The Inquiry Method

By Neil Postman and Charles Weingartner

These extracts are taken from the third Chapter of the book "Teaching as a subversive activity" by Neil Postman and Charles Weingartner. While the book itself highlights the urgent need for educational institutions to help their students focus on learning to learn, the chapter on inquiry method is an attempt to define and design an environment that can bring about this trait in learners.

The inquiry method of teaching and learning is an attempt at redesigning the structure of the classroom. It is a new medium and its messages are different from those usually communicated to students. Our purpose here is to begin to describe the 'grammar' of the medium, for of all the 'survival strategies' education has to offer, none is more potent or in greater need of explication than the 'inquiry environment'.

We begin by seeking help again from McLuhan*. In particular, he provides three metaphors which offer a way into the problem. The first may be called the 'label-libel' gambit. McLuhan refers constantly to the human tendency to dismiss an idea by the expedience of naming it. You libel by label. (Here, McLuhan connects again with Dewey, for no one stressed more than Dewey the emptiness of 'verbal knowledge'.) Find the right label for some process, and you know about it. If you know about it, you needn't think of it any further. 'What is its name?' becomes a substitute for 'How does it work?' While giving names to things, obviously, is an indispensable human activity, it can be a dangerous one, especially when you are trying to understand a complex and delicate process. McLuhan's point here is that a medium is a process, not a thing, which is an important reason why he has turned to the metaphor 'massage'. A massage is a process, and for health's sake, you are better advised to understand how it is working you over than to know what it is called. The inquiry method is a massage, a process, and nothing is especially revealed about its workings by trying to name it properly. And yet in educational circles, a very considerable part of the discussion about the inquiry method has centred on what is the most appropriate label to use in the discussion. In instances where someone wishes to dismiss the inquiry method, it is common to hear, 'Oh, all you mean is the Socratic method.' That serves as terminal punctuation. No more need be said. In better circumstances, serious people search for a 'real' name: the inductive method, the discovery method, inquiry training, the hypothetical mode of teaching, inferential learning, the deductive-inductive method, the inductive-deductive method, and so on. We mean to disparage such labelling only mildly. Eventually, the profession will have to get its names straight so that intelligent discussions can go forward and useful refinements be noted. But the label is not the process, and in this case, the process needs scrutiny and description, not yet a taxonomy.

McLuhan's second useful metaphor is the 'rearview-mirror' syndrome. He contends that most of us are incapable of understanding the impact of new media because we are like drivers whose gaze is fixed not on where we are going but on where we came from. It is not even a matter of seeing through the windshield but darkly. We are seeing clearly

enough, but we are looking at the rearview mirror. Thus, the locomotive was first perceived as an 'iron horse', the electric light as a powerful candle, and the radio as a thundering megaphone. A mistake, says McLuhan. These media were totally new experiences and did to us totally new things.

So it is with the inquiry method. It is not a refinement or extension or modification of older school environments. It is a different massage altogether, and, like the locomotive, light bulb and radio, its impact will be unique and revolutionary. Yet the rearview-mirror syndrome is already at work. Most educators who have taken the trouble to think about the inquiry method are largely interested to know if it will accomplish the goals that older learning media have tried to achieve: will students pass the Regents? Will they pass the College boards? How will they do on 'objective' tests? Will they absorb a great deal of information? Will they come up with the right answers? etc.

It is entirely possible that the inquiry method will help students to produce answers their teachers crave, and remember them longer, and even utter them faster. But in anticipating this, you are imagining the most inconsequential part of the story. The inquiry method is not designed to do better what older environments try to do. It works you over in entirely different ways. It activates different senses, attitudes and perceptions; it generates a different, bolder and more potent kind of intelligence. Thus, it will cause teachers, and their tests, and their grading systems, and their curriculums to change. It will cause college admission requirements to change. It will cause everything about education to change.

What we are driving at (the metaphor is not accidental) is that rearview-mirror thinking has resulted in some curious and largely ludicrous attempts to use inquiry methods as imitations of older learning environments. Some of these have been initiated by well-intentioned men who, nonetheless, are basically committed to the older forms and functions of school environments. Some have been initiated by publishers who want to satisfy the impulse for change that so many teachers feel, without requiring them to stray far from recognizable and secure controls. What they have produced is roughly on the level of using television to resuscitate vaudeville. At their worst, if we may do a bit of labelling ourselves, such efforts are best thought of as the Seductive Method of learning. The goal remains the same: to get into the student's head a series of assertions, definitions and names as quickly as possible. (This is called 'covering content'.) The method turns out to be a set of questions posed by the teacher, text, or machine which is intended to lead the student to produce the right answers - answers that the teacher, text, or machine, by gum, knew all the time. This is sometimes called 'programmed learning'. So far, most students have been neither tricked nor intrigued by it. They recognize the old shell game when they see it, just as they recognize a lecture given on television as more of the same.

