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TITLE re telecommunications

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Series:

(Continued from 00-00-167 PT 1)

A man says that the contact of undergraduate students with graduate students could be as useful as contact with good professors.

Another man [I will call him the second speaker] says that whenever he found a bright student, he put him on a project. It is important for this country to put bright young people into positions where they feel that they are beginning to make a contribution.

Another man agrees, saying that this is getting at "the gut problems in all universities today." Of all the interdisciplinary problems he says, this is the most difficult to overcome. The man says that though this problem could be overcome in universities, at present it is only overcome in think tanks. In order to follow the path of all successful interdisciplinary labs, he argues, one would have to mix up the campus and do things like putting half the economics department with half the physics department. But this strikes at the core of the department system at a university.

Someone says, "Oh, I don't mind that at all!" Everyone laughs.

The second speaker talks about an interdisciplinary program he set up at Dartmouth. In one of the classes students are challenged to write public policy on issues like river management. One group of students – a math major, a sociologist, and an engineer - wanted to form a private company and go into business because after 10 weeks of comparing their ideas with what the politicians in Vermont and New Hampshire and Connecticut had done, the students felt that they were already competitive. This project required interdisciplinary communication. The speaker thinks the only barrier to this sort of cooperation is the faculty.

Discussion continues on the topic of think tanks. A man says that think tanks are problem oriented rather than discipline oriented. This does not necessarily destroy the disciplines but does bring them together.

The man who created the project at Dartmouth cautions the group not to get carried away with its own enthusiasm. He says that there are budgetary, space, and personnel limitations. That the growth of one program means another program will not grow as rapidly. He says that the disciplines are all well entrenched

He says that if you form a program that is interdisciplinary, some positions of some of the disciplines do not get filled. And it is very important to explain carefully to the faculty the symbiotic relationships that develop in interdisciplinary work. He tells an anecdote about his experience with engineering programs at Dartmouth. He says that sometimes applications are held back because frontiers in the discipline haven't been pushed back far enough. In creating an interdisciplinary program, it is important that the faculty understand this. These days, he says, the associate professor levels and some of the full professors are staffed by people who do not have real experience outside their professions and do not understand how their discipline fits into the scheme of things.

Another man says that recently, when he was chairman of the committee that looked into it, an interdisciplinary master's program on regional community development has been approved. The program will be housed in department of geography but each student will have an ad hoc admissions committee depending on the area the student wishes to specialize in. The program is just about to start this fall and, the speaker thinks, would lend itself nicely to the sort of programs the group has just been discussing. The program will be able to award MA and MS degrees.

Another man asks if there is a specification of the qualities and attitudes the students are to have when they emerge from the program. The man who introduced this topic assures him that Dr. Rasche(?) is doing this now. The man is not appeased. He says that there is a tendency in budgeting to be scrupulous on the input but not on the output so students are described by the courses they took rather than the attributes they have. He restates his question and says that "objectives" are not the same as "performance criteria." He gives an example, reading the specifications for abilities an engineering graduate must have to earn a bachelor of engineering. Theoretically, the student can take any classes he pleases as long as he possesses those attributes upon graduation.

The man who introduced the topic of the program on regional community development responds saying that there is not anything that specific as of yet, saying as how the program was only approved about a month ago. Dr. Rasche(?), who is working on this right now, can take into consideration the points that have just been brought up.

Another man says that educational theorists have been recently talking about educational objectives stated in behavioral terms.

At this point a new person arrives. He is invited in, some introductions are done, and he is invited to sit down.

The discussion resumes. This behavioral approach to the design of the educational experience has enormous implications. Now content of courses is not the most important factor. Now style and student's perceptions of his role in society come into play. Assignments might be less the student answering a question so much as the student formulating what the question ought to be. This means the curriculum needs to be examined and revised and this, in turn, changes character of the committee on courses and instruction. [Silverware is heard clattering.] Changing the definition of educational success propagates a series of shockwaves throughout the institution.

A woman comments that it is frightening how students have been conditioned so that it does not even occur to them that they have a right to be thinking about what questions ought to be asked.

A man agrees, saying that the vast majority of students won't ask questions when they are led by anybody. The students are only concerned with fitting in.

A man suggests that they go around the table and "trot out for ear inspection some of the things that intrigue us at the moment." He suggests starting out by talking about the proposed satellite demonstration for Alaska. The only concrete progress that has taken place for that demonstration has taken place on this campus. An electrical engineering professor established a terminal for the audio portion of the experiment and has successfully communicated with ATS-1 and stations in the lower 48. From the programming and production standpoint, the university's radio operation has produced programming in the relevant area. The speaker's commission has been working with the community of Bethel. An educational radio station will be established there to serve a 200 mile radius.

The audio part is easy and relatively inexpensive. There are lots of problems, however, in terms of content.

Someone interjects that it is the old software/hardware problem.

They speak of a similar program in Australia. Alaska, the speaker says, unlike Australia is in the position of having at least one elementary level teacher in every remote location. A man said that he went, for five years to a one-room school house with 17 other kids and his teacher and that is was the greatest education he ever got. Another man comments that it is the only education he ever got at that time.

Picking the thread of the discussion up again, technology aside, there are problems with content that need to be addressed. The technology, of course, has an important impact on the form of the content.

Another man speaks, saying that they are proposing to investigate the effect aurora, magnetic disturbances, and ionic storms have on the transmission to and from the satellite. [It is difficult to follow the thread of this speaker's ideas because others are continually interjecting.] He lists places that have been received from and transmitted to. He elaborates on signal noise, decibel levels and reception quality. The aurora is expected to make signals fade by as much as 20 dB during high ionospheric activity.

He says that they were able to acquire equipment for voice transmission but there are few TV transmitters and receivers. They have also analyzed bandwidth capability and signal noise in terms of tying into time shared computing.

Strangely, the time slot they were permitted to transmit during coincided with quiet ionosphere conditions. They would like to get more time on the air so they can experience the anticipated fading, and so forth. They do, however, have continuous recordings made at another institute of ATS telemetry channel. These have fades up to 15-20 dB. UA's transmissions have been so solid and steady that it makes the scientists nervous.

Another man interjects, saying that before this is “cranked into some sort of operating program” it is necessary to have a subjective, qualitative evaluation of this program is in, say, Bethel, AK if this program is going to do anything more than “what engineers call communications quality.”

Another man [sounds like the same man who developed the interdisciplinary program at Dartmouth] interjects asking whether the state of Alaska had the resources to back up the required software development. He explains that he once had a television show for CBS. He asks if we have teach with “answer back” capability.

A man answers that they have operated in duplex operations. “Answer back” would be immediately available. They have operated the equipment in duplex mode expressly for the purpose of demonstrating that capability. Another man adds that this capability would not be usable in situations where broadcasting from a broadcast station to some community center.

A man says he is disappointed that the man from the Institute for Economic, Social, and Governmental Research is not present this morning. He was here yesterday afternoon and expressed concern over the communication patterns which exist in rural villages now and what they might become with the advent of modern communication technology. What they already know and what they yet need to know will condition whatever it is that we do there. A man remarks that without attention to this, we’re on the point of having one culture destroy another. He says he also hopes someone can speak to the health needs.

A man says that he is going to address that. The discussion has been of on a tangent. The speaker has been to a meeting with the national institute of health on the transmission of health data, information and slow scan TV pictures. We have the capability and are set up to transmit and receive this at the present time. They have also investigated the possibility of transmitting cardiograms and encephalograms. Duplex operation would open up the opportunity for a specialist to converse with the physician on site.

The speaker mentions another meeting in the University of Washington’s medical center with the NIH representative concerned with hooking the local hospital, through the ATS satellite, with a demonstration of vital signs from a patient in intensive care here to the intensive care monitoring service at the University of Washington’s medical center. The University of Washington’s engineering department is setting up a transmitter/receiver system. Employees at the medical center and at the local hospital are very enthusiastic about this.

Another man mentions that people have been trying to provide medical advice over radio for a long time now. Other men add that sometimes they have a health nurse who gets assistance from the doctor, or the BIA teacher, or even an airline pilot.

