

The Independent Thinker: Assessing Student Outcomes In Tutorial Education

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Abstract

As part of an increased focus on accountability in higher education and the emergence of assessment as an integral practice in teaching, liberal arts colleges have been urged to assess qualitative student outcomes of their programs. A study of the Oxford tutorial found that independence/thinking for oneself in learning was a central outcome. Assessing a complex set of traits such as independent thinking is comparable to the diagnosis of personality traits and requires a process of construct validation. The independent thinker is first modeled as comprising a cluster of traits including: (1.0) becoming an independent thinker through co-teaching in an equitable relationship; (2.0) developing an inquiring mind; (3.0) writing to think for oneself; (4.0) engaging in interdependent/collaborative learning; (5.0) learning to self-assess; (6.0) acquiring a skeptical orientation; and, (7.0) arguing to learn. Trait dimensions were then assessed by a group of tutor-researchers to achieve a preliminary consensus on specific outcomes. Rubrics were created for selected traits. An action research study for validating traits was designed using a case method for collecting and reflecting upon an electronic portfolio of student work and rating scales.

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In this study we develop an assessment model for tutorial education in liberal arts colleges that responds to principles and commitments to action communicated in the "New Leadership for Student Learning and Accountability" by the Association of American Colleges and Universities (2008). The AACU called on participating colleges to *develop quality standards themselves* and not rely on external agencies. These quality standards refer to learning goals and assessments *anchored in the tutorial and liberal arts course curricula*. Thinking for oneself and learning independently are two student outcomes often cited. However, there are currently no well-researched assessment strategies for measuring the extent to which these liberal arts outcomes are achieved. We suggest that tutorial education aims at the same kinds of student outcomes as other liberal arts curricula and has significant advantages as a setting for the development of detailed assessments of student learning outcomes.

What kinds of outcomes are thinking for oneself or independence? Recently Stanley Katz (2008) discussed outcomes relevant to taking the true measure of a liberal education: "Most advocates of liberal education deny that a primarily content-based evaluation of learning assesses the totality of a senior's educational experience. Most of us are committed to the notion that liberal learning has more to do with cultivating qualities of mind and the capacity to recognize and analyze significance than with the mastery of any quantum of information." In a speech in Washington D.C., W. Robert Connor (2006), President of the Teagle Foundation, also supported increased focus on the assessment of student learning in liberal arts colleges. Of primary interest to the present problem is the trend he cited of moving from reliance on assessments of content or subject matter, called achievement goals by educators, to cognitive goals, in which enduring cognitive capacities are measured as outcomes. Connor concluded that unless we understood cognitive capacities in the context of relevant content these new goals might prove to be unduly abstract. Wolniak, Seifert & Blaich (2004) surveyed 900 students in 16 colleges and universities. For those colleges that featured liberal arts experiences, such as quality of interaction with students, number of essay exams in courses and focus on the integration of ideas, students had statistically significant positive outcomes. Among these outcomes, which included interactions between cognitive

capacities and content knowledge, were learning for self-understanding, writing skills, and preference for deep and difficult intellectual work.

Why focus on tutorials to assess students' cognitive outcomes? There is some evidence to suggest that tutorials may represent a superior form of education at any stage of education. In a recent review of the role of dialogue and tutoring in education, Hacker and Graesser (2007) wrote: "The superiority of one-on-one tutoring over traditional classroom instruction has been well documented" (259). In an experimental study of K-12 students, Benjamin Bloom (1984) demonstrated that tutorial instruction had two-standard deviation superiority over all other forms of instruction. Cohen et al. (1981) conducted an excellent meta-analysis of several studies that assessed tutorial education and came to the same conclusion although tutorial superiority did not reach the astounding levels found by Bloom. Yet, Hacker and Graesser cautioned: "However, the identification of exactly what aspects of one-to-one tutoring contribute to this superiority has received little attention" (259). It should also be mentioned that no comparable studies have been conducted in higher education no less in liberal arts colleges. Nevertheless, most colleges in the Annapolis Group of liberal arts colleges, for example, have some form of one-on-one instruction to teach disciplinary subjects and to conduct independent studies and research, and individualized instruction is often cited as a distinctive feature of liberal education.

If tutorials are, in fact, superior forms of curricula in supporting student learning, and we can determine which aspects of one-on-one tutoring contribute to this superiority, then tutorials in liberal arts colleges should also prove to be a highly advantageous research environment for observing and measuring qualitative student outcomes. The student outcomes we seek to measure may develop more quickly during tutorials than in conventional courses. Tutorials feature close and repeated interactions and intensive oral and written communications between teachers and students enabling tutors to assess changes in student cognitive capabilities. Because of the presence of nearly continuous assessment in the dialogic method of tutorials, in which questioning and the assessment of responses serve both to offer students feedback and guidance, we may readily explore the relationship between teaching and assessment. Tutorial assessments draw on several comparable records pertinent to student learning, such as a series of essays, or revisions

to papers, and related discussions in a disciplinary area. Because they take place in an intimate, recordable setting, tutorials could, therefore, provide a data-rich environment to research the interaction of cognitive and content goals in liberal education. The use of alternative outcomes could benefit tutorials. Simple assignment of grades and correction of papers do not do justice to the richness of student development in tutorials. Setting goals of qualitative outcomes for students and providing them with comprehensive assessments could improve the performance of tutorials. Nevertheless, because tutorials attract the interest of, and are often offered to high-achieving students, the potential level of upside growth in any one tutorial may be limited.

Toward the specification of learning outcomes in liberal education

In a study of tutorials at the University of Oxford, Beck (2007) suggested that the learning outcomes of tutorials are to develop students' abilities to think for themselves, work independently, develop a skeptical orientation, acquire mental flexibility, demonstrate creativity and imagination, learn to argue, engage in continuous self-assessment, and produce a documented example of original work. Concurrently, because tutorials are conducted through literacy enhancing activities, they were expected to improve students' written, oral, and discursive literacy skills. To meet these objectives, after the setting of a question or problem, the typical student activities in tutorials include a period of research involving the reading and review of literature or conduct of an experiment, or creation of preliminary sketches and plans for art works; these activities lead to the production of a written essay, scientific report, or artwork, followed in some cases by an oral presentation; and finally, a critical discussion of the student's work with a tutor.

