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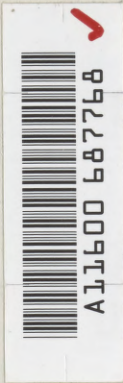
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NATIONAL CENTER ON EDUCATIONAL MEDIA FOR THE HANDICAPPED

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HEARING BEFORE THE COMMITTEE ON EDUCATION OF THE COMMITTEE ON LABOR AND PUBLIC WELFARE UNITED STATES SENATE NINETY-FIRST CONGRESS

FIRST SESSION

ON

S. 1611

TO AMEND PUBLIC LAW 85-905 TO PROVIDE FOR A NATIONAL
CENTER ON EDUCATIONAL MEDIA AND MATERIALS FOR THE
HANDICAPPED, AND FOR OTHER PURPOSES

APRIL 21, 1969

Printed for the use of the Committee on Labor and Public Welfare



U.S. GOVERNMENT PRINTING OFFICE

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NATIONAL CENTER ON EDUCATIONAL MEDIA FOR THE HANDICAPPED

MONDAY, APRIL 21, 1969

U.S. SENATE,
SUBCOMMITTEE ON EDUCATION OF THE
COMMITTEE ON LABOR AND PUBLIC WELFARE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 4232, New Senate Office Building, Senator Claiborne Pell presiding.

Present: Senators Pell, Yarborough, and Schweiker.

Committee staff present: Robert O. Harris, staff director of full committee; John S. Forsythe, general counsel to full committee; Stephen J. Wexler, counsel to the subcommittee; Richard D. Smith, associate counsel to the subcommittee; and Roy H. Millenson, minority staff member.

Senator PELL. The initial hearing of the Subcommittee on Education will come to order.

The purpose of this hearing is to take testimony and receive different viewpoints on S. 1611, a bill to amend Public Law 90-905, that would provide for a National Center on Educational Media and Materials for the Handicapped, and for other purposes.

This is a relatively simple bill, and a rather necessary one in the viewpoint of many of us. I order the bill printed in the record.

(The bill referred to appears on p. 3.)

Senator PELL. I think we all should understand that the unique characteristics of handicapped children, for example, the loss of vision, hearing, or the need for individualized instruction because of retardation or emotional disabilities, continue to make educational programs for these children a prime target area for the development of educational media and materials. A decade of experience under the Captioned Films for the Deaf Act led to the expansion of this program in 1967 so that its benefits might be extended to all types of handicapped children. I take a particular interest in this legislation since I have worked with the captioned films for the deaf program ever since coming to the Congress.

Expertise in specially designed educational programs for the handicapped is only slowly being developed and the emergence of educational technology is following a similar course. Very few persons, whether educators or producers of instructional media, have expert experience, although there are here and there across the Nation

individual examples of excellent materials for the deaf, for the blind, and other handicapped. At present there is a great need to consolidate the resources which are available, to pool the existing knowledge to bring together the best minds now working in this field, and to provide an environment where rapid growth in educational technology for the handicapped may take place.

The National Center on Educational Media and Materials for the Handicapped is proposed to fill this need. It will be developed by an institution of higher education in the Washington, D.C. area, with the specific responsibility for coordination of action with the Model High School for the Deaf in Washington, D.C., and programs of the Bureau of Education for the Handicapped, as with other model or innovative programs for handicapped children.

The proposed National Center will provide a focus for the necessary development in this area of education.

To insure some financial participation by the institution of higher education operating the media facility, the bill does not authorize funds for the purchase of land. The selected institution of higher education will be required to make available sufficient land for the construction of a separate, self-contained, identifiable structure. The amount of real property necessary will be determined, by the Secretary of HEW, taking into consideration reasonable future expansion plans.

Today less than 40 percent of the Nation's handicapped children, or only about 2 million of the more than 5½ million such children, are receiving appropriate special education services. Only one teacher, speech and hearing specialist, or similar special educator is available for every four that are needed.

To fill these voids there must be a systematic attempt to expand the teachers' resources by providing them with specially developed curricula, media and methods so that we can move toward our national goal of educational opportunity for every child with no exclusion for the child who is handicapped. The National Center on Educational Media and Materials for the Handicapped will provide a means to develop this specialized material.

What we are really doing here today is to foster a degree of innovation, to try and bring the systems approach into the field of education to a greater degree than it is already involved, with specific application to the handicapped, and to try to have a center of excellence which would develop methods of instruction. Methods of instruction which like the ripples in a pool when a pebble is dropped, will develop and have an effect throughout our country.

91ST CONGRESS
1ST SESSION

S. 1611

IN THE SENATE OF THE UNITED STATES

MARCH 20, 1969

Mr. PELL (for himself, Mr. JAVITS, Mr. KENNEDY, Mr. MURPHY, Mr. PROUTY, and Mr. YARBOROUGH) introduced the following bill; which was read twice and referred to the Committee on Labor and Public Welfare

A BILL

To amend Public Law 85-905 to provide for a National Center on Educational Media and Materials for the Handicapped, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 That the Act of September 2, 1958 (Public Law 85-905)
4 is amended—

5 (1) in section 3, by adding at the end thereof the
6 following new subsection:

7 “(c) (1) The Secretary is authorized to enter into an
8 agreement with an institution of higher education located
9 in the National Capital area for the establishment and oper-
10 ation (including construction) of a National Center on Edu-

1 cational Media and Materials for the Handicapped, which
2 will provide a comprehensive program of activities to fa-
3 cilitate the use of new educational technology in education
4 programs for handicapped persons, including designing and
5 developing, and adapting instructional materials, and such
6 other activities consistent with the purposes of this Act as
7 the Secretary may prescribe in the agreement. Such agree-
8 ment shall—

9 “(A) provide that Federal funds paid to the Center
10 will be used solely for such purposes as are set forth in
11 the agreement;

12 “(B) authorize the Center, subject to the Secre-
13 tary’s prior approval, to contract with public and non-
14 profit private agencies for demonstration projects;

15 “(C) provide for an annual report on the activities
16 of the Center which will be transmitted to the Congress;

17 “(D) provide that any laborer or mechanic em-
18 ployed by any contractor or subcontractor in perform-
19 ance of work on any construction aided by Federal funds
20 under this subsection will be paid wages at rates not
21 less than those prevailing on similar construction in the
22 locality as determined by the Secretary of Labor in ac-
23 cordance with the Davis-Bacon Act (40 U.S.C. 276a—
24 276a-5); and the Secretary of Labor shall have, with
25 respect to the labor standards specified in this clause,

1 the authority and functions set forth in Reorganization
2 Plan Numbered 14 of 1950 (15 F.R. 3176; 5 U.S.C.
3 133z-15) and section 2 of the Act of June 13, 1934
4 (40 U.S.C. 276c).

5 “(2) In considering proposals from institutions of
6 higher education to enter into an agreement under this sub-
7 section, the Secretary shall give preference to institutions—

8 “(A) which have demonstrated the capabilities
9 necessary for the development and evaluation of edu-
10 cational media for the handicapped; and

11 “(B) which can serve the educational technology
12 needs of the Model High School for the Deaf (established
13 under Public Law 89-694).

14 “(3) If within twenty years after the completion of
15 any construction (except minor remodeling or alteration)
16 for which such funds have been paid—

17 “(A) the facility ceases to be used for the purposes
18 for which it was constructed or the agreement is ter-
19 minated, unless the Secretary determines that there is
20 good cause for releasing the institution from its obliga-
21 tion, or

22 “(B) the institution ceases to be the owner of the
23 facility,

24 the United States shall be entitled to recover from the appli-
25 cant or other owner of the facility an amount which bears to

1 the then value of the facility the same ratio as the amount of
 2 such Federal funds bore to the cost of the facility financed
 3 with the aid of such funds. Such value shall be determined
 4 by agreement of the parties or by action brought in the
 5 United States district court for the district in which the
 6 facility is situated.”

7 (2) in section 2, by adding at the end thereof the fol-
 8 lowing:

9 “(5) The term ‘construction’ means the construction
 10 and initial equipment of new buildings, including architect’s
 11 fees, but excluding the acquisition of land.”

12 and

13 (3) in section 4, by striking out “and” after “1969,”
 14 and inserting after “1970” the following: \$12,500,000 for
 15 the fiscal year ending June 30, 1971, \$15,000,000 for the
 16 fiscal year ending June 30, 1972, and \$20,000,000 for the
 17 fiscal year ending June 30, 1973”.

4

EXECUTIVE OFFICE OF THE PRESIDENT,
 BUREAU OF THE BUDGET,
 Washington, D.C., May 2, 1969.

HON. RALPH YARBOROUGH,
 Chairman, Committee on Labor and Public Welfare,
 U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request of March 24, 1969, for the views of the Bureau of the Budget on S. 1611, a bill “To amend Public Law 85-905 to provide for a National Center on Educational Media and Materials for the Handicapped, and for other purposes.”

The Bureau concurs generally in the views expressed by the Department of Health, Education, and Welfare in testimony on April 21, 1969, before the Subcommittee on Education of your Committee. As noted in that testimony, legislative authority already exists for most of the steps called for in S. 1611. Whether additional construction authority is needed and should be sought requires further consideration in the context of budgetary needs and priorities for fiscal year 1971.

Accordingly, the Bureau of the Budget recommends against the enactment of S. 1611 at this time.

Sincerely yours,

WILFRED H. ROMMEL,
 Assistant Director for Legislative Reference.

Senator PELL. Our first witness today is Dr. James J. Gallagher, a highly respected educator and Associate Commissioner of Education for the Bureau of Education for the Handicapped.

Dr. Gallagher, would you proceed, please?

STATEMENT OF JAMES J. GALLAGHER, ASSOCIATE COMMISSIONER OF EDUCATION, BUREAU OF EDUCATION FOR THE HANDICAPPED, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; ACCOMPANIED BY DR. EDWIN W. MARTIN, DEUPTY ASSOCIATE COMMISSIONER OF EDUCATION FOR THE HANDICAPPED; DR. FRANK B. WITHROW, DIRECTOR, DIVISION OF EDUCATIONAL SERVICES, BUREAU OF EDUCATION FOR THE HANDICAPPED; DR. JAMES W. MOSS, DIRECTOR, DIVISION OF RESEARCH, BUREAU OF EDUCATION FOR THE HANDICAPPED; AND DR. ALBERT L. ALFORD, ASSISTANT COMMISSIONER FOR LEGISLATION

Dr. GALLAGHER. Thank you very much, Mr. Chairman. I would like to begin by introducing the staff that is accompanying me this morning. On my right is Dr. Ed Martin, Deputy Associate Commissioner for the Bureau of Education for the Handicapped, and on my far right is Dr. Al Alford, Assistant Commissioner for Legislation in the Office of Education.

On my immediate left is Dr. Frank Withrow, Director for the Division of Educational Services in the Bureau of Education for the Handicapped, and on my far left, Dr. James Moss, Director of the Division of Research and its related activities within the Bureau.

Mr. Chairman, I would like to read my statement and perhaps make some comments on the way. If that is all right.

Senator PELL. Fine.

Dr. GALLAGHER. Mr. Chairman and members of the subcommittee, it is a source of pleasure to us that your first hearings as chairman of the Subcommittee on Education are concerned with handicapped children and with providing them increased opportunity to receive an appropriate education—the basic objective of this Bureau, and of S. 1611, a bill relating to a National Center on Educational Media and Materials for the Handicapped.

We estimate that more than 300,000 teachers, speech pathologists and audiologists, and other specialists are needed to work with handicapped children.

About 75,000 to 80,000 such specialists are now available. Accordingly, only about 2 million of the 5½ million children who need special education services are receiving them.

Our present system of training and our present pattern of delivering services to children simply will not close this gap, in the immediate or medium future. Instead, we must look for new ways to provide handicapped children with the specialized educational experience that they require.

In the Bureau of Education for the Handicapped, we now are devoting considerable attention to two areas which we think offer tremendous promise in helping us close the gap. We are giving particular attention to the development of the area of early childhood education, and to the development of more effective use of instructional materials and media.

It is not necessary for us to point out to you, Mr. Chairman, the great values in the use of instructional materials and media in the education of handicapped children. It was the foresight of your committee in holding the hearings to amend the captioned films for the deaf program in the 87th and 89th Congresses that led to the development of that program as a national model for the use of instructional materials in education.

So successful has our experience been in providing services to every classroom for deaf children in the United States that in 1967 Congress extended the authority of this program to children who are retarded, emotionally disturbed, blind, have speech problems, or are crippled or otherwise health impaired.

Since the creation of the Bureau of Education for the Handicapped 2 years ago we have been making a maximum effort to create a nationwide system for the research and development and distribution of instructional materials and for the appropriate training of teachers to make effective use of such materials.

Using funds from our research authority we have supported 14 instructional materials centers serving distinct regions of the country. That these 14 centers have been successful in demonstrating the usefulness of instructional materials in the teaching of handicapped children, is shown by the States and local communities using other sources of funding available to them to begin over 80 associate centers to deliver these materials at the local level.

Similarly, under the captioned films for the deaf authority, four regional centers have been developed around the country, each with its own emphasis in media development. The center in the Northeast at the University of Massachusetts specializes in the development of innovative overhead projector transparencies.

The center in the Southeast at the University of Tennessee specializes in the development and usefulness of closed circuit television in educating deaf children.

The center in the Southwest in New Mexico specializes in the development of program instructional devices in which a student can learn at his own rate using a machine designed to present information to him in a slow and systematic fashion and to reward him for correct answers.

Finally, the center in Nebraska at the University of Nebraska has specialized in the development of filmstrips and film cartridge productions.

In addition to these developmental centers, we have a nationwide distribution system involving distribution centers so that a teacher in any classroom for the deaf in the country can have available to her the filmstrip materials and other instructional devices developed under the captioned film program.

Still another link in this developing system has been a program supported by our research division—our information and retrieval center, the special educational ERIC center operated by the council for exceptional children. This center is already storing on computer tape abstracts of instructional materials, articles, and other information which will be available to teachers, researchers, and any person in need of accurate and up-to-date information.

For example, all of the abstracts of research projects funded by the Bureau are immediately entered in the ERIC system so that people may know what research is currently going on across the Nation.

Through a number of independently supported projects, the Bureau is assisting the special education field in developing films and other instructional materials.

For example, an investigator at Yeshiva University in New York has been developing a special social studies curriculum designed for teaching in this area with retarded children. Investigators from George Washington University have developed films showing the most modern methods of teaching deaf children and retarded children in Europe, so that advances in other countries can be quickly available to students learning and studying to be teachers in this country.

These programs are still in an early stage of development.

For example, the ERIC system is only beginning to develop its information bank. The instructional materials centers range in age from 2 to 3 years and are still in the process of developing appropriate models for functioning.

Some are working on appropriate means for evaluating instructional materials; others are studying the appropriate use of materials in training teachers, and in the latter, training of experienced teachers.

Still others are exploring what kinds of processes are necessary for developing and field testing effective instructional materials.

Since two of the centers were specifically designed to be models for delivery systems, grants were made to State educational agencies. But no State-by-State delivery system has yet been perfected to the point where all teachers of the handicapped have ready access to instructional materials.

None of the 50 States currently link together in a network so that information about materials can be quickly transferred from place to place.

Expertise is perhaps the most crucial lack. There are very few people who are experts in special education programs and procedures for handicapped children and at the same time are expert enough in instructional technology to blend these two disciplines together for the production of such materials as are necessary.

We have found since the enlargement of the captioned films program (now media services and captioned films) to serve children with all kinds of handicapping conditions, that few individuals or centers are immediately ready to expand their efforts in this area.

