論説と報告

HIGHER EDUCATION IN THE AGE OF COMMUNICATION*

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It is indeed a great pleature the privilege for me to be able to join with all of you in this fine tribute to Dr. Edgar Dale. I have known Dr. Dale since 1953, both as a friend and a highly respected pioneer in the field of Audio-visual Education.

Dr. Dale has continuously advocated the use of pictures and other audio-visual media in education. This can be easily seen by glancing at the three editions of his highly valued book : *Audio-Visual Methods in Teaching*. Although the title has remained unchanged, each edition has shown great improvement due to his creative thinking. They have always included the latest information on educational technology, and also a detailed section on educational television and information on programmed learning as well as the computer-assisted instruction in the most recent edition.

Dr. Dale is always widening his horizons and progressing in front of the most progressive of educational innovators. It is rather sad to think that Dr. Dale is now retiring and that we may no longer benefit from his wise advice and broad experience. However, 70 is actually still young for a scholar, particularly for one as young in heart as Edgar Dale. Therefore I am sure that we can look forward to him -- not to retire -- but to begin a new career. Since I have already passed the 70 year mark myself, I wish to give him my personal assurances that it is indeed a

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landmark -- a landmark which denotes a new begining, not an ending to active life.

I made my first visit to Ohio State University in 1953. I was fortunate to be able to return in 1955 and again in 1960. But this is my first visit in ten years. As Ohio State University was established just 100 years ago, this absence has corresponded with the most recent decade of O. S. U. 's ten times ten years. May I say that there is a great deal of evidence of O. S. U. 's continuous progress and development? I find, as I look around the campus, that Ohio State University is growing; both academically and physically. One interesting sidelight is that O. S. U. 's establishment took place just two years before Japan initiated its modern educational system. Quite parallel to O. S. U. 's development, Japanese education has also been developing during these past 100 years.

In reflecting upon the past 10 years, or past 100 years, I often wonder what the next 10 or 100 years may bring to education. While we may be able to make reasonable assumptions about coming developments for 10 years in the future, no one is brave enough to suggest what the next 100 years may bring. A good example of what may evolve within ten years or even less, is America' s moon landing programme. Only about nine years ago, the late President John F. Kennedy made the following statement in a special message to the Congress of the United States: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth." Last year, Apollo 11, quickly followed by Apollo 12, did just that very thing. The primary mission of Apollo 13, that of exploring the moon, failed. However it still made a great contribution to the development of space science. I am sure that future flights will be successful.

These are the feats which ten years ago almost no one would have dared suggest possible by 1970; and which were made po-

ssible only through the vision of a man who believed that it could, and should be done.

Although maybe not as spectacular as the feats of the Apollo flights, broadcasting 's development is almost as amazing. Television was very much an infant among communication' s media just 30 years ago. While radio -- although well developed as a commercial industry -- was still an educational media "infant". But today, in both your country and mine, and others as well, television and radio are accepted as normal components of instruction by a great many teachers. I first started working with the use of radio in school education 37 years ago. During the early years, one of my most difficult problems was trying to convince teachers of the value of radio as an educational tool.

It took 8 years to get the Japanese Ministry of Education to recognize radio' s value -- and even after that was accomplished, teachers who had themselves been educated in the world of printed materials, were only partly convinced and only half-heartedly cooperated in the use of school radio. Japan began to develop television on a large scale about 17 years ago. At the same time television school broadcasting programmes were initiated -- and although the job was a little easier -- again I, and other pioneers in the field, had to convince the teachers in the classroom of the value of the new media as an educational tool.

Although I must admit that I am not completely satisfied with the present situation, I may also proudly state that Japanese radio and TV school broadcasts have reached a very high level of development. Today, NHK, or the Japan Broadcasting Corporation, broadcasts approximately 80 radio and 100 television programmes weekly for use in kindergardens, elementary, junior and senior highschools. There are programmes covering every part of the curriculum from science and mathematics to music and art. The most popular of them are used by as high as 80% or more of the nation' s schools. In addition to NHK, a number

of commercial television stations also prepare and broadcast programmes for elementary and junior highschool use. In addition to school broadcasts, radio and television programmes are broadcast by NHK for use by senior highschool correspondence students.