The kinds of student outcomes found in the Oxford study represented cognitive and metacognitive alternatives to the way student learning have often been assessed in education, *i.e.*, solely through examinations of content knowledge. Marzano (1992) defined *habits of mind* as mental traits or dispositions individuals can develop to render their thinking and learning more self-regulated. These mental habits include: being aware of your own thinking; planning; being aware of necessary resources; being sensitive to feedback; and evaluating the effectiveness of your actions. Costa and Kallick (2000)

argued that:

A Habit of Mind means having a trait toward behaving intelligently when confronted with problems, the answers to which are not immediately known: dichotomies, dilemmas, enigmas and uncertainties. Our focus is on performance under challenging conditions that demand strategic reasoning, insightfulness, perseverance, creativity, and craftsmanship. The critical attribute of intelligent human beings is not only having information, but also knowing how to act on it (p. 1).

Both of the previous definitions of habits of mind are particularly relevant to the goals and practices of tutorial education. Several of Marzano's habits of mind are *metacognitive* and employed regularly during intellectual work in tutorials, such as being aware of one's own thinking, self-assessment of one's actions, and being sensitive to feedback. A student's metacognitive powers refer to his or her so-called executive or active control in thinking or reasoning about thinking, and thinking about how one learns (Flavell, 1979). Metacognition entails strategies for planning, monitoring and evaluating progress toward learning goals. Such techniques as self-questioning and self-assessment are considered vital to the development of students' ability to engage in higher-order thinking and self-regulated learning (Brown, 1987). Metacognitive thought, then, refers to thinking about one's own thinking. In tutorials, both tutor and tutee are often engaged in clarifying what students are thinking and how effective their work is in their writing and discussion. And Costa and Kallick's taxonomy refers to the kinds of problems – dilemmas and uncertainties - - that are part and parcel of typical student assignments in writing and discussing essays in tutorials.

In discussing the teaching of cases in the Harvard Business School, Frederick (1994) effectively captured a primary aspect of “thinking for oneself” as a metacognitive and independent form of learning:

The key to effective retention of learning, I believe, is in owning the discovery. Emerson wrote in his journals that a wise person ‘must feel and teach that the best wisdom cannot be communicated [but] must be acquired by every soul for itself.’ My primary strategy as a teacher is to structure situations in which students have as many opportunities as possible to acquire wisdom for themselves; that is, to

own the discovery of a new learning insight or connection and to express that discovery to others (p. 95).

In the same volume Carl Rogers put it succinctly: “I have come to feel that the only learning which significantly influences behavior is self-discovered, self-appropriated learning” (p. 129). A student should find, therefore, that he has learned important concepts and evidence on his own during tutorials and, in general, should find, increasingly, that he is capable of independent thinking. However, there is some doubt that independent thinking can be reliably assessed.

Measuring qualitative student outcomes in liberal education

While we intend to focus specifically on the assessment of the independent thinker, this paper raises several general issues that are concerned with the measurement of qualitative outcomes in higher education. Qualitative outcomes, such as independent thinking, are hypothetical properties of mind, psychological constructs in the language of tests and measurements, until they can be substantiated through empirical investigation. The problem bears a strong resemblance to the measurement of mental problems such as psychiatric researchers confront in compiling the *Diagnostic and Statistical Manual of Mental Disorders* (2000), also known as the DSM-IV-TR. The comparison is not far-fetched and can inform the development of assessment traits in our study. In the psychiatric domain researchers attempt to measure mental disorders using a combination of tests and observations. Each mental disorder has a diagnostic code, that is, the name of the clinical problem, its diagnostic criteria, subtypes, and associated descriptive features. Diagnostic criteria refer to behaviors that are associated with the disorder. For example, Attention Deficit/Hyperactivity Disorder (ADHD) has such criteria as: “fails to give close attention to details”; “does not seem to listen when spoken to”; and, “distracted by extraneous stimuli”. Such behaviors refer to how the problem “presents”, *i.e.*, what the clinician observes that would enable her to make the diagnosis. The authors of the DSM-IV-TR caution that the diversity of clinical presentations makes it impossible for diagnostic nomenclature to cover every possible situation. Each diagnostic code has subtypes: for example in “Delusional Disorder” there is the “Grandiose Type” and the “Jealous Type” among others. Each code classification has “Specifiers” that refer to the

severity of the disorder, i.e., severe, moderate, mild, etc. There is also advice on differential diagnosis: how to tell ADHD from ODD (Oppositional Defiant Disorder) or CD (Conduct Disorder). Now in its fourth edition the DSM-IV is constantly revising its codes and a significant issue is the overlap of diagnostic codes and the recurring need to reclassify. Indeed the DSM is constantly adding new codes and dropping others as research proceeds. The DSM is dynamic and recognizes that the clusters of symptoms it attempts to classify are related to societal and social changes and new theoretical understandings of the phenomena in question. Therefore, the classification system must always be treated as provisional. It is pertinent that other than ensuring standardized practice and payments (no code, no payment to the mental health professional!), the principal use of the DSM is to facilitate communication among mental health professionals.

Researchers of qualitative learning outcomes in liberal arts settings face a comparable challenge and decidedly need to share information about the student outcomes they are investigating. These are very early days in the state of the art for assessment researchers of liberal arts outcomes, but we should be working toward a common classification system of traits and criteria, while recognizing the intrinsic problems. For example, an enduring cognitive trait like independent thinking has, potentially, a large number of criteria, such as dependence, inquiring mind, self-assessment, collaboration, skepticism, and argument. Moreover, the assignment of a particular set of criteria to independent thinking or another trait may not yet be definitive. For example, below we propose that learning to argue, academically, is a component of independent thinking, but another assessment research project considers argument an aspect of creativity (Grace, personal communication). Therefore, there will be an initial period of time in which the very classification and distinctiveness of different traits will be in dispute. In a recent workshop among several participating faculty in the current study (Beck, Skinner & Schwabrow, 2008) it became apparent that there is no substitute for the rigorous discussion of each proposed trait and criterion behaviors to be included. Different instructors variously defined each trait and they provided different behavioral criteria for the same trait. Nevertheless, as the discussion proceeded degrees of consensus were reached on the nature of the traits and how students who might be classified as

having such traits behaved in the classroom or tutorial setting. We need to achieve a sufficient level of agreement as to what we are talking about before proceeding to the next stage of the research: empirical verification of the categories.