A national center on education and materials, such as suggested in S. 1611, would provide an environment where people with expertise and interest in educational technology for the handicapped might gather to provide a manpower pool and where additional individuals could be trained in the actual development of appropriate materials and media for handicapped children.

Such a center could allow a comprehensive program of activities designed to facilitate the use of new educational technology.

At the same time, the provisions of the bill allowing the national center to subcontract would assure that it would be able to reach out across the country to take advantage of special areas of excellence and expertise anywhere in the Nation.

We note, Mr. Chairman, that in your introduction of the bill, you proposed that the center have specific responsibilities for coordination

with the model high school for the deaf program now being planned at Gallaudet College.

You also called for cooperation between the center and the Bureau's media service program, as well as with other models or innovative programs for handicapped children that may be developed.

As you know, the model high school at Gallaudet is designed to be the only comprehensive high school for deaf children in the Nation.

It is planned to include innovative educational materials and methods such as computer assisted instruction and other modern methods. This new high school will demand a continuous supply of instructional materials.

As I mentioned, our whole approach to this problem is to develop an interlocking network of programs interested in instructional media and materials.

University programs which have the research and development capacity for the design and field testing of development of materials, regional distribution programs, State instructional materials centers, the National Computerized Center, which can feed information to answer individual requests, and so forth.

As you know, the captioned films program has had an impact on virtually every classroom for the deaf in this country.

The entire teaching strategy has been altered by the introduction of large amounts of new instructional materials. Each class now has an overhead projector, film strip projector, slide and motion picture projector, and teachers have been trained in the use of this equipment and in the development of their own software of instructional materials.

If we were to try and replicate this program of saturation for the classroom serving children with other kinds of handicapping conditions, the retarded, the emotionally disturbed, et cetera, the cost would run in the range of \$80 to \$100 million.

Since this is not a practical alternative at this time, we are hopeful that we can develop prototype programs in each of these various areas and that we would be able to supply the incentive for innovation and provide a stimulating force in these areas.

Centers that provide research and development resources such as the one you describe might very well assist in this catalytic effort.

In summary, the development and increased use of education and media materials for handicapped children is an important objective which we have begun to pursue diligently. A center such as the one you propose would provide further momentum toward that objective, and would be particularly useful in the National Capital area close to the Model High School for the Deaf and to the media service programs of the Bureau of Education for the Handicapped.

We plan to consider the question of establishing such a center in preparing our fiscal year 1971 legislative and budget requests.

However, we have been assured by legal counsel and others reviewing S. 1611 that we already have legislative authority for most of the steps called for in the bill. Only construction authority is lacking, we see no need to seek additional legislation for this purpose until we decide whether to propose new facilities.

If budgetary priorities permit inclusion of the center in the 1971 budget, and we decide that additional construction authority is needed, we would return to the Congress to seek that authority.

In the meantime, we do have to face the realities of a stringent budget which requires hard choices in the light of other national priorities and needs.

Therefore, we are unable to recommend approval of S. 1611 at this time, although we support its objective of extending additional educational opportunities for handicapped children.

That is our statement, Mr. Chairman. Thank you.

Senator PELL. Thank you very much, indeed, Dr. Gallagher. This is not a very tremendous bill as far as funds go, but as you so well point out, it will have a salutary affect on a good many people.

We also have to consider the question of priorities, both priorities within the field of education, as well as priorities for education and those for defense, and I know the strain that you are under.

I think my own view, as one member of this committee, is that if the administration is opposed to this bill it would be hard to get it through, and I will be guided greatly by my Republican colleagues in the committee and how they feel on it.

There are some specific questions I would like to ask you:

For instance, in your statement you speak of the high cost of the program modeled after the captioned films for the deaf program being used for teaching other types of handicapped children, yet then you say you do not support a bill which would establish a working model to produce usable products at a minimum cost. It would appear to me that your position is almost going against itself, and against the modus operandi you say you are for. In other words, if you want a model as a means of achieving this, I would think this contains just what you want.

Dr. GALLAGHER. Well, Mr. Chairman, I think it is often true that sometimes the spending of small amounts of money saves a lot of money at a later time. One of the things that I think we are trying to say, through the testimony, is that we think the concept is a valid one. We have already involved ourselves in the planning and development of this complex system and have these 14 materials centers and four media centers for the deaf in operation, and we see the kind of things which you are proposing in this bill as fitting into this total system.

What we are faced with here is a problem of timing, I think, as much as anything else, and in terms of the budget situation in fiscal 1970.

I think your comment is appropriate, that effective planning in this area represents a long-term gain in terms of economy.

Senator PELL. I am always amused, and this is rather off the subject, at the way the Government is always bringing new words into the English language, and I was rather struck in your testimony by the word "replicate," which does not have the meaning which you give to it. Webster's Dictionary defines "replicate" as folded over or backwards, which is to my mind somewhat the thrust of your testimony here, but I do not think that is what you fully intended, but maybe the new edition of Webster's will reflect the new governmental meaning.

The question of construction authority is, I think, a little bit glossed over. Is not the essence of the whole concept of a media center, one single, self-contained unit with specific facilities built into it, and this requires a bricks and mortar approach.

Could you conceive of such a center without having that authority?

Dr. GALLAGHER. Not really. If I may say, as a part of our continuing study in this area, and this is an area of high priority to us, I had a chance to visit about four or five of the materials centers around the country, I found one of them in an old church, found another one on the eighth floor of a classroom building at a university where it took real ingenuity to even find it, and then later it was transferred to a brownstone house across the street.

We found another one in a library where it was so hidden that it was hard to identify it, and we found these people working under these kinds of constraints that impaired their efficiency, we have concluded that there is a very crucial relationship between function and structure in these plans.

Whenever we get into the kinds of things which are suggested by your bill, I think the requirements are even more stringent in terms of this relationship. I would like to have Dr. Withrow, who is not only our ranking expert, but a ranking expert in the country on this matter, make some further comments on this.

Senator PELL. I would be delighted, but I would like to correct one point. I want it to be our bill here, it is not my bill, or anybody's bill, I want it to be our bill, all of us together, and this should be the thrust of the testimony at this hearing.

Dr. GALLAGHER. Fine.

Dr. WITHROW. Thank you, Dr. Gallagher. Yes, in the construction of a center such as indicated in the language of the bill new construction would be required for production facilities. We have in some of our other centers attempted to modify buildings for production facilities, for film and television studios. For instance, in one center we did develop a film studio and such sounds as ladies' hard heels on the floor above came through on the soundtrack of the films.

Therefore, in our experience at least, developing a sound studio, it is almost essential that you design it from the beginning and build it from the ground up. In addition to this we would envision this center storing most of the materials that are developed in prototypical form from other centers. To do this requires humidity and temperature control for storage of original filmed material in very special rooms designed for such storage.

The sheer weight of film storage precludes it from being located in existing buildings on anything other than the ground floor.

The Navy Photo Center, for instance, is an example of some well-constructed and well-developed vaults, temperature and humidity controlled for film storage. We would anticipate that a center of this type would eventually need such storage facilities.

In addition to these activities we would expect training, artwork, script writing, et cetera, to be a part of the center activities. These could be done in existing buildings which could be modified to do that kind of activity. For film production and television production for prototypical materials the center must have this kind of facility.

Senator PELL. Thank you.

Dr. Gallagher, to kind of digest this discussion, would you agree with the concept of this bill?

Dr. GALLAGHER. Yes, sir.

Senator PELL. Would you also agree or disagree with the fact that in order to implement the concept legislation is necessary?

Dr. GALLAGHER. Yes, sir.

Senator PELL. Let me reverse this, if you like, and make it easier. Would you agree that a separate building is necessary in order to permit the concept?

Dr. GALLAGHER. Yes, sir.

Senator PELL. Would you agree that legislation is necessary in order to build a separate building?

Dr. GALLAGHER. Yes, indeed.

Senator PELL. So the difference of view here is not one of substance, it is one of timing, would that be correct?

Dr. GALLAGHER. That is correct.

Senator PELL. Do you have any views with regard to how your present viewpoint might be revised so that this legislation could be authorized this year, because unless we do it pretty soon, as you know, the way Government moves, by the time we have it authorized and get the appropriations it will be years in the future; there is quite a slippage of time.

Dr. GALLAGHER. Yes. Well, I think you have made a good point, Mr. Chairman, in terms of the timing and the sequence of activities that have to occur.

One of the things that we are embarking on this year is a yearlong study of the total system nature of all of the centers, how they should fit together, what the particular role and function of each of them should be vis-a-vis each other.

Senator PELL. Excuse me. Who is making the study? Is it you or is it an outside agency?

Dr. GALLAGHER. Well, we might contract this out to an outside agency.

Senator PELL. Then you have not started it.

Dr. GALLAGHER. No; that is right. As I say, we are planning to do it, we intend to do it, and we would intend that this would bring together some of the outstanding people in the country who are already engaged in this business, who would help us with the development of our long-range plans for this system, in which a center such as this one would be one component.

Senator PELL. With all of the myriad of studies in the department, is there not such a study already in the files somewhere?

Dr. GALLAGHER. I would not want to bet against that possibility, Mr. Chairman, but I do think that one of the things that has most impressed us in the field of the handicapped is that there are some special needs here; there are special needs in terms of deaf children, in terms of blind children, in terms of neurologically impaired children, which do change the situation somewhat.

Senator PELL. I would be grateful if you would check and see if in the Government there has not been such a study made with regard to the handicapped themselves, either the Government or a private institution.

Dr. GALLAGHER. No; I feel quite confident in saying that there has been no such study as that. But we will check it and put it in the record, Mr. Chairman.

Senator PELL. If there is a change after you research it, you will let me know, otherwise we will presume there is not.

Dr. GALLAGHER. I certainly will.

But, again to try to answer your question, this planning effort that will take place we hope will contribute somewhat to the beginning planning of this particular center or a center like it.

Mr. Chairman, if I may just amend that statement a little bit, we do have and have had in process a review of the instructional materials centers and have actually had 10 of the 14 centers site visited by a team of outside experts in terms of estimating the strengths and weaknesses of each of these centers. What we are proposing here, though, is not a study of an individual center; what we are embarking on is a study of the system by which these centers fit together. What we find is that whenever you have a center that tries to do the whole job—research, development, demonstration, and field testing—they try to do the dissemination training jobs that they end up perhaps doing none of those jobs very effectively. The centers that seem to work out best are those that have taken on a couple of these functions and have stuck with them.

Now, what this suggests to us is that we need centers that focus on development, we need other centers that will work on dissemination. A number of State education agencies have become most interested in being part of the dissemination system, and have actually taken the materials that have been produced and disseminated them into the local educational agencies in their States and they could operate as part of the system in this regard.

So, what we are looking at this next year is what does this system look like and how can we most effectively put the pieces together in combination.

Senator PELL. What are your views with regard to the center which is contemplated being located right here in Washington?

Do you think it should be in Washington or somewhere else?

Dr. GALLAGHER. Well, the bill specifies that it should be in the Capital area, and I think there are a number of reasons in addition to the model high school being here and having a close relationship to that.

It would be very nice from the standpoint of the Bureau of Education for the Handicapped to have this close relationship between the center and our staff in the captioned films area. We do have Project Life that we are supporting that is being operated at the NEA and is a major curriculum development program in which we could take the materials from that program and put it into a production or distribution status through this center. There are a number of centers and, Dr. Withrow, there is the distribution center in Maryland, too, is there not?

Dr. WITHROW. Yes. There is also the lab that does our captioning here in Washington, the Washington area, and it would seem reasonable to have the center located close to that lab. That is the sole source of captioning and they have developed a very economic and efficient way of captioning these materials.

Also, our central distribution office is here, although we have some 63 additional depositories throughout the country, but the central activities are here.

Senator PELL. In brief, you would like it in the Capital area, correct?

Dr. GALLAGHER. Yes.

Senator PELL. Thank you. What would be the actual cost of the media center, recognizing the figures contained in the bill are for full implementation of the expanded captioned films program?

Dr. GALLAGHER. Yes. We have not had a chance to cost out in detail what the cost would be.

Senator PELL. Well, just with the broad brush?

Dr. GALLAGHER. We have had some experience with the equipping of a center. We also have a research and demonstration center at Teachers College, Columbia University, that has been constructed, and I would imagine \$2 million would probably be a reasonable neighborhood to estimate. This would then be in addition to equipping as I understand it.

(The following information was subsequently supplied for the record:)

MEMORANDUM FROM JAMES J. GALLAGHER, ASSOCIATE COMMISSIONER FOR EDUCATION FOR THE HANDICAPPED, OFFICE OF EDUCATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

DEAR SENATOR PELL: In your hearing on the National Center of Educational Media and Materials for the Handicapped, you requested that we provide you with information concerning the estimated cost of construction of such a center.

Our preliminary estimates of the cost of construction and equipment for such a center is as follows:

10,000 square feet sound stage at \$75 per foot.....	\$750,000
10,000 square feet film storage at \$50 per foot.....	500,000
15,000 square feet of office space for the art department, shop, classrooms, and general offices at \$30 per foot.....	450,000
Equipment (see below for details on equipment).....	750,000
Furnishings.....	100,000
Total.....	2,550,000

The equipment for a black and white television studio would cost approximately \$500,000. This would include 3 cameras at \$25,000 each, 2 tape machines at \$60,000 each, 1 mobile unit at \$40,000, a console at \$2,500, switchers at \$30,000, film chain at \$30,000, sync generator at \$4,000, 16mm projector at \$2,400, plus equipment for filming and audio recording, additional costs for wiring, lighting, etc. The development of such a studio in color would increase the cost by one-half or make the estimated cost at \$750,000. It is suggested that the equipping of any center should be based upon color rather than black and white to be compatible with the most modern production techniques.

In addition to the construction and equipping of such a center, we would estimate an annual operational cost for staff and expendable materials to be in the neighborhood of \$250,000 to \$300,000. This would provide continuity to our program and give it central and uniform coordination.

I hope that this information is of value to you.

Senator PELL. Now, on a more broad base—and the Assistant Commissioner might care to respond to this question, does the Department have any objection to this bill because it provides for a categorical grant?

Dr. GALLAGHER. Dr. Alford?

Dr. ALFORD. Well, our objection—

Senator PELL. This is a very key point, and I am very interested in your response.

Dr. ALFORD. This may have been part of the conversation, but actually as far as our objection to the bill, it is purely on budgetary levels and budgetary planning.

Senator PELL. For a program of this sort, in order to really help differing entities we believe, as you know, that the Congress has the responsibility for the determining the emphasis, and the executive has the responsibility for carrying out our priorities. This approach is very necessary and I believe there is very little doubt on both sides

of the aisle in regard to this viewpoint. In fact the same viewpoint with regard to earmarking of handicapped programs was expressed by Commissioner-designate Allen in his nomination hearing. Thank you.

Are there any other statements or comments that any of you wish to make? If not, I thank you very much for coming, and we will move on to our next witness.

Our next witness is Mr. William Geer, executive secretary of the Council for Exceptional Children in Washington, D.C.

STATEMENT OF WILLIAM GEER, EXECUTIVE SECRETARY, COUNCIL FOR EXCEPTIONAL CHILDREN, WASHINGTON, D.C.; ACCOMPANIED BY FREDERICK J. WEINTRAUB, SPECIAL ASSISTANT TO THE EXECUTIVE SECRETARY

Mr. GEER. Senator Pell.

Senator PELL. We are glad to see you here.

Mr. GEER. I would like to introduce first Mr. Fred Weintraub, who is with me this morning.

I am William Geer, executive secretary of the Council for Exceptional Children.