NHK established the NHK Gakuen Correspondence Highschool in 1963. Only about 75 percent of the junior highschool graduates in Japan, are able to enter senior highschool. Correspondence education at the senior highschool level was established in the early 1950's as a means to enable everybody to secure a complete secondary education. Unfortunately, it attracted relatively few students and graduated even fewer during the first one and a half decades Following the establishment of the NHK Gakuen Correspondence Highschool, however, highschool correspondece education developed rapidly. Using both radio and television programmes as part of their studies, students are enrolled from throughout Japan. The first four graduating classes have totaled almost 6,000 young people from all walks of life, the young people who would never have had a chance for a highschool education, if it had not been for the fact that we in Japan united the capabilities of correspondence education with those of radio and television in presenting a home education programme which is both appealing and effective. I should note, however, that just as is the case with school broadcasts, so is not NHK the only source of programmes for correspondence students. Channel 12 in Tokyo broadcasts television programmes for science highschool correspondence use and one university is using FM radio to present programmes also.

Adult education is another important (third) field where radio and television in Japan play an important part -- and it is this field where I have hopes for the greatest development in the future. Radio and television programmes for adult and social education have been broadcast since the start of the res-

pective media. Today both radio and television programmes are presented for use by youth groups, women's groups, farmers, white collar workers and many other specific groups. Programmes for more general audiences are also part of the daily broadcast schedule.

And yet, unfortunately, except for a very few courses which are presented for university-level correspondence education, none of these courses lead to any kind of degree, diploma, certificate, or other official recognition of successful completion. The remedy for this is now in the planning stage. The Japanese Ministry of Education, in cooperation with the Ministry of Telecommunication, NHK and scholars, is now preparing to establish an "University of the Air". The purpose is to realize equal opportunity for all for an university-level education. We feel that the use of radio and television -- in conjunction with correspondence education -- is the most practical and the shortest way of achieving this goal.

College or university education may be grouped into three types. The first is the academic course, which the traditinal universities have developed over the past several centuries. It might be called the "Ivory Tower" type of higher education. The second is the technical, scientific and specialist type. Before the Second World War, such education in Japan was carried out by specialized higher schools which were rated below universities both in prestige and in academic standing. Following the educational reforms brought about after the end of the war, however, and also due to the recent rapid advances made in science and technology, these schools are now rated at the same level as the "Ivory Tower" type of universities.

The third type of college education is the study of subjects closely related to practical aspects of daily life and work. Veterinary science, for example, has always been an important subject in the agricultural department of the traditional universities.

But it is also an important field of knowledge for cattle ranchers or chicken farmers who have not means nor time to attend the university. These people must know the latest and best techniques available for their trade much more than the formal students of agriculture. They must even go beyond and be able to do research -- in other words, conduct experiments in the practical application of the knowledge for the fight against the disease, its prevention and even for the best methods of cattle or chicken raising. Therefore the instructions in veterinary science, having much more stress upon practical or application side, in other words outright courses like "cattle raising" or "chicken farming" must be presented for farmers and others through the "University of the Air."

This third type of university or college level education should receive special emphasis by the "University of the Air", but the first and second type instructions are not to be neglected in its curriculum either. Because there are many who, after passing the normal age for attending a regular institution of higher leaning, look forward still to improving themselves through education. In addition, those who have graduated from the traditional universities and colleges need re-training and new information throughout their lives, not only in the specific field of their activity, but also in a broader cultural sense as well.

Education is really a constant reconstruction of life throughout its entire span and, by means of the "University of the Air", students all over Japan will be able to study at a university level, without classroom walls and artificial barriers created by the traditional schools. This is the real function of the "Univesity of the Air". It is not planned as a substitute for the traditional universities, it is rather a completely new system of higher education. It is designed to meet the needs of the entire populace -- not only those of university age, but also all adults who are striving for a life-time education.