The development of rating scales and rubrics for the assessment of undergraduate outcomes needs to proceed in conjunction with the collection of behavioral criteria for each trait. Thus, it would not be sufficient for an instructor to rate a student's trait without documentation of the observed behaviors that served to inform the rating. This does not mean that rubrics cannot be established in principle but at this stage of the development of the field, the rubrics are provisional until verified by observations that indicate the presence/absence, range, and degree to which the student behaviors exemplify the trait. Further, given the emphasis on metacognitive traits it seems sensible to ask students to rate their own possession of the quality, to document what they think constitutes demonstration of the trait, and to what degree they estimate they have developed the trait during the selected period of instruction. In addition, there is another means of verifying the trait in question: student work. We might compare this to the psychological tests and lab tests used to verify some DSM disorders, such as depression and drug problems, respectively. In this regard the students' papers, discussion skills, and presentation abilities are potentially valuable sources of information about the traits under investigation. In the present research context we will record samples of oral behaviors (discussions/presentations) that might otherwise be difficult to use as verification data. Thus, verification of the traits would rely on triangulated data derived from ratings by relevant parties and independent sources of information that could be analyzed by researchers as well as tutors and students.

Developing and assessing trait constructs

Independent thinking may still be too general and inaccessible a habit or trait of mind to be observed and measured by tutors and students in tutorial assessments. Nor is this trait easily verifiable through documentation in student work. If metacognitive abilities are to prove useful as student outcomes, they must be more precisely and operationally defined. In order to measure learning outcomes in assessments, we need to formulate researchable *constructs* of the outcome. A construct is a hypothetical

psychological entity that must first be defined qualitatively, have face or intrinsic validity, and then be made operational through methods that test its validity and reliability in actual teaching and learning situations. While constructs have generally been used to build psychological tests and categories of psycho-diagnosis, they have also been applied to the measurement of qualitative learning outcomes. As renowned psychologists Cronbach and Meehl (1955) stated:

A construct is some postulated attribute of people, assumed to be reflected in test performance. In test validation the attribute about which we make statements in interpreting a test is a construct. We expect a person at any time to possess or not possess a qualitative attribute (amnesia) or structure, or to possess some degree of a quantitative attribute (cheerfulness). A construct has certain associated meanings carried in statements of this general character: Persons who possess this attribute will, in situation X, act in manner Y (with a stated probability) (284).

Translating the language above into the present project: Students who possess a trait (habit of mind, attribute, disposition, etc.) will, in tutorial education, act as independent thinkers as measured by tutors, students and objective evidence.

We offer the following research process for selecting and investigating constructs to be assessed as student outcomes of tutorials:

Phase 1. Proposing selected traits. To begin with, the constructs are construed as hypothetical entities that were previously identified in the literature. Comparable to DSM-IV descriptors, the constructs are labeled with minimal descriptions of student traits that are proposed as outcomes of tutorials in liberal education. As a preliminary set we suggest descriptions of independent thinking that have been researched in Oxford tutorials (Beck, 2007). The constructs are formulated as hypotheses about tutorial contributions to student outcomes of independence in terms of associated traits, including achieving independence through co-teaching, developing an inquiring mind, writing for self-understanding, interdependent/collaborative learning, assessment and self-assessment, skeptical orientation and, arguing to learn.

Phase 2. Assessing traits for inclusion in the research study. The constructs are then discussed by tutor-researchers to determine whether they are serviceable in terms of their own experiences of tutorials. As each trait is described the collaborators assess their

viability and offer anecdotal evidence that they have previously observed such traits in their tutorials. To further validate the constructs, they are assessed by tutor-researchers for importance and scalability. Are they capable of being rated by tutors and students alike? Tutors should be able to assess that a given student has or does not have the trait in question; tutors should be able to assess that a given student has more or less of the trait; A student should be able to self-assess that she has or does not have the trait or has more or less of the trait over the course of a tutorial. As an outcome of this phase, the participating tutor-researchers accept certain constructs and reject others, yielding a provisional set of constructs.

Phase 3. Action research: A case/portfolio approach by tutor-researchers to validate constructs in practice. The provisional constructs will then be validated through action research in which tutor-researchers develop case studies of their tutorials. The researchers draw on their portfolios of tutor and student self-report ratings, and observations and analyses of student performance and work during actual tutorials. In this phase, we seek the validation of the construct through the correlation and triangulation of both subjective survey evidence and objective evidence, such as textual passages found in student essays and transcripts of tutorial discussions.

Phase 4. Statistical validation of traits by Principal Investigators. Based on action research collected in Phase 3, the constructs analyzed in all the case studies will then be validated, statistically, through several analyses by the Principal Investigators. First, we will compare observations of different constructs across disciplines to determine if different tutor-researchers are referring to the same trait. Second, we will analyze the degree of statistical independence of selected traits. Through correlation and factor analysis we can find the strength of selected traits and study the groupings of different traits. One outcome of this analysis will be to reduce the number of assessment traits and settle on the most robust ones. Third, selected traits will also be correlated with other measures, such as course, essay, and discussion participation grades. Fourth, we would look forward to future studies. Although beyond the scope of the present study, validation of traits such as independent thinking could be experimentally researched by investigating groups that are expected to acquire the trait or develop it more rapidly and/or to a greater degree, for example, comparing groups of students who take tutorials

with control students (who might be the same students) who, concurrently, are taking traditional courses and seminars.

Independent Thinking

In terms of observable tutorial behaviors, student traits of independent thinking are expressed in their approaches to learning and in intellectual productions such as essay writing. A student can engage in independent thinking by independently finding sources of information, employing individual strategies for acquiring ideas from sources, and combining this knowledge with her own prior knowledge in creating new knowledge. Because a student uses metacognition in thinking about herself during tutorial learning, she can reflect independently both on her methods and effectiveness in approaching learning. During tutorials a student has the opportunity for creating and criticizing her work independently.