Senator PELL. Excuse me. We are trying to move on rather rapidly, and I notice you have a lengthy statement. I wonder if we could agree to insert the statement in the record, and then you might merely just give your own summary.

Mr. GEER. With the understanding that the entire statement will be entered in the record, I will be willing to summarize much of this.

Senator PELL. That will be done.

(The complete statement referred to follows:)

PREPARED STATEMENT OF WILLIAM C. GEER, EXECUTIVE SECRETARY, THE COUNCIL FOR EXCEPTIONAL CHILDREN

Mr. Chairman and members of the subcommittee, I am William C. Geer, Executive Secretary of The Council for Exceptional Children.

The Council for Exceptional Children, a professional organization of 38,000 special educators, is pleased to have this opportunity to testify in support of S. 1611, a bill to create a National Center on Educational Media and Materials for the Handicapped. We would like to take this opportunity to commend this subcommittee for its long interest and activity in fostering the development of federal programs to provide every handicapped child with the opportunity through education to become a productive citizen. Mr. Chairman, we particularly appreciate your long interest in the Captioned Films for the Deaf program from which this bill now before the Congress is a natural outgrowth.

Mr. John Gough, who recently retired as head of the Captioned Films for the Deaf program, noted that:

"* * * education is primarily a process of communication between the learner and his society. The handicapped child frequently has a breakdown in the ability to participate in this process of communication. Breakdown in the normal communication system may be a direct result of a physical impairment in the sensory system which interferes with the transmission and reception of the communications signals. On the other hand, it may originate outside of the child and be the function of the attitudes which surround him in his environment. This may be the case when the handicapped person is seen primarily as someone who is handicapped and only secondarily as a person. Much of special education is concerned with expanding communication skills, expanding the environment of the orthopedically handicapped child through field trips or vicarious experiences, enriching the communication process of the deaf child and expanding the world of the blind child through auditory and tactile experiences."

S. 1611 should be a major step toward providing the vehicle by which special education can expand and enrich the sensory world of the handicapped child.

Since 1963, with the passage of Public Law 88-164, research has been conducted on the unique learning characteristics of the handicapped child; however, such information is of little value unless it can be translated into media and methods which classrooms teachers in schools throughout the country can use to assist handicapped children to learn more effectively. Steps have been taken by the Bureau of Education for the Handicapped to develop a national network of Instructional Materials and Media Centers to serve such a purpose.

Three major functions have guided the development of these centers: (a) service; (b) research and development; and (c) stimulation of materials and media production.

The service function includes: (a) the acquisition of commercial and teacher prepared instructional materials; (b) the description, classification, and organization of these materials; and (c) the dissemination of materials and information to educators.

The research and development function includes the evaluation of instructional materials and the development and production of new materials on a pilot basis for experimental trial or demonstration in order to establish their effectiveness.

The stimulation of production function includes: (a) contacting the organizations which have production capacity (sheltered workshops or commercial publishers) and encouraging them to produce materials which have been found to be effective in the research phase; and (b) consulting with producers to assure that ideas which they believe have merit are given consideration.

Mr. Chairman and Members of the Subcommittee, these Instructional Materials and Media Centers are providing direct service to local education agencies and their staffs and are making a major contribution to the teachers in the classroom. It is at this level that we can begin to see the effects of our national efforts on the actual learning of children.

As presently constituted the special education information network is composed of thirteen Instructional Materials Centers, four Regional Media Centers, specifically concerned with Captioned Films and other materials for the deaf, the ERIC Clearinghouse on Exceptional Children, the American Printing House for the Blind, and approximately 145 affiliate centers, established through state departments of education, colleges and universities, and local communities. We are pleased to see that the Bureau of Education for the Handicapped has continued to devote emphasis to this program under the wise leadership of Dr. James J. Gallagher, Associate Commissioner of Education for the Handicapped; Dr. James Moss, Director of the Division of Research; and Dr. Frank Withrow, Director of the Division of Educational Services, and that steps are being taken to enlarge the network.

The Council for Exceptional Children is pleased to operate the Clearinghouse on Exceptional Children which is part of the Instructional Materials and Media network. The specific functions of the Clearinghouse on Exceptional Children are related to acquiring, abstracting, indexing, and reporting information regarding the education of exceptional children. The entire system is computerized to facilitate the use of stored information to produce publications of abstracts and special bibliographies, and to answer the specific questions of individuals or groups in the field.

It is this last function which is perhaps the answer to one of the major needs in the field. With the assistance of the Clearinghouse, it is possible for the teacher, specialist, or administrator in special education to direct a question related to any aspect of special education to the Clearinghouse on Exceptional Children. Once the request is received by the Clearinghouse it is matched against the stored data and any material relevant to the question is retrieved by the computer. This capability permits the individual to receive specific answers to specific questions within a very short period of time. The value of this service has only begun to be realized, but already the Clearinghouse is providing answers to approximately 500 information requests from the field every month.

Ultimately the Clearinghouse hopes to have a complete and comprehensive base of all information relevant to the education of handicapped children. It is planned that practitioners, researchers, administrators, specialists and others working with handicapped children will be able to receive the information they need in a form that will enhance the efficiency with which they educate handicapped children. The Clearinghouse also has as a function monitoring the field in such areas as research and program development to bring interested persons or groups needed information that will stimulate activity in these areas. The Clearinghouse is also concerned with compiling original data that is needed for educational planning. For example, there is frequently a demand for data about various administrative struc-

tures, incidence factors, and personnel needs. Such data will be available through the Clearinghouse.

Finally, a major objective of the Clearinghouse and one in which it has already become involved, is to establish channels for the effective dissemination of information about the education of exceptional children. It is planned that these channels will be established at local, state, and regional levels, utilizing universities, IMC affiliate centers, and local schools districts.

Mr. Chairman, we anticipate that the National Center on Educational Media and Materials for the Handicapped will serve as a vital link in the total Instructional Materials and Media network. As a National Center it will be able to provide public visibility for the unique learning problems of the handicapped. This should be most helpful in encouraging greater participation on the part of other government agencies as well as private enterprise in meeting those problems. We also envision this Center exploring sophisticated systems of instructional technology as they apply to the particular learning needs of handicapped children. In this regard we are delighted to note that the Center will be university affiliated and will thus have as its resource expertise from disciplines outside of education. Finally, we hope that the Center will become an active part of a larger distribution system that will take the findings of research, translate them into pedagogical approaches, develop the necessary media and systems, and most importantly, deliver them to the teacher and the child and help the teacher assess their effectiveness.

Mr. Chairman, initially upon seeing the bill, the Council for Exceptional Children had some reservations about the Center's location being limited to the National Capital Area. However, after more fully examining the implications of the Center and its impact upon the education community, we endorse the location as being in proximity to the Model High School for the Deaf, the Office of Education, and the Clearinghouse on Exceptional Children.

The Council for Exceptional Children supported enthusiastically Public Law 90-247, the Elementary and Secondary Education Amendments of 1967, which expanded the Captioned Films for the Deaf program into a broader program of Educational Media for the Handicapped. The Captioned Films for the Deaf program of which you Mr. Chairman, have been the prime sponsor has been a model in that it unlocked new avenues of learning for the deaf. Similar work is needed for all of the handicapped. Recent research has begun to demonstrate that new learning avenues can be opened for other handicapped children if the appropriate materials and methods are made available. Through prescribed instructional programs the learning disabled child can be taught to read; with improved Braille systems the blind child can better communicate; and with more sophisticated curricula the mentally retarded can become productive members of society. We are pleased to note that S. 1611 extends the authority for the provisions on Educational Media for the Handicapped and that the proposed Material Center will serve all of the handicapped in an equitable manner.

Again, The Council for Exceptional Children extends its support to S. 1611 and commends this Subcommittee for its continued leadership in improving the education of handicapped children. Please be assured that the resources of The Council for Exceptional Children and its members are available if we can be of any further assistance in this matter.

Mr. GEER. Thank you, sir.

In short, we do support the concept of the National Center on Educational Media and Materials for the Handicapped. Some of the reasons have already been given in the testimony just preceding. This center can provide another link in the developing information system on instructional materials and media, which has been underway since the passage of Public Law 88-164.

The instructional materials centers, the regional media centers for the deaf, and the information center which the Council for Exceptional Children operates as part of the ERIC system of clearinghouses, all provide us with components for this system.

We believe that this center would provide an additional unit which would tie in with the rest of the units and would help complete what will some day become a total information system reaching out to educate handicapped children.

In our statement we have indicated several functions of our own clearinghouse which would expect to take the output from such a media center and inform the entire educational community about it. This just demonstrates one of the functions which we would hope that we could help to serve in this regard.

As a national center the proposed media center would be able to provide public visibility for the unique learning problems of the handicapped. In this sense it could demonstrate the need for greater participation from the public and private sectors in meeting the educational needs of handicapped children.

Mr. Chairman, initially upon seeing this bill the Council for Exceptional Children had some reservations about the center's location being limited to the National Capital area. However, after more fully examining the implications of the center and its impact upon the educational community, we endorse the location as being in proximity to the Model High School for the Deaf, the Office of Education, and the clearinghouse on exceptional children.

The Council for Exceptional Children supported enthusiastically Public Law 90-247, the Elementary and Secondary Education Amendment of 1967, which expanded the captioned films for the deaf program into a broader program of educational media for the handicapped.

The captioned films for the deaf program of which you, Senator Pell, have been the prime sponsor, has been a model in that it unlocked new avenues of learning for the deaf. Similar work is needed for all of the handicapped, and we feel that the cost is not too great to pay to extend this to all handicapped children.

Recent research has begun to demonstrate that new avenues can be opened for other handicapped children if the appropriate materials and methods are made available. One thing that has not been clearly said is that there is a carryover from some of the methods in the education of the deaf, for example, to the education of the mentally retarded. In some instances material produced for the education of the mentally retarded, because they come in simple steps, has been able to be translated into materials for teaching language to the deaf. Project Life, which was referred to earlier, has discovered this to be so.

So we advocate the extension of this program to all handicapped children and feel that the media center would be one way to do that.

In closing, the Council for Exceptional Children extends its support to S. 1611 and commends this subcommittee for its continued leadership in improving the education of handicapped children.

Please be assured that our resources are available if and when they are needed.

Senator PELL. Thank you. I give you my assurance that your statement will appear in full. Would you give me, as the new chairman of this committee, your definition of "exceptional children?"

Mr. GEER. "Exceptional children," as we define it, includes all children who require special educational measures in order to be educated adequately.

Senator PELL. So it includes the deaf, the speech handicapped, the blind—

Mr. GEER. It would include all the visually handicapped—

Senator PELL. The mentally retarded?

Mr. GEER. Yes; and, in addition to all handicapped children, we in the Council for Exceptional Children support programs that deal with gifted children.

Senator PELL. That is what I was getting at; and you would also have responsibility for programs for the gifted and exceptionally intelligent children?

Mr. GEER. That is right. This, incidentally, is one of the most neglected areas of education in our country today.

Senator PELL. I could not agree with you more. The changes in our national life and our leadership are not going to be made by the mentally retarded, but by the gifted.

Mr. GEER. The mentally retarded will support the gifted, and similarly, the gifted will make the decisions.

Senator PELL. In the viewpoint of our national life the gifted are probably the most important. In this connection how much of a percentage of the thrust of your work is devoted to the gifted and how much of the thrust of your work is devoted to the nongifted?

Mr. GEER. Well, it would be difficult to define in exact percentages.

Senator PELL. Well, just roughly. A quarter?

Mr. GEER. I would say that in our publication and in other ways in working with children probably 10 percent of our effort is devoted to the gifted, at least.

Senator PELL. Ten percent?

Mr. GEER. Yes. We have one division in our organization, the Association for the Gifted, which works primarily in this area. We print articles and books about the education of the gifted when they become available, and we have quite a few titles.

I believe that 5 years ago I did a survey of our journal, which is entitled "Exceptional Children," and it had published more articles on gifted children in its history since 1936 than any other periodical.

Senator PELL. What is the IQ cutoff for gifted at the top, and retarded at the bottom?

Mr. GEER. The definitions vary, although one common definition has been children with 130 or higher IQ are certainly likely to have greater potential and be able to make great contributions.

Senator PELL. What about the low line?

Mr. GEER. Commonly, up to about 80 IQ is considered slow or mentally retarded.

Senator PELL. Do you believe that we should move ahead with this center in the immediate future, or do you think it can wait a year or two or three or four?

Mr. GEER. I would urge that immediate steps be taken to provide for this center because the production of materials that are needed in the present system is very important. In fact, I think this ought to be considered very carefully in the light of other national commitments which we are making, and some real assessment should be made of what is really important to this country.

Senator PELL. As you know, there is a good deal of discussion in this town and in the Congress about priorities. When you are examining this problem perhaps some of your own efforts should be directed toward urging the executive to move on this quickly. Given the workings of the budgetary function it will be hard to build such a center unless the administration is fully committed to the concept.

Mr. GEER. I realize that. I think it is a matter of reallocating some of the moneys that we spend for defense and other areas to

develop our own citizens. We are particularly aware that the handicapped are growing older every year, and without the proper education that they need. Perhaps we could shoot a few less guns and educate a few more children and get a lot further than we are getting now.

Senator PELL. Thank you very much.

The next witness we have is Mr. Irvin Schloss, legislative analyst for the American Federation for the Blind.

**STATEMENT OF IRVIN P. SCHLOSS, LEGISLATIVE ANALYST,
AMERICAN FOUNDATION FOR THE BLIND**

Mr. SCHLOSS. Thank you, Mr. Chairman.

I have submitted a written statement.

Senator PELL. You have a good written statement which I had a chance to read over the weekend, and I thank you.

If you would like, we will just put the statement in the record as if read, and if you want to digest it—

Mr. SCHLOSS. Yes, I can summarize it.

Senator PELL. Summarize it; that is fine.

(The prepared statement of Mr. Schloss follows:)

PREPARED STATEMENT OF IRVIN P. SCHLOSS, LEGISLATIVE ANALYST,
AMERICAN FOUNDATION FOR THE BLIND

Mr. Chairman and members of the Subcommittee, I appreciate this opportunity to appear before you in support of S. 1611, a bill to amend Public Law 85-905 to provide for a National Center on Educational Media and Materials for the Handicapped.

In supporting this bill today, I am representing the American Foundation for the Blind, the national voluntary research and consultant agency in the field of services to blind persons; the American Association of Workers for the Blind, the professional membership organization of workers, including educators, in the field; Blinded Veterans' Association, the national membership organization of individuals blinded as a result of service in the armed forces; and the National Federation of the Blind, a major membership organization of blind persons. All of these national organizations believe that a university-affiliated national center to coordinate research and development of educational media and materials for handicapped persons and to utilize technological advances on behalf of these groups would be an important asset.

Over the years, the American Foundation for the Blind has designed and developed various educational aids for the use of blind persons. It adapts commercially available materials for touch reading to make them usable by blind persons. All of these items are available for purchase at cost from the Foundation. A few examples are braille slide rules, micrometers and other measuring devices, special arithmetic blocks, the raised line drawing board, and the like. I am submitting for the files of the Committee several copies of our Aids and Appliances Catalogue, which also lists educational games like Scrabble.

In the mid 1930s, the Foundation pioneered the development of long-playing records for use in the Talking Book program for blind persons administered by the Library of Congress. Continuing research in this area has resulted in the development of recorded books and periodicals at sixteen and two-thirds and eight and one-third revolutions per minute with microgrooving, thus increasing the amount of recorded material available at reduced cost.