All of which brings us to our third metaphor, namely, the story line. McLuhan contends that, without the distraction of a story line, we get a very high degree of participation and involvement in the forms of communication, which is another way of saying the processes of learning. One has to work hard, and one wants to, at discovering patterns and assigning meanings to one's experiences. The focus of intellectual energy becomes

the active investigation of structures and relationships rather than the passive reception of someone else's story. Of course, the school syllabus is exactly the latter: someone else's story. And most traditional learning environments are arranged to facilitate the sending and receiving of various story lines. That is why teachers regard it as desirable for students to pay attention, face front, sit up in their seats, and be quiet. ‘There were these Indians, see, and they lived in America before it was discovered. . ..’

The inquiry method is very much a product of our electric age. It makes the syllabus obsolete; students generate their own stories by becoming involved in the methods of learning. Where the older school environment has asked, ‘Who discovered America?’ the inquiry method asks, ‘How do you discover who discovered America?’ The older school environments stressed that learning is being told what happened. The inquiry environment stresses that learning is a happening in itself.

Of course, this is not the first time that such an environment has existed. Socrates had no story line to communicate and, therefore, no syllabus. His teaching was essentially about process; his method, his message. It is indiscreet but necessary to allude to how he ended up. His accusers cannot be faulted. They understood perfectly well the political implications of such a learning environment. All authorities get nervous when learning is conducted without a syllabus.

Even John Dewey was forced to concede the validity of the conservative position: once you start a man thinking, there is no telling where he will go. Just as unnerving is the fact that there is no telling how he will go. A syllabus not only prescribes what story lines you must learn (the war of 1812 in the sixth grade, chromosomes in the eleventh, South America in the ninth), it also prescribes the order in which your skills must be learned (spelling on Monday, grammar on Tuesday, vocabulary on Wednesday). This is called the 'sequential curriculum', and one has to visit the Ford Motor plant in Detroit in order to understand fully the assumptions on which it is based. In fact, the similarities between mass-production industries and most existing school environments are striking: five-day week, seven-hour day, one hour for lunch, careful division of labour for both teachers and students, a high premium on conformity and a corresponding suspicion of originality (or any deviant behaviour), and, most significantly, the administration's concern for product rather than process. But the larger point is that the sequential curriculum is inadequate because students are not sequential: most significant learning processes do not occur in linear, compartmentalized sequences. Here we want to say that lineal, mechanistic, input-output, ABC-minded metaphors have been found to be increasingly unsatisfactory in our electronic age. Even professional educators, who are generally the last people to recognize the obsolescence of their own assumptions, have discovered this, and have recently invented what is called the 'spiral curriculum'. Unfortunately, students aren't spiral any more than they are sequential. Nonetheless, the spiral, or coil, image does have obvious advantages over its predecessor. Of course, it is still much, much too orderly to reflect what actually happens when people are engaged enthusiastically and energetically in the process of learning. Certainly, anyone who has worked with children in an inquiry environment knows what a delightful, fitful, episodic, explosive collage of simultaneous 'happenings' learning is. If the learning process must be visualized, perhaps it is most

authentically represented in a Jackson Pollock canvas - a canvas ' whose colours increase in intensity as intellectual power grows (for learning is exponentially cumulative).

From all of this, you must not conclude that there is no logic to the learning process. There is. But it is best described as a 'psycho-logic', whose rules, sequences, spirals and splotches are established by living, squirming, questioning, perceiving, fearing, loving, above all, languaging nervous systems. Bear in mind that the purpose of the inquiry method is to help learners increase their competence as learners. It hopes to accomplish this by having students do what effective learners do. Thus, the only reasonable kind of logic or structure that can be applied in this environment is that which is modelled after the behaviour of good learners. Good learners, like everyone else are living, squirming, questioning, perceiving, fearing, loving and languaging nervous systems, but they are good learners precisely because they believe and do certain things that less effective learners do not believe and do. And therein lies the key.

What do good learners believe? What do good learners do?

First, good learners have confidence in their ability to learn. This does not mean that they are not sometimes frustrated and discouraged. They are, even as are poor learners. But they have a profound faith that they are capable of solving problems, and if they fail at one problem, they are not incapacitated in confronting another.

Good learners tend to enjoy solving problems. The process interests them and they tend to represent people who want to 'help' by giving them the answers.