But independent thinking is not only an individual independent activity. Learning from and with others does not imply that one is not thinking independently. Most theories of the development of the self argue that social linguistic interactions with others, particularly knowledgeable others such as experts or parents, are an important source for the internalization of characteristic habits of mind and other self-qualities. As Charles Morris (1934) argues in his introduction to G. H. Mead's *Mind, Self and Society*:

Mead finds the distinguishing trait of selfhood to reside in the capacity of the minded organism to be an object to itself. The mechanism by which this is possible on a behavioristic approach is found in the role-taking which is involved in the language symbol [exchanges of language]. In so far as one can take the role of the other, he can, as it were look back at himself from (respond to himself from) that perspective, and so become an object to himself...Selves...arise...as beings that have become conscious of themselves (pp. xxiii-xxiv).

The simple learning theory on which these assumptions are based is *modeling*, that is, that a great deal of human learning occurs by observing what others do, particularly figures whom we regard as authoritative, such as parents and educators. But, the kinds of behaviors we assume are operative in forming the independent thinker require a more complex model, *self-regulation theory*. From this perspective the reciprocal processes we

have described support individual development from a condition in which authoritative persons control a large proportion of the learning to one in which the learner achieves self-control or self-regulation. According to this theory (Watson & Tharp, 1989) a novice's learning is first controlled by others, then regulated by self through reminding ourselves, and finally, in some cases, the desired behavior becomes automatic, that is, occurs smoothly without thought (pp 114-115). Moreover, the most prevalent method for achieving growth is through language regulation. Thus, our learning is first controlled by others through explicit instructions, then learners incorporate these instructions and may talk themselves through problems, albeit sub-vocally, that is increasingly "more silent, rapid and shorthand" (p. 100) as well as expressively. The theory is that even when learning is automatically self-regulated instructions occur sub-vocally, at that point out of conscious self-awareness.

There is another principle of self-regulation theory that is applicable to the present assessment research project. Because independent thinking is valued as a habit of mind, we think it desirable to establish the trait as a *goal* as well as to assess its presence/absence or degree. By establishing it as a goal for both tutor and student and as a trait to be assessed, it follows that both parties will engage in repeated observations of different forms of independent thinking as it occurs in various tutorial settings. It is a commonplace that behaviors that are subject to observation are likely to change and, if goals, to change in a positive direction. Positive effects of such self-observation and recording have been found in numerous studies of psychotherapy in which, typically, the first advice for new clients is to observe themselves (p. 77). Moreover, recording such behaviors in logs or on checklists will serve to reinforce observations because these data may be examined repeatedly for trends. Where there is such detailed observation by different parties to the same process they may compare findings and discuss further adjustments that may need to be made.

Thus, independent thinking is learned through reciprocal interactions with teachers and peers. You may acquire independent thinking as a result of telling others what you have learned and in responding to other's responses to your knowledge claims. Comparably, you learn to think for yourself in responding to ideas others communicate and listening to other's rejoinders to your responses to their ideas. Independent thinking

means being able to change one's mind on the basis of new information or to argue that one's claims of knowledge are superior to those proposed by others.

These reciprocal processes lead students, in principle, to adopt and adapt the ideas and methods of others into their own world views and ways of working. Engaging in the receiving and giving of feedback, a student may develop the habit of mind of self-assessment. When others pose questions about our work or vice versa we may, in time, learn to question our own ideas as well as form a readiness to question the ideas of others. These self-reflective thought processes come into play not only during interactions with others but when we metacognitively examine our own work. During writing we engage in serial creative and critical processes as we draft sentences, stop and consider, and alter wordings. At a larger scale, when we reread and revise our essays do we not communicate with ourselves, our critical selves responding to and changing our own creations?

Another important idea to take away from these descriptions of meaningful learning and references to self-discovered learning above is that independent thinking, whether a wholly individual activity or achieved through social interaction, can only be assessed in the context of what is learned by an individual through his own highly *involved participation and initiatives*. During tutorials this kind of learning is enhanced, potentially, because students research and create new knowledge independently in their essays and then participate actively in refining what they know through dialogic discussion. Therefore, tutors need to estimate how involved, participatory and initiatory their students are during the tutorial. An uninvolved, passive student is unlikely to achieve independence.

We propose, therefore, the following general hypothesis:

Students who participate actively in tutorials by engaging in reciprocal interactions with others and examining and re-examining their own work will demonstrate independent thinking during tutorials.

It is obvious that such an assessment of independent thinking represents only the grossest estimate of this important trait. We now analyze, in detail, several sub-traits of independent thinking and develop more specific constructs formulated as hypotheses about tutorial contributions to such student outcomes. In examining these outcomes, we

will sometimes find it useful to refer to independence, or to thinking for oneself; both qualities are integrated in the construct of the *independent thinker*. Independent thinking is modeled as comprising several primary modes, including: (1.0) Becoming an independent thinker through co-teaching in an equitable relationship (2.0) developing an inquiring mind; (3.0) writing to think for oneself; (4.0) engaging in interdependent/collaborative learning; (5.0) learning to self-assess; (6.0) acquiring a skeptical orientation; and, (7.0) arguing to learn. While these modes are intended to explain the nature of different dimensions of independent thinking, they are offered as theory preparatory to the development of scales for rating specific behaviors that will be presented in the following section.

This paper draws on insights from a three-year ethnographic study based on observations, papers on tutorial practice, and interviews with 34 tutors in 12 colleges at the University of Oxford (Beck, 2007).

(1.0) Becoming an independent thinker through co-teaching in an equitable relationship

We claim that tutorials support the development of the student as an independent thinker because the tutorial relationship, in principle, has the *ideal of tutor-student equality*. “My own tutor never taught otherwise than as his equal” (Mirfield, 2001, p. 38). What is it about the tutorial in which equality is achieved to a high degree that contributes to students thinking for themselves? Emma Smith, a Tutor in English at Hertford College explains the shared nature of the tutorial:

The work tutor and student/s are together engaged in during the tutorial is both a general and shared enterprise – to develop different understandings of the texts in question – and a specific one – to extend individual student’s work according to their particular strengths and areas for development (2001, p. 72).

Perhaps, because she is a tutor of English, Smith understands best that what tutor and student are working on together is a discussed, and possibly shared interpretation of readings, leading to an improvement of the student’s ability to read independently and write well-argued, persuasive essays. Shale (2001) supports this view, but puts it in terms of diminishing the tutor’s role as a traditional teacher. She elaborates Moore’s rejection of the idea that tutors *teach* pupils and rather that students are “reading this part

of her subject with Dr. X.” Shale points out that in the latter method “Dr. X is engaged in a working partnership in which her own [student’s] endeavour lies at the heart of her learning and are really of far greater significance than the efforts of her tutors” (p. 98).