In addition to stimulating needed social, vocational, and educational research, the Foundation's Research Department has played a key role in stimulating technological research, notably at the Massachusetts Institute of Technology and Stanford Research Institute. This activity has already resulted in the use of computers to produce press braille much more quickly, efficiently, and economically than laborious braille stereotyping methods previously used. Research continues to go forward toward the development of practical guidance devices and reading machines to convert the printed page to audible speech. There are

already prototypes of reading machines which can convert the printed word into braille.

In 1962, the Foundation established its International Research Information Service (IRIS), which attempts to learn of and catalogue all research activity related to blindness and blind persons. Periodically, the Foundation sponsors conferences of scientists from a variety of disciplines for discussion of research in progress as well as continuing research needs. In addition, our staff assists in arranging for the evaluation of devices, including educational aids.

Other specialized agencies in our field also assist in the development of educational materials for blind persons. The American Printing House for the Blind in Louisville, Kentucky, specializes in producing educational materials for blind and visually handicapped elementary and secondary school children. Science for the Blind of Haverford, Pennsylvania, was founded by Professor Thomas A. Benham a blind professor of engineering at Haverford College. It records popular and technical scientific literature on a custom basis for the use of blind students at all educational levels and of blind adults working in various scientific professions. It also develops various electronic and mechanical devices designed to meet the specific needs of blind students in science courses and of blind scientists and laboratory technicians.

Although we know that there is a considerable amount of research activity toward the development of educational media and materials to assist blind and visually handicapped persons, we nevertheless realize that there is still much to be done. The same is undoubtedly true with regard to other types of handicapped persons. We also know that there is research activity in some of these areas financed by the Veterans Administration, Social and Rehabilitation Service, and Office of Education. In addition, research financed by the National Science Foundation, National Aeronautics and Space Administration, and Department of Defense for other purposes undoubtedly have important implications for the handicapped.

We believe that the proposed National Center for Educational Media and Materials for the Handicapped could fill a vital need by coordinating and evaluating existing effort on an authoritative basis, stimulating new activity, evaluating implications of technological developments for programs for the handicapped, and serving as an information resource. We would recommend that the university selected to house the National Center have a full range of disciplines available in its faculty to serve as resources to the center. For example, the National Center should be able to draw upon technological scientists, social scientists, behavioral scientists, biologists, physiologists, as well as special educators. We would also hope that the National Center would maintain a very close relationship with centers for deaf-blind children and with the instructional materials centers.

In conclusion, Mr. Chairman, all of the national organizations I am representing here today recognize the need for the National Center proposed by S. 1611. We hope that this legislation will be favorably acted upon by the Congress.

Mr. SCHLOSS. First, I would like to indicate that in addition to representing the American Foundation for the Blind, which is the national voluntary research and consultant agency in the field of services to the blind, I am also speaking for the American Association of Workers for the Blind. The American Association of Workers for the Blind is the national membership organization of professional workers, including educators, in this field. I am also representing the Blinded Veterans Association, the membership organization of individuals blinded in connection with their military service, and the National Federation of the Blind, the major national membership organization of blind persons. All of these national organizations endorse the establishment of a university-affiliated national center to coordinate research and development of educational media and materials for the handicapped as well as to evaluate the implications of the technological advances of various types for the benefit of handicapped persons.

I might outline what we know is going forward now in the area of development of educational media and materials. The American Foundation for the Blind over the years has designed and developed

various educational aids and various devices to assist blind persons in many different ways. We also adapt commercially available materials so that they can be read by touch and, therefore, be made usable by blind persons. I have submitted for the files of the committee a catalog of the aids and appliances which the foundation sells at cost. Among these are braille slide rules, braille micrometers, and other measuring devices, special types of arithmetic blocks, raised-line drawing boards and the like.

In addition, the foundation pioneered in the development of long-playing records for the talking book program for the blind administered by the Library of Congress. This was back in the mid-1930's; and continuing research, much of it financed through the effort of the Division for the Blind and Physically Handicapped of the Library of Congress, has resulted in the development of slower speed microgroove records so that books and periodicals are now available at 16 $\frac{1}{2}$ rpm and 8 $\frac{1}{2}$ rpm. In 1966, the Congress extended this program to those physically handicapped individuals who could not use normal printed material.

The research department of the foundation, in addition to stimulating social, vocational, and educational research, has also played a key role in stimulating technological research, notably at the Massachusetts Institute of Technology and Stanford Research Institute. This work has already resulted in computerized production of press braille so that braille publications can be produced much more economically and quickly. Also, work is still going forward on guidance devices and reading machines which will hopefully convert the printed word into audible speech. Prototype models have already been devised which will convert the printed word into braille. At present, these are not economically feasible for individual use.

In 1962, the foundation established its international research information service, called IRIS, which attempts to learn about and catalog research activities about blindness and blind persons going on in various parts of the world. Periodically, we sponsor conferences of scientists and others from various disciplines for discussion of on-going research activity and the need for new research.

There are other specialized agencies which are working in this area as well. The American Printing House for the Blind in Louisville specializes in the production of educational materials for elementary and secondary school children. Science for the Blind, of Haverford, Pa., specializes in the custom recording of popular and technical scientific literature for the use of students at all levels in various types of science courses, as well as for professionally employed blind scientists. In addition, Science for the Blind will devise on a custom basis various specialized aids and tools to assist students in their laboratory work and employed blind laboratory technicians and professionals.

In short, we know that there is a lot of research activity going on, but we know that there are still many areas of need as far as research and development of education media and materials for the blind are concerned. We have no doubt that the same would apply for other types of handicapped persons. We believe that the establishment of the National Center on Educational Media and Materials would serve a vital need by coordinating existing research and development activities, stimulating new activity, evaluating the implications of technological progress for adaptation to the needs of the handicapped, and serving as an information resource center.

We would like to recommend that the university which houses the National Center have a full range of disciplines available on the faculty to serve as resources to the Center. There should be technological scientists, social scientists, behavioral scientists, biologists, physiologists, as well as special educators—a wide range of individuals with various skills and attributes that could be called upon to both evaluate and advise on all aspects of the development of educational media for the handicapped.

We would also hope that the Center would have a close relationship with the new centers being established for the education of the deaf blind, which have research authority in the enabling legislation. We believe that there is a prime need for attention and development of educational aids to assist this group in particular. In addition, we would hope that there would be a close relationship with the various instructional material centers that are already in existence and the new ones to come.

In conclusion, Mr. Chairman, I would state that the four organizations I am representing endorse enactment of S. 1611 as legislation which would meet a need in the educational media and materials field. We hope that the Congress will take favorable action on this legislation.

Senator PELL. I thank you very much, indeed. What you basically are saying here is that we are seeking, in the field of education for the handicapped, a systems approach where we can find whatever the common denominator is for success or failure of a program, and that with this experience and from this Center we will be able to project the results or the fruits of this learning?

Mr. SCHLOSS. Yes, sir. We believe, for example, that some of the things that are going on in the development of media and materials for the blind would be of value for other types of handicapped persons. This was true of the talking book program, and this probably would be true of work going forward for other types of the handicapped. I am sure that we could all gain from knowing authoritatively just what is going on and having it available—the availability of this authoritative interchange focused through the National Center.

Senator PELL. For instance, in your own experience, do you know braille, do you read braille?

Mr. SCHLOSS. I can. Not as fluently as I would like, but I can read braille.

Senator PELL. Has the technique in teaching braille changed in the last few years, or does it remain static?

Mr. SCHLOSS. That I cannot say authoritatively. I believe that there are better books available now for teaching braille to adults who lose their sight, than were available in the past. In the past, the same techniques were used as were used to teach young blind children.

Senator PELL. I do not want to interrupt you, but there are five or six particularly welcomed guests in the hearing room, they are the Future Farmers of America from Ponagansett High School in Foster, R.I., who are attending the hearing and, as Senator from Rhode Island, I would like to welcome them here and hope that they have a good stay in Washington.

In the course of your testimony, Mr. Schloss, there is an indication that work on education media research is being done by the Veterans' Administration, the Office of Education, Social Rehabilitation Service,

the National Science Foundation, and NASA in the Department of Defense.

Do you think there should be some formal provision in the bill providing for coordination between these different agencies of the Government?

Mr. SCHLOSS. I think this would be very helpful, coordination in the sense of pulling together what is going on in these agencies. With regard to NASA, the National Science Foundation, and the Department of Defense evaluating the implication for the handicapped of those things they are doing for other purposes. I do not mean coordination, of course, in the sense of administering those programs, but of becoming aware and making available information about what they are doing. For example, the Veterans' Administration, we know, is financing research activity on the development of guidance devices and reading machines for blind persons. This we know is being done, and this is bound to have some usefulness.

Senator PELL. Thank you very much, indeed, Mr. Schloss. Yours was a good statement, and I appreciate your willingness to come here.

Mr. SCHLOSS. Thank you.

Senator PELL. Our next witness is Mr. Robert Keeshan, producer and writer of "Captain Kangaroo" of the CBS television network. In fact, he is Captain Kangaroo.

STATEMENT OF ROBERT J. KEESHAN, PRODUCER-DIRECTOR, CBS TELEVISION NETWORK, BABYLON, N.Y.; ACCOMPANIED BY THOMAS COLEMAN

Senator PELL. Is there any violence in your program?

Mr. KEESHAN. I think not, Senator. I believe we are relatively free of that sort of thing.

Senator PELL. That is a relief.

You have a statement here. You can proceed as you will. If you wish to, we will put it in the record, but I would like to leave the floor open to you and your views.

Mr. KEESHAN. Thank you.

Mr. Chairman, I would, with your permission, like to introduce my associate, Mr. Thomas Coleman, who is the executive director of the National Association of Hearing and Speech Agencies.

I would, if you would like, allow this to go into the record just as it has been submitted to you.

Senator PELL. It will be done.

(The prepared statement of Mr. Keeshan follows:)

PREPARED STATEMENT OF ROBERT J. KEESHAN, PRODUCER-WRITER, CBS TELEVISION NETWORK

Mr. Chairman and Members of the Committee, thank you for permitting me to come here today to express my thoughts on Senate Bill 1611, which provides for a National Center on Educational Media and Materials for the Handicapped.

I am Robert J. Keeshan from Babylon, New York. For 13 and ½ years, I have been a pioneer in using an educational and informational format for children's programming via the media in my role as Captain Kangaroo on CBS Television. I also have served as producer of this program.

Besides my experience with educational media, I have had a long and great interest in the welfare of handicapped persons, particularly those with hearing and speech problems, including the deaf. My interests and experiences with deaf individuals have been stimulated through several personal experiences:

1. I am a close relative of a young man who has been deaf since birth and who, fortunately, will graduate from Gallaudet College in the next few weeks with a bachelor's degree in library science. My close association with this young man over the years has provided me, I believe, some understanding of the difficulties involved in providing good educational experiences for the handicapped individual.

2. I am a member of the Board of Directors and President of the Suffolk County Hearing and Speech Center on Long Island and have played an active role in the planning and development in that institution's programs for the communicatively handicapped, including the deaf.

3. I am a member of the Board of Directors of the National Association of Hearing and Speech Agencies and, through this involvement, have attempted to stay reasonably abreast of the trends and the needs for educating the hearing and speech handicapped individual.

As some of you may know, my CBS program is used to educate and communicate information on a variety of subjects for children. And like any other audiovisual medium, our purpose is not to replace the ideal teaching/learning situation provided by the personal relationship of a teacher with a student, but rather, in these times of professional teacher shortages and the concomitant explosion in the amount of knowledge to be taught and learned in all subject areas, our job is to assist teachers and parents to expand both the breadth and depth of the educational experience. In fact, for the past 26 weeks, our program has been collaborating with the Bank Street College of Education in an experimental program which uses a structured curriculum designed to educate the preschool child in essential concepts through the entertainment format of Captain Kangaroo. From such experiences and experiments over the years, we have become quite aware of the value of the media in educating and informing people of all ages, including the handicapped.

Those of us in the media fields have received great personal rewards by assisting teachers to enhance the educational experience by taking filmed, taped or live programs into the classroom or home in order that the student might have the advantage of seeing the wonders of space exploration, of agriculture, of a hospital at work, or perhaps other types of enrichment in programs featuring art or music. And while we know the advantages of expanding the view of the world in which we live for the child in the regular classroom, we are even more aware of the need for using the media to the advantage of the disadvantaged handicapped person.

Gentlemen, let me state here that I support the need for this Center to serve all handicapped persons. However, I essentially will confine my remarks to the needs of those with hearing, speech and language handicaps, including the deaf.

You see, when a child is born, the first responsibility of the physician is to ascertain whether it is a normal or damaged baby. One of the important considerations in this process is attempting to detect any difficulty in hearing * * * this because hearing is the very earliest learning tool for a human being. As a child hears, it learns. As it learns, it develops language and comprehension. This, in turn, is expressed via the speech mechanism. Can you imagine the extreme difficulty that each of us in this room would have had without the opportunity to learn in our earliest days from the aural stimulation initially provided by our mothers and then by other members of the family and friends as we progressed through the first few years of life?

Well, through early identification of a hearing problem . . . often accomplished today before an infant leaves the newborn nursery . . . we are able to begin remedial work to make it possible for a hearing handicapped baby to have maximum opportunity for ultimately competing in this hearing world. Depending on the nature and extent of a hearing loss, we sometimes are able through amplification to use an aural approach for stimulating a child's hearing and thereby permitting it to learn, to develop language and to comprehend. But even in those cases where the ear does play a major role in the learning process, we still make use of visual processes for reinforcing as well as expanding his opportunity to learn . . . just as we have done for many years for the normal child. For the individual with severely impaired hearing . . . and, as you know, there are thousands of these throughout our land . . . we make a judgment as early as possible as to the feasibility of using the aural method of training and, according to our findings, may have to turn immediately to something more comprehensive which is based almost exclusively on a visual process of teaching.

In other words, we try to accept the fact that each human being when born is a computer . . . and that we must program this computer with input which can result in language, learning, comprehension and other factors leading to a productive output on the part of our human computer later on in life. Because we

live in a hearing and speaking world, we initially attempt to provide oral programming for the individual. If this cannot be done, then we immediately utilize a visual method of programming. The important consideration is to provide input to our human computer. For our very special patient . . . the deaf child . . . we absolutely must and do recognize the need for well-programmed, audio-visual materials in order to give him a reasonable opportunity to compete productively and socially later on in life.

Unfortunately, as we appeal to our federal, state and voluntary agencies, including educational institutions, for a supply of educational materials and methods to assist us with the teaching and learning process as far as the handicapped individual is concerned, with rare exception our attempts are futile. As all of us know, such materials are costly in terms of their initial programming and production. It is practically impossible for us to acquire enough financing at the local level to produce such materials . . . and thus far the picture has been quite similar at the national level. Yet, if we are to honor our obligation and stated mission to assist those with handicaps . . . such as the hearing, speech and language impaired . . . then we must have available the assistance provided directly and indirectly through the intent of Senate Bill 1611.

While my remarks thus far have concentrated on the need for the development of the media to enhance the educational experience of handicapped children . . . I do not mean to infer that this would be the only value of the Center proposed in S-1611. For instance, we know from limited experience that a well-programmed cartridge film series could be used to teach lipreading to mature individuals of various ages who are facing the problem of a severe, irreversible hearing loss and who need such training in order to continue in society as a productive and adjusted individual. We also believe that there is an excellent opportunity for a Center such as you have designated in S-1611 to develop the methodology and programming for activities in the area of speech conservation to prevent the deterioration in speech that usually occurs when one has suffered a meaningful loss in hearing. The opportunities for research in such a center would be boundless. Think with me of the excitement that could be caused for those with severe hearing loss if the technology available in the electronics industry was thoroughly explored and put to work in developing a device to permit the handicapped to receive, in coded form, the sound track from a major Hollywood production, or from an educational film, and even from the audio portion of television. Besides the educational value from such developments, a rewarding side effect would be our knowledge that the deaf individual, for the first time, would have direct advantage of the safety messages made available to the rest of us via the media in times of local or national peril.