Good learners seem to know what is relevant to their survival and what is not. They are apt to resent being told that something is 'good for them to know', unless, of course, their crap detector advises them that it is good for them to know - in which case, they resent being told anyway.

Good learners, in other words, prefer to rely on their own judgement. They recognize, especially as they get older, that an incredible number of people do not know what they are talking about most of the time. As a consequence, they are suspicious of 'authorities', especially any authority who discourages others from relying on their own judgement.

Good learners are usually not fearful of being wrong. They recognize their limitations and suffer no trauma in concluding that what they believe is apparently not so. In other words, they can change their minds. Changing the character of their minds is what good learners are most interested in doing.

Good learners are emphatically not fast answerers. They tend to delay their judgements until they have access to as much information as they imagine will be available.

Good learners are flexible. While they almost always have a point of view about a situation, they are capable of shifting to other perspectives to see what they can find. Another way of saying this is that good learners seem to understand that answers are

relative, that everything depends on the system within which you are working. What is 'true' in one system may not be 'true' in another. That is why, when asked a question, good learners frequently begin their answers with the words ‘It depends’.

Good learners have a high degree of respect for facts (which they understand are tentative) and are skilful in making distinctions between statements of fact and other kinds of statements. Good learners, for the most part, are highly skilled in all the language behaviours that comprise what we call 'inquiry'. For example, they know how to ask meaningful questions; they are persistent in examining their own assumptions; they use definitions and metaphors as instruments for their thinking and are rarely trapped by their own language; they are apt to be cautious and precise in making generalizations, and they engage continually in verifying what they believe; they are careful observers and seem to recognize that language tends to obscure differences and control perceptions.

Perhaps most importantly, good learners do not need to have an absolute, final, irrevocable resolution to every problem. The sentence, ‘I don't know’, does not depress them, and they certainly prefer it to the various forms of semantic nonsense that pass for answers to questions that do not as yet have any solution - or may never have one.

If you will grant that these are some of the major beliefs and doings of good learners, then you will grasp the meaning of what we have been calling the 'inquiry method'. We are talking about an environment in which these behaviours can flourish, in which they are the dominant messages of the medium. Obviously, this cannot happen if you teach self-reliance on Monday, enjoyment of problem solving on Tuesday, and confidence on Wednesday. But neither will you get anywhere by teaching question asking in the sixth grade, observing in the seventh, and generalizing in the eighth. What we are talking about is an environment in which the full spectrum of learning behaviours - both attitudes and skills is being employed all the time. From problem to problem. From kindergarten to graduate school. So that anytime someone is in school, he is trying to behave the way good learners behave. Only in that way can the medium convey the kinds of messages we are talking about.

Now, in practical terms, what would such an environment be made of? It seems to us that it would have four major components: the teacher, the students, the problems and the strategies for solving problems.

Let us consider here the teachers, and especially their attitudes. We take it as axiomatic that the attitudes of teachers are the most important characteristic of the inquiry environment. This point is frequently passed over even by those who advocate the use of inquiry methods, but especially by those innovators who are in constant quest of teacher-proof programmes and methodologies. There can be no significant innovation in education that does not have at its centre the attitudes of teachers, and it is an illusion to think otherwise. The beliefs, feelings, and assumptions of teachers are the air of a learning environment; they determine the quality of life within it. When the air is polluted, the student is poisoned, unless, of course, he holds his breath. (Not breathing is widely used by students as a defence against intellectual poison, but it mostly results, as

you can imagine, in suicide by suffocation.) The attitudes of the inquiry teacher are reflected in his behaviour. When you see such a teacher in action, you observe the following:

The teacher rarely tells the student what he thinks they ought to know. He believes that telling, when used as a basic teaching strategy, deprives students of the excitement of doing their own finding and of the opportunity for increasing their power as learners.

His basic mode of discourse with students is questioning. While he uses both convergent and divergent questions, he regards the latter as the more important tool. He emphatically does not view questions as a means of seducing students into parroting the text or syllabus; rather, he sees questions as instruments to open engaged minds to unsuspected possibilities.

Generally, he does not accept a single statement as an answer to a question. In fact, he has a persisting aversion to anyone, any syllabus, any text that offers the Right Answer. Not because answers and solutions are unwelcome - indeed, he is trying to help students be more efficient problem solvers - but because he knows how often the Right Answer serves only to terminate further thought. He knows the power of pluralizing. He does not ask for the reason, but for the reasons. Not for the cause, but the causes. Never the meaning, the meanings. He knows, too, the power of contingent thinking. He is the most ‘It depends’ learner in his class.

