. It helps you ensure that you have correctly understood the student, and it gives the student the opportunity to clarify any misunderstandings, or even change her mind upon hearing ideas coming out of someone else's mouth.

As much as possible, relate what is being said by one student to things that have already been said by others. This affirms the value of the earlier contributions and keeps those students actively engaged in the conversation.

To reinforce the notion that evidence comes not simply from within but from the "public domain," ask students to point to texts from which they have drawn their evidence. If appropriate, spend some time considering how specialists in your discipline determine the validity of such evidence.

Occasionally stop to give students time to summarize the conversation in written notes. Alternatively, have several students, on a rotating basis, take notes which can then be copied for the rest of the class. If the class erupts in spontaneous side conversations when something especially meaningful is being discussed, let the conversations occur as long as the energy sustains them. Then follow up with an opportunity for the students to write out their ideas and/or share them with the whole class.

Be alert to ways in which topics for student writing can emerge from the discussion. Using student writing will enrich your discussion and will, over time, help the students develop their ability to discuss.

At the end of class, try to bring closure to the conversation by summarizing and integrating ideas that have been discussed. Also open the next class with such a summary, if the discussion will continue.

Remember to test for critical thinking. Students need to master the content of the course in order to be able to think critically about it, so we need to continue testing on content. But we also need to include questions that test students' ability to think critically. I use short essay exams, and I develop some questions that have no one right answer. In the beginning I flag these questions for the students by putting the following in parentheses after the question: "Hint: there is no one right answer. You will be evaluated on how well you defend the position you take. This may require you to show why your position is better than its alternatives."

As the semester goes on, allow the students themselves to begin "orchestrating" the discussion by using the strategies you have modeled for them. Be aware that at first the discussion will not be as fruitful as it would be if you were taking a more active role. But the students need to practice and to learn from their mistakes in order to develop their abilities.

Silent Socratic Dialogue

A marked departure from the kind of discussion I have been describing, yet wonderfully fruitful, is the Silent Socratic Dialogue developed by Carolyn Sweers of New Trier High School in Winnetka, IL. In this case, after the teacher initiates the discussion by asking an open-ended question, the "discussion" is carried out on paper between paired students.

The students write out their initial thoughts on the question and then exchange papers with their partner for the day. The partner reads the response and writes out a question designed, perhaps, to elicit clarification, probe for the thinking behind her partner's ideas, or provoke consideration of alternative perspectives. Note that it needs to be a real question, not a leading statement, followed by "don't you think?"

The paper is then returned to its owner, who reads the question and writes out a response. The pair exchanges papers again, and the process continues with each student asking a question on the partner's paper and responding to the question the partner writes on his or her own paper. All of this is done silently, and the cycle repeats until the teacher senses that it is time to open it up to class

discussion.

Involvement in this Silent Socratic Dialogue is a powerful experience, especially for students less inclined to speak in class. But for everyone it provides an opportunity to reflect seriously on an important issue in a sustained and systematic way.

Conclusion

Bull sessions happen. Fruitful discussions are made to happen. Like so many other worthwhile things, leading class discussion is a skill that needs to be practiced in order to be acquired. The payoff for the students is a course that is more interesting, as well as the opportunity to practice thinking critically about course content. The payoff for me has been the growth I see in the students' abilities to think critically, as well as the many things I have learned and insights I have achieved from listening to the students think their way through a problem or issue.

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USING TECHNOLOGY IN THE HONORS CLASSROOM

LARRY CLARK and LARRY CROCKETT

> A chief event in life is the day in which we have encountered a mind that startled us. (Emerson)

One of the most exciting elements of honors education is the intellectually stimulating environment that is created when several knowledgeable and inquiring minds are brought together. Boiled down to its essence, it can be said that the greatest asset of honors programming is the capable minds of the students and faculty who learn together. Traditionally getting bright minds together involved logistical limitations associated with convening their corporeal entities together in the same space at the same time to "hold class." Through the years increasingly sophisticated and available forms of information transfer have greatly reduced the barriers to this "meeting of the minds." Today computers, satellites and other high tech gadgetry are available to transcend time and space and facilitate communication among honors students and faculty around the globe. In this chapter we will discuss two multifaceted uses of current educational technology to enhance the dialogue among honors students and faculty. These are course-based web pages and national satellite seminar series.

WEB PAGES IN THE HONORS CURRICULUM
Larry Crockett

Web pages are often used as electronic brochures, which display the features of a program, or even as electronic catalogs which display all the offerings of the program. But perhaps their richest application is in the honors curriculum itself. Web pages can feature syllabi, daily schedules for courses, internet resources for courses, study questions, and even science or humanities labs. We put much of the honors curriculum at Augsburg College on the Honors Page. Except for quizzes and exams, in fact, I have not distributed printed materials for my courses in two years. All materials (other than course texts) are on the Honors Page.

To illustrate how we do this, I will use the example of HON/PHI 365, Philosophy of Science. I make the syllabus part of

the web page for several reasons. First, visitors to the Honors Page, who might be prospective students, get a chance to examine a real syllabus. Notably, a syllabus on a web page has several advantages over a "dead tree" syllabus. First, it can include links to other pages. For example, I do not simply list the books I use in the course, I make book titles links to Amazon.com, where the students can see all the information about the book, can often see reviews of the text, and can sometimes get it cheaper than they can in the college bookstore. Any other on-line resource that I believe augments the syllabus can be included as a link at no cost in terms of printing.

Moreover, many of the search engines automatically catalog pages — which means that my philosophy of science course shows up when people search the Web for "philosophy of science." This is no longer just a syllabus, but a live part of a dynamically growing web which raises the visibility of both the course and the program. When my philosophy of science students discover that a Web search lists their own course as a "philosophy of science" resource, it lends a credibility to the course that is energizing.

I also make a daily schedule for the course section of the Honors Page. I find it helpful to have a daily schedule that I can consult wherever I happen to be so I can keep track of where we are supposed to be in the course. The problem with printed schedules, of course, is that if there is a snow day, or I am ill, or we simply fall behind, then the schedule not only has to be revised, it has to be reprinted. Since the schedule for HON/PHI365 is on the web (http://honors.org, press "Courses," then "365" at the top), I simply revise and repost the web page. At first, I found students would reprint the schedule when it changed so arguably there was little gain overall. Increasingly, with greater access to Web from a wide variety of places, they simply consult the page without printing it. They know they can consult it virtually anywhere and they know the Web version is by definition the latest version.

More importantly, the schedule is more than a schedule. It also includes the web resources I want available for a particular day. For example, I have my philosophy of science students write papers. One web resource is an exercise that presses them to think through their argument so they do not give me a string of unsupported assertions. The "Writing Lab for Paper I" is on the page. I do not need to print it, I do not have to worry about the number of copies students need, and I do not have to carry copies around with me. Moreover, I include a link to my "Guide to Writing Academic Papers" with every paper assignment which, at about 10 pages, spells

out with clarity what I expect to see in a research paper. The general principle I follow is to provide as many resources as possible to do an assignment with the assignment.

As well, labs and assignments themselves can contain relevant Web resources. One thing I routinely do for my students is that I refine a search using Altavista.com and, when I am satisfied that the way I queried Altavista is optimal — when I phrase the question right so I get the most useful list of resources — then I save the URL (the address) which automatically includes my refined question. When students click on the link I have saved, they do not simply get Altavista, they get the query which I refined, perhaps taking 15 or 20 minutes to get it right, and the list of good resources generated by the better query. This keeps my students from floundering when using the Internet, using precious time trying to get the query right. Of course, there is something to be said for students doing the querying themselves and learning how to do queries, but a good deal of time can be consumed refining queries. When time is critical, I find it worthwhile to refine queries ahead of class or lab time.

As part of every course that I teach, I maintain a list of pertinent web pages and post them to the course page. The Philosophy of Science course page includes a list of local resources on the left — schedules, assignments, questions, and labs — and a list of resources to other sites on the right. In fact, when I assign papers, I not only expect my students to use a reasonable list of conventional research resources, I make use of Internet resources a part of the assignment as well — even when I have some reservations about the quality of the resources they find. I am convinced that one of the most important skills we can help honors students learn is the ability both to access and assess Internet-based materials. In the honors program at Augsburg, they routinely do exactly this so that, by the time they graduate, they will be experienced, savvy users of the Internet who know how to size up a search engine listing of putative Internet resources with a seasoned eye.

Last, since I base much of the course time in 365 on pivotal questions, I post questions for each of the chapters in the principal introductory text we use and make them part of the schedule. Philosophy is dialectic — since the time of Socrates philosophy has been the dialectical exploration of important questions — and the power of the Web to host important questions is significant. I will often ask students to spend a part of each meeting discussing questions that are posted as part of the course page. With some regularity, students come up with better questions than I had posted. When

that happens, I revise the questions (often in class, in "real time," so they can see their better questions replacing the less-effective questions usually written by me) so that the students themselves become the Socrates of the course, asking the potent questions that occupy much of our time together. Students learn that they can "play the game" and, since our course is dynamically on-line, they also understand that the whole world may be witnessing their achievement. Again, neither students nor I can lose the study questions and we can access them wherever there is Internet access. Using the Web in this way enables the discipline to become the dynamic learning activity Socrates originally envisioned.

Using Web pages in this fashion in a course does presuppose a course which has ready access to both Internet-connected computers and printers. But with the equipment dropping in price about 20% each year, at some time-price point in the near future, every program will want classrooms that are also web-based labs.

NATIONAL SATELLITE SEMINAR SERIES
Larry Clark

Since the mid-1990's the Technology and Honors Committee of the National Collegiate Honors Council has coordinated the production of an annual educational seminar series transmitted by satellite. Subscriptions to the series are offered to the member institutions of the NCHC and to members of Phi Theta Kappa in conjunction with their annual honors study topic. Recent topics have included "The Arts: Landscape of Our Time" (1996), "The Family: Myth, Metaphor, and Reality" (1997), and "The Pursuit of Happiness: Conflicting Visions and Values" (1998). The lineup of programs telecast in 1998 on the Pursuit of Happiness represents the diversity of perspectives presented on the series theme:

- "Historical and Philosophical Backgrounds of the Pursuit of Happiness" (Doug Miller, Oklahoma State University)
- "Psycho-Biological Perspectives on the Pursuit of Happiness" (Larry Clark and Gail Overbey, Southeast Missouri State University)
- "Ethical and Moral Issues of the Pursuit of Happiness" (George David Miller, Lewis University)
- "Happiness in Different Cultures" (Rosalie Otero, University of New Mexico)

- "Redefining the Pursuit of Happiness: Work, Family and Personal Life (Stephanie Coontz, Evergreen State College)

A good overview of the Satellite Seminar format is given by Celeste Campbell, Co-Chair of the Technology and Honors Committee, and Billy Wilson, Director of Honors and Regional Programs for Phi Theta Kappa, in the Summer, 1998 issue of the *National Honors Report*. Subscribing institutions must have access to facilities capable of receiving C-Band satellite signals. During the Winter prior to the Fall telecasts, descriptions of the series and the individual programs are sent out. This information allows schools time needed to lay the curricular or co-curricular foundation that will make best use of the series at their particular institution. Outlines and suggested reading lists are sent to subscribing institutions prior to the individual telecasts to help prepare viewers to derive maximal benefit from the programs themselves. An electronic bulletin board (listserv) is established before the series begins and is maintained for some time after the last telecast to enable viewers to share reactions to the information presented. Exchanges on the listserv can become quite spirited and help participants hear different perspectives on complex issues.

The 1-hour telecasts are aired live. Some presenters include videotaped segments to show phenomena that would be difficult or impossible to capture in a live studio production. For example, in the telecast "Introductions to Concepts of the Family" for the 1997 series, Gail Overbey and I included a videotaped segment on family structure and function among zoo animals to illustrate similarities and differences to human family groups. This is a way of using modern communication technology to bring the wider world into the electronic classroom. A toll-free phone line is available during the telecast for viewers to phone in questions and comments that can be shared and responded to live on air. This capacity to contribute to the telecast by phone as well as to the listserv makes viewers feel more involved with the educational enterprise. It also allows the sharing of different perspectives that so enriches a collective educational forum among bright minds. As Celeste and Billy say in the article mentioned previously, "Each subscribing institution becomes part of the larger nationwide classroom..." (p. 33). The subscription agreement allows schools to make one videotape copy of each telecast to use for educational purposes on their campus. This extends the educational usefulness of the shows far beyond the time of the telecasts themselves.