Mayr-Harting (2006) expressed the view that the tutor-student relationship is less one of equality as that of colleague or collaborator. The colleague role he derives from the practice dating from medieval Oxford in which senior and junior scholars shared living arrangements. However, Mayr-Harting accepts the proposition that one of the forces supporting collegueship or equality in the relationship is the student's apparent role of teacher in composing, reading out their essay to the tutor, and taking some leadership in the discussion: “Out of their lips rather than the tutor’s must come what needs to be said” (p. 6). Martin Ceadel. Fellow in Politics at New College, also see a degree of equality in the relationship because "I have the facts and you've (student) read the literature more recently on which the essay is based and we can have a discussion on an equitable basis" (Personal communication, 2007),

We propose that students become independent thinkers by assuming the teacher role during tutorials. When students present their essays to the tutor they are acting/performing their argument, as if they are lecturing from a script; however, their presentations are ones in which the audience may constantly interrupt and engage them in discussion about the very line or previous argument they have uttered. In this role, the students learn that in their presentations teachers must be prepared to justify and defend their propositions and their supporting evidence. However, we observed that Elizabeth Frazer, Tutor in Politics, New College preferred to let her student read out his essay in its entirety before responding. When a student assumes the teacher role, this may contribute to better equality in the relationship, because at least for a time both student and teacher function as teachers. They are teaching together, just as they are reading together. The teaching together will involve a complex pattern of alternating roles, in which the don is the teacher and the student may assume the roles of both teacher and student. The teacher role is assumed by the tutee through the use of characteristic teacher speech acts: professing knowledge; asking questions; and providing feedback.

If there are two or more students per tutor, then each one has the opportunity also to teach his co-tutee(s).

Tutorials as a pair gives you both a chance to ask your individual questions, to be challenged by the questions from your partner, and to join in discussion actively. It gives you and your partner a chance to discuss problems before the tutorial and to run things together. Sometimes your tutor will run through solutions and explain material. Sometimes he will ask you to do that, especially as a response to the questions of your tutorial partner. There is nothing like trying to explain material to someone else to find out what you really understand!” (Probert, 2001, p. 69).

Probert, at least, believes that students learn best when performing as teachers, taking on the responsibility for teaching their essay to a fellow-teacher (and fellow-student).

Our theory, therefore, is that tutors, with various levels of awareness, seek to balance their structurally superior roles by placing students in the teacher or co-teacher role. One way they do this is by creating an environment in which tutors and students work together to help students think for themselves. Students are teachers because they author papers and then use these papers to teach the material to tutors and peers. While tutors and peers are still co-teachers or in this arrangement, their primary function is to respond critically to the student-teacher-presenter’s arguments. We claim that these equitable arrangements contribute to student engagement, confidence and risk-taking in thinking for themselves.

2.0 Developing an inquiring mind: questioning ideas and self-questioning.

There is a persistent image of the Oxford tutor as Socratic. Perhaps it is because Benjamin Jowitt, the famous classicist at Balliol College in the 1880s is associated with the origins of the inquiry or questioning form of the Oxford tutorial, just as he taught Plato’s dialogues as works of philosophy. Tutor questioning serves both a formative assessment function and a scaffold that points students in directions they have hitherto not considered. In this latter sense the tutor uses questions to explore the various subtopics of the primary question or problem of the student essay. But the tutor tends not to disclose these subtopics didactically, so much as through indirect teaching by probing or asking; this encourages the student to do the work. When a tutor asks a student a question, such as a why-type question, that has no pre-existing, informational answer, the

student will think for herself in formulating a reply. If as often occurs the reply is incomplete or displays error in some way, then the tutor's follow-up questions ask students to think further to refine their propositions. This process may continue through several iterations. Martin Ceadel (New College, Oxford) stated that the questioning method led his students to acquire the attribute of puzzling over ideas.

3.0 Writing to think for oneself

Writing occupies a central role in expressing and developing the student's independent thinking. As preparation for the tutorial, student work during the week consists of independent reading and composition of a written essay, without which a meeting with one's tutor would be fruitless. As one veteran tutor asserted: no essay, no tutorial (Mayr-Harting, 2006). A written essay is a "trying out" (*essai*, Fr.) of ideas in response to a question:

Like the novel, the essay is a literary device for saying almost everything about almost anything. By tradition, almost by definition, the essay is a short piece, and it is therefore impossible to give all things full play within the limits of a single essay.

Longer academic essays (often with a word limit of between 2,000 to 5,000 words) are often more discursive. They sometimes begin with a short summary analysis of what has previously been written on a topic, which is often called a literature review. Longer essays may also contain an introductory page in which words and phrases from the title are tightly defined. Most academic institutions will require that all substantial facts, quotations, and other supporting material used in an essay be referenced in a bibliography or works cited page at the end of the text. This scholarly convention allows others (whether teachers or fellow scholars) to understand the basis of the facts and quotations used to support the essay's argument, and thereby help to evaluate to what extent the argument is supported by evidence, and to evaluate the quality of that evidence. The academic essay tests the student's ability to present their thoughts in an organized way and tests their intellectual capabilities (Wikipedia, 2008).

Most forms of essays relevant to tutorials are deeply conceptual and include such types as: cause and effect (What were the causes and effects of the Financial Crisis of 2008?); comparison and contrast (Compare and contrast Obama's and McCain's approaches during the presidential campaign for solving the Financial Crisis of 2008); classification and division (Using technical criteria, what is a depression and what are the different forms of economic decline?).

During composition, a student accesses the deepest levels of learning to think. Alan Ryan holds that students use their writing to understand what they know: "knowing that he will not know what he thinks until he sees what he has written" (2001, p. 79). Max Van Manen, an educational philosopher of writing, elaborates this idea: "Writing teaches us what we know, and in what way we know what we know. As we commit ourselves to paper we see ourselves mirrored in this text. Now the text confronts us...Research is writing in that it places consciousness in the position of confronting itself...to write is to exercise self-consciousness" (1990, p.127, 129). Literacy theorist David Olson (1994) adds: "Because writing creates representations of thought, that are more precise and reliable than oral discourse, such as concepts, evidence, and arguments, it allows these forms to become self-consciously the object of further reflection, analysis and design (p. 266) and affords further discourse" (p. 51). Clearly, these authors consider writing a metacognitive ability, whose practice leads to increased self-understanding of one's thinking.