He encourages student-student interaction as opposed to student-teacher interaction. And generally he avoids acting as a mediator or judge of the quality of ideas expressed. If each person could have with him at all times a full roster of authorities, perhaps it would not be necessary for individuals to make independent judgements. But so long as this is not possible, the individual must learn to depend on himself as a thinker. The inquiry teacher is interested in students’ developing their own criteria or standards for judging the quality, precision, and relevance of ideas. He permits such development to occur by minimizing his role as arbiter of what is acceptable and what is not.

He rarely summarizes the positions taken by students on the learnings that occur. He recognizes that the act of summary or 'closure' tends to have the effect of ending further thought. Because he regards learning as a process, not a terminal event, his 'summaries' are apt to be stated as hypotheses, tendencies and directions. He assumes that no one ever learns once and for all how to write, or how to read, or what were the causes of the Civil War. Rather, he assumes that one is always in the process of acquiring skills, assimilating new information, formulating or refining generalizations. Thus, he is always cautious about defining the limits of learning, about saying, 'This is what you have learned during the past forty-five minutes,' or 'This is what you will learn between now and the Christmas holidays,' or even (especially), 'This is what you will learn in the ninth grade.' The only significant terminal behaviour he recognizes is death, and he suspects that those who talk of learning as some kind of 'terminal point' are either compulsive travellers or have simply not observed children closely enough. Moreover, he recognizes that learning does not occur with the same intensity in any two people, and he regards verbal attempts

to disregard this fact as a semantic fiction. If a student has arrived at a particular conclusion, then little is gained by the teacher's restating it. If the student has not arrived at a conclusion, then it is presumptuous and dishonest for the teacher to contend that he has. (Any teacher who tells you precisely what his students learned during any lesson, unit, or semester quite literally does not know what he is talking about.) His lessons develop from the responses of students and not from a previously determined logical structure. The only kind of lesson plan, or syllabus, that makes sense to him is one that tries to predict, account for, and deal with the authentic responses of learners to a particular problem: the kinds of questions they will ask, the obstacles they will face, their attitudes, the possible solutions they will offer, etc. Thus, he is rarely frustrated or inconvenienced by 'wrong answers', false starts, irrelevant directions. These are the stuff of which his best lessons and opportunities are made. In short, the 'content' of his lessons are the responses of his students. Since he is concerned with the processes of thought rather than the end results of thought (The Answer!), he does not feel compelled to 'cover ground' (there's the traveller again), or to ensure that his students embrace a particular doctrine, or to exclude a student's idea because it is not germane. (Not germane to what? Obviously, it is germane to the student's thinking about the problem.) He is engaged in exploring the way students think, not what they should think (before the Christmas holidays). That is why he spends more of his time listening to students than talking to or at them.

Generally, each of his lessons poses a problem for students. Almost all of his questions, proposed activities and assignments are aimed at having his students clarify a problem, make observations relevant to the solution of the problem, and make generalizations based on their observations. His goal is to engage students in those activities, which produce knowledge: defining, questioning, observing, classifying, generalizing, verifying, applying. As we have said, all knowledge is a result of these activities. Whatever we think we 'know' about astronomy, sociology, chemistry, biology, linguistics, etc. was discovered or invented by someone who was more or less an expert in using inductive methods of inquiry. Thus, our inquiry, or 'inductive', teacher is largely interested in helping his students to become more proficient as users of these methods.

He measures his success in terms of behavioural changes in students: the frequency with which they ask questions; the increase in the relevance and cogency of their questions; the frequency and conviction of their challenges to assertions made by other students or teachers or textbooks; the relevance and clarity of the standards on which they base their challenges; their willingness to suspend judgements when they have insufficient data; their willingness to modify or otherwise change their position when data warrant such change; the increase in their skill in observing, classifying, generalizing, etc.; the increase in their tolerance for diverse answers; their ability to apply generalizations, attitudes and information to novel situations.

These behaviours and attitudes amount to a definition of a different role for the teacher from that which he has traditionally assumed. The inquiry environment, like any other school environment, is a series of human encounters, the nature of which is largely determined by the 'teacher'. 'Teacher' is here placed in quotation marks to call attention to

the fact that most of its conventional meanings are inimical to inquiry methods. It is not uncommon, for example, to hear 'teachers' make statements such as, 'Oh, I taught them that, but they didn't learn it.' There is no utterance made in the Teachers' Room more extraordinary than this. From our point of view, it is on the same level as a salesman's remarking, I sold it to him, but he didn't buy it' - which is to say, it makes no sense. It seems to mean that 'teaching' is what a 'teacher' does, which, in turn, may or may not bear any relationship to what those being 'taught' do.

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* Marshall McLuhan