And when this bill, hopefully, has become law as a result of the deliberations of the Senate and the House of Representatives, I would further urge you to insist that a competent, multi-disciplinary council or board of directors be established and empowered to guide the activation of and operation of this most worthy center. Included in this should be those who have demonstrated competency in the various professions concerned with education, and particularly special education related to the handicapped individual. But I also plead for you to consider the inclusion of professional people from the media world . . . those who have displayed their obvious competency in planning, programming, directing and producing films, television shows and other audio-visual experiences.

Those of us who have been directly or indirectly involved in working with the communicatively handicapped individual have found many rewards from our efforts. And one of the greatest is the fact that we know that the vast majority of those we serve in the most severely handicapped portion of this population . . . the deaf . . . have proven themselves to be intelligent, energetic and, whenever an employment opportunity is presented, productive citizens of this nation. However, we know that many of these handicapped individuals never reach their potential in the employment market or even socially because, to date, we have not had available those tools necessary for providing the information and/or experiences mandatory for anyone to achieve his maximum either educationally or in his field of employment. There is no doubt in our minds but that the passage of this bill will do much to enhance the armamentarium we need for increasing both the opportunity as well as the productivity of the handicapped in this nation.

Thank you.

MR. KEESHAN. I would merely emphasize several points. I think my personal background as a performer and as a producer, and especially in a program which has experimented with education of

young children, particularly preschool children through the entertainment media, along with my avocation as a director of the National Association of Hearing and Speech Agencies, and as the president of a Hearing and Speech Center makes it easy for me to bring together much of what we see as possibly being accomplished by this bill; that is, the application of modern techniques and media in the education of the handicapped. Of course, we speak from our point of view, with particular reference to those who are handicapped in terms of hearing, speech, or language disorders.

I think most of the points that I would make have been very well outlined in this statement. However, I would like to emphasize that the one aspect of the proposed center which excites me most is the great opportunity it offers for research and development of tools for education.

One of Dr. Gallagher's associates talked about the sound studio and the film studio and the difficulty of erecting same. That would frighten me, I think, too, knowing very well the tremendous technology and expense involved in such a structure. But I see the possibilities here for research and development not so much in the area of production of materials, but in the area of planning, designing, developing and testing these materials.

The Center might, for example, address itself to the problem of development of language arts for the preschool deaf child. It might then work with the tools or the mechanism, whatever it might be, that would be useful in this area. It would develop a prototype and test it, and then modify it in whatever way testing indicated it should be modified. Then this tool would, so to speak, go into the market, and the Center at that point would not be involved in reproducing tools or making them available to the Centers. That would have to be financed and done in quite another way. But I think that that aspect of it excites me because there are so many areas of new technology, of audiovisual techniques that should be applied to the habilitation and rehabilitation of the deaf and the sound deprived, the hearing deprived. I think we are really far behind in our technology, and this Center would make it possible for us to catch up.

Senator PELL. In view of your own really tremendous contributions to positive programs for television, productive ones, beneficial ones, I am wondering if in any of your experience in doing films of this sort you have participated actually in the production of a film for the handicapped.

Mr. KEESHAN. No, I have not. I have only been involved in working with hearing and speech problems the last few years. But I have given a lot of consideration to this possibility and we have had many discussions about it with professional people.

Also, I have had a great personal experience with my nephew who has been deaf from birth. I believe this has made it possible for me to become very knowledgeable of the needs, having lived quite intimately with him and watched him develop. Very happily, he is well educated.

This is a young man who might have been institutionalized 40 years ago and I think we all feel a certain pride that we are not institutionalizing such people any more. But I wonder if we should feel the amount of pride that we do feel because many of the children, although not institutionalized, are given over to custodial care because they have

not been trained and educated to be self-sustaining individuals. I think this is where we have a long way to go, and the Center would help us.

Senator PELL. Does your associate care to give any statement?

Mr. COLEMAN. I am just here as a resource person, Senator, thank you.

Senator PELL. Mr. Keeshan, what is your view with regard to the need for this Center, and the priorities for going ahead? Do you consider the need great, or moderate?

Mr. KEESHAN. Well, working at both the national level and at the direct service level with my small local hearing and speech center I can tell you the need is immense and that we really must have the Center, I think very quickly.

We are falling short, we are short of personnel, the tools we need, and the tools developed by the Center will help to augment the shortage of personnel that we do have. It will improve the quality of the educational process for the handicapped, and I will tell you that I can only support it as strongly as possible.

I think there is a great need, and I liken it to the analogy that you made earlier, Mr. Chairman, when you talked about the pebble being dropped in the water. I think it is a tiny pebble and that it will have many ramifications in terms of educating the handicapped.

Senator PELL. I think that I would agree with you personally, and I think the administration must be convinced of this, and I must say that your network is doing an excellent job of educating the administration, and the high command within the administration on some of these priorities, and getting them adopted. Let us hope they will support this bill. I think they are very excellent and competent men. The caliber of Mr. Shakespeare and Dr. Stafford as exceedingly high, and that is another reason why I am very glad to see you here.

Thank you very much, Mr. Keeshan.

Mr. KEESHAN. Thank you, Senator.

Senator PELL. Our next witness will be Mrs. Marguerite Hastings, chief of program services for the mentally retarded, Maryland State Department of Mental Hygiene, Baltimore, Md.

STATEMENT OF MRS. MARGUERITE J. HASTINGS, CHIEF OF PROGRAM SERVICES FOR MENTALLY RETARDED, MARYLAND STATE DEPARTMENT OF MENTAL HYGIENE, BALTIMORE, MD.

Senator PELL. Welcome, and proceed as you will. You have a nice short statement, so you might read it. It is really just two pages, which is really quite a triumph.

Mrs. HASTINGS. It takes longer to make it short. I say, it sometimes takes longer to make a short statement than a long one.

Senator PELL. Like Woodrow Wilson once said, when he was asked to make a speech, that if it was a short one he needed longer, about a week, to prepare it but if it were a long one he could start speaking right away.

Mrs. HASTINGS. Senator Pell and members of the committee, it is with great humility and appreciation that I appear before this committee to support Senate bill 1611.

I am Marguerite J. Hastings, a past president of the American Association on Mental Deficiency, a fellow of AAMD, and a member of

its executive council. At present I am chief, program services for the mentally retarded of the Maryland State Department of Mental Hygiene.

The field of mental retardation has long needed a central clearing-house for educational media, materials, and curriculums since it is related to all handicapping conditions whether it is the result of neurological damage, economic deprivation, auditory, visual, speech dysfunction, or emotional disability.

Senator PELL. Excuse me. When you say as a result of economic deprivation, by this do you mean that some of the mentally retarded children are that way as a result of hunger or of poverty?

Mrs. HASTINGS. Definitely.

Senator PELL. Thank you. That ties in with the work of another committee that I am a member of.

Mrs. HASTINGS (continuing). Or emotional disability.

I see the National Center of Education Media and Materials for the Handicapped as written in Senate bill 1611 providing this opportunity for such a clearinghouse. That is, if this Center is intended to coordinate and disperse the results of the past, present, and future endeavors and to offer supplementary services to the multitude of programs presently supported by the various bills related to the education and training of the handicapped child and adult whether at home, in a day program, or a residential center.

I am pleased to see that Senate bill 1611 would cover contracts not only to publicly operated centers but also to nonprofit private agencies.

Again I would like to reiterate my support for the intent of the Senate bill 1611 but at the same time question the manner in which it is expected that the bill will be implemented in order to assure the following:

1. Coordination, administration, and supplementation with existing special education materials centers presently operating on a regional and local level.

2. The procurement and dispersement of special educational media developed through past, present, and future federally funded projects encompassing not only those under ESEA but also those developed under hospital improvement projects, inservice training grants, and summer work experience and training grants.

3. Coordination and dispersement of all types of handicapped-related media including media to be utilized directly by the handicapped persons, as well as media to be used in training the instructors of the handicapped.

4. The methods to be used in delivering an awareness of the existence of this center to the practitioners for whom the materials in this center will be and have been developed.

5. The inclusion in this center of materials that have been and will be developed by education-related services such as psychology, audiology, speech pathology, sociology, physical therapy, music therapy, recreational therapy, social services, vocational training, and other services, all of which have developed teaching and training media that are related and essential not only for the retarded but for all handicapped.

I want to thank you for the opportunity to appear before you in support of this bill, which will enable us to consolidate present and

future education and training media, coordinate and disperse existing and future knowledge, and provide an environment where rapid growth and utilization of educational technology may take place.

At the same time, with educational materials and curriculums provide a more rapid means to train and develop the educational and related manpower needed in this field.

Senator PELL. Basically, then, Mrs. Hastings, what you are saying is that these five points really are guidelines that should be observed?

Mrs. HASTINGS. That is the reason, that if these are guidelines then we can insure for the country, I believe, through this center the coordination of the various personnel, as well as assuring the bringing together of these materials and dissemination in a way that they will be more accessible to those practitioners needing them.

Senator PELL. Is your confidence in the administration's handling of these problems, and that is Dr. Gallagher's office, such that you feel they will basically be guided by these key steps if the bill is passed and we go ahead, or do you think that they should be more specifically written into the legislation?

Mrs. HASTINGS. I would hope that some of these things would be specifically written into the legislation. There are too many times that the intent of legislation is not necessarily carried out as it is interpreted by various agencies in its implementation.

Senator PELL. In other words, you would like to see the bill, in its present form, but with a little more flesh and bones, and a little more direction?

Mrs. HASTINGS. That is right, a little more definitiveness.

Senator PELL. I think your thought has some merit, and I would hope that the majority and the minority counsel would probably move in that direction.

Now, your statement also mentions contracts with nonprofit agencies, and I was wondering what your viewpoint was with regard to including contracts with profitmaking agencies, as is done in certain other programs.

Mrs. HASTINGS. I believe that in most instances I would see nonprofit groups, and yet at the same time I think that we need to utilize more than we have business media who have the expertise in developing services, as well as at times are able to develop and deliver services at less cost than some States and nonprofit groups do.

Senator PELL. Thank you very much, Mrs. Hastings.

We have the honor of having with us, the chairman of the full committee, Senator Yarborough.

Senator YARBOROUGH. Do you think, Mrs. Hastings, that service is done these handicapped children by postponing this construction to sometime after fiscal 1971? If it is authorized and if we put this off as recommended here by the administration, to think about until sometime after fiscal 1971, that would mean construction sometime in fiscal 1972 or 1973, or something like that. We do not know when it would be reached. Do you think the whole objective of this body of legislation, the program for handicapped children, will be served by the postponement of this construction?

Mrs. HASTINGS. My own opinion would be that the implementation of this bill should be given high priority in order to utilize and capitalize on the materials that already have been developed and are not now usable to their fullest extent because of their lack of centraliza-

tion and the lack of coordination between the various programs and the dissemination of materials, so that I think that this priority, to bring these materials together in one center, is essential to move ahead as fast as we can, at a faster rate, and as you point out, because of the time of construction, even if started now it is far ahead of time.

Senator YARBOROUGH. I believe you are aware of the fact, Mrs. Hastings, that we in the Congress cannot wait for the support from the Bureau of the Budget to enlist aid for the handicapped, regardless of the administration. We have had objections from past administrations for certain handicapped bills, and they were passed to aid the handicapped. I think you are conversant with that.

We had objections from the Bureau of the Budget to the creation of this Bureau of Education for the Handicapped. Do you recall that?

Mrs. HASTINGS. Yes, I do.

Senator YARBOROUGH. We in the Congress passed it over the objections of the executive department. We created it, and I am proud that we in the Congress did, because the evidence we have had at previous hearings was that of 50 million children of school age in America, five and a half million have readily ascertainable mental or physical handicaps, mental retardation, or defects of vision, or hearing handicaps.

Mrs. HASTINGS. Senator Yarborough, this is certainly so, and as we look for the development of this material, particularly in the handicapped, we see a large percentage of them not being served, and then the question of the budget.

I see long range that this clearinghouse would be a saving for the future as it coordinates and brings together so that from a budget point of view I think that this would be a long-range economically based approach to providing services.

Senator YARBOROUGH. This would be just good management, in other words?

Mrs. HASTINGS. Just good management and administration.

Senator YARBOROUGH. I think we in the Congress are determined to see that this aid for the handicapped is not diminished and not cut away. The handicapped have had this budgetary handicap superimposed upon them and have made it more difficult for them.

In addition to that five and a half million handicapped school-children we have estimates from people informed in the field, doctors, pediatricians, educators, and others, that there are large numbers of children with learning difficulties. They are not handicapped in the sense of mental retardation, or blind or deaf, or some other handicap of loss of the hands or something. They might be children of high IQ, but due to a neurological disfunction, or some other cause they have difficulty with mental coordination and have learning difficulties. We have probably 7 million of these 50 million of our children with either handicaps or learning difficulties, and these programs I think are very vitally needed.

Mr. HASTINGS. Well, in line with that, when you are speaking of learning handicaps from various points of view, again, many of these children developed added handicaps of mental retardation or emotional disturbance because of lack of appropriate programs and materials being developed.

So, again, this kind of program is a preventive measure to ameliorate and lessen further handicapping conditions.

Senator YARBOROUGH. We have had many programs for the handicapped initiated by Congress. People talk about a rubber stamp Congress, but the Bureau for the Education of the Handicapped was initiated in the Congress and it passed over executive objections. Secretary Gardner personally lobbied against the creation of the Bureau for the Handicapped. The cold war GI bill, under which some 6 million discharged veterans not eligible to go to school, was passed after an 8-year fight over the objection of three Presidents and the Bureau of the Budget. The bilingual education bill was passed in 1967 over the objection of the executive department. So the fact that the executive department now objects to the building of this building at a minimum cost for the amount of money being spent to aid millions and millions of handicapped does not impress me. It is no new thing to this committee to find the executives trying to prevent the Congress from doing something for children who have handicaps either of language—as in bilingual children—or the physically or mentally handicapped.

Mrs. HASTINGS. Senator Yarborough, may I make one point? You mentioned children. I specifically in my statement have said children and adults, because particularly in working with any handicapped individuals their needs for education and training frequently extend beyond the usual age that we speak of for education of children, so that this, too, should be given consideration.

Senator YARBOROUGH. Well, I am glad you pointed that out because the five and a half million I mentioned referred only to children.

Mrs. HASTINGS. It is not only that they did not receive it, but many of them are not able to utilize it until late adolescence or early adulthood, so that these measures need to be extended to include those times when it is still needed.

Senator YARBOROUGH. Of course, time for expansion of these measures is needed now if we want to make these people fully productive citizens for their own lives primarily, but for the good of the whole Nation as well.

Mrs. HASTINGS. Right.

Senator YARBOROUGH. Thank you.

Senator PELL. Mr. Schweiker.

Senator SCHWEIKER. No questions.

Senator PELL. Now, would Dr. Gallagher be kind enough to come forward again, please?

STATEMENT OF DR. JAMES J. GALLAGHER; ACCOMPANIED BY DR. EDWIN W. MARTIN; DR. FRANK B. WITHROW; AND DR. JAMES MOSS—(Resumed)

Dr. GALLAGHER. Yes, Senator.