According to educational researchers (Wells, 2001; Scardamalia, Bereiter, & Lamon, 1994) knowledge building requires an "improvable object" as the focus of the activity. The improvable object may be orally communicated ideas or an artifact, such as an essay prepared for a tutorial. The goal is to transform the "object." Former Oxford senior administrator Marjorie Reeve's observation in this regard is apt: "it is to set the student the task of expressing his thought articulately, and then to assist him in subjecting his creation to critical examination and reconstructing it" (Palfreyman, 2001, 7). Clearly, a major objective of tutorials is to improve writing through critical examination and assistance in reconstruction.

Because it may be reviewed and rewritten, writing affords multiple metacognitive perspectives to students. Not only is writing, arguably, the supreme method of

communicating thought, but it also lays down a record of thought's progress, and so facilitates the assessment of a student's development in thinking for herself. Just as writing enables a tutor to assess a student's thinking, it also enables the student to achieve metacognitive awareness of her own thought as it develops.

4.0 Engaging in interdependent/collaborative learning in discussions.

The dialogic structure of tutorials constitutes another set of practices contributing to students' abilities to think interdependently. A considerable amount of time is devoted to *discussion* during tutorials. Tutorials provide practice for students in learning from and with others. Interaction with tutors provides opportunities to learn from knowledgeable others and in tutorials with two students, opportunities to learn with peers. These interactions will involve traits that have been treated above, such as feedback, teaching, and questioning. It is likely that students will find that their abilities to learn with others, to collaborate, improve over the course of the tutorial.

The trait of interdependent/collaborative thought is revealed during discussions when students provide critical responses to tutor and peer propositions with the motive of helping others develop their ideas; and, students incorporate others' responses to their knowledge claims, into their elaboration and revisions to their ideas. Students who exhibit this mode of interdependent thinking will not "blow off" or reject criticism nor will they fail to respond to others' ideas when it is clear that they may have alternative ideas.

How does the tutorial discussion carry on the work of the student essay and oral presentation? Henry Mayr-Harting (2006) and Gavin Williams (St. Peter's College) (2007) strongly argued that the tutorial is first and foremost a discussion of the student's own work. The function of tutorials, he says "...is to turn out people who can survive and adapt to rapid change, who can bend their mental powers to new fronts as they emerge" (p. 4). We suggest that the tutorial discussion, particularly, provides an intensive conversational context of rapid intellectual exchange for training "mental flexibility". As students present their claims, they receive and participate in an insistent, fast-paced dialogical stream of tutor questions, alternative formulations, and feedback - - new emerging fronts in Mayr-Harting's terminology - - to which they must adapt, flexibly,

either in defending or adapting these incoming ideas to their developing thesis or realizing that their argument is failing and there is a need to start over. In the process their mental powers are bent, as they are directed to ponder and to answer the tutors' communications and to re-compose their positions in response to criticism.

When students hear how their ideas are taken up and interpreted, they are exposed to their ideas in alternative language. This affords students conceptual distance on their own thinking; their thinking is "out there" and can be viewed and reviewed with perspective. In this way, tutorial discussion contributes to the development of a student's metacognitive abilities. By constructing and reconstructing arguments together, students and tutors participate in a natural dialectic process that offers a continually shifting flow of alternative perspectives. This duality of knowledge construction lays the groundwork for the student's active consideration of alternative perspectives on truth claims.

5.0 Acquiring self-assessment and assessment skills

Student responses to tutor questions also provide material for assessment and other forms of feedback. Richard Mash, a Fellow in Economics at New College, proposes that tutorials are exceptional settings for providing extensive feedback: "Tutorials should offer excellent opportunities for feedback that is positive (while always being honest), and the frequency of feedback should help the process whereby students settle in mentally and feel that, subject to the required effort, they can be successful" (2001, p. 91). Emma Smith, a Fellow in English at Hertford College, described her role in the tutorial as less of a teacher than as a *critic*. Mayr-Harting offered some excellent advice about criticism and feedback on students' essays: "A pupil needs to hear why the tutor *thinks* it is a good essay...to understand what *makes* a good piece of work a good piece of work"; even for weak essays, the tutor should "build up the credit column all he or she can before going into the debit column" (p. 5). We assume that the extreme density and fine calibration of assessments offered to students lead not only to a propensity for students to use assessments constructively as well as to acquire the trait of self-assessment and the practice of seeking assessments from others.

6.0 Skeptical orientation.

In this mode students approach all claims to knowledge, whether proposed by others or themselves with skepticism. When Moore (1968) spoke of the tutorial method as skeptical, he referred primarily to the ordinary use of the word, someone who doubts, is uncertain, and questions the validity about some claim to knowledge that has been put forward. At the very least a skeptic is one who suspends judgment as to whether knowledge is possible in a particular case. In general, skepticism is concerned with the theory of knowledge, whether we can know anything. "It raises doubts about the adequacy and reliability of the prevailing methods of fixing belief and about whether we are ever justified or warranted in believing what we do. It questions, also, whether our basic concepts have application to things as they are" (Landesman, 2002, 3). This summary of skepticism identifies some of the critical properties pertinent to tutorial practice: *raising doubt* is a persistent trait; the doubt concerns *beliefs* that are otherwise unsubstantiated; the doubt concerns the *theories, evidence and methods of reasoning* by which beliefs are justified; even if our concepts are sound, do they *apply to things as they are*? It is interesting that skepticism arose in the golden age of Greek philosophy in response to dogmatism, such as Stoicism and Epicureanism. The ancient skeptics labeled their opponents 'dogmatists', which suggests an irrational rigidity of opinion, a refusal to look impartially at the evidence (Annas & Barnes, 1985, 1-2).

From a skeptical perspective, the student essay is a claim to knowledge about which the tutor, and peers where present, should assume a skeptical attitude and inquiry. In the tutorial context, the student's essay/work, insofar as it makes claims to knowledge, raises the prospect of dogma, and this must be met with unreserved skepticism on the part of the tutor. In criticizing the student essay/work, the tutor models the role of a skeptic who examines the reasoning behind the claims of knowledge made by the essay.

Formulated as such, a skeptical orientation comprises a more comprehensive mind set than the trait of self-assessment. While expressing doubt about others' ideas or indeed one's own involves an assessment, technically, a skeptical orientation implies a tendency to engage in a deeper philosophical consideration about the basis for and logic of ideas. Nevertheless, we cannot imagine but that students who acquire the trait of self-assessment are good candidates for acquiring a skeptical orientation.

7.0. Arguing to learn/learning to argue

What does it mean to be literate with respect to the tutorial activities of reading, listening, writing, presenting, and discussing as they lead toward the development of independent thinking in tutorials? Pedagogical researchers claim that it means to master *argumentation* (Schwarz & Glassner, 2003). In a recent study, Sabri and colleagues (2007) interviewed 12 Oxford tutors and 36 students on their experiences of the marking or formative assessment of essays in history and archeology. Both tutors and students agreed that the assessments were largely concerned with the improvement of students' arguments:

Tutors' initial responses to the question about criteria for what makes a good essay was primarily [that] they are looking for an argument that consistently addresses the question. They define good essays in generic ways as incisive, precise, concise, critically evaluating arguments, containing personal interpretation and demonstrating independence of mind (p. 12).

Thus, Sabri's study not only confirms the importance of learning to argue as a goal but also makes the connection between independence of mind, well-formed essays, and skill in argumentation. The continuous practice of arguments in writing essays may well lead to increased skill in argumentation. To learn to argue is to acquire logical procedures for independently formulating and criticizing knowledge claims.

During tutorial discussion, however, argument serves as a means for the production of constructive activities such as collaborative learning. Aristotle theorized that the objective of argumentation, which was located in the dialectic of critical discussion and inquiry, was to expose error in thinking and to shape discourse toward a rational ideal. Argumentation ensues when there is communication about "an issue that has two sides and which provides for two opposing communicator roles: a protagonist who puts forward a claim and an antagonist who doubts that claim, contradicts it, or otherwise withholds assent" (van Eemeren, Grootendorst, Jackson & Jacobs, 1997, 209). The process by which argument is exposed and shaped is necessarily dialogic and argumentative because it requires an extended series of questions and feedback to help students understand how intricate arguments may be parsed and constructed. Socratic dialogues are the most well known examples of argumentation using extended chains of

questions and feedback until a neophyte experiences self-realization and repairs errors, contradictions, and fallacies in his thinking. Sufirin (2007, 22) sees the value to students of learning through mistakes: "what's important is learning to recognize a dead end when they see one, and having the stamina to explore other avenues, and the skill (and 'courage') to see where an argument or proof or design went astray" (21). Nevertheless, tutors and peers also help students build up and elaborate their arguments, perhaps even providing missing parts and logical language to make connections. To summarize Veerman's (2003) position: Argumentation gives rise to conflict and negotiation processes in which students can discuss information, elaborate on arguments and explore multiple perspectives. In such discussions, students are *arguing to learn*. Of course, a byproduct of arguing to learn may be *learning to argue*.

Independent Thinking: Learning Outcome Rubrics

In our theoretical overview of the seven traits comprising independent thinking, we engaged in a first-order differentiation of the construct. A second task, to organize rubrics for assessing the traits, requires that we translate the constructs into more specific, observable behaviors to be assessed in the primary tutorial settings of writing, presentations, and discussions. We decided to eliminate *writing* from the rubrics for two reasons: tutors already have comprehensive criteria for assessing writing and we did not want to muddy the waters by suggesting an alternative approach; all of the other sub-traits of independent thinking will be applied in any case to the primary tutorial settings and therefore writing would, in fact, be assessed for independent thinking. The reader will find, following, that the traits have been selected with conciseness, observation, and ratings in mind. In some cases, it is only the most important outcome that is selected for rating, for example in collaborative learning it is taking the perspective of others that is paramount and in self-assessment the outcome is that students have changed as a result of the process, both in revising their work and acquiring the habit of seeking feedback. While arguing to learn is of theoretical value, it would not be easy to discriminate from learning to argue. Hence, only the latter is rated.

1) Independence/dependence: this trait is assessed by how much support the student needs, i.e., a measure of dependence. a.) One indicator of dependence on support is the frequency

of oral and written instructions that are explicitly provided for the students to carry out tutorial activities, e.g., ways to do research, writing, etc.; b.) As a measure of independence, students take teacher roles during discussions by setting topics, asking questions to originate new topics, summarizing discussion and assessing ideas.

2) Developing an inquiring mind - questioning ideas and self-questioning: a) Student asks high-level questions, such as why-questions, during tutorials; b) Student is meticulous in the way he or she articulates questions, stating them, as far as possible, clearly and precisely, during tutorials; c) Students acquire the habit of puzzling over ideas during tutorials, that is, they ask themselves questions.

3) Interdependent thinker -Student takes the perspective of others, considers alternative ideas during discussions, and demonstrates mental flexibility by modifying their ideas and changing their minds.

4) Acquiring self-assessment and assessment skills: Student uses assessment/feedback to improve their work and to seek assessment/feedback on their work during tutorials.

5) Skeptical orientation: student adopts a posture of doubt and uncertainty about claims and arguments during tutorials including his or her own work and the work of peers.

6) Learning to argue: student argues effectively in tutorials by making conceptual claims backed with supporting theory and evidence.

Action Research of Independent Thinking and Other Traits: A Case/Portfolio Approach

We intend to investigate independent thinking and other traits, intellectual maturity and creativity, in partnership with several tutors, who will research the development of these qualities in their tutorials. The goals of the research include the assessment of the constructs and testing the integration of the constructs into tutorial teaching and learning. As such, the investigations are an example of participatory action research intended to bring about change in tutorial practice:

The process of action research involves people reflecting on issues and processes during the research, participants as co-researchers...it is transformed by emergent findings which, in turn, impact upon the process itself and subsequent outcomes...participatory action research can be defined as collective, self-reflective inquiry... (Miller and Brewer, 2003, p. 5).

Evaluative case studies are used in action research to judge the merit and worth of the intervention and guide revision and refinement of the action (Stenhouse, 1985, p. 50). Case studies involve documentation, largely of verbal exchanges, but also the assessment of student work between an expert and a novice in situations of professional

development. The purposes of a case are: “to explain causal links in real-life interventions, to describe the context in which a real life intervention has occurred, to describe the intervention itself [and its outcome], [and] to explore situations in which the intervention being evaluated has no clear, single set of outcomes” (Yin, 1984, p. 25). In the present study a case consists of information on how effective is the intervention of an assessment-based approach in tutorials. Stated as an hypothesis: *Does the assessment of independent thinker, intellectual maturity and creativity traits lead to changes in tutorial practice and student development of these qualities?*

As noted by Yin (1984), “[a] case study is an empirical inquiry in which multiple sources of evidence are used” (p. 23). Therefore, case studies need to make links between multiple sources of data; the links are discovered through a structured inquiry that directs data collection and integration. In *electronic portfolios*, computer-based Internet and hypermedia information systems effectively support the easy and rapid access to different pieces of evidence and afford their recombination for determining validation and reliability of interpretations or conclusions from these data. Because we are working with electronic files of word, visual and spreadsheet documents (student essays, art images, databases), audio files (tutorial discussions), and, potentially, video recordings of student presentations in this study all material will be stored and accessible through computer-supported media.

Recently, the use of case-based teaching and learning has become popular as a means of bridging this *instruction about* teaching and learning and *observation of* teaching and learning—that is, bridging theory and practice. Typically, cases present exemplary or problematic “slices of life” that are authentic, concrete illustrations of situated teaching-learning in progress in real classrooms. These vignettes, which mostly have been texts constructed to represent prototype problems, are then written about, discussed, or analyzed. Cases have potential for bridging theory and practice because they present opportunities for applying theoretical, conceptual, and pedagogical knowledge about teaching and learning to “real world” classrooms and tutorial settings and explicate evidence of theories, concepts, and strategies embedded in practice, such as the traits included in this study.

Once materials are collected the work of the case investigator is to engage in reflective practice. The concept of the teacher as a reflective practitioner, who inquires into problematic issues and constantly reflects on practice to develop innovative solutions, is a widely supported model of the kind of teacher needed in our schools and higher education. The ability to reflect has been heralded as the key to the formation of a self-assessing advanced teacher who can integrate theory and practice in all of the primary functions of planning, instruction, and assessment. “Since at least the time of Dewey, such thinking about practice has been termed reflection and in teacher education courses there has been a focus on developing reflective practitioners” (Loughran, 1996, 3). The idea of the reflective practitioner has been so influential that all states and all national organizations for the credentialing, professional development, and advanced certification of K-12 teachers have unanimously adopted standards calling for teachers to reflect on practice. In this study we apply the concept of the reflective practitioner to the professional development of tutors. Potentially, the reflective practitioner could form the basis for a new kind of tutor, who actively researches the environment, questions practice, and seeks the self-knowledge and understanding of students’ needs that would help maximize the potential for all students to learn.

Schon formulated the role of the reflective practitioner as a method for helping teachers develop professionally and he identified working examples of reflective practices in his case studies of professionals and organizations. Schon’s concept of *framing* is central to his model of reflection as research inquiry. In the present study the pertinent frames are the models and assessment methods of the various enduring cognitive qualities, that is, the traits set forth in the Workshop on Assessment Methods in Tutorial Education at Lawrence University (2008). For a reflective practitioner, frames impose some degree of conceptual clarification for problems and “bound the phenomena to which they will pay attention [and] set the directions in which they will try to change the situation, the values which will shape their practice.” Frames may be composed of any theoretical consideration, social, instructional, or organizational role. By a frame, Schon means a theory that could be used to explain a pattern of behavior. By adopting a specific frame, such as the cluster of traits comprising the independent thinker, intellectual maturity or creativity, the practitioner is prepared to make changes to practice

that would test the theory. Thus, throughout the course of the tutorial as a reflective practitioner, the tutor uses these several modes of assessing independent thinking and other traits as a theory to guide practice. The use of cases in tutor professional development also has intuitive appeal as an instructional practice for the tutors' understandings about teaching and learning because cases are situated in actual teaching-learning contexts and thus represent a relatively realistic view of the dynamic complexities and ambiguities of teaching.

Discussion:

Using assessment of students' independent thinking and other traits

To structure tutorial instruction

Although the principal purpose of assessing independent thinking is to ensure accountability of student trait outcomes in tutorial settings, we think the various traits could be usefully applied to instruction in a more integrative fashion. Throughout our treatment of the problem we have emphasized that students, as well as faculty, need to assess whether their questioning, assessment, writing, etc. is improving during tutorials. By setting the cluster of traits related to independent thinking (and creativity and intellectual maturity in the present study) as goals for tutorials, we thereby alert students that they not only need to monitor their progress but also could use the traits to set their own expectations of success. Knowing that questioning, for example, is a desirable outcome, students could strive to increase and perfect their questioning. Just as tutors might benefit from establishing the goal of continuous assessment/feedback to ensure they employ this technique frequently, so students are alerted to the expectation that feedback will be coming their way and, if not, to ask for it. Educators generally subscribe to the proposition that assessment and teaching and learning are interrelated. By using the goals of independent thinking as behavioral expectations, we can move beyond the mastery of disciplinary content alone during tutorials and toward the education of the whole student.

If we find that independent thinking and other traits are not merely theoretical constructs but have real substance and body for assessing and goal setting, then should we not set ourselves the additional goal of developing these traits *through teaching*?

Again, if high-level questioning is a desirable trait, shouldn't the tutor model the use of such questions in inquiring into the learning materials? And shouldn't the tutor respond to a less than satisfactory formulation of a question by a student, with further probes asking students to refine their question or, failing that, to rephrase the question herself? Comparable teacher approaches can be applied during tutorials for any of the sub-traits we have considered. In fact, we learned that such practices might already be routine in tutorials but unacknowledged as such (Rob Neilson, tutor-researcher, personal communication).

We could take this farther still and *integrate the traits into student assignments*. For example, we will test another cluster of traits that comprise "creativity" in the current study. Creativity has been organized into several outcome constructs such as: idea generation; curiosity; multiple perspectives; connectivity; and divergent thinking. In making assignments to students in studio art, for example, the tutor could ask students to integrate any or all of these qualities into their conceptions, sketches and plans for their art works. If their works are going to be assessed for these qualities, why shouldn't they be built into the art works, or by extension into the essays or experiments at the outset? In this way we move assessment to be included in instruction not only at its conventional position, at the end, but into the process of teaching and, ultimately, incorporated into criteria for the creation of student work.

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