A man elaborates on why Alaska needs its own telecommunications system that is not dictated by the federal government.

Another man says that everything we are talking about is the ATS satellite, an old satellite that “shows no great signs of ill health” but that will not last forever. These demonstrations are only demonstrations of what could be done. What is a requirement has not yet been determined. Communications requirements for the state of Alaska are established by policy.

After some discussion on the public interest and the goals of the state of Alaska, the men proceed in their circuit around the table.

One man suggests elaborating on the recent actions of the Ford Foundation and the implications of that.

A man talks about his exploration into the possibilities of using future generations of satellites for television broadcasting to Alaska. He says there is a possibility with ATS-F, but there seem to be other, more suitable frequencies other than the high UHF to be used for educational broadcasting. But ATS-F does present a technological answer to a low cost village-type system for educational satellite broadcasting.

A man says most questions have been frames into fitting needs into existing frameworks. He asks about the other way around: stating what is needed and what would be required to do it.

A man responds that Governor Miller has sent to NASA communication speaking specifically to the ATS-G, whose format had not been firmly established, saying that Alaska has a need to provide broadband communication capabilities into remote areas. This would call for small, low-cost, unmanned terminal capability, not specified for frequency. Also mentioned was the idea of semi direct FM for audio.

A man says this speaks to the need to develop expertise in order to identify problems and know what the problem is.

A woman says that there are many areas in which we have some idea of what the problems are but, she say, there is always someone in the back of the room who says “Well that is all very nice, but when you start figuring out how much this is going to cost...”

One man says that naysaying is a typical bureaucratic stance. What is needed are people who will figure out how something can be done. Another man says she is right about the large cost. All the costs for doing anything, including for getting ham and eggs for breakfast, are large. Alaska is not a cheap place.

Another man says that the suggestion has been made, though not approved, for the formation of some sort of Alaska Academy of Sciences. This institution would serve the purpose of bringing together knowledgeable people in many disciplines. Not only would this be a think tank like situation, but the scientists working there would have connections to other specialists. This is currently in the governor’s office. Someone suggests reconsidering the word sciences to make sure the scope is not limited to the physical sciences.

There is a suspicion among politicians that scientists are troublemakers. He worries that for this reason such an institution would be threatening or at least annoying to people in politics. The men discuss the definition of “science”.

Dr. Lafferty(?) says that communications is one of the extreme problems in the state. In his previous job as superintendent of schools for the Fairbanks North Star borough, he served on committees on problems in developing education. A main problem turns out to be the cost of travelling to every single community and sitting down and talking with the chief and some parents. This cost is the cost of communication. In other areas this could be accomplished by simply picking up a telephone. Another man says that this comment supports a comment he made earlier than in Alaska, if you have good communications you save on the investment in people, energy, transportation and materials. Other men agree and elaborate on this topic. There is excited discussion.

A man makes a comment that he has received word that the plane is going to leave on time so the discussion has to wrap up quickly.

A man makes a last comment, saying that he thinks everyone recognizes that there are a tremendous number of problems. There also have been a number of studies conducted. Progress has been made as a result of those studies. He thinks what needs to be done right now is do a sort of definitive study of what the basic problems are. They need to get down to the basic problems and develop a priority system of how to solve the problems. The speaker also cautions against looking at the state as one nice, easy test tube experiment; the state is varied in terms of people and geography.

He has a feeling that some of the things currently being done for reasons of political expediency or just plain politics are out of phase with basic needs and the way we are to go about solving things. He wants a 1,2,3 order of basic needs and a 1,2,3 order of how to go about meeting those needs. Unless we do that, he says, it is "just going to be another great big boondoggle and I won't have anything to do with it."

Someone else reassures him that he has just defined the seminar that they wish to conduct in mid-July.

Another man cautions that everyone should be thinking of this as a process; this is a growing, developing state; there will be a sequence of studies and programs that will be initiated and die stretching as far into the future as can be foreseen.

This point is discussed briefly and the meeting is adjourned.