Displaying their characteristic creativity, honors administrators and faculty have developed a variety of educational formats in which to incorporate the telecast series on their campuses. Some specific applications of the Pursuit of Happiness series are described by Celeste and Billy in their *National Honors Report* article to illustrate the variety of uses possible. Barry and Judithe Thompson at the University of Rio Grande (Ohio) planned a mandatory 1 credit "Beginning Honors Seminar" for all freshman and sophomore honors students around the series. A faculty member with particular expertise in the telecast topic was on hand to participate in a discussion following the show. Each student wrote a paper related to the series theme and presented it on a night when a telecast was not scheduled. Jon Schlenker at the University of Maine at Augusta used the series as the core of an elective Honors Reading course. Students watched the telecasts, read works from the suggested reading lists, and met periodically with a faculty facilitator to discuss both. Tom Youngren made videotapes of the telecasts available for general campus use at Elgin Community College (Illinois). He reports that composition teachers used the videos and associated print materials to stimulate research and writing projects.

The Satellite Seminar format provides honors administrators and faculty with a multi-functional and broad-based pedagogical tool that can enhance their curricular offerings. Its interactive elements also link individual honors programs into a national honors community. It is, in short, an effective use of some of the most sophisticated new information technology to accomplish some of the most fundamental educational goals of honors education. For all of our reliance on alphanumeric data in this "information age," particularly in academia, as human beings we are still drawn to visual and auditory change and variety. Moviemakers, advertisers, and, now, web-masters know that the right combinations of visual form, color and movement accompanied by auditory variety and appeal capture and hold attention best. From Imax movies to video streaming on the internet, conveying information through a medium that mimics visual and auditory reality can have a powerful effect on the audience. Marshall McLuhan '60's edict that "the medium is the message" may have been hyperbole, but it is fair to claim that the medium can make the message stick.

A REVIEW OF PEDOGOGY IN HONORS COURSES

CHERYL L. FUIKS and LINDA W. RUTLAND GILLISON

This section of the monograph briefly describes a variety of honors courses that exemplify the principles of honors teaching and learning presented in the previous sections. These courses and/or methodologies should serve as a guide or starting point for implementing honors teaching and learning techniques in a variety of situations. The methodologies here are designed to help honors students think critically, to express themselves more effectively in both written and oral communications, to recognize the common elements among people and appreciate the differences, and to collaborate where necessary, but still work independently.

Each of the course descriptions below is an excerpt from an article printed in the *National Honors Report (NHR)*. In addition to the more in-depth descriptions given in this chapter, a bibliography of other course descriptions that the reader may obtain from the NCHC National Office is included at the end of this monograph.

In "Socratic Chemistry" (*NHR*, Spring, 1993), Joseph G. Morse describes teaching an honors introductory chemistry course using a "major departure from content coverage to concept mastery." The course, Chemistry 221H, is a two-quarter six-credit hour course that is accelerated from the non-honors version of the basic chemistry sequence of three quarters for twelve credits.

In this course, Dr. Morse moved from lecturing with an emphasis on presenting algorithmic solutions of traditional problems toward a discussion/question-answer format with the emphasis on "analysis of real phenomena in molecular terms." The course begins with several sessions in the laboratory where students present "carefully prepared and selected laboratory demonstrations to each other." The purpose of the demonstrations was to generate questions for the students to answer rather than provide explanations of the phenomena. With these questions and others that had been typical of those used in previous exams, Morse prepares a set of discussion questions for each class period. Students were given the questions one class period in advance and were responsible for reading the text and coming to class prepared to discuss them.

In evaluating the effectiveness of this course, Morse notes that

"no student in the past six years (since the course was revised) who declared chemistry as major has changed major after the first year course." Also, students' grades in successive chemistry courses have in virtually no case been lower than that earned in Chemistry 221H. He argues that the "critical thinking required is higher than it has ever been" [even without the traditional computational rigor] and that "students are responding quite well to quite sophisticated interpretive questions." The course, he says, "incorporates the full participation, the extension beyond the norm, the individual creative input, and the emphasis on critical thinking which should characterize honors work."

In another science honors experience (*NHR*, Summer, 1995), Rinda West with colleagues Terry Trobec and Gene Carr from biology and geology, linked courses in Introduction to Poetry and Introduction to Environmental Science. These two courses comprise the Honors Core Seminar required of all Honors Program graduates at Oakton Community College. The core requires a collaborative semester-long research project culminating in a written report and oral presentation. For this project the students were linked with the coyote study being conducted by volunteers of the North Branch Prairie Project, itself part of the Volunteer Stewardship Network of The Nature Conservancy. The students would provide data on coyote populations in one of the North Branch sites, data that could be part of an on-going study of coyotes' return to northern Illinois. In the poetry course, the students' readings included T.S. Eliot's *Four Quarters* and William Bright's *A Coyote Reader.*

The group based their course on *The Liberal Art of Science* published by the American Association for the Advancement of Science, which calls for the creation of science courses that teach science as science is practiced and that stress aspects of scientific understanding that cross disciplinary boundaries. The publication also argued for science courses to present the historical development and intellectual and cultural contexts of science as well as the ethical, social, economic, and political dimensions of science.

Students were given handouts on coyotes' habitat, tracks, diet and habits and then had two sessions on tracking both on-site and on-campus. Students were divided into two groups that then organized their observational teams. Although they had access to the head of the TNC's coyote study, to scientists at the Forest Preserve District and to a community resident who was part of the coyote study, they were essentially on their own for the project. They were required to visit their sites at least once per week to look for evi-

dence of coyotes such as tracks, scat (excrement), fur, dens or sightings. They collected scat for lab analysis. At the end of the project they pooled their results and presented them to the class and to TNC's study group.

This course exemplifies honors teaching and learning in that the students had to work as part of a team; they had to learn how to collaborate. They had to organize themselves, motivate team members, coordinate data collection, analysis and storage; they had to deal with no-shows, egos and even some low blows. Further they had to learn independently what sources of information — print, electronic, or human — might assist them. They also had to learn where knowledge is not available to them, bringing home the reality that scientists are constantly creating, testing, expanding and rejecting information. The faculty believe the project fostered their resourcefulness as well as their group skills. In the poetry course, knowledge of the real coyote gave students a richness in their reading of the mythical animal of the American West, and knowing the coyote's trickster history helped soften the disappointment that he had continued to elude their sight. The students gained a new understanding of the nature of our knowledge and the conditions that limit its certainty.

In "Incorporating Film into the Honors English Classroom" (*NHR*,Summer, 1993) Bill McCarron describes the use of texts and film in an introductory freshman writing course. McCarron used books that were subsequently made into films such as *One Flew Over the Cuckoo's Nest* and *The Silence of the Lambs*. Following a thorough discussion of the novel, students write an essay on an aspect of the novel (e.g., a language pattern, unusual use of images) which has not been discussed in class. McCarron emphasizes "seeing" and "risk-taking" as the essential components of writing.

Following class discussion of the various perspectives developed in the essays, the students then compare differences between the book and the movie. The students answer questions such as "Which medium is more effective and why? What occurs in the book vs. what occurs in the movie? Are there weaknesses or things that you would change in either medium?" The instructor's goal was to have each of them see a book-movie difference that no one else in the class saw and to articulate that difference in and through writing.

In addition to the novel/movie assignments, McCarron also uses excerpts from film to illustrate various writing techniques — opening, point of view, closure, narrative voice — which the students

would use in their own writings. Films such as *Stand by Me* and *A Christmas Story* have such elements. Other films such as *Wall Street* and *Apocalypse Now* can be used to illustrate such ideas as metaphorical seeing and text within a text.

McCarron believes that making novel and film the focus of part of an honor writing course has significant benefits for the generation of students who have been nurtured on a visual medium: movies shown on VCR. Not only did the course require active reading and writing, but active viewing and writing. Writing is the foundation for all movies; without a script there would be no film. The intent of such a book-movie experience is to make students active readers of both texts and, in the process, to have them create their own texts as they write interpretations of the differences between book and movie.

In "The Japanese Psyche: A New Course Demonstration" (*NHR*, Summer, 1995), Sheila Fling and her students learn about the differences between the American and the Japanese psyches through the use of media and experiential activities. While the course is based in psychology, the content also includes philosophical issues such as the parallels between post-Einsteinian science and eastern mysticism in contrast with the Newtonian-Cartesian paradigms to Japanese and American psyches. The students also address methodological problems in cross-cultural study and postulate geographical and historical factors bearing on the Japanese psyche. As some of the experiential components Japanese students helped prepare a Japanese meal and the honors students attended Japanese festivals and a moon viewing in a Japanese garden with ancient court music.

The course centered on the various elements of psychology. For example in the unit on developmental psychology, the students learn about mothers' vocalizations to their infants to calm in Japan versus to stimulate in American. In educational psychology, they addressed the "examination hell" Japanese students experience. In cognitive psychology they examined how language reflects psyche. For personality psychology the focus was on Jungian theory in Kawai's analysis of fairy tales. Social psychology topics included group homogeneity, harmony, exclusivity, hierarchical relationships, loyalty, reciprocity, gender roles and relationships, and low crime rates versus violence in video games and comics. In industrial psychology they looked at management practices. Demonstrations of martial arts introduced the students to sports psychology.

This course is a good example of how experiential learning can be used with nearly every discipline. The students were actively

engaged in the course and could still cover the content typical of an introductory psychology course. The course was also an attempt to scrutinize the inscrutable, allowing students to become aware of the similarities between the psyches of the people of Japan and the United States.

In "Mimicking the Real World — Using Risk Analysis in the Classroom" (*NHR*, Summer, 1993), Diane Schulman reports on a team-taught course, Social Issues and the Environment at Erie Community College. Taught by a social scientist and a scientist, the course lends itself to a wide variety of student-centered activities. Students engage in the process of risk analysis throughout the semester to illustrate the problems encountered in environmental decision-making.

The entire issue of risk analysis is appropriate for an honors course because it forces students to confront different positions on a topic, thus focusing on critical thinking skills. Students also have to deal with a variety of problems in conducting risk analysis. There is always missing data, and more data can always be obtained. But since decisions must be made in a pre-established time frame, data gathering must end, often arbitrarily. Another problem students face in risk analysis is that information that is obtained is open to interpretation by experts who often disagree, and who are not often as neutral as perhaps they should be. In some cases there may be latent effects that might not become evident for generations and cannot be predicted. Predictions that are made are often unreliable. Much statistical data is collected on animal or epidemiological studies, because it is often impossible to conduct controlled human experiments.

In addition to these problems, the two views of the risk analysis field, risk assessment and risk management, are often at odds with each other. Assessment is concerned with the risk of a hazard and the extent of the resulting damages (the scientific approach). Management is concerned with the acceptability of the hazard and whether it should be allowed (the social approach). Effective risk analysis should include both aspects.

Using the issue of building a nuclear power plant, the students were divided into teams. One represented the industry building the plant; one represented a public interest research group charged with preventing the building of the plant; the third group was the legislature, charged with making the decision.

In his article "Symposium on Teaching Teachers, Part I: Give them an Inch: Honors Students as Teachers" (*NHR*, Spring, 1995),

René Díaz-Lefebvre describes a course where students actually teach portions of an honors course in developmental psychology. In his syllabus for the course, Díaz-Lefebrve notes: "Because the honors classes are small, there is ample time to create a highly interactive learning environment. Each student is encouraged (actually expected) to participate in a variety of learning opportunities — creative team-teaching, discussion over textbook reading, viewing selected videos and selecting, completing and reporting on a Learner Project."

Each student is invited to select a chapter he or she is interested in and be prepared to present their lesson to their fellow classmates. Each student will be a part of a dyad in preparing, presenting and facilitating discussion on key concepts/terms and issues as it relates to a specific area of life-span psychology. The team members meet with the instructor prior to their teaching and are given his notes, video list, reading lists, etc. He lets them know he will be their third partner if they need some support during the presentation. He encourages them to be creative and have fun. The instructor teaches the chapters that are not selected to model an approach of active participation, enthusiasm, and creativity.

To evaluate the team teaching, Díaz-Lefebrve uses six criteria: (1) preparation, organization and teamwork; (2) enthusiasm and interest; (3) key points and highlights; (4) flow of presentation; (5) facilitation of discussion; and (6) response to students' questions. After the team-teaching experience, students are asked to reflect upon the assignment in an essay. Díaz-Lefebreve notes that this method of teaching has been so successful that he intends to use it in his honors introductory psychology course in the future.

In "Curriculum as Praxis: An Honors Project for Nursing Students" (*NHR*, Summer, 1997), Judie Csokasy describes an honors project that placed students with a community-focused home care agency to collect information helpful to those making decisions about health care services for the elderly still at home. The project was designed to help nursing students develop the critical thinking and analysis skills they will need in the changing health care environment.

Since Indiana has no statewide health care plan, each community attempts to meet the needs of its citizens though local planning organizations. These communities are filled with many older people who want to live independently in their homes but lack the support to do so. Thus when they become ill, they must often be hospitalized or admitted to nursing homes. The Medicaid payments for

such persons costs the state $30,000 and these clients have frequent hospital readmission.

The students and their instructor met with a local home care agency that agreed to work with the honors students to develop a grant for funding for the types of services needed for these citizens. The students' role was to collect data and present it in readable form to the agency, which could then write the grant proposal. To collect data the students engaged in an environmental scanning project with three priority areas: (1) locating financial sources, (2) identifying the needs of the elderly living at home and (3) finding existing, successful models of community-focused care.

Students found that the rapid changes in health care delivery systems had managed to destroy many of the models of care and funding that had existed in the past. While many of their sources spoke of the need for community-focused health care, few models actually existed. Those that did received only minimal financial support.

The students completed the 16-week scanning process and presented their findings in an executive summary to the agency personnel and administrators. The final recommendations reflected a changing paradigm of health service delivery. The most common service needs were related to grocery shopping, transportation to physicians' offices, pharmacies, and outpatient services. Along with these services, the elderly needed someone to assist them with meal preparations and personal care two or three days per week. The students also concluded that a coalition of local community agencies, business and industry was needed to support the needed health care services before foundations could be contacted for funding.

The students agreed that the project had been a valuable learning experience, permitting them to think critically about the larger questions concerning nursing delivery systems. They described their increased sensitivity to the political, social and economic factors that affect health care.

In "Multiculturalism in Mathematics" (*NHR*, Summer, 1997), Douglas Ensley describes an honors course, Mathematics as Language, which looked for mathematics in many cultures. The class then used their discoveries as stepping off points into the relevant mathematics from a modern perspective. The course began with an exercise in which students played the role of primitive shepherds who must guarantee that all sheep who leave in the morning return in the evening, with the assumptions that they did not know how

to count and had no words for numbers.

For the remainder of the course, the class used *Ethnomathematics* by Marcia Ascher to study other examples of mathematics in different cultures. For example they looked at the analysis of kin relations in native Australian societies to learn about the mathematical study of symmetries. In another example, the class studied games and strategies to learn the basic ideas of probability, game theory and graph theory. The students' final projects fully embraced the structure of the course, filling in many gaps and continuing the exploratory paradigm from the earlier material. Project topics included "Native American Mathematics," "The History of Calculus," "The Mathematics of Art and Music," and "Women in Mathematics."

Ensley believes this format would succeed for any general mathematics course. Even the less mathematically capable students were able to embrace the important concepts given the contextual setting. Not only is this course design a welcome divergence from the usual mathematics appreciation courses, it follows the currents of multiculturalism present in contemporary education. The strength of this course is that it does this with mathematics, a subject traditionally considered hopelessly shackled to Western philosophy and history (Ensley's words).

In "The Play's the Thing" (*NHR*, Summer, 1997), Judith Laird describes the play produced by students in her course "Medieval Women Writers." The play, written by Laird and one of her students, was a one-act comedy drama about the lives of women the students had studied in the course.

The setting of the play, Vox Leonis, is the writing room of Pater Press; Jerome, the managing editor, has agreed to interview the six women after ostensibly having read their work. The historical women meet not just one another, but the fictional Wife of Bath as well. The interaction among the female characters and between them and the male Jerome individuates each while simultaneously illustrating the oppression of their community. Everything ends well when the Wife, as outraged as the others by Jerome's thoughtless rejection, decides she will publish their works (hence the title of the play). All except the thwarted Jerome look forward to the day when they'll not only be heard, but also attended; not only read, but also studied. The historical women represented in the play included Marie de France, Christine de Pizan, Hrotswitha of Gandershiem, Hildegarde of Bingen, Julian of Norwich and Margery Kempe.

The students performed the play at their University to a crowd of over 200; they then performed it at their regional conference, the NCHC Conference, the Texas Medieval Association Conference and the XVII Medieval Forum in Plymouth, New Hampshire. The students participating grew academically, for they not only read history, but also enacted it. Furthermore, they prepared themselves to answer questions from the audience after each performance, questions ranging from inquiries about historical facts to insights into misogyny. In addition, the participants expanded their experience beyond their own campus, learning about other students, faculty, and institutions. Finally, each cast member grew personally. Bonds among the cast became strong, and they shared their commitment to one another in an intellectual pursuit with their families and friends as well as their audience.

Since more and more faculty are incorporating community service projects into their honors courses, two brief articles about community service are excerpted. Each article reports on a teaching/learning experience in which students participated in an intensive way in a community service project and used their service experience to learn about a societal problem and its embodiment in their communities.

In "Community Service in the Curriculum" (*NHR*, Fall, 1993), Ann Cassebaum reports on a first-year English research writing course called "Writing about Poverty," where the students were compelled to think deeply and actively about a social problem and a community service experience. The dual experiences of class and volunteering, organized around a problem-solving model, led students to consider in an orderly way their own (beginning) attitudes about wealth and poverty, the nature of poverty as lived-out, the causes of poverty, and, finally, some possible solutions. Volunteer hours, class discussions based on journals, and circulated research papers allowed the students to learn from each other as they began to shift from the stage of despair in the face of social ills to that of empowerment.

In "Literacy, Society and the Individual" (*NHR*, Summer, 1993), Mary Ann Tighe describes a team-taught upper level English course open to honors students and pre-service English teachers. Students made readers notes on the required text as suggested by its author (P. L. Courts, [1991] *Literacy and Empowerment: The Meaning Makers*. N.Y.: Bergin and Garvey, 1991) and also composed short research/creative papers focused on their 16-hour experience

as tutors in a local literacy program. Like Cassebaum's course, this one surveyed and studied student attitudes at the start of the term. Journals, in-class discussions and papers helped the students clarify and articulate their changing thoughts and feelings, and a final journal entry indicated important shifts in attitudes and understanding as a result of the semester's work. Tighe reports that "the most positive aspect of the course was the bringing together of students with various majors who shared a sense of commitment, who were willing to give of their time and knowledge in an effort to reduce illiteracy." In both of these service-oriented courses, the aim was to encourage in the students new commitments that would work themselves out in communities and professions after their university years are over.

As is evident from these few course descriptions, there is no single model for teaching an honors course. Honors faculty take risks in their teaching and use their honors classroom as a learning laboratory — giving students more autonomy, experimenting with new techniques, bringing in ideas which may not have been used in a particular discipline before, encouraging students to become involved in their communities.

CONCLUSION

LAIRD R. O. EDMAN

A little learning is a dangerous thing;
Drink deep, or taste not the Pierian spring:
There shallow draughts intoxicate the brain,
And drinking largely sobers us again.
(Alexander Pope, *Essay on Criticism*)

The purpose of this monograph is to provide honors educators with information and ideas concerning honors pedagogy. As is clear from the chapters included, honors pedagogy is not one thing, but many, just as honors students are not one kind, but many. However, there are themes that run through honors education which we hope this monograph has helped elucidate. There are techniques and approaches that seem to show up repeatedly in honors course descriptions, goals and objectives that are a regular feature of honors program mission statements. These common characteristics are all designed to help those students called "honors" go beyond the shallow draughts so frequently offered in our information-rich age and to drink deeply at the spring of learning.

The depth of learning honors programs hope to foster may include a depth of knowledge within a particular field of inquiry — a kind of undergraduate graduate education, complete with research and presentation opportunities, or it may focus on a kind of breadth often unavailable outside of honors education. Often honors programs and courses broaden traditional fields of inquiry for students in order to enable them to make more connections, use divergent ways of understanding issues, and move beyond the artificial boundaries of academic disciplines to the deeper understanding Larry Crockett (this volume) refers to as wisdom. Honors pedagogy tends to try to move students from "who," "what," and "when" to "why," "how," and "to what end." Honors pedagogy nurtures and challenges students to become self-motivated, self-regulating engaged thinkers.

Honors Pedagogy?

This monograph presents some of the ways honors courses do this. However, Larry Clark's chapter on honors student characteristics is an indication of the difficulty of making well-defined distinctions

between honors pedagogy and non-honors pedagogy. It is difficult to characterize "the honors student" because different honors programs use different criteria for inclusion into honors. Honors programs are as diverse as the institutions which house them — colleges and universities that are public and private; two-year, baccalaureate, and graduate-degree granting; single-sex and co-ed; secular and sectarian; highly selective and open admission. And the variety of honors programs possible is dwarfed by the variety of students involved in those programs.

Because of this diversity of institutions and programs, defining the post-secondary honors student is probably more difficult than defining the primary or secondary school gifted and talented student — and defining gifted and talented students in the primary and secondary schools is not without a great deal of controversy. As Sam Schuman notes in *Beginning in Honors,* another NCHC monograph, honors students are identified as such within particular contexts, in particular colleges and universities, and one institution's superior student may be another's average pupil. Whatever the institution, however, almost every campus has a group of roughly five to 10 percent of its highest achieving students who may not be fully challenged by the regular curriculum and who benefit significantly from honors work.

Therefore, each college and university must define the population of students targeted by its honors program, and that program must be shaped by that student population and the mission of the institution in which the honors program is housed. The curriculum and pedagogy appropriate to honors in a small sectarian liberal arts setting may be different from that appropriate in a large land-grant university or from an urban community college. Some programs focus on honors within the major, offering research and internship opportunities usually unavailable to undergraduates. Some programs offer team-taught interdisciplinary seminars which seek to make connections across disciplines. Some programs have alternative core curriculum requirements. Some programs have accelerated honors sections of large multi-section courses. Some programs offer opportunities for students to "contract" to do more within a regular course, thus turning the course into an honors course for that student. Most programs engage in at least one of these approaches to honors curriculum, and some offer all of them. What is common across programs is an intolerance of mediocrity and a desire to cultivate academic excellence. Perhaps what characterizes honors pedagogy is its focus on challenging superior students in the best ways possible

— a focus on doing collegiate education as well as it can be done, within the particular contexts of particular places.

If honors pedagogy can be distilled into doing collegiate education as well as it can be done, then the question arises: is there such a thing as honors pedagogy? Isn't it simply the same type of teaching college instructors seek to do in all of their classes, assuming college instructors in general seek to do collegiate education as well as they can in whatever circumstances they find themselves? Could we simply have titled this monograph "Good teaching practices"?

Perhaps. I said at the outset of this conclusion, however, that there were common themes to honors pedagogy, common trends and approaches that appear over and over again in honors programs in diverse settings and with diverse students. These common themes and approaches have been tested and used to great effect in programs across the country, and one need not attend very many National Collegiate Honors Council Conference "nuts and bolts" sessions to discern some of what characterizes honors teaching. The honors director or instructor designing and teaching honors students can learn a great deal from the wisdom and research of others in honors.

Common Features

Larry Clark's chapter on honors student characteristics indicates a tendency among those students who participate in honors programs to be able to function at higher levels of abstraction in their thinking, and to prefer doing so. This ability is reflected in the many honors courses that tend toward "big picture" issues and analysis. This tendency leads directly into Larry Crockett's discussion of the DIKW hierarchy and the need for honors pedagogy to focus on Knowledge, and especially Wisdom, rather than Data and Information. Among honors directors in the NCHC, there is a bias against the approach to honors that sees the honors course as an opportunity to cover twice the material in half the time. The experience of honors directors and the preferences of honors students point toward covering course material differently, with more depth and more connections and deeper understanding, rather than simply covering the same material faster.

Some of the ways of covering the material differently are spelled out in the articles in this monograph. Honors courses are quite often issue and question-centered classes, in which real classroom discussion occurs (as opposed to the teacher-centered, semi-

monologues or the student-centered bull sessions that often pass for the dialectic of good classroom discussion). Primary texts are often the source of entry into an issue. Honors students are expected to take more responsibility for their education, and thus are expected to take the material further, to engage in more sophisticated questioning and research, to teach themselves and each other, as well as enlighten the instructor. Honors instructors more often serve as mentors and guides in the classroom, rather than as "the sage on the stage." The classes are usually smaller, and the increased difficulty of the work involved is often due to its focus on primary texts and higher orders of abstraction. And while the tendency is toward discussion-oriented, participatory, multi-disciplinary courses, some honors courses are lecture oriented. Those which are, however, are so usually because the lecturer is a distinguished scholar or widely regarded expert or leader. (Which I think is entirely appropriate. If I am in a class with a Nobel-laureate as an instructor, I want to listen first, ask questions later.)

Because of the nature of honors programs and the often smaller class size of honors courses, the creation of a community of learning within a course and within a program is also a theme running through honors pedagogy. Linda Rutland Gillison's article on community-building in honors argues for the need for a community that can lead honors students to engage in critical self-examination and examination of their own traditions, broaden their viewpoints, and expand their understanding and appreciation of diversity. The trends toward cooperative learning, service learning, group activities, and linked courses with stable classroom cohorts are all a part of this desire to create a community of learning within a class and program. While one of the goals of many honors programs is to foster academic independence in students, honors classroom pedagogy tends toward group discussion, group processes, and group projects. Student independence often comes out of the group responsibilities they have exercised and the independent research opportunities available in other components of the courses and program.

The community of learners created in honors courses can help students overcome another common characteristic of honors students that we have not yet mentioned in this monograph: the impostor phenomenon. High achieving students, especially when identified as such and invited to join an honors program or college, often see themselves as "impostors," as having been placed somewhere they neither belong nor deserve. Particularly with first- and second-year students, this feeling of being an impostor at the academic game ex-

presses itself as a self-imposed pressure to succeed, a fear of failure, and a fear of being "found out" as not up to the expected academic standards. These students are often very concerned about their grades and reluctant to take on new challenges. Building a solid and safe community of learning in an honors course can diffuse the impostor phenomena in honors students. And of course, it helps if instructors do not deride their students, saying, "I thought you were honors students!" when those students balk at difficult work or worry about their grades. Instead, instructors should use such opportunities to help the students understand the nature of academic work; develop the appropriate attitudes toward that work; and learn to accurately appraise their own preparation, ability, curiosity, and motivation in order to overcome their feelings of being "honors impostors."

Grading and Assessment

One of the issues in teaching honors courses with which all experienced honors instructors have had to cope is the concern honors students have for grades. For a variety of reasons, including impostor syndrome reactions, long training in grade hyper-consciousness, concerns about fellowship, graduate and professional school applications, and concerns about current scholarship requirements, honors students tend to be quite anxious about grades. Honors students tend to think it unfair if they believe their GPA is being penalized because they are in the honors program, yet tend to disrespect an honors program that does not challenge them. Some honors programs and instructors grade honors courses to higher standards than they grade other courses, and others tend to give automatic A's in honors courses for all students who complete the required work. The issue of grades is an important one for instructors and programs to consider, and no single approach will be appropriate for all courses or programs. In some cases criterion-referenced grading is appropriate, in other situations norm-referenced grading is called for, and in still others mastery learning is the preferred approach. What is always inappropriate, however, is to discount students' concerns about grades and ignore the issue. We are part of an academic system which pays close attention to grades, and honors program participation is often GPA-driven. Listening to student concerns and carefully considering grading policies should be a part of any good honors pedagogy.

The issue of grades and student concerns about grades brings up another issue in honors pedagogy: assessment. Assessment is obviously an important part of the honors course, as it is in any course. The honors instructor should understand assessment as far more than giving grades; it is how we give our students feedback, and feedback is essential in good teaching. As I mentioned in the article on teaching critical thinking in this monograph, unless students learn to self-assess, learn what they know and do not know and how to judge the difference, they have not learned much in our courses that will transfer out of those courses. Assessment is the key way in which students are taught to evaluate themselves.

Is honors assessment different from assessment in non-honors courses? Probably only in so far as the course being taught is different, and the most obvious way honors courses are different from non-honors courses is that they tend to consist of smaller groups of honors students of whom the instructor typically has high expectations and who may have higher expectations of themselves and each other. This setting can lead to superb opportunities for students to engage in exercises in self-assessment as well as in helping each other assess her or his own work. The honors instructor should provide opportunities for the type of non-grade centered and non-grade driven assessment that is most worthwhile for teaching and learning.

Examples of that type of assessment can be found in the one-on-one tutorials proposed by Stuart Justman in his article on honors composition, in the types of authentic assessment proposed in some of the courses reviewed in the previous chapter, and in some of the recommendations given in the chapter on teaching critical thinking in the honors classroom. The use of web-based discussion and research groups can also be a part of giving timely feedback to students. Requiring students to write down a few questions they have every class period can be a powerful way of helping them learn to assess themselves, and commenting on the quality of the questions in class can help the students learn to formulate good questions (I have also required students, if they do not have any questions, to write down that they just are not thinking well today).

However the assessments are carried out in a course, it is essential that the purpose of any assessment be clear to the instructor and the students. Assessing simply in order to give a final grade in a course wastes a very important teaching opportunity. The core of assessment is feedback, and the purpose of feedback is to acknowledge achievement and provide direction for improvement. Honors

instructors should plan their assessments carefully, provide explicit criteria to enable students to assess themselves, assess often, and time the assessments appropriately. Timely feedback is essential to good teaching.

An important part of the assessment process should also be assessment of the course and the teaching. Often such assessments are provided only once, at the end of the semester, on a brief, anonymous paper-and-pencil form. These teacher-course evaluations which are required at most institutions for promotion and tenure decisions are actually very poor ways of improving courses. Honors instructors should allow students a greater part in the course assessment process, calling regularly for student feedback, and holding students responsible for giving accurate, thoughtful feedback to the instructor and their peers. Course goals should be clear to the students so that students can assess how well those goals are being met. There are ways in which technology can be used to provide a course feedback forum (a web-based or e-mail-based discussion-group) which can allow the instructor and the students to discuss how well the course is doing what the instructor wants it to do. Allowing students greater and more regular opportunities to give the instructor feedback serves not only to help the instructor improve the course, it also reinforces for the students that ultimately they are responsible for their own education, and the honors course and honors program is *theirs*.

Focusing on Faculty In Order to Focus on Students

There is a great deal of research now available concerning student learning outcomes, teaching methods, assessment practices, and critical thinking pedagogy. A brief time on the ERIC lists makes this clear. However, most of the research in education concerns primary and secondary education, and comparatively little research has been done in post-secondary education. This is especially true in honors or talented and gifted education.

Honors instructors and program directors may wish to avail themselves of what is being done by subscribing to several educational research journals, such as *The Journal for the Education of the Gifted, The Roper Review,* or *Theory into Practice.* An honors program library could be started into which pedagogical books and journals and other education research materials are collected. There are numerous ERIC titles and books from publishers such as Jossey-Bass which should be added to such a library.

However, for most faculty, keeping up with one's own field while teaching is difficult enough. Therefore honors directors could offer short teaching seminars for honors instructors, provide materials such as this monograph, and perhaps most importantly honors directors could provide faculty mentoring/workshops for honors instructors. Honors faculty could examine and critique each other's syllabi and course materials. They could sit in on each other's courses and discuss common (and uncommon) pedagogical problems and issues. Honors faculty could be assigned to small faculty teaching groups in which faculty work with each other over a course of several semesters to help each other become better teachers. In short, honors faculty could practice what they preach to their students. Any faculty member who thinks he or she has nothing more to learn about teaching or nothing to learn about teaching from other teachers, may not be appropriate faculty to teach honors.

Providing such faculty growth opportunities could make the honors program or honors college the center for teaching excellence in the institution in which it is housed. This would increase the teaching effectiveness and quality not only in honors courses, but across the institution and curriculum. This would add force to the stated understanding that honors programs and colleges are teaching centered and committed to providing collegiate education as well as it can be done. Such a focus on teaching excellence can serve the entire academic community.

Ultimately, regardless of the curriculum, the syllabus, the teaching strategies used or philosophy of education incorporated, good teaching depends upon good teachers. If what truly differentiates honors courses from non-honors courses is the people involved more than the curriculum, then that includes not only the students but the faculty. If we say honors students are (or should be) more curious and motivated, and thus more committed to their learning than their non-honors counterparts, honors faculty should be so as well. The core of any honors program is honors teaching, and honors teachers should be intensely committed to teaching and to making their teaching better. An instructor who is not passionate about her or his topic will not impassion students about the topic. A professor who does not exhibit critical thinking skills or dispositions in the classroom will be unable to teach those skills and dispositions to students. Honors pedagogy almost always includes a sense of passion, of wonder, of curiosity, of engagement, of respect for and delight in the world of ideas. Honors faculty should exhibit these characteristics as well.

The goals of most honors programs and honors colleges include helping students to become better critical thinkers and more articulate communicators, to recognize commonalities and appreciate differences between people, to learn both how to collaborate and work independently, and to grow in both intellectual curiosity and humility. These goals can only be achieved if the faculty who teach honors courses value these things. And when it works, it is glorious. This is what is honorable about honors, and this is what honors pedagogy usually seeks to accomplish.

INDEX OF ARTICLES ON TEACHING AND LEARNING

This section is a relatively complete bibliography on teaching and learning in honors, compiled from issues of the *National Honors Report* (NHR) through 1997. The articles are divided into sections according to the major topic covered in the article.

Copies of NHR articles may be obtained by contacting the office of the National Collegiate Honors Council at nchc@radford.edu.

Section I. Pedagogy

All articles in this section discuss ways to add variety to teaching in an honors course.

Celebration of Honors Teaching. Rinda West. Vol. XVIII No. 4 Winter 1997, 33-34.

Curating Art Exhibits: Promoting Active Honors Education. Paul Von Blum. Vol. XVIII No. 3, 30-33.

Ron's Magical Mystery Tour. Margaret Brown. Vol. XVII No. 4 Winter 1996, 12-16.

Transforming 'A' Students into Educated People. Alfred P. Clark. Vol. XVII No. 2 Summer 1996, 5-8.

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UNCC Honors Program Feeds the Minds and Stomachs. Glenn Hutchinson. Vol. XVII No. 1 Spring 1996,14-15.

Popcorn, Portfolios and Process: Exploring Socially Relevant Issues Using Feature Films and Interdisciplinary Team Teaching. Sharon Kantorowski and Catherine Henley-Erikson. Vol. XV No. 4 Winter 1995, 21-23.

Honors Students with Quick Questions: A Reply. Joan Digby. Vol. XV No. 4 Winter 1995, 33-34.

Interdisciplinary Honors Teaching: Inquiry, Teaching, and Service as Holistic Activity. Roger H. Hogner. Vol. XVI No. 3 Fall 1995, 59-63.

Cross Culturalism in an Honors Colloquium. Clyde Herreid, Josephine Capuana, Irene Lau. Vol. XVI No. 2 Summer 1995, 32-34.

Traveling Abroad: Expanding Borders. Ellen J. Kennedy, Carrie Noran. Vol. XVI No. 2 Summer 1995, 46-48.

A Wing and a Prayer: Trying to Reinvent Undergraduate Science Education With An Honors Program Experiment. D. W. Mullins, Jr. Vol. XVI No. 3 Fall 1994, 18-23.

The Student Based Curriculum in Honors Seminars. Cheryl Cohn. Vol. XV No. 2 Summer 1994, 46-48.

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Fostering Community and Maintaining Integrity in Honors Education. Andrea G. Labinger. Vol. XV No. 1 Spring 1994, 34-38.

Let's Hear It from the Students: The Ideal Honors Class. Hilaire Kallendorf. Vol. XV No. 1 Spring 1994, 39-42.

Community Service in the Curriculum: From Volunteerism to Social Change. Anne Cassebaum. Vol. XIV No. 3 Fall 1993, 25-26.

Honors and the Learning Process. Robert P. Case. Vol. XIV No. 2 Summer 1993, 8-10.

The Academic Habit: A Unique Co-Curricular-Based Honors Course. David Gross and Craig Womack. Vol. XIV No. 2 Summer 1993, 27-30.

Curriculum Development: The Honors Seminar As Bridge to the Community. Joseph G. Reish. Vol. XII No. 3 Fall 1991, 19-21.

The Virtues of Boundaries. Robert T. Rhode. Vol. XII No. 2 Summer 1991, 28-29.

A Report From the Task Force on Science and Mathematics Education for Non-Technical Majors. Dorothee J. Blum, John B. Osborne, Don H. Tucker and Len Zane. Vol. XI No. 3 Fall 1990, 23-24.

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Is There a Connection Between Teaching and Learning? Len Zane. Vol. X No. 2 Summer 1989, 12-13.

Collaborative Teaching and Learning: Essential to Honors Programs. Jane Fiori Lawrence and Lorine Potts-Dupre. Vol. X No. 2 Summer 1989, 13-16.

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