The "University of the Air" is scheduled to begin in April next year, 1971. The planning committee, of which I am a member, started meeting in November, 1967. Since then it has met on an average of several times a month. My ideas for the use of radio and television are as follows :

For the first year, an entirely new set of channels for television, completely separate from those already in use, will be alloted and stations will be established in 9 major cities throughout Japan. This will permit 50% coverage of the nation. By the end of the third year, stations will be established in each of the 46 prefectural capitals, and by the end of the fifth year, about 260 television stations (including relay stations) will permit 80% coverage. Radio stations, also using new wavelengths, will be built over the same period, and by the fourth year a total of 49 radio stations will cover 70% of the country.

The school year will start in April. This is the beginning of the fiscal year in Japan as well as that of the traditional academic year. The year will be devided into quarters of 3 months each : April - June ; July- September ; October - December ; and January - March. Each week during the quarter, a thirty-minute radio or television programme will be broadcast for every subject offered. The broadcast day will last from 5 : 00 a. m. to 1 : 00 a. m. It will be devided into six periods of three hours each as follows :

Early Morning Broadcasts :	5 : 00 a. m. - 8 : 00 a. m.
Morning Broadcasts :	8 : 00 a. m. - 11 : 00 a. m.
Afternoon Broadcasts :	1 : 00 p. m. - 4 : 00 p. m.
Evening Broadcasts :	4 : 00 p. m. - 7 : 00 p. m.
Night Broadcasts :	7 : 00 p. m. - 10 : 00 p. m.
Late Night Broadcasts :	10 : 00 p. m. - 1 : 00 a. m.

You may have noticed that the 11 : 00 a. m. to 1 : 00 p. m. time period was left out. This time will be devided into two, one-hour programmes devoted to "University of the Air" news, announ-

cements, and other administrative matters. It is possible that one of these two programmes may later be moved to a different time spot and the broadcast times for lessons adjusted accordingly.

Theoretically, an almost unimaginable number of subjects could be broadcast every school year -- much more subjects than the traditional university can ever dream of giving. If you will follow along with my arithmetic a moment: six 30 minute programmes can be given during each 3 hour broadcast period. There are six such broadcast periods in each day, and the "Univ. of the Air" will broadcast seven days a week without interreuption. Six subjects (per period) multiplied by six periods, make 36 subjects a day ; 36 subjects multiplied by 7 days a week make 252 subjects ; we can offer 252 different subjects each quarter consisting of 13 weeks. If we multiply this figure 252 by 4, the total number of subjects per year amounts to 1,008. And, assuming that different subjects were to be given over radio and television, it would be possible to present 2,016 entirely different subjects each year. Of course, a great many subjects will be repeated, sometimes during the same day, and sometimes from quarter to quarter. So, in fact, the "Univ. of the Air" will probably never be able to offer as many as 2,016 subjects a year. But, on the other hand, where is a traditional university which could begin to match its possibilities ?

In addition to the 1,008 subjects possible each year through television and the additional 1,008 which are possible through radio, VTR cassettes can be used extensively. VTR cassettes will allow intra-university use of "Univ. of the Air" lessons. In addition, individual students can borrow VTR cassette lessons, or the lessons can be placed in special centres to be made available to anyone. A lesson library of VTR cassettes should be established. Such a library should not be limited to one region, or even to a single country. It should be international in scope. Traditional university and college education in Japan is computed

in terms of "units" or "credits" which are granted for each subject completed. A total of 128 units, or 32 units per year, are required to qualify for the Bachelor of Arts degree. The "Univ. of the Air" will adopt this same "unit" system. One subject taken for thirteen weeks will be worth two units. Some topics, of course, cannot be satisfactorily covered within such a short length of time. These will be spred over a two, three, or even four quater series.

Assuming that a student decides to take 4 subjects each quarter, he can earn 8 units per quarter or 32 units per year -- the same rate as is expected of regular university students -- and will be able to graduate within a period of 4 years. To do so requires that the student listen or watch just four thirty-minute radio or television programmes each week -- something almost everybody could do quite easily. This last statement may have made things sound too easy. Actually each broacast programme will have accompanying correspondence education materials -- references and textbooks -- for the student to work with, and an end-of-term examination will have to be successfully met with before the units will be granted. But this kind of activity can comfortably done by the student on his own time and at this own convenience. It shouldn't be, therefore, too hard for him to get his work done.

Another requirement will be the writing of a thesis during the last year of his study. In addition to listening to or watching the programmes and studying and doing exercises through correspondence methods, each student -- in order to receive a degree -- will have to attend four "schooling" sessions, one for each year. These "schooling" sessions will consist of 2 weeks courses of study, during which the students will attend regular classes given at one or more central locations. They will be very similar to the "tutorials" which are planned as part of England's Open University. The "schooling" sessions will be available 8 times a year, primarily during the June - September quarter. Students

attending these sessions will have two classes every morning for twelves days (Monday through Saturday, for two weeks) and will thereby earn 4 units. In the afternoons the students will be able to attend counseling sessions, to participate in group activities, to do work in the library, and so forth.

In planning for the "Univ. of the Air", we are relying greatly upon the computer. It will be used, of course, as an administrative aid in handling enrollment records, grading of tests, etc. We are also planning to use it as an aid in analyzing the contents of lectures, and in preparation of manuals and questionnaires. The world has now truly entered the age of computers. The "Univ. of the Air" should use computers to the fullest extent, in an attempt to perfect instruction -- instruction which until now has, by necessity, been handled entirely by the brain of the human teaching staff. I am convinced that the computer will never be able to replace the "human" and "personal" aspects of the classroom teacher, but I am equally convinced that the mechanization of the mechanical parts of the teaching-learning process will amplify and strengthen the process as a whole. The use of computers in education is still relatively undeveloped. Its full and active use in all possible aspects is one of the strong points of the "Univ. of the Air".

We anticipate the possibility of inviting famous and well known personalities to present radio and television programmes to our students. An international faculty can be formed, by inviting outstanding scholars from abroad to come to Japan and prepare a series of thirteen programmes on VTR duing their two or three weeks' stay, to be used later by the university. Or, the staff could visit the scholars in their respective country. Although the participation of such well known personalities or foreign scholars may greatly increase the production cost, a completed programme series will be available for re-use in following years. Even if used only once, they will potentially reach more students

than it is possible today within the material limitations of the traditional university. The preamble to the UNESCO Charter states that "war is created in the minds of man." We have to mould, therefore, the minds of adults for peace, as well as to develop the minds of younger generations. The "Univ. of the Air" will be very much concerned with the minds of adults -- those minds which control the world's political and economic power. The minds of both the young and the old are important. "Adult power" exists alongside "youth power". The "Univ. of the Air", by educating their mind, can change adults and fill the generation gap which is badly affecting present day society, thereby improving the prospects for world peace.

I need not remind you that there is no better way to promote international understanding than to 'exchange' scholars and students among nations. This will be a second strong point of the "Univ. of the Air". The university will be open to anyone, regardless of age, who has a high school diploma or its equivalent. Entrance, based upon document examination only, will be as open and available to everybody as possible. My plan is to admit from 20,000 to 30,000 students for the first year. While envisioned as a "4 year course of study", there will be no time limit placed upon students. They will be able to spend as much time as necessary on their studies, although quick completion will be encouraged. It is anticipated that the Bachelor of Arts degree will be given in one of three levels: Ordinary, Honours, and High Honours. The appropriate level will be determined based upon the quality of the student's work, his thesis and other performance factors.

I have already mentioned the troubles we, in Japan, have met in getting elementary and secondary school teachers accept radio and television into their classroom activities. And, as you can well understand, the system I have described above is a very new one, and those who have been educated in the traditional manner

can hardly understand the rationale behind much of it. This is because they are confined within their own, already learnt and set, traditions and concepts of teaching. Also, as they were educated primarily by printed materials alone, they cannot fully comprehend the potentialities of radio and television in education. It is now necessary to convince the more powerful, and possibly even more traditionally minded, university scholars of the value of radio and television in education. Not only that, it is now necessary to show them that education as such, need not be carried out in an ivy-covered, ivory-towered citadel.

For the past 37 years, I have suffered from the traditional way of thinking on the part of elementary and secondary school teachers. Now I am suffering from the traditional, printed material centred scholars who are at the top and wh control the entire system! However, as you are all here to honour one of America's greatest non-traditional scholars, I am sure that none of you would ever cause any such suffering. In Japan, the 'University Chartering Committee' determines the academic qualifications for giving credits and awarding degrees of an institution. Many of its more printed material minded members are, at the moment, literally "up in the air" over the "Univ. of the Air".

The broadcasters, however, and a good number of the more progressive educators in the country are confident that they can meet their responsibilities for bringing the "Univ. of the Air" into being. The idea, I repeat, is not to replace the traditional universities, but to supplement their work with a new method of higher education which will suit the times. The "Univ. of the Air" is not envisioned as omnipotent. The traditional universities have played and must continue to play an important -- if not major -- part in higher education. We of the planning committee expect to have the established traditional institutions cooperate with the "Univ. of the Air", in ving "schooling" sessions, in furnishing scholars, in research and in other ways as well. In

turn, the traditional universities should open their methods wide and make use of VTR courses prepared by the "Univ. of the Air" in their own classrooms.

It is sincerely hoped that programmes and courses prepared by the "Univ. of the Air" will be used by the Educational Television Programme International Library, by other countries -- both developed and developing -- as well as by educational institutions in Japan. Yet there are two large problems that block the smooth realization of these hopes. One is royalties. Royalties have been a large factor in the delayed development of the NHK Educational Television Programme International Library. It is imperative that every nation and every producer of educational programmes and materials be as liberal as possible regarding the protection of copyrights and payment of royalties.

The other problem is attitude. The developed countries, for example, need good, current and skillfully filmed and VTRed educational materials on foreign lands. The developing nations need the same, plus filmed and VTRed basic educational materials for the rapid diffusion of compulsory education among their people. In both cases, however, the attitudes of traditionalists have almost always blocked progress in the desired directions. The technology is available, but the will, the attitude, seemingly is often lacking. An example of the power of such negative thinking is the Open University in England. Prime Minister Wilson and his Labour Party are eager for its development. Nevertheless the use of broadcasting is being limited to only three hours a day. May such a situation not be blamed upon the control, both open and convert, coming from the traditional Oxford and Cambridge scholars ?

I am sure that this contradiction shall be resolved in favour of the Open Univ.' s backers, but its mere existence speaks volumes for the power of the printed material centred traditionalists. I was in London in 1965. At that time, the committee for the Open Univ. was headed by Miss Jenny Lee, the wife of one of the

Labour Party leaders, Mr. Vevan. While realizing that British tradition calls for a slow and thorough approach to innovations, seven or eight years from conception to realization for anything as important and necessary to British education as the Open Univ. appears to be, is a case of "foot dragging" on someone's part.

It has taken us in Japan 37 years to make broadcasting an important part of lower and secondary education. I predict that it will take just as long to do the same for higher education. But the day will come -- probably early in the 21st century -- when the "Univ. of the Air" will become the main current of higher education. This is because everyone in the coming Age of Science and Technology, must have a higher education, if they are to be truly productive members of society, and the proposed methods of the "Univ. of the Air" are the only way to give everyone -- both youth and adults who missed an earlier chance for university-level training -- opportunities to become such productive members.

While the "Ivory Tower" concept of university training should and shall continue to exist, the general concept of higher education must be drastically changed in order to meet the needs of the times. Just as the status of technical education in Japan was brought up to that of the ivory-towered institutions following the World War II, so the 'practical education' closely related to daily life -- such as to be diffused by the "Univ. of the Air" -- will also come to be evaluated highly.

At present, such "practical education" is little considered by the traditional universities. It is necessary, however, that it be fully recognized, if the "Univ. of the Air" and the traditional schools are to work together for the good of education. Recent advances in science and technology, and recent changes in the philosophy of modern life, demand that all three aspects -- scholarly learning, scientific and technological studies, and learning for practical living -- be treated as equals. This applies not just to my country, but to all nations throughout the world. Topics worthy of serious

research and capable of a high level of scholarship can be easily found in all those three areas. The last, however, that of practical living, is the least explored and therefore the most fruitful. I dare say that without serious thought being given to the third area, the other two may not advance as rapidly as they should.

I have always admired the progressive attitudes of American educators, and how they have constantly developed many new fields of education. In fact, I spent 3 years in this country during the early 1920s, studying under one of the greatest progressive teachers of this century, Dr. William H. Kilpatrick, at Teachers College, Columbia Univ. But I cannot help but express my disappointment in these same people for their seeming timidity regarding the combination of broacasting with education. Americans have more television stations and television sets than any other people in the world. But these are almost exclusively controlled by commercial interests, and devoted primarily to entertainment and news purposes. While the number of educational television stations in the U. S. soars as high as to about 200, these stations are rather small and suffering from constant financial difficulties.

The Carnegie Report of 1967 outlined a grand future for educational television in your country. While a part of its recommendations, including the establishment of the Corporation for Public Broadcasting, has been implemented, as a whole its provisions have not been realized. I was interviewed by the Dr. Killian of M. I. T. in 1967 in Tokyo and admired the plans he envisioned for educational television in America. I am sure he is as disappointed as myself over their failure.

I have also always admired American democracy which has developed so well since the confederation of the original 13 states almost 200 years ago. One of the pillars of American democracy has been de-centralization. The school system has reflected this. But mass communication media are, by nature, highly centralized. Maybe this is why it is proving so difficult to combine the two in

your country. I hope that American educators will give serious thought to these new media and not criticize them from the centralization - de-centralization point of view alone. They must develop means of harmonizing the characteristics of the two -- education and broadcasting -- and devise the means of promoting local democracy through educational broadcasting, not only for use in America, but for use through the world as a whole. I trust that creative thinkers and progressive educators in the U. S. will carry this mission out to a successful point within the next several decades, and at latest by the beginning of the 21st century.

I would like to talk a moment about the current world exposition being presented in Osaka, Japan, and how these expositions have influenced the development of civilization. The 1851 London Exposition featured the Crystal Palace. Many people opposed the building of the palace and even some opposed the building of the Palace and even some opposed the very idea of a large scale exposition being held at all. The latter people felt that food shortages would result. They feared that morals would go down and British culture be ruined. The Crystal Palace itself was decried as a horrible example of architecture -- but in fact it was a pioneering effort towards the development of our modern glass-walled office buildings, schools and factories. The same was noted at the Paris Exposition in 1889. The Eiffel Tower built for that exposition was regarded as a blot on Paris' s beauty -- but today what would be Paris without the Eiffel Tower? Technologically speaking, it marked the beginning of the age of steel-framed buildings and skyscrapers.

The 1933 "Century of Progress" Exposition in Chicago was considered by some -- in its use of electricity as a help in the home -- as the beginning of the decline of the role of housewife. But today, no one who has experienced the conveniences brought about by electric home appliances, would ever want to be without them.

The Expo '70, which opened March 14th and runs until ept. 13th this year, has adopted the heme: "Progress and Harmony for Mankind". A record number of countries to participate in a single exposition, 77 in all, are working together to bring this theme into reality. Just as past world expositions have been the harbingers of technological change, the Expo '70 is showing the way towards the future "communicaions" civilization. Many of the pavilions at Expo '70 are designed around the computer and the most modern of media inventions and techniques.

The Ontario Pavilion, for example, includes a continuous audio-visual presentation in which 22 programmed projectors throw a multitude of colour images of Ontario upon a 30 meter screen. One hall of the Japanese Government Pavilion has a 1,000 seat theatre with a 48 by 16 meter multi-faced screen which present "Japan and Japanese", giving a suggestion of Japan of the future. Electronic music, with and without computer controls, plays a large part in the presentations at the Furukawa and the Iron and Steel Pavilions. Possibly one of the more ambitious ventures along these lines is at the Midori Pavilion. The main building consists of a dome 46 meters in diameter and 31 meters in height. Inside is a hemispheric screen 30 meters across and 25 meters high. Five projectors cast three-dimensional images which, along with a stereophonic sound system, convey a feeling of being "on-the-spot" to 1,000 spectators at a time. The Telecommunications Pavilion features an "Eidophor" theatre where, on each of three walls, live scenes of Tokyo, Kyoto and Kyushu are presented simultaneously.

Television is being used at Expo '70 as the means for crowd control and information, also for handlings between various administrative offices. Broadcast television is used extensively to promote the exposition and to give those who can not visit it in person a chance to see it at home. NHK is presenting programmes of between two and three hours daily upon various Expo '70

events. These are broadcast nation-wide and will continue throughout the course of the exposition. This coverage is not limited to Japan alone, many programmes -- particularly the opening ceremonies and national day events -- are being sent by satellite to many countries throughout the world. I am sure that many of you watched the opening of the Expo in your own home here in the U. S.

Incidentally, along with the Soviet Pavilion, the U. S. Pavilion is attracting the largest crowds of all the exhibits. These two nations -- always hard in competition with each other -- have built very dissimilar pavilions: the Russian one being the tallest on the grounds, whereas the American one being one of the lowest, as it is almost entirely underground. Unofficially, I would suggest the American Pavilion is winning the popularity contest, primarily because it has the display of a rock from the moon. But frankly speaking, I am sorry to state at the same time that myself felt the Russian Pavilion superior to that of the United States. The contents as well as the technique of the display in the Russian Pavilion is very dynamic and varied, in contrast with the low-keyed simplicity of the American Pavilion. The United States spent, I was told, about 10 million dollars on their pavilion, while the Soviet Union put twice as much. The difference in atomosphere, I feel, not merely a matter of money, but also of attitude. Perhaps the planners of the American Pavilion might have placed too much hop on the moon stone or were too much concerned with lowering American profile in the eyes of the world.

At any rate, each world exposition points to a new age and by the end of this century we should have many of Expo '70's "unique" features as part of our daily life. Things such as push-button and colour television telephones, extensive closed-circuit networking, frequent satellite relayed programmes from and to foreign lands, moving sidewalks, wide use of computer and many others are all on the verge of becoming commonplaces. The age

of communication technology -- both on a local and global scale -- is rapidly approaching.

As a final note, printed materials often put too much emphasis on local or national events. This, in turn, can lead to a narrow-minded nationalism. In contrast, radio and television -- because they can be much more current than books, because also they are as mobile as carrying a camera or a tape-recorder -- can emphasize events in other nations across wide oceans and continents. Television, in particular, can help promoting international understanding, because images are always more easily understood among different cultural and linguistic groups than are words that often must be translated, if they are to be usable at all. Books and other printed materials are easily stopped at national borders, while radio and television waves know no artificial boundaries. Canadians living along the border with the U. S. can easily watch American television, just like Koreans in the southern part of the peninsula can receive Japanese television programmes. Radio waves can be sent around the world and radio is playing a large part in making people on both sides of many existing "curtains" understand and know more of each other.

Radio and television can be powerful instruments in bringing peace to the world, through their contributions to bettering education in all the nations of the world, and through their ability to help each nation o understand others better.

Well, I have been rather outspoken in my speech, believing that outspokenness is necessary to the deepening of understanding, and I should like cordinally to invite, before I end, any comments you may have regarding the points I made. I firmly believe that the best reward for the outspokenness is frank comments.