Senator PELL. Senator Yarborough, you have a statement, I believe.

Senator YARBOROUGH. Yes. I wanted to add something, but first, Mr. Chairman, I want to commend the chairman of the Education Subcommittee for his authorship of this bill and tell him how pleased I am to cosponsor it with the distinguished Senator from Rhode Island. Having served on the Education Subcommittee since 1958, for

more than 11 years now, I have put in more work as a Senator on education than any other field. So, it is a happy privilege of mine to continue to serve on the Education Subcommittee this time under the leadership of the distinguished Senator from Rhode Island and to cosponsor this bill with him.

I just wanted to mention the fact that in the short time since 1966 the Congress has passed legislation authorizing more than 10 programs for the handicapped children, and authorizations which could provide more than \$400 million in fiscal year 1970 if the Congress will step up and appropriate the money, as I think they should.

These programs include title VI of the Elementary and Secondary Education Act, the creation of the Bureau of Education for the Handicapped, the early childhood educational program, the special amendments to benefit handicapped children in title III of the Elementary and Secondary Education Act, and in the Vocational Educational Act we passed last October, and the Higher Education Act and a number of others.

If I am not mistaken only three small programs for which there is appropriated this year less than \$2 million, have been proposed by the executive branch, just \$2 million.

Senator PELL. Excuse me, there is the ABM Safeguard proposal.

Senator YARBOROUGH. I was speaking in the field of education. I was not including in this, Mr. Chairman, the \$3 billion a month we spend on the war in South Vietnam, the \$36 billion a year we spend on the war in South Vietnam, the more than \$100 billion we have spent up to this time on the war in South Vietnam, more than any other war in our history except World War II, while our domestic education, health and poverty, and the narcotics problems, and all of the other domestic problems of this country are swept under the rug. I was saying here that out of this \$400 million a year authorized for teaching and training and equipping for life the millions of handicapped children, only about \$2 million is appropriated this year that came from recommendations from the executive branch.

This aid to the handicapped children of America originated in the Congress and was put through by the Congress over the objection of the executive branch of both parties. I speak a word here for the Congress of the United States as being the leading, the leading branch of our Government in care for the handicapped, whether it be physically handicapped, whether it be language handicapped, as the bilingual education or for our veterans who are handicapped by years of service overseas, while the very Defense Department that sent them there came up here for 8 long years and fought the cold war GI bill to try to prevent them from getting an education after they got back.

Now, I want to say this, the Regional Resource Centers, the deaf and blind proposal, and the information and recruitment program are illustrations of these programs. These were ones that the executive department did recommend, the only three, but in all of the rest of these programs for the handicapped, some 10 of them, the Congress supplied the initiative, the leadership with regard to recognizing the need and reacting to it in a timely way.

On the basis of this record it would be hard for this committee to wait for the executive branch to come forward in the fiscal year 1971 or some other vague, indefinite year in the future, to recommend this.

I say this with particular regard for the policymakers in the budget area, as I realize that those of you who are professionals in education for the handicapped frequently are not able to make the final decisions in these matters.

Recently I have been asked by some representatives of the press, asked to comment on the fact that the people in the Budget Bureau have a kind of a feeling that they are better educated and have higher prestige than the other members in the other executive branches of the Government.

I told them that that has not been my experience, that I did not know about the education, but they did not have more prestige with me because they are always fighting progress for the human race that I am fighting for. I find people in other branches of the Government with less objections to progress for the human race than those in the Bureau of the Budget.

The support I want to point out, of this bill, is bipartisan, that the cosponsors include Mr. Javits, Mr. Murphy, and Mr. Prouty of this committee. This is a bipartisan measure, and I think it is like many of these other educational measures that we in the Congress have initiated and put through, and we will just have to pass it over the executive objections.

Senator PELL. Mr. Chairman, in view of your remarks on the budget, what is of interest to me is the point that the senior Senator from Wisconsin has made, that out of the 300, I think it was 300 professionals in the Bureau of the Budget, only 10 percent, or a small number of that sort are concerned with the Defense Department appropriations screening, while the vast majority of professional employees, about 90 percent are concerned about screening the other programs of the Government.

Senator YARBOROUGH. In other words, they have 10 that reduce the military expenditures, which is over half of the budget, and some 290 to cut the people down. Ninety percent are engaged in cutting down services to the American people. Well, they have been pretty successful at that. And the Bureau in the present fiscal budget, 66 percent is devoted to military and the cost of past wars, and 34 percent to all of the other activities of governmental activities of the American people.

Dr. Gallagher, as I read your statement I do not find any objection to this center until I get down to the last two paragraphs, and that is mainly on timing.

Dr. GALLAGHER. That is correct, Senator.

Senator YARBOROUGH. You think it is too early to get it out in 1971, but what assurances do we have that there will not be an even more stringent budget in the next fiscal year?

Dr. GALLAGHER. That is always a problem, Senator.

Senator YARBOROUGH. I believe from reading your statement that you have got more budget problems than you have problems of your own ideas, but I am not asking you to comment on your secret thoughts here. You are a public officer and you are a part of the executive, and we in the legislative are not bound to the executive.

I wish the American people knew how much initiative was exercised by the Congress for progress of the American people. I could mention many things here—the Teachers Corps, that started here in the Congress and was opposed downtown. There was one thing, though,

that I call the presidential syndrome. I have noticed in my 12 years in the Senate, and it is 12 years this month, ending this month, that very often a good proposal will come up to the Congress and under-cover the administration's lobbyists, whatever administration, whatever party, move to but it down. If they are really for it, they get it cut down that year and the next year they come back and recommend it and say they invented it. I call that the presidential syndrome.

It happens year after year.

Senator PELL. It is nonpartisan too.

Senator YARBOROUGH. And it is nonpartisan, as the chairman says.

Now, President Kennedy advocated that in his campaign for the Peace Corps, but it had been advocated in the Congress here by the Congressman from Wisconsin before that, so not all ideas originate with the executive and not all achievements are achievements of the executive. We in the Congress seldom get credit. But I intend as co-sponsor of this bill, this bipartisan bill, to continue to fight for the construction and direct authorization, but the harder fight is in the Appropriations Committee.

As you know, the fight before the Appropriations Committee is much more difficult than the fight before this committee. I regard this as the most progressive committee in the Senate, as shown by this body of legislation that I have mentioned and the aiding of the handicapped with more than \$400 million authorized this year. But I am on the Appropriations Committee, and I am 23 out of 24. I am the low man, almost, on the totem pole there, and it is very much more difficult to get money appropriated after the Congress says it is needed and authorizes it than it is to get the authorization.

Unless you care to comment further, Mr. Gallagher, that is all I have to say.

Senator PELL. I think Senator Schweiker has a question.

CONTRACTS WITH PRIVATE AGENCIES

Senator SCHWEIKER. Thank you, Mr. Chairman.

Dr. Gallagher, in the bill, S. 1611, on the second page under paragraph B it authorizes contracts with public and nonprofit agencies for demonstration projects.

Now, a lot of the other legislation does include profit as well as nonprofit agencies if the Secretary sees fit. Do you feel strongly one way or another as to whether it is wise to include any authorization authority to deal with profitmaking as well as nonprofit public agencies such as is written in other education bills, or is there some reason that you would be opposed to that in this case?

Dr. GALLAGHER. No, I do not think we would be opposed to extension in that regard. It seems to me that we have the obligation to reach out and get all of the resources that are available in this area to help develop these programs.

So, I would not think that we would have objection as to that point.

Dr. MARTIN. We now have similar authority to contract with private enterprise under the captioned films bill itself and also under the research and demonstrations authority, so this would not be a new precedent.

Senator PELL. I think there was some discussion of this point in the original passage of the captioned films bill, and my recollection is that this was one of the thoughts that was well studied.

The meeting of subcommittee will adjourn at this time.

The record will stay open until May 1, or later, if any member of the subcommittee wishes pertinent material inserted.

(The material referred to follows:)

THE LIBRARY OF CONGRESS,
Washington, D.C., April 21, 1969.

HON. CLAIBORNE PELL,
U.S. Senate, Washington, D.C.

DEAR SENATOR PELL: A National Center on Educational Media and Materials for the Handicapped, as proposed in S. 1611, would help fill a need with which this Library has long been familiar. For the past several years our Division for the Blind and Physically Handicapped has been cooperating with various state and regional centers. Coordination of the use of all available resources and of the development of new and more effective materials is a necessity in meeting and requirements of handicapped persons.

The Library of Congress is in favor of the proposed national center and will cooperate in every way possible to help provide effective service.

Sincerely yours,

L. QUINCY MUMFORD,
Librarian of Congress.

PREPARED STATEMENT OF DR. WILLIAM D. JACKSON, DIRECTOR, SOUTHERN REGIONAL MEDIA CENTER FOR THE DEAF, UNIVERSITY OF TENNESSEE, KNOXVILLE, TENN.

For too long, the American public has inaccurately equated quality of instruction with quality of the teacher—and the teacher has been judged largely in terms of minimum standards for certification with promotion based on tenure, additional college courses, years of teaching experience, and other inept measures. Even textbook adoption has been based on degree of classification and standardization of instructional materials to be provided each grade level. It has been erroneously assumed that every teacher will teach a given subject in much the same way and that every student can be fitted into a standard classroom situation. Traditionally, schools have been organized for group instruction with definite time periods allocated for specified learning tasks. It is inconceivable that a great nation which is spending vast sums of money to send men to the moon continues to torture its children in egg-crate buildings and stultify their natural intelligence through use of obsolete instructional tools and techniques invented by the ancient Romans and Greeks. Visit a typical public school, particularly a residential school for handicapped children, and you will see a door opening into a long dark corridor, a row of windows along the outside wall, teacher's desk at the front of the room, identical student desks and chairs (the same size and height, for big or little boys and girls, designed to last a lifetime, comfortable or not), classrooms too hot in the summer and too cold in the winter, an endless and unvarying pattern of desks neatly arranged for thirty to thirty-five pupils, chalk-boards, a few maps perhaps, a shelf holding the required textbooks and some related library materials.

Fortunately, educational progress and improvements are being made, though slowly and randomly in many instances. For the majority of the handicapped population, however, the future is bleak indeed. The benefits of modern technology are not being made available to them or to their children. The disparity between what is possible today and what could be provided tomorrow is nowhere more evident than in educational programs for the handicapped. Only recently has legislation provided support for preschool education of the handicapped, Captioned Films for the Deaf, media services, and a wide range of research and training activities which are directed by the Bureau of Education for the Handicapped, United States Office of Education. Outstanding leadership at policy-making levels has brought about an awareness of the necessity for greater financial support at all levels—national, regional, state, and local.

Perhaps the greatest barrier to acceptance of any major innovations in education for the handicapped is the reluctance of taxpayers—even concerned parents and educators—to discard inadequate organizations for administration and depend-

ence upon limited resources. The complexities of problems associated with education of handicapped children are manifold. Implementation and new approaches are often superficial and reflect an absence of expertise in developing components for a totally new instructional system in terms of objectives, procedures, materials, media, and staff. Whether the new programs will actually provide a viable model and set firm scientific and technological foundations for instructional practice will depend largely upon the leadership of these programs, the staff selected, the policies and innovations adopted. New approaches and methods of communicating an idea, a problem, or a task are mandatory if handicapped children are to compete with normal children. There is sufficient evidence that some students can learn quite well through independent learning efforts while others need highly structured teaching-learning situations. Given various types of resources, teachers can find ways of modifying the instruction to fit individual needs, particularly for the handicapped child requiring specialized instruction. Each student should be assured that alternative ways of learning are available to him and he should be encouraged to explore a range of possibilities. Educational programs must be developed which provide every pupil with successful learning experiences in the realm of ideas and self-development. There must be major changes in the attitudes of students, teachers, and administrators along with sweeping revisions in teaching strategies and new recognition of the role of evaluation.

A major objective of the proposed model center should be the search for strategies which give full consideration to individual differences and promote the highest possible development of every handicapped child. This center will identify particular learning difficulties so that each pupil can grow toward independent learning and the ability to comprehend new ideas and develop his own learning strategies. Most important, the widespread demonstration of a rich variety of instructional materials and procedures will tend to abolish present attitudes of defeatism and passivity about learning on the part of both child and teacher. Therefore, it is imperative that a National Center on Educational Media and Materials for the Handicapped be established with the resources and support necessary to facilitate full utilization of new educational technology in all types of programs for exceptional persons, including the design, development, and demonstration of instructional materials.

The Library of Congress and the American Printing House for the Blind have long been recognized for their contributions to the visually impaired. Gallaudet College in Washington, D.C., has been equally instrumental in shaping the future of the young deaf, and its role will be increased to even greater proportions due to recent legislation approving the establishment of a model secondary school for the deaf on that campus. The four regional media centers and the network of instructional materials centers for special education are providing insight and innovative approaches to critical problems facing the field of special education today. The growth of these centers and the success of related activities at state and local levels pinpoint serious gaps in the very meager educational opportunities heretofore provided for the nation's handicapped citizens. An important need for the cohesiveness of this overall project is a National Center which can coordinate the activities of these diverse organizations all across America currently engaged in programs or projects for improved education for the handicapped. What should the function of such a center be, and how can it best serve the handicapped? A systems approach is clearly needed—broadly based and covering all aspects of problems related to education of the handicapped. Successful models of the systems approach can be found in agriculture and perhaps in medicine, industrial research, or other areas. The most striking feature of any successful system, however, is the existence of separate agencies for the functions of design, evaluation, and dissemination of new procedures. In the field of agriculture, where it took many years of trial and error to discover the differences and get organized to deal with them, these distinctions today are perhaps most outstanding, America's agricultural extension service, translating research into practice at the local level, is the envy of the free world today. This analogy between education and human endeavor in agriculture should be of value to us in development of a systematic approach to meeting the needs of the handicapped.

A National Center on Education Media and Materials for the Handicapped will provide a unique institution whereby behavioral scientists, teachers of teachers, administrators, classroom teachers, curriculum specialists, media specialists, engineers, technicians, and others can join in a fruitful attack on the problems of learning and instruction with the ultimate goal of educating handicapped children to compete in a world of rapid change.

AMERICAN SPEECH AND HEARING ASSOCIATION,
Washington, D.C., April 21, 1969.

HON. CLAIBORNE PELL,
U.S. Senate, Washington, D.C.

DEAR SENATOR PELL: We appreciate your invitation, in your letter of April 16, 1969, to submit comments concerning S. 1611 to be printed as part of the hearing record.

The American Speech and Hearing Association is pleased to lend its support to this bill relating to a National Center on Educational Media and Materials for the Handicapped.

In the past twenty years the explosion of educational materials and media has had both a positive and a negative effect. On the one hand, it has provided educators with a wide range of media and materials from which to choose. On the other hand, it has imposed the problem of evaluation and intelligent selections of media and materials for use.

Educators of the handicapped have faced similar problems in selecting materials. However, they must also decide how to *adapt* existing media and materials to meet the specific needs of handicapped children. In the development of materials and media, the physical, sensory, and mental obstacles confronted by the impaired child are not generally the prime consideration. Captioned Films for the Deaf and talking books for the blind are examples of specific special media programs, but in general very little has been done in developing materials specifically for the impaired. Realizing the need for special materials for use in diagnosis, assessment and education of the handicapped child, special educators have attempted to develop such materials and media. As an example, a series of 100 films and a separate series of sixteen films are in circulation in programs for the deaf and speech and hearing clinics. These materials are designed for speech reading instruction of hearing impaired children. Over 250 titles of special reading filmstrips have been distributed to programs for the deaf. These materials are now being evaluated at some 100 institutions and agencies. The results of this evaluation will be made available to the educational community.

To keep pace with these new trends in educational technology, pilot and demonstration projects, educational centers and research projects are trying to find the most effective ways of using media and materials within the instructional system. Through the Instructional Materials Centers for the Handicapped and the Regional Media Centers for the Deaf, teachers and supervisors are learning the potential of the new media and the concepts of educational technology.

Our past efforts have been largely sporadic attempts to find solutions to pressing problems. What is still lacking is a means whereby these efforts can be centralized and coordinated. There is an urgent need to plan systematically for effective use of existing commercial materials and media, and to produce materials for specialized use with handicapped children.

Communications technology has advanced at a tremendous pace, and many applications can presently be made to the special problems of the handicapped. The potential of these developments has to be carefully analyzed to provide the field with the necessary information and training in order to keep abreast in this area. Educational television, commercial radio and television, remote access systems, and computer-assisted instruction may help solve teacher shortages and provide educational programs to those handicapped children not otherwise able to attend a special program. The recommended National Center of Educational Media and Materials could become a catalyst for the varied activities in media, materials, and educational technology for the handicapped. It could provide the best personnel available to identify needs and to develop, produce, and validate materials and instructional strategies.

It is our understanding that this National Center would employ experts from the fields of educational technology, computer science, psychology, sociology and other related areas—and we would hope that experts from the field of speech pathology and audiology would also be included. The National Center can provide a central point for the development of media and materials in the education of the handicapped children. It can coordinate field activities in this area. It can train specialists in media design and development. And, it can do a great deal to translate research into actual help for the handicapped child—including those with speech, hearing, and language impairments. We strongly support the establishment of such a Center, and we urge that Congress give its favorable consideration to the Senate Bill 1611.

Yours very truly,

KENNETH O. JOHNSON, Ph.D.,
Executive Secretary.

STATE UNIVERSITY COLLEGE, FREDONIA, N. Y.,

April 24, 1969.

Senator CLAIBORNE PELL,
U.S. Senate, Washington, D.C.

DEAR SENATOR PELL: Thank you for the opportunity of reacting to your bill S. 1611 providing for a national center on educational media and materials for the handicapped.

Experience throughout the country is indicating that the handicapped child has unique instructional needs that can only be met when new instructional techniques are designed specifically for him. Recent research has indicated that such techniques as programmed instruction, films and multimedia presentations are not only instructionally effective, but highly efficient in educating the handicapped child. The unique needs of this population makes it imperative that a concerted effort be made to design, field-test and evaluate instructional tools designed for this population.

Practicing teachers, overworked as they are, do not have the time to design and evaluate new tools and techniques. A center, along the lines of the one proposed, could do much to bring field-tested instructional tools into the classroom of the handicapped child and in the process, do much to improve the efficiency and effectiveness of the instructional program.

I would, therefore, like to heartily endorse the concept of this bill.

If I can be of any further assistance, please do not hesitate in letting me know.

Very truly yours,

ROBERT M. DIAMOND,
Director, Instructional Resources Center.

ILLINOIS SCHOOL FOR THE DEAF,
Jacksonville, Ill., April 22, 1969.

Senator CLAIBORNE PELL,
Chairman, Education Subcommittee, Senate Committee on Labor and Public Welfare,
Washington, D.C.

MY DEAR SENATOR PELL: I have read S. 1611, a bill to provide for a National Center on Educational Media and Materials for the Handicapped.

I welcome the opportunity to comment on the pending bill whose passage I hope will be forthcoming.

First, may I cite the following as some of the obvious, more theoretical reasons why the bill is a necessary one:

a. Handicapped children, in general, need a particular kind of instructional material which is not presently available (where at all, only in a very limited sense).

b. Deaf children, specifically, need a particular kind of visual material.

c. The expense of this type of Educational Media and Materials is beyond the scope of local school districts.

d. The need for development of said materials can only be done by creative people who have knowledge of the various handicaps and the educational needs in this area.

e. The value of having these people united in one central location and not scattered throughout the country.

Secondly, may I react to the bill on an empirical basis. My background and experience allow me to reflect first as the mother of a 15-year-old handicapped boy, Freeman, our deaf son. I speak in greater depth now as an experienced, trained teacher of the deaf, working everyday with the handicapped in breadth. As I use teaching machines and other educational media with positive results, I often think, how much more we could get to these youngsters with this media if only developmental materials in all areas were forthcoming. One would only have to observe even my two- and three-year-old preschoolers' reaction to Sights and Sounds, 8mm. cartridge teaching loops for examples to realize that with serious development these media would effectively help to close the educational gap present in handicapped children.

I hope these comments will be of assistance to you so that hopefully you can bring about an enactment of a law that will bring so much to so many who have

long been in need of effective, meaningful instructional media and educational materials—the Handicapped.

With warm regards and appreciation for your interest in an education for all.
Most sincerely,

(Mrs.) PHYLLIS M. HARPER,
Parent-Pupil Tutor.

CENTER FOR DISORDERS OF COMMUNICATION,
HAROLD S. BAIRD INSTITUTE,
Burlington, Vt., April 28, 1969.

Senator CLAIRBORNE PELL,
*Chairman, Education Subcommittee,
Committee on Labor and Public Welfare,
U.S. Senate, Washington, D.C.*

DEAR SENATOR PELL: Last Wednesday I was in Providence addressing a group of parents at the annual meeting of the Rhode Island Association for Children with Learning Disabilities. Your letter arrived a few days later and I feel very aware of the work being done for and with handicapped children by the people of Rhode Island. This background made me particularly receptive to your letter suggesting that I might comment on your pending bill S. 1611.

I must preface my remarks with two qualifications. Unfortunately I have not been able to review the original Public Law 85-905, therefore some of my comments may be inappropriate; these issues may have been carefully outlined in the original bill. Secondly, I am well aware that you and your committee may have already considered the points I raise and are satisfied that they are not important. With these considerations in mind, my comments follow:

(1) If not already established, I would strongly encourage the inclusion of a multidisciplinary advisory council, composed of members of various professions who will be knowledgeable of developments in the psychotechnology of learning and instructional materials/media. Such a group will help minimize the likelihood of a duplication of efforts.

(a) As presently worded the emphasis on "deaf" might preclude the likelihood of appropriate representation from other disciplines.

(b) There will be a critical need to coordinate the large amount of effort being made in the area of work to which the bill addresses itself (in general education, early childhood programs, all aspects of special education, etc.)

(2) Referring to page 2, lines 3-6, it might be well to be more specific regarding the need for increased emphasis on the use of materials and the incorporation of new techniques of teaching as opposed to emphasis on hardware.

It is not the materials (or media) teachers have that counts, it is what they do with it. I feel a phrase or sentence should be included which will encourage opportunities for professionals to share ideas about the application of techniques and/or materials-media. We have had considerable experience which prompts this observation. This Center, through my interest and efforts, has had Captioned Films Educational Media for almost a year. This represents considerable expense on the part of the U.S. Government as we have been generously provided with a projector, 65 film cartridges and other valuable materials at no charge to us. Our intentions for using these were honorable, as I am sure you will realize, but we have not been able to make effective use of all of them. Just recently, I wrote to suggest the possibility that part of our supplies be returned and raised a question regarding our professional responsibilities to the adult hearing handicapped for whom we had hoped to use the cartridges. Forgive the length of this example, but I am trying to communicate that although some of the materials have been wonderful for us because we did see how we could implement their use into our program, other materials have simply sat on the shelf. Either our philosophy of rehabilitation is inappropriate or we do not know how to make best use of the materials.

I would like to see the addition of a phrase which would encourage effort to help those who will use materials/media to do so effectively. To put this another way, emphasis should not be on materials/media but on the psychotechnology of learning. Having established how people learn best, how teaching can best be done, the National Center should help professionals utilize materials, techniques, and media to the best advantage for the job that needs to be done.

(3) It is suggested that the statement on page 3, lines 5-10 be amended so as to preclude the possibility of its exclusion of technological developments from other than traditional educational institutions.

Simply because certain institutions ". . . have demonstrated the capabilities necessary for the development and evaluation of educational media . . ." does not mean they will continue to do so or that innovations may not result from other resources. Exciting new approaches in education are now coming from people who have not been traditionally involved with education. For example, behavioral modification material (whether this will prove *an* approach, *the* approach, or something the future will put into proper perspective) is having a tremendous impact on education at the present time. The impetus behind it, after basic research which was done in traditional settings, is coming from state hospitals and private centers.

(4) It worries me that the annual report will apparently be transmitted directly to Congress with no specific provision for transmittal to other governmental agencies. Congress may or may not be the best group to judge how much dovetailing of programs would be helpful in order to avoid duplication of efforts. Surely there must be a national group for the handicapped who knows what is going on so that overlap can be avoided or minimized.

(5) This same point is worrisome relevant to the specification on page 3, lines 11-13, that preference will be to institutions "which can serve the educational technology needs of the Model High School for the Deaf".

The bill is for the "handicapped" which possibly needs definition. Specification of deaf, for example, might encourage the proliferation of similar projects. Also this raises the question of whether one discipline should get a disproportionate share of limited financial resources.

I apologize for the length of this letter and feel compelled to repeat that all of my comments might be inappropriate. I do appreciate your letter and hope that if for no other reason, my response will indicate the degree of my awareness and appreciation for the work you are doing.

Sincerely yours,

VILMA T. FALCK, Ph. D.,
Associate Professor, University of Vermont.

THE COMMONWEALTH OF MASSACHUSETTS,
UNIVERSITY OF MASSACHUSETTS,
Amherst, April 21, 1969.

Senator CLAIBORNE PELL,
*Education Subcommittee, U.S. Senate,
Committee on Labor and Public Welfare, Washington, D.C.*

DEAR SENATOR PELL: I have read Bill S. 1611 to provide a National Center on Education Media and Materials for the Handicapped. I am enthusiastically in favor of it.

Handicapped students have unusual needs for special selections from an abundance of the same kinds of media and materials that have proved so effective in the education of normal students. In addition they have needs for specially prepared materials and specially constructed or adapted equipment to provide the multisensory, special sensory, high maturity, low vocabulary, repetitive, tutorial, remedial lessons that are needed. The settings in which the equipment and materials are used also need study, experimentation and demonstrations. Special materials used with special equipment in special settings can make outstanding contributions to the education of handicapped students. The proposed center would appear to provide the critical mass of resources necessary to start and continue this program.

An example of what can be done with specialized media for the handicapped is explained in the attached article from "The Volta Review" for March, 1969.

My only reservations about the bill concern its location in the Washington area and its connection with the model high school for the deaf. The model high school needs its own very special media center and services for the teachers and students in that particular school. The research, experimentation, adaptation and demonstration of media for the broad areas of the handicapped should be located wherever the best job can be done, rather than attaching or relating it to a school restricted to deaf and secondary students from the Washington area.

Very truly yours,

RAYMOND WYMAN,
Director, Northeast Regional Media Center for the Deaf.

MARYLAND STATE DEPARTMENT OF EDUCATION,
Baltimore, April 29, 1969.

HON. CLAIBORNE PELL,
Chairman, Education Subcommittee,
U.S. Senate, Washington, D.C.

DEAR SENATOR PELL: In reference to your letter of April 16 requesting comments on Bill S. 1611—to provide for a National Center on Educational Media and Materials for the Handicapped, I would be highly supportive of this Bill.

With all of the advances in educational technology and the multitude of instructional materials now on the market, a national center would be of invaluable assistance in evaluating, adapting, and developing such for use by handicapped children. I would hope such a center would actually be a working laboratory and not just another depository of hardware. We have enough of the latter already.

One of the needs of special education is a coordinating source from which information can be obtained concerning the availability of instructional materials and their appropriate application with handicapped children. A national center would meet this need. A coordinated effort by the State and local education agencies can provide input into the design and development of materials. The national center described in this Bill could provide the coordinated input to both university and industry developed materials.

As more emphasis is placed on a continuous range of services to handicapped children from special school to resource rooms and itinerant services, specific and detailed kits of materials will be required by the educator. One of the services of the National Center could be to package new materials and repackaging existing materials so that a wider choice is available to the teacher and the pupil.

A national center could provide leadership to develop new models of education for the handicapped which utilize the most efficient and effective forms of modern technology. In addition, the center can be the focal point for dissemination through the science of modern communications of the latest techniques in teacher training and in education. Through a minimum expenditure today the center can bridge the gap in extensive professional and paraprofessional preparation. Modern communication systems permit the best experts to be immediately available to new and inservice teachers.

Respectfully yours,

ROZELLE J. MILLER,
Coordinator of Special Education.

THE RAND CORP.
Santa Monica, Calif., April 25, 1969.

HON. CLAIBORNE PELL,
Chairman of the Subcommittee on Education of the Senate Committee on Labor and Public Welfare, Washington, D.C.

DEAR SENATOR PELL: I recently learned that your committee is considering Senate Bill S-1611 which calls for the establishment of a "National Media Center for the Handicapped", which would be concerned with the development of special educational tools for use by the handicapped. In view of this fact, I thought you and your colleagues would be interested in learning about some research my colleagues and I have done on a closed circuit TV (CCTV) system which helps the visually handicapped with their reading, writing and other tasks which require precise eye-hand coordination. The system is of potential value to any partially sighted person who has difficulty reading printed material or writing with a pen or pencil, even with the aid of eyeglasses, but who could carry on these operations by using a visual aid that increases magnification, brightness or contrast or some combination of these factors. (The current system has a magnification range of 1.4x to 31.7x using a 9 inch monitor.)

I, myself, have been partially sighted since a few days after birth. I have no vision in my left eye and 8/500 in my right eye. Our current prototype CCTV system is installed in my office, and I use it daily to assist me with my reading and writing. Over 30 other visually handicapped people, ranging in age from 10 to 83 and having a variety of visual disorders including glaucoma, diabetic retinopathy, uveitis, retinitis pigmentosa and macular degeneration, have tried out our prototype device and about 85% of them report that it helps them with both reading and writing. Some of these people reported that they were unable to read printed material or write with a pen or pencil (even with the aid of eyeglasses), without the assistance of our prototype device. It should be noted, how-

ever, that the 85% figure mentioned above is probably on the high side relative to the total partially sighted population, because our sample of visually handicapped people was very likely made up almost entirely of persons who are highly motivated toward improving their ability to cope with the world of the "normally sighted". Still the results are encouraging, for it is the highly motivated individuals whom we have the greatest chance of helping and who are likely to make the greatest contribution to our society.

We believe that better designed CCTV systems would permit many visually handicapped students to derive much more from their educational experience than currently is possible. Such systems could, for example, make it possible for partially sighted students to read any book or paper which is directly or indirectly related to their studies, to view a chalkboard, experiment or illustrated lecture, and to take notes, write reports, do mathematics or successfully cope with other classroom and homework assignments. For many of these students, all these operations could be carried on without the help of readers, recorded books, volumes having enlarged type, excessively large writing on a chalkboard, etc., though for some of them, it still might be necessary to supplement their use of CCTV with some of these other techniques for communicating with the partially sighted.

Properly designed CCTV systems would also allow the visually handicapped to sort, manipulate and assemble parts which they could not see clearly enough to handle safely with their unaided eyes or even with eyeglasses. Such TV systems would also help them to type, and see what they are typing, to read plans, study diagrams, make notes, write reports, and carry on a wide variety of other activities which normally sighted people are able to perform.

Many visually handicapped adults are currently unemployed and are forced to accept financial assistance from the federal as well as state and local governments for themselves and their families, not because they lack interest in working, but because they are unable to successfully compete for jobs against normally sighted people. My colleagues and I believe that well designed closed circuit TV systems would allow these people to successfully compete for jobs which are currently closed to them because of their limited eyesight. If we can put these people to work at interesting and well paying jobs, we will, in the long run, be able to save many federal, state and local tax dollars that otherwise would go into welfare and other forms of financial assistance. But even more important is the fact that these people will then be able to provide themselves with many of the material and psychological advantages enjoyed by those who are fortunate enough to be financially independent and contributing members of society.

We have applied for a grant from the Social and Rehabilitation Service of the Department of Health, Education and Welfare which if approved and funded, will support a research effort which we are confident, will lead to the design and fabrication of a CCTV system which will be significantly more useful to the visually handicapped than our current device.

I am enclosing copies of RAND Research Memorandum, RM-5672-RC, A Closed Circuit TV System for the Visually Handicapped and RAND Paper, P-3984, Some Comments on a Closed Circuit TV System for the Visually Handicapped. These reports give more details concerning our current system and indicate some of the things we would like to explore for incorporation in future devices.

I am also enclosing a single sheet which describes The RAND Corporation and lists the members of its Board of Trustees. Please note that RAND is a nonprofit research organization which does not and will not manufacture CCTV systems. My colleagues and I will, however, do all we can to find and convince a qualified manufacturer to produce and distribute appropriately designed CCTV systems to the visually handicapped and organizations serving them.

Thank you for bearing with a scientist whose primary objective these days is to make the lives of his partially sighted brethren richer and more satisfying. If there is anything I can do to help you or your committee please do not hesitate to call upon me for assistance.

Very sincerely,

SAMUEL M. GENENSKY, Ph. D.,
Mathematics Department.

SOME COMMENTS ON A CLOSED CIRCUIT TV SYSTEM FOR THE VISUALLY
HANDICAPPED

(Samuel M. Genensky,¹ The RAND Corp., Santa Monica, Calif.)

1. DEFINITIONS OF BLINDNESS

The definitions of blindness are legion and most of them are not very satisfactory. The basic problem in trying to define blindness is that unless you are willing to define it as a state in which an individual is unable, with either eye, to perceive light, no matter how intense the source of that light, you are faced with a problem of establishing a visual level above which you will regard a person as sighted and below which you will consider him to be blind. It is an unfortunate fact that no such level has ever been found which is both precise and meaningful.

The federal government of the United States defines a person as being blind if with correction, he has less than 20/200 vision in the better eye or has a visual field which in no direction exceeds an angle of 20°. While this definition is convenient for deciding who is or is not entitled to an extra \$600 deduction on his federal income tax form or who is or is not entitled to the free use of federally financed braille and recorded books for the "blind", it is still not a very meaningful definition vis-a-vis whether a person is or is not in fact blind. I, for example, have no vision in my left eye and, measured at 20 feet, the vision in my right eye, with or without correction, is 8/500.

Now this entitles me to take a deduction for being blind, which I am not too proud to accept, nevertheless, I am able to maneuver in automobile and people traffic both day and night, I can read the smallest printing without optical aid by bringing my right eye to within an inch and a half of the material I wish to read, and I can read a chalkboard or a sign with the aid of my 8 x 30 binoculars or my 20 x 48 monocular (the former corrects my vision to about 20/40 and the latter to about 20/20 over a very limited field). I do not regard myself as blind, and most people who know me do not regard me as sightless. It is true that, because of my limited eyesight, I am not able to do some things that I would like to do such as drive an automobile or girl watch unobtrusively, but not being able to do these things does not make me blind.

Another definition of blindness that is often suggested is that a person is blind if he is unable to read newspaper type even with the aid of eyeglasses. Psychologically, I prefer this definition to the definition used by the federal government, because according to it, I am not blind. Nevertheless, in my opinion, this definition is also unsatisfactory, because it would label as blind people who cannot read newspaper type but who are able to maneuver about in crowds and traffic with no perceptible difficulty and with no mechanical or human assistance.

Now I do not want to turn this talk into a detailed analysis of who is and who is not blind, but I do want you to develop a healthy skepticism of most definitions of blindness. This is in part due to the fact that the work we have done to date and which we hope to do in the future on closed circuit television (CCTV) for the visually handicapped is aimed at helping people who are blind according to one or more of the conventional definitions of blindness even though they do not or need not function as the totally blind do.

Throughout the remainder of this talk we shall use the term "the visually handicapped" to mean persons who have poor vision and who are unable to read or write or have great difficulty reading and writing even with the aid of eyeglasses, but who could be helped by a visual aid which increases image magnification, light intensity or brightness or some combination of these factors.

2. GENERAL INTRODUCTION

Our research on closed circuit TV is an outgrowth of several attempts over the past ten years to permit me to read and write with ease while seated in a comfortable and natural position. Until about two years ago these efforts involved the use of various pure optical systems although some of the ideas were ingenious, they all had one or more of the following drawbacks, namely, the devices they led to were too cumbersome, fragile, complicated or expensive, and in addition,

¹ Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors. Papers are reproduced by The RAND Corporation as a courtesy to members of its staff.

The contents of this paper were presented in Beverly Hills, California at the 48th Annual Meeting of the American Academy of Optometry to the Section on Refraction on December 10, 1968.

all these devices delivered less light than they received. It is an unfortunate fact that all purely optical visual aids are light losers, that is, they suffer light losses due to reflections from optical surfaces and from absorption, scattering and diffusion within optical media.

About two years ago my friend and then neighbor, Mr. David S. Grey, suggested to us that we give up trying to design a pure optical system and investigate the possibility of using CCTV to help solve my reading and writing problems. He pointed out that a CCTV system can enhance the brightness and contrast of an object beyond that which appears in the original scene, and that CCTV technology had advanced to the point that inexpensive and reliable TV receivers, monitors and cameras were readily available. Until this past September, we believe that Mr. Grey was the originator of the concept of using CCTV to assist the visually handicapped. At that time, however, we learned of a paper by A. M. Potts, D. Volk and S. S. West entitled "A Television Reader" which appeared in the April, 1959 issue of the *American Journal of Ophthalmology*, and which describes a CCTV system which used a Dage camera equipped with a 3 inch telephoto lens and a 14 inch monitor. Material to be read by this device was clipped to a moveable stand which could be moved by means of a manual gear drive in any direction over a horizontal plane. Their TV camera was fixed in space, and the system produced a magnification of 10x. We deeply regretted not knowing of this work prior to the publication of our Research Memorandum, RM-5672-RC, A Closed Circuit TV System for the Visually Handicapped, for we would have enjoyed referencing it in that memorandum. We have written, however, to the American Foundation for the Blind (AFB), which is going to reproduce the contents of our memorandum in their Research Bulletin, and have asked the AFB to include a footnote in our article which acknowledges and describes the work of Potts et al.

We believe that our CCTV system has several important features which are not found in the Potts device, namely, (1) it is both a reading and *writing* device, (2) it incorporates variable magnification (from 0.8x to 17.6x using a 5 inch monitor), (3) it permits the reader to electrically track printed or handwritten material across a line, (4) it allows the user to adjust the position of the monitor for his convenience and (5) it permits the user to change the vertical plane of rotation of the camera—a maneuver which is necessary if the writing habits of the individual are to be taken into account.

3. THE SYSTEM AND HOW IT OPERATES ²

Our prototype system is really quite simple. It consists primarily of a TV monitor which rests on a shelf which can in turn be pulled toward or away from the user and which can be raised or lowered, a TV camera which can be rotated about a fixed but arbitrary horizontal axis by means of an electrically operated synchro transmitter synchro receiver and a working surface which is used to support reading and writing material.

To operate the prototype system the user first turns the main power and dimmer switches. He then rotates the dimmer switch until the desired illumination level is achieved on the working surface. If the height of the shelf supporting the TV monitor is not satisfactory, he may adjust this by turning the turnbuckles on the rods which support the shelf. He may also alter the distance between his face and the TV monitor by sliding the moveable portion of the shelf toward or away from his face. Writing or reading material is placed upon the working surface and the desired magnification and focusing of the image seen on the monitor is achieved by changing the length of the tube which supports the camera lens and by raising or lowering the camera by means of a motor which is housed above the camera and which is activated by means of a simple switch. Image brightness and contrast are controlled by adjusting the appropriate knobs on the TV monitor.

To read the user rotates, with his left hand and in a counter clockwise direction, a knob which is connected to the synchro transmitter and hence causes the camera to sweep across a line of the printed material and at the same time he views that material on the monitor screen. To advance to the next line, he pushes the printed material with his right hand along and toward the rear of the working surface, and at the same time rotates the synchro transmitter knob in a clockwise direction until the camera is viewing the left-hand margin of the page. To write he uses the same method as for reading, but this time he writes with his right hand as the camera sweeps across the line upon which he is writing. Since the angle at

² An illustrated and more detailed description of our current prototype system is given in RAND Research Memorandum, RM-5672-RC, A Closed Circuit TV System for the Visually Handicapped, by S. M. Genensky, P. Baran, H. L. Moshin and H. Steingold.

which a writing pad is inclined to a given edge of a desk varies from individual to individual, provision has been made for varying the vertical plane in which the camera rotates. This allows the user to write on a slant and yet see his hand move horizontally on the monitor screen.

Note that the user does not usually see a whole line of printed or written material on the monitor screen at one time. What he normally sees at a fixed but arbitrary time is a portion of one or more neighboring lines. Hence, for example, to learn what is on a given line of printed material, he must cause the camera to sweep out the entire line. Now to a normally sighted person this may sound unsatisfactory, but to many people with very poor vision, if they are able to read at all, *this is the way they are forced to view almost every piece of printed material they encounter.* This is due to the fact that they have to come so close to the material that they wish to see that their eyes are not able to span an entire line at one glance. Hence, for them seeing only a portion of a line on the monitor screen at a given time is not as disturbing as it often is for a normally sighted individual.

4. THE MARKET

Little reliable information is available regarding the number of visually handicapped people in the United States who might benefit from our system or improved models of it. I believe the number lies between 200 and 400 thousand, but others at RAND and elsewhere would place the lower limit at about 100 thousand and the upper limit as high as 2 million.

One thing is clear though, and that is that CCTV could be of value to visually handicapped people covering a wide span of ages. It could, for example, help students to read and write at home and at school, and to view, very likely for the first time, what a teacher writes on a chalkboard or what is going on during a scientific experiment. It could help visually handicapped adults of working age to acquire and hold onto many jobs which until now have been closed to them because the jobs require precise hand-eye coordination. Many of these people currently are subsisting on federal and state welfare payments. We believe that most of them would rather be self-supporting, and we believe that suitably designed CCTV systems could help them achieve partial or total financial independence. CCTV could also help the elderly to read and write for many years after their vision has become so poor that without a visual aid, they could no longer carry out these essential and enjoyable operations.

It is interesting to observe that many partially sighted people, who are unable to read or write even with the aid of eyeglasses, are as much if not more concerned with such things as their inability to read personal mail, examine bills, and write checks without the help of a sighted person, as they are with their inability to read printed books, write with a pen or pencil or handle a job requiring precise eye-hand coordination. Their inability to carry on the former activities independently of others implies a loss of privacy that the latter activities do not, and it is this loss of privacy which irks these people. There is no doubt that a properly designed CCTV system would permit many of them to carry on these important day to day activities in complete privacy and though this may not in itself justify the cost of a CCTV system, it nevertheless contributes a big plus toward placing such systems in the hands of many visually handicapped people.

6. SYSTEM EXPERIENCE

Since time is limited I cannot go into detail regarding all the visually handicapped people we have worked with. We can say in general, however, that the results we have achieved to date are very gratifying. Recently, for example, we tried out the prototype system on a 63 year old electrical engineer who has cataracts and some macular degeneration in both eyes. His visual acuity is 20/300 in his better eye and 8/400 in his other eye. He stated that he had tried a wide variety of visual aids, including those available at the Braille Institute of America here in Los Angeles, and found that "This system offers more than any other system I have used before." He found reading (using our prototype) to be very comfortable, and as for writing, he stated that "With a little practice a person could become very proficient with this (namely our device)." This gentleman had given up writing with a pen or pencil several years ago because he could no longer see what he was writing.

With the cooperation of Mr. Ralph Salaway and Mrs. Joy Efron of the Los Angeles school system we were able to try out our prototype system on two male students. One of these youngsters is ten years old and is an albino and the other is twelve and has no vision in one eye and only partial vision in the other eye due to glaucoma. Both boys are unable to read some of the significant passages in their

school books even with the aid of eyeglasses. With our prototype system they were able to read this material with no difficulty. They were also able to read other material, including newspaper type, and to write with very little difficulty.

7. PRESENT AND FUTURE PLANS

We are now busy trying to acquire financial support for continuing research on CCTV for the visually handicapped. We would like to build one or more prototype devices which incorporate features which our current devices does not have, in order to ascertain how these changes and additions to the system affect its cost and its usefulness and acceptability to the visually handicapped community. The following are among the changes and additions we would like to try out:

(1) a foot operated control which would govern the rotational motion of the TV camera or the optical system associated with that camera and which would allow a user to use both hands to write—one to hold a pen or pencil and the other to keep the paper from slipping,

(2) a more compact and less heat producing lighting system,

(3) an automatic self-focusing system for the TV camera which, combined with item (1), would permit a user to assemble parts or carry on other manual operations which require a considerable depth of field, and which would also allow him to view pages of books and magazines which do not lie in or close to a horizontal plane,

(4) reversibility of the TV camera's gray scale which would in general lead to a less glary image on the monitor screen,

(5) more uniform image quality and greater contrast in the image on the monitor screen,

(6) a two step gray scale which would maximize black-white contrast. (This would be very useful for reading and writing, but would be unsatisfactory for observing most pictures. However, if a user could flick a switch and change from a two step to a continuous gray scale, he could satisfactorily handle all three operations.)

(7) a high speed line return which would tend to minimize the time lost in returning to the left margin of a page,

(8) a margin guide which would permit the user to place material below the camera so as to minimize the change in distance between that material and the camera lens as the camera sweeps across a line,

(9) a zoom lens system which, among other things, would permit a user to obtain a Gestalt of a large portion of a page, as well as focus in on a small portion, which contains information of interest to him and which otherwise he would be unable to see,

(10) more compact and lighter construction and

(11) more rational design which, for example, would make the system useful to both right- and left-handed persons.

In addition to trying to obtain support for the research just mentioned, we are also busy trying to convince various companies, which have well-equipped laboratory facilities and staffs which are knowledgeable in optics and TV electronics, to continue the development of CCTV for the visually handicapped with the objective of developing models which are appropriate to produce and distribute to these partially sighted people and organizations serving them.

Although to date we have not had much success in obtaining financial backing for our proposed research program or in persuading appropriate companies to continue the development of our prototype system, we still remain optimistic. Our experience has convinced us that our prototype system really helps partially sighted adults and children, and, hence, we must and we shall do everything that we can to hasten the day when appropriate versions of our device are available to every visually handicapped person who can benefit from using them.

We have been told by Mrs. Efron that our two young guests have informed her that they recognize that our current system is just a prototype and that it will take time to design and test systems which they and other visually handicapped kids can use in school. They have therefore given us three years to complete this work. You see at that time they will be starting high school and they believe that our CCTV system can really help them through that critical portion of their education. You can be certain that we will do everything we can to meet this important deadline.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
OFFICE OF EDUCATION,
Washington, D.C., March 15, 1969

HON. CLAIBORNE PELL,
Chairman, Subcommittee on Education,
Committee on Labor and Public Welfare
U.S. Senate, Washington, D.C.

DEAR CHAIRMAN PