

Education in the Electronic Age¹

Marshall McLuhan/University of Toronto

The first idea I want to develop is very much like that idea of territoriality; just as in the natural habitat animals create their own territory or environment around them, so do technologists. Any technology creates its own environment. If you do not have drinking glasses, if you do not have running water, you have to approach wells or other places and secure it by completely different patterns of human behaviour. In India, in some villages, when they first introduced hot and cold running water, it disrupted the social life of the villages so badly that the residents insisted on having the running water removed, because the age-old habits of association around the well among the women of the village had been completely suspended. So they went back to the old technology.

Here is something that Bobby Kennedy said—the generation gap between children and parents today is as great as the gap between the U.S.A. and the U.S.S.R. I do not think that is an exaggeration. The children of the TV generation are completely newly fashioned. They have a completely different sensory life. They do not have different ideas. If it all depended on their getting ideas in their heads, we would be safe. Nothing would ever happen; but the changes don't occur in the mind. They occur in the senses. Change the environment and you completely alter the sensory life of the inhabitants of that environment. Change the lighting here, dim it down as in a posh restaurant, and what happens? You dim down the lights; up comes the viscera. All of the erotic part of one's being is activated by simply dimming down lights. You can do this on a national scale also; TV did it on a national scale. TV dimmed down the lighting in the sensibilities of people very, very much. We will mention that later on. The same with radio, transistors or otherwise; it completely altered the sensibilities of the young and altered their relation to one another and to their parents, without benefit of any ideas, observations, or theories.

If people think that change is in some way related to changing ideas, then change would remain forever mysterious. I call this the "rear-view mirror" habit of always looking for change in the rear-view mirror; of always carefully inspecting the old situation for evidence

of change. Maybe you have noted something of this happening even among school teachers, inspectors, and officials.

It would be very misleading to look at the existing bureaucracy and organization of curriculum for evidence of change and what is happening in our world. The changes have gone on *outside*, not inside the school. The outside environment perhaps for the first time in history is, in terms of information, many times more heavily laden than the inside environment of the school. What is going on inside the school is puny and undernourished compared to what goes on the moment the child steps outside. In Watts there was a report of kids saying quite freely, "We are dropouts because we do not want to go to school and disrupt our education."

What goes on inside the school is an interruption of education, of the education available in the current environment.

In the electric age people make their world in an entirely new way; the whole environment is created. Here, for instance, there would be no environment if that light went out. There would be nothing. That is, information—pure information. We make environments out of information today; and man makes his world. The old idea was "Man makes himself." Now man makes his world also. In the pre-literate times, paleolithic pre-literate men had ritual dances and rituals whereby they renewed the energies of the cosmos periodically, and they had the strong impression that they were responsible for the universe and they made it by their own energies and their own art and their own understanding. Then came civilized man, who thought he lived inside the universe, as if it was around him. Then came electronic man, who suddenly realized again that he made the universe and that he was not inside it. Literally, in the electronic age man makes his world. He makes the cosmos and programmes it. With the satellite, for example, going around the planet, the planet becomes an incidental content of satellite environment, a man-made satellite environment, which completely alters the planet and us on the planet. You cannot put a satellite environment around a planet without altering the planet and the occupants of the planet. Their whole vision of themselves, their body percepts, their corporate social percepts, are entirely altered by a satellite environment. That does not mean that they ever have to notice the satellite. They never have to give it a thought. It never has to occur to them that there is such a thing as a satellite, in order for the satellite to make total changes

¹ Ed.'s Note: The following article is an address delivered by Dr. McLuhan on January 19, 1967 to the Provincial Committee on the Aims and Objectives of Education in the Schools of Ontario. © McLuhan Associates Ltd., 1970.

in the comings and goings and patterns of their daily lives.

Anything of which one is conscious is "rear-view mirror." The actual environment itself has the power of invisibility and of non-perceptibility. People never recognize their environment; that is why in business they have discovered in recent years they have to call people from outside, in order to see what the business is. Businessmen do not know what business they are in and never have known. You know there is an old saying (not so very old): "We don't know who discovered water, but we are sure it wasn't a fish." That is literally true. It is inconceivable that a fish could discover water or that anybody could discover anything that was totally surrounding his senses. That is the one thing you will never know.

The thing that is most intimate and most totally surrounding us at all times is our own body percept. We create a body percept from minute to minute, or second to second by simple sounds and inputs that we experience, and if this body percept were totally unconscious, it would take the toil of a psychiatrist to reveal it. We do not know what our body percept is without special efforts at getting into a new environment from which to examine it.

One of the peculiarities of the electronic age is that speed-of-information movement is itself a qualifying factor, but speed "all-at-onceness" means that there is no *connection* between anything any more. Now we are 19th century people here. We came out of a world in which everything was connected, just like the railways, just like the world of linotype, a visual world. In other words Western man in general has come out of a world he had much to do with creating, in which space was continuous and connected; in which time was continuous and connected; in which consciousness was continuous and connected. Now man has suddenly, in the electronic age, left the age of the continuum, when we have gone "through the looking glass" à la Lewis Carroll into the world where time and space are not connected. They are not continuous at all, and that is like our unconscious. Our unconscious contains everything, but there are no connections. Consciousness is a little insignificant area in which we strive to keep things in place and visually connected. Visual space is connected space. Cultures that do not have visual technologies and visual stress have no consciousness in our sense; but live in a sort of unconscious world of dream, and that is where electronics is taking us. For example, it is as

simple as this: TV has invented the inner trip, LSD style, for the ordinary child. The TV watcher goes on an inner trip, not an outer trip. The movie watcher went on an outer trip; the camera took him outside into the world, extended his eyes. TV does not. It goes *inside* you. You are the screen; you go inside yourself, in depth, with icons. The iconoscope—the engineers call the tube that forces these images into you the iconoscope—these images go inside you. You are the screen. On TV you are not a camera. You go inside yourself.

The TV generation of children are very depth-oriented, completely unrelated to any outer goals. TV kids have no goals in education or living. They play the total field. Everything. They are hunters, not planters. A planter has his little strip culture, his own little pattern, his own little specialty, his own little skill. With electricity the whole field comes back into play. The little strip cultures such as basket-weaving and pot-making are gone. Our kids have no goals because they understand the world they are living in and you can't have goals in an electronic total-field world. You cannot have fixed objectives. What do you put in their place? Roles! Involvement—participation in depth—in processes. Our youngsters understand this without fail. They understand that the new kind of world in which they live demands absolute participation in processes.

This has been happening in big business, where all the members of the firm more and more insist on participation in decision-making at high levels, but when I mention the senior members of firms as being invaded by these teams of decision-makers from below, there is no inside or outside under electronic conditions. That is the meaning of our glass buildings, the new banking services. Another way of putting it, in case I forget, is to say that under electronic conditions everything becomes a service industry, including education. Education is the biggest service industry in the world and it is only beginning. All things become service industries, banking included.

The knowledge industries and the educational industry are the biggest in the world by far. I mean they make General Motors look very small indeed. The biggest amount of personnel, the biggest amount of investment by far exists in the educational sphere. The amount of investment in time, energy, and resources in community education (secondary or university level) is very small compared to the businessman's investment in the same process; that is, the military establishment and the business establishment spend on education in

company time at least ten dollars for every one we spend. Yes, the community investment in education is quite small compared to the business and military establishment, so that it is often observed in backward countries that if you want to get a good education at a high level, as in Brazil or in Russia, you join the army. This reminds one that Julius Caesar educated a great many savages this way in his legions and they learned the lessons so well that they soon overran Rome.

Military action is education. We are spending a lot of money educating the orient these days and they are learning the lessons very well. They will be back soon with the lessons well learned, but every bomb that drops in the orient is a mighty educational heave to westernize the Eastern world. They are westernizing at a great clip, using all our investment over there and all our old technology. You notice we only permit war with the old technology; the military fights only with old technology—they are always prepared to fight the last war. We can all notice that the East is going West, but what we don't notice is that the West is going East, much faster than it is going West. LSD and all the TV inner trips are more oriental than anything we are doing to westernize the East. The world of electric circuitry feeds us back into ourselves. The whole point about feedback is that it feeds back into *you*, and involves *you* in the process. That is what is called communication. Communication is a feedback to you without involvement. It is not a transmission of information or messages. It is involvement in the process.

The world of the electronic is oriental as much as any inward trip can make it, but it is worth noticing that there are some very weird changes taking place as a result of translating everything in the environment into information.

As a result of translating our whole world into electrical information and programmes, you can expect some very weird "flip-overs" to occur. For example, in the school system the whole change-over is from instruction to discovery. What we now call instruction in school or college is already yielding to discovery. We call it Research. Research and Development are a little advance warning telling you that the instructional process has had it. Instruction is just a blueprinting and stencilling on brain pans of things already known, but the future is not for what we know now. It is for discovery. There will be no instruction in our schools in a very few years. I mean within say five years, if you want to figure it. No instruction at all. There will be discov-

ery. Teams of students will be prowling the environment on research programmes, and that applies to elementary school children. Discovery takes the place of instruction in any environment in which the information levels are very high. When the information levels drop below a certain level you have to go back to instruction.

Another "flip-over," accompanying the same reversal of high information levels, is seen in advertising; the ad is taking the place of the product progressively; the ad is a substitute for the product. It is not intended to encourage you to go out and buy a product; it is intended to *be* a product; to give you all the satisfactions and more than you could ever get from the product. In fact it is the people who own that car, own that icebox, love that soap—whatever they own already—who read and watch ads, in order to get the right satisfaction. This is a simple dynamic within the information environment.

All the industries of our time are service industries. With Xerox the book becomes a service industry. It ceases to be a package or a product. The future of the book in school or outside of school is a service. You will go to the phone, or use some other means of announcing your interest, and say "The history of Egyptian arithmetic" and that you know a little Sanskrit and a lot of French and a lot of this and that and, "Please send me the latest." You will receive in an hour or so a package with all the latest studies on Egyptian arithmetic from every journal in the world, and custom-made for your resources and your means. The idea of just having mass-produced books the same for every one, and just going out and buying one, is automatically liquidated by Xerox. Xerox makes the book into a service industry—information service—and entirely tailor-made, custom-built.

Our motor cars are rapidly becoming custom-built. On almost any car at the present time there are so many variations that there are hardly two alike, and in a short time they will stop making cars that resemble one another. With electronic programming and planning, it is just as easy to make a hundred different cars as a hundred the same. It does not cost any more.

If you look into the rear-view mirror you see conformity, but if you look at the present right out in front of you, you see nothing but diversity and decentralization. The meaning of the electronic is total decentralism, total diversity, so in terms of the educational effort, you can say that any kid will drop out of a system which demands that he study the same things at

the same time as anybody else. That is automatic drop-out because he knows that this is not related to the world he lives in. Drop-out is alienation. It is not a failure of talents or capacities. It is alienation; a sense that "I do not belong here"; that there has been some dreadful mistake.

Father Phelan used to tell the story about how he was looking for a confessional so that he could go to confession himself in New York City. He saw a promising looking church, which he entered and got into one of these boxes; it was sometime before he heard the confessor, who seemed to be rather puzzled at his confession and indicated this; and Father Phelan gasped and said, "I am afraid I have made a dreadful mistake—wrong church!" The kids feel like that. They have got into the wrong box. They did not make that box, but they did not make that world that surrounds that schoolroom either, and they know that world. They have completely responded to that big new world we made for them and when we put them in these square boxes, curriculum-wise, they know that something is wrong, but they cannot tell you what it is. When they say "square," they mean a 19th century space that is enclosed, or a person who is a job-holder in a special little bracket or niche. In our kind of electric world you can't have that sort of organization of human energies any more. Giving people identities by cards and classification won't work any more. In our time there has been this tremendous hassle about identity. "Who am I?" Remember that the adult sense of alienation in our world is another form of drop-out on a much bigger scale than anything that has happened so far in the schools.

The ordinary adult in our world feels utterly alienated simply because he is living in a world that has changed so rapidly that nobody has had time to adjust or make any kind of relationship to it. So the adult takes off for the psychiatrist in order to get a new identity instead of the old classification. Yes, it used to be possible to accept an identity in terms of your nationality, your age, your family background. Outer considerations of that sort used to be thought of as a kind of identity. But now people won't accept this kind of identity in their inner life. They feel, "That is not me. I have got to have something better than that." I think this is characteristic of almost everybody in our time. If you have gone from very backward territory as I did—from Winnipeg—it is easier to accept the 19th century than it is if you are living in New York. Toronto has

that great advantage: it is a 19th century territory and it gives you a wonderful advantage in looking at the strange antics of those trying to live in the 20th century down south. We know better: we go on in the old ways, 19th century patterns of solid connected space, personalities, jobs, learning processes, and this kind of 19th century world is a wonderful vantage point from which to observe the 20th century.

In contrast to that you have the West Coast, of which I think it is true to say they never had a 19th century. They leap-frogged out of the 18th into the 20th. They bypassed the 19th century. That is why Hollywood is possible on the West Coast. It would not have been possible to have Hollywood in Chicago: they are having a 19th century. Of course if we hang around long enough in the 19th century, we will be in a wonderful position of being able to leap-frog out of the 19th into the 21st, without ever having had a 20th century and it would not be a bad century to miss!

What is wrong with the 20th century is the ferocious demands it makes of human beings. It is almost cannibalistic. W. S. Burroughs wrote a book called *The Naked Lunch*, the theme of which is quite simply that our new technologies, devised by ourselves, eat us alive. We are the Naked Lunch. When you make a thing like television, everybody goes in the hopper. Everybody is chewed to bits. The railway did the same, completely revamped every aspect of national and personal life in the 19th century and broke up families right and left. The railway was a great smasher of families, because anybody could get away to the little town and to the big town. The motor car reversed a lot of that and brought the family back together again in a sort of a rush. It was the railway that smashed up rural life and family life in the 19th century. You won't find many essays on this subject. People were looking into the rear-view mirror then as now. What they saw changing in their time had nothing to do with the railway; they never noticed what the railway was doing to them. Among other little incidental features, it created Canada, but it is a Canada that can't live with the aeroplane, or with electric circuits. The country is falling apart under the new technology. The old technology made us and the new technology unmade us.

The West Coast feature is instructive because it is true in Vancouver too. They never had a 19th century. They are far more avant-garde educationally—experimental and otherwise—than any other part of Canada. You mention any new educational feature to a Van-

couverite and he will say, "My gosh, we threw that out thirty years ago. We got absolutely fed up with it." They never had a 19th century.

French Canada never had a 19th or an 18th. It leap-frogged out of the 17th into the what? The 20th?

Leap-frogging gives you tremendous advantages. For example, Ghana, with educational television, can do some quite wonderful things that we are not in a position to do. They never had a Renaissance, a Middle Ages or even an Antiquity. They just never had anything except Stone Age Man. To leap-frog out of the Stone Age into the new Stone Age, or the new Paleolithic Electric Age is not so bad. It is easier for an Eskimo to leap-frog into the 20th century than for us. It would be very hard for an Eskimo to make it into the 19th century. The Eskimo confronting the steam engine would be in trouble; confronting television and radio—easy!

We are like Eskimos or primitives facing our own new technologies. We do not know what to do; how to respond; how to react. We are like primitives facing this very advanced technology, the electronics.

I hope you are not hearing any recommendations from me or any insistence or urgency about doing anything. The only thing I suggest we do is pay a lot of attention to what is going on and to what is involved in these events. I would not dream of recommending any course of action until we know an awful lot about what is going on—diagnosis before therapy. Since people generally look in the rear-view mirror before finding out what is going on, they never do find out.

Here is another thought for you that is very controversial. I don't see any point in making anything but controversial statements. There is no other way of getting any attention at all. I mean you cannot get people thinking until you say something that really shocks them; dislocates them. That is the way the arts work; the painters, the poets, all work like that. They work by dislocation of attention. That is why new styles are necessary for perception. The function of the arts is training in perception. It is not instruction. It is to train your ability to see and use your senses. I am simply going to make this statement and I am prepared to explain it. The most disadvantaged part of our culture is the suburbs—the rich suburbs—because these are the people who have plunged into the most primitive modes of awareness, thanks to electronics and thanks to the latest in everything. In other words the suburbs are more in contact with the 20th century than any other

part of our culture and they are therefore the most primitive in the sense of Paleolithic hunter-oriented man.

The suburban youngster has more trouble finding goals in life than any other member of this society. There is another way of putting it. The world of Picasso, the art of Picasso, is a way of talking about the electronic age. Instead of giving you an object or a thing, he gives you the effect of the thing. "Man Sitting in Chair." There is no picture of chair or man, but what he does give you is what it feels like to be sitting in a chair. He gives you the feeling of sitting in a chair—minus chair, minus man. Now to give the effect without the thing is a typical aspect of the electric age, because when you push the buttons in the electric time, there is the impact and the feedback at the same moment. There is no gap in time between the impulse and the feedback.

Now we don't have an educational system set up on that plan. There is a huge gap between the input and the feedback. This is not true of the nervous system of the children we are teaching, however. They are undergoing a processing by our new environment for which they have instant responses. But the suburban kid, who watches TV, lives in Bonanza Land—"rear-view mirror." The whole suburban world lives in the rear-view mirror of Bonanza Land. They do not know their own world and their own time at all. In sensory terms they respond totally to their own time but in their concepts they are away back in the rear-view mirror.

Now the suburban kid lives in the Picasso world of primitive art, primitive abstract, sensory-like, highly tactile and kinetic, and yet he is the one who is expected to be the most visually oriented and most completely civilized and ordered person in our kind of society. He is a privileged kid.

In actual fact the suburban kid is the most culturally disadvantaged. He lives in a slum. The suburb is in every sense, in terms of century life, a slum. Picasso is slum art in the sense it is entirely tactile: it is not visual. In educational terms you have this paradox: that the most economically advantaged part of our community is the most disadvantaged culturally in terms of the sensory life. Now these people are in trouble. They are torn because they want to belong to the establishment—in fact they think of it as theirs—and yet they are, in terms of their new century involvement in the electric age, so deeply involved that their capacities for establishing contact with the visual world of rational

order and visual connectives, their capacities for making that adjustment, are just about zero.

Now I am saying this knowing how utterly bizarre it sounds but it is something which I have had a lot of opportunity to observe and to think about in recent years. I know this will hold up. I know it is also probably confirmed in various ways in your own experience: that the difficulty of the suburbanite, the privileged suburbanite, the difficulty of establishing goals and getting going on the old 19th century rails, is almost too much. But they do not know this. They do not know what is wrong.

I hope that I may clarify these ideas a bit more during the question period.

Questions

Q.: Do you think it is our job as educationists to increase the capacity of the student to come to grips with this new experience of a new technology?

A.: They are totally at grips with it and what we want is to give them some detachment.

Q.: How are we to facilitate this coming to grips with it?

A.: You could not do anything more than you have done by simply providing this new electric environment for them. The involvement is total in this new environment. What we have to provide is some detachment. For example, if you wanted the kids to withdraw from involvement in the new electric environment, you should just programme it in your school system as necessary for examinations. Put the hit parade on the examination and all the comic books and all the movies and all the TV shows and examine every week in them and you will find a total desertion of the whole enterprise. If there is anything but hypocrisy in our protest about the vulgarity of our programming, we would do this. We are pure hypocrites. We can stop them from looking at every one of those shows by the simple gesture of using our school system. It works for Shakespeare; why shouldn't it work for Bonanza?

Q.: I have a feeling there is something more than a facetious comment there.

A.: I am speaking the literal truth. There is no figure of speech there at all. If you want to control the outside environment, just make them notice it and pay attention to it.

Q.: You are saying in effect then that if I could let *my* hair grow long, they would begin cutting *their* hair?

A.: They would. There is nothing they detest more

than for you to take a sympathetic interest in their goings on. This they find most offensive and intrusive. I happen to know. I have a batch of these at home. Now I have spent quite a lot of time thinking about those hair-dos. These kids do not want jobs; they do not want little specialties; they want depth involvement in their society and they are willing to get it, even at the expense of wearing a wig. A wig is a role; a man who wears a wig has a role in society. He is a judge or he is a gentleman. However, not everybody can wear a wig. You have to be somebody. You see the kids instinctively understand that they want more depth involvement in the society, so they start creating costumes and rituals that give them depth, and so these are perfectly rational strategies in the sense they make sense. They may be very repulsive and very undesirable from the 19th century visual point of view, but our kids are not visually oriented. You can tell from their costumes and their hair-dos and their habits, they are not visual people. They do not live by the eye. The eye, you see, is the only sense we have that is continuous, connected, and uniform. The ear is not. Touch is not.

Q.: Would school attendance increase if we had voluntary attendance?

A.: I doubt it although something of this sort is obviously coming. Just as in penitentiaries, the mere containment is no longer felt an adequate reforming technique. So in education the penitential method of enclosure in time and space is probably going to be dropped. We have really created a school system that is amazingly like the penitential system of enclosure. It came about in the 13th century. When the monastic system was declining, the secular arm took over the penitential idea of cells. After all it is supposed to have been very good for the spiritual life of the religious of the earlier centuries; maybe it would be good for these delinquents. That is about as much theory as went into the devising of penitentiaries; not a very profound concept. Prior to penitentiaries they had just mutilated right and left, and with our new methods of surgery and anaesthesia, mutilation as a form of penitential reform is obviously going to have a big come-back. Why box them up? Just cut something out of them! Now this is coming of course. I am not recommending it. It is just something that we can do so easily, compared to boxing them up in cells, and people always find the simple level or equilibrium pattern in any situation sooner or later. No, I am not suggesting that you make school attendance voluntary. You might as well

make penitential confinement voluntary.

Q.: What do you think of structured courses in elementary schools?

A.: When I speak about discovery, I mean take elementary school children in small teams of four or five and give them some objective to investigate like Punishment in the Society; what it is for and how it works; and just let them have a few weeks to prow and take notes and talk among themselves about it; that is what I mean by discovery. They would be given projects, assignments, in that sense that involved the total community—the way James Bond roamed the community, or Sherlock Holmes. We live in the age of the detective, the investigator, because in an information environment there is nothing else to do except investigate.

Q.: What about instruction in the traditional sense?

A.: Children reject any form of instruction, the answers to which are already known. The indispensable ingredient in motivation in the young is, "We are given this job because nobody knows the answer." They will buy that, but if you tell them, "you go and find the right answer to this; I already know the right answer," they won't buy that. There is no involvement possible. At best all they can do is match your wits. They cannot use theirs.

Q.: What do you think about competition in schools?

A.: It is like many other issues, very complicated and confused. The more you can make any two people or any two situations resemble each other, the more competition there will be. It is based on a principle of absolute conformity. You don't get competition until you get complete likeness. People who are just slightly different in some respects, income or something, they are competitive; but if they are totally different, like one artist and another artist, they are never competitive, because they are totally different. When people are really involved in being something or doing something, there is no competition possible. Competition belongs to the old visual world of matching.

Q.: I was interested in what you said about Canada disintegrating or coming apart because of the electronic age.

A.: Separatism is a natural result of electronic speed-up.

Q.: Would you explain that?

A.: With slow speeds everything has to be done centrally in a continuum. At very high speeds, there is no point in having centralism. Any place can have everything, as with the telephone. There is no point in going

to some central position to use a telephone. You can use it anywhere and the same with electric information services. They are just as available at the North pole as they are in New York. Our own set-up here at the Education Centre is far ahead of anything they have in New York, because in New York there are too many 20th century types competing to permit any advanced technology to really get into use. Here, in a backward country, there is no competition in the 20th century area. We can do what we like. In New York they think they are living in the 20th century. Therefore, they fight furiously against any new 20th century thing, but here we are not in the 20th century. Therefore there is no effort at all needed to get really in, with the latest. Witness Scarborough University. The latest!

Q.: Is it pointless to talk about national identity?

A.: I don't think it is pointless. I am sure dialogue is very desirable but it might be very undesirable to attempt a blueprint of any kind for any purpose in any area, because that is pure 19th century visuality. Everything we call rationality is visual. The irrational is the unconscious, where there are no connections. In the electric world everything is the unconscious. We put the unconscious outside in the environment by simply putting everything outside at once without connections. The unconscious has everything, but it has no connections. Our new electric environment has everything but no connections. It is simultaneous but not connected. This is the unconscious, so for most people it looks like crazy, mixed-up energy. Just like the unconscious itself. We have created the unconscious outside ourselves as an environment. The kids respond to it as such. Anything goes. They are perfectly right. If you put the unconscious outside, then anything goes and there is no argument against that. That is what we did to them and they know that.

Q.: To what age levels are you referring?

A.: To all youngsters, TV is now what—10 or 12 years old? Those who began to watch TV before they learned to read and write, would be specially victims of this syndrome. They would be people now of about 16 or 17. That group are in the most primitive condition of sensibility that has ever existed in the Western world. It has nothing to do with the ideas it puts into their heads. It has to do with the sensations we put into their bodies.

Q.: Do you think that the new electric world would have any effect on the dependence of people one on another?

A.: They are totally interdependent. There is no point of view possible in a world like that. No private position from which to look at anything.

Q.: So then this gap that you speak of between the parent and the child becomes more traumatic than ever?

A.: It is total. The parent still lives in a world of points of view.

Q.: This would also be true of the teacher and the child?

A.: Exactly. The same generation. The child does not live in a world where any point of view is possible, because he has no detachment from the world around him. He is merged totally with that world and he knows that that is the only way in which he can live in that kind of world.

Q.: What is going to happen, Dr. McLuhan, as each generation grows older? Will they have an automatic conditioning, a better situation, as the present 16-year-olds become 26-year-olds?

A.: The future is here now. The teacher of the future is always the present and it is very difficult to look at the present. Everything that is going to happen in 10 or 20 years is happening now, right under our noses.

Q.: Are teachers 19th century?

A.: Yes, they are 19th century. They are still civilized people who belong to the old visual culture.

Q.: Will this change in the next 10 years?

A.: Gradually the "beats" will move up into the teaching profession of course.

Q.: Will they remain "beats"?

A.: Yes, because as long as we have our electric technology, we are all going to be "beats," more or less, that is, totally involved. The beat is a person who is deeply involved. He has no detachment and no point of view.

Q.: Perhaps we should simply wait 10 years, then?

A.: Well, it would take. . . . I remember a story from my childhood when the aeroplane was fairly new and rides were being offered at five bucks. A Scot and his wife approached one of the fliers and the Scot said, "Would it be possible to have a free ride?" The aviator thought a while and he said, "Well if you promise not to scream or make any sound, yes, I will take you and your wife up for free." So he gave them the barrel-roll treatment and everything, and when they got down he turned to the Scot and he said, "Well, you are a game one. I will say that." "Ah," said he, "I nearly spoke out when my wife fell out back there!"

So if you want to wait silently, unprotestingly. By the way, that is an old joke. The new jokes have no story line. The new jokes have no connections. It is just like the surgeon who, when his patients could not afford surgery, offered to touch up the X-rays for free! The new jokes, the ones the kids like, have no story lines. Everything happens at once. In the new painting and the new art and the new literature, it is a happening. A happening is an all-at-once situation. There is no story line. We are all engaged in a happening; everything happening at once. That is what a happening is. It is not one thing at a time but everything at once. Well our world is a happening. The electric world is a happening. Now our civilized world, which we still house in the school system, is not a happening. It is a one thing at a time, orderly, connected, visual culture.

Q.: Should we devise a happening, and call it a school?

A.: We have got the happening as our highly expensive world that we create outside the school and that is doing far more educating with the young generation than any school system will ever do. Now it would presume to be the responsibility of the school system to train perception and it seems to me desirable that the young be trained in the ability to perceive the situation in which they live—the training of perception rather than the stencilling of instructions on the brain pan. For example, our new "happening" world is a brain-washer but so is the educational system. The educational system is a brain-washing that goes on leisurely and in a measured way. Speed up the mental metamorphosis process and you have brain-washing. It is like the difference between peacetime and accelerated wartime activities. Wartime is all the business of the peace world accelerated to very high speed. Instead of a trade war, you have a hot war. It seems necessary in a world where everything happens at once and in which the daily environment is alive with messages and meaning, that the training in perception becomes the necessary work of any school. If you lived on this continent 1000 years ago, your whole training would be a training of your senses to survive in this environment as the hunter. We are back there! The electric age is the most primitive age, in the sense of the hunter world, that ever existed. So the only alternative to instruction is the training of perception. The artist is a person who is expert in the training of perception.

Q.: How about the mathematician?

A.: At the present time mathematicians are very much aware that they have to return to the humanities for

new models. Mathematics and physics alike are now abandoning the sciences in favour of the humanities, looking for new models of perception. Models of perception, because the models of perception linguistically and artistically are far more complicated than the models used by the mathematician or the scientist. They are relatively simple-minded people, you know. I mean their models are very severely restricted and specialized and they have got to the point of sophistication in the use of models where they know they have to go back to the languages and the humanities in order to find better models. You will find that they are talking this way right now on this campus and it is a rather startling and also gratifying switch-over. We live in a world of “flip-overs.” This is one of them. The scientists are going to return to the humanities; the humanities people have never made an effort to get into science. That is the more shame to us. We ought to dote on the math and physics world instead of studying it as an artistic organization of experience. No wonder they had a field day—an apparently unobserved and unconstrained field day. You know Einstein said at the end of his life, “If I had my life to live over again, I would be a plumber, or take up some modest profession like that which would not upset people’s lives so profoundly.” The scientist is beginning to notice what is happening as the result of his unrestrained activities. There is nobody who criticizes his discipline. It is the duty of responsible citizens to learn mathematics and physics in order to put them in their place, cut them down to size. We have made them into heroes, à la comic-book heroes, beyond criticism.

Q.: Is education a science?

A.: In so far as it is based on genuine knowledge and evidence, I hope it is very scientific; but science in so far as it means breaking everything up into minute little bits, statistically or in quantified terms, that is not science, except one little kind of science. The scientist borrowed that method of fragmentation of evidence, as a way of quantifying evidence. He borrowed it from the world of the printed word, and from the humanities. This was found to be very effective in industrial terms. If you want to control any natural process, break it up into minute bits. Then you can harness it. Break people up into little bits, into little specialties and you can do anything with them: they are helpless.

Q.: Is the connected narrative approach, as in the novel, on the way out?

A.: Well it only came in a little while ago. It came in

under highly industrial conditions. The novel as a form came in with the 18th century industry and controlled operations. In a novel you take a given body of people and you do things to them and see how they speak. Wasn’t it Bertrand Russell who asked, “If the bath water got $\frac{1}{2}^\circ$ hotter every hour, would we ever know when to scream?” The answer is “No.” We would be boiled alive before we ever uttered a protest. No way of observing such change—too gradual. The reason we can notice these changes going on now is that they are happening so fast that anybody can see them happening. When change happens at the speed it happens in our world, anybody begins to notice that there is change about; whereas when it happens gradually, it takes a scientist to notice it. The novel is like a laboratory for putting people through certain tests. It came in in the 18th century and it goes out now. It was finished as a form of literature about 50 years ago.

Q.: Does that apply to all narrative?

A.: You will see that the story-line book is “square.” It is not for our youngsters. They won’t have it. If it disappears from the world of humour, if it disappears from music and humour, the likelihood of its staying around in all the other places is not great. This is not a value judgement; I am simply observing how it happened and what is happening now.

Q.: Is there a greater need for a continuum with young children?

A.: The continuum, in the older sense of the connected organization of experience, yields now to mosaic patterns. At IBM their watchword is “pattern recognition.” When information moves at instant speeds, you cannot classify it, so you look for patterns. The training of perception in our time means the training in pattern recognition, and youngsters are very good at this. You ask them to go out and look for patterns. They are very good at it. There was a project assigned to one of our kids a couple of years ago. She was with a team of students whose job it was to devise a new educational system that would retain many of the old features and incorporate all the new needs. They had also to devise a new architecture. Well this took them weeks and they worked in small teams and they dialogued back and forth and they went across to Rochester and met teams over there that were on the same pitch. This was the greatest experience of their high school life, because they knew they were working with things for which the answers were not known. You can put kids on town-planning problems in the same way and they are tre-

mendous at it.

Q.: You spoke of the hunter class, the total field. What is the goal of the hunter?

A.: He has to know the language of the seasons and the animal life—the whole environment. He plays the whole field, whereas the planter coming along later, settled down to work in little strips.

Q.: If the schools are not to have goals, but roles . . .

A.: Not schools, but the individuals in the school, demand roles now.

Q.: But you would still hold out the possibility of goals being established for a school?

A.: No. The goal means a fixed position from which you go. You know you hold this position for 6 or 10 years and you move steadily towards this remote goal. "I am going to be a doctor." Talk to doctors and you will find that they are by no means certain what doctoring is any more.

Q.: Well then, am I correct in saying that you have no brief for predetermined goals as such?

A.: Oh I would welcome a world in which all the old 19th century assumptions were completely valid and fixed, but they are gone; they have disappeared.

Q.: So what I want you to comment on is the position of authority, any kind of moral code. These things appear to be 19th century by definition.

A.: Morals in the 19th century sense meant just a blueprint. You did not go over a certain line, that is all. Now morality in total field conditions does not work like that and you cannot say that here is a line that you must follow in these matters. I am a Roman Catholic and the Roman Catholic Church is just as befuddled by this electronic age as it was by the Gutenberg age. More so! They are still attempting to look for lines and blueprints which no longer exist. They are not there. So what do you do? Well we have not discovered the strategies of behaviour or response for a situation in which there are no boundaries at all. It is like being in total space.

Q.: In planning a course in health education, would you include some aspects of sex education for senior students? Perhaps the best solution is to have them look for patterns?

A.: And for answers, because they are in a much better position to research this question than we are. Give it to them as a problem though, for which no answers are known and invite them to look into the whole picture. The word "sex" is wrong to begin with because it is fragmentation. It automatically creates pornography.

If you want to create pornography you just separate some aspect of sex and life from everything else. That is pornography. It is fragmentation. Sentimentality the same way. Take a rich emotion, break it up into bits and you have sentimentality. Sex is fragmentation. The mere abstracting of the word or the concept from the whole complex of lived social existence is unreal. So it is a very good point to begin the investigation by simply challenging the right of that word to exist except as a classification of male and female. Otherwise it probably has no right to exist. If you ask young people to look into this themselves with a view to discovering new patterns and possibilities for resolving all sorts of conflicts and problems, they would pitch in with a will. They would become very responsible citizens in this matter very quickly. But by keeping them entirely on the outside looking in, while the thing becomes show business, it is just fragmented. They become demented.

The assumption that wisdom must settle down on young people from an elder source is a natural assumption on our part, but it may not have any validity whatever. But I don't care what problem you mention, I would welcome an opportunity to see the youngsters tackle it head on with a full understanding that there are no answers known and no holds barred. There is to be a new university opened at Fordham this year, in which there will be 30 people in the first year and the same in the next and the next, and there will be no subjects, no lectures, no instruction. Hopefully it will be a training in perception by dialogue and roaming the whole environment, but it has not started yet. Oh, yes, it is to be presided over by no less a person than Elizabeth Sewell, author of *The Book of Nonsense*. So you may figure that they finally hit upon nonsense as a solution to the educational system.

Q.: Would you explain what you mean by "roles?"

A.: A mother does not have a job; she has a role; she has 60 jobs. A surgeon does not have a job; he has 40 jobs; that is a role. The top executive does not have a job; he has many jobs; that is a role. The role is a multitude of jobs in a syndrome, all tied together. An artist does not have a job; he is totally involved with all his energies all the time. That is a role; it is not work. You only begin to work when you fragment yourself into little specialist jobs. When you are making out your income tax, that is work. When you are performing some joyful thing, some hobby, that is play; that is involvement; that is a role. Role-playing means total involvement, the whole being, non-specialist. We are

moving into a non-specialist age. We still talk and look in the rear-view mirror and think we are heading into specialization. We are heading into a highly encyclopediac non-specialized world, like the world of the hunter. The hunter knew everything. He had to in order to survive.

I hope that we shall have a chance to continue this discussion sometime. You can be sure that I am going to continue working very hard at these problems for a long time. So I am looking for new discoveries, new insights, and new problems all the time. This is a simple fact—well known in the business world—that whenever there is a headache, there is new potential. Every breakdown is a break-through to richer, bigger potential. This is literally true. The big headaches come with the new potential.

I think of this as an on-going conversation. I never stop talking about this matter with friends, colleagues, and school teachers. I am trying to discover and you can help me.

Postscript, 1971

In the four years since making the above observations I have discovered very many things about media and education. It is now perfectly plain to me that all media are environments. As environments, all media have all the effects that geographers and biologists have associated with environments in the past. Environments shape their occupants. One person, complaining about my observation that “the medium is the message,” simply said: “McLuhan means that the medium has no content. The electric light has no content.” This remark was extremely useful to me because it revealed the obvious, namely, the content of any medium is the user. This applies equally to electric lights, any language whatever, and, of course, housing, motor cars, and even tools of any sort. It is obvious that the user or content of any medium is completely conformed to the character of this man-made environment. His entire sensory life arranges its hierarchies and dominance in accordance with the environment in which he operates.

If we say “mist on the moors tonight,” we are inclined to call it poetic. When the sensory inputs are dim, the sensory response is correspondingly strong. This is why small children are always “poetic” in their responses to anything at all. A child’s sensory reception is very selective, somewhat in the manner of what is offered our senses by “abstract” art. And just because the sensory offering is meagre, the sensory response is full. As we grow older, we dim down the sensory responses and increase the sensory inputs, turning ourselves into robots. That is why art is indispensable for human survival. Art perpetually dislocates our usual sensory responses by offering a very abstract or meagre and selective input.

The medium is the message because the environment transforms our perceptions governing the areas of attention and neglect alike. Another very useful remark was made to me by a student who said: “Why are your letters to the newspapers so plain and your other writings so difficult and obscure?” This question highlights the difference between exposition and exploration. Anything that I know I can explain quite simply and directly. I can package it. Nearly everything that I write is concerned with areas of *exploration* in which I am actively engaged in discovery. That is why I say “I have no point of view.” Anyone engaged in exploration uses every available approach, every available foothold, every accessible crevice to which to cling as he scales the unknown rock-face. The actual process of dialogue

and discovery is not compatible with packaging of familiar views.

A person engaged in exposition has nothing new to say, and he cannot communicate the effect of participating in the process of discovery. The TV age demands participation in this process and it is for that reason that all existing education, insofar as it is concerned with expounding what is already known, is entirely unacceptable to students. One basic point is a result of a recent TV experience. I was on the David Frost show and had occasion to mention the antithetic and polar-opposite character of movie and TV forms. This observation always causes dismay in people who have never thought about the media. Incidental to this observation I pointed out why the TV medium was itself an inner psychedelic trip and why "drug addiction" was a mere minor aspect of the TV experience. No discussion of this observation occurred on the program and no inquiries or comments ensued then, or later. It would seem quite impossible that even the most bizarre suggestion that offered any kind of approach to understanding drug addiction in our time should pass unheeded. Such, however, was and is the case. People do not want to know the cause of anything. They do not want to know why radio caused Hitler and Gandhi alike. They do not want to know that print caused anything whatever. As users of these media, they wish merely to get inside, hoping perhaps to add another layer to their environment in the manner of "The Chambered Nautilus" of Oliver Wendell Holmes.

The total non-response of hundreds of thousands of people to the suggestion that there was an actual physical, environmental, man-made cause of drug addiction in our time startled me into study of the attitude of the scientific community to causation. It does not take long to discover that all of the sciences, physical and social, are interested only in describing and measuring effects while ignoring causation entirely. A *connection* is not a cause, but a hang-up. This is not a matter that can be properly discussed in this footnote, but the absence of interest in causation cannot persist in the new age of ecology. Ecology does not seek connections, but patterns. It does not seek quantities, but satisfactions and understanding. The pioneer work of Harold Innis in the study of causality relating to the material media of communication had no followers, despite his being surrounded with academic admirers. The student of media will discover that for the past 500 years Western science has systematically excluded the study of causation by

the simple process of fragmentation and specialism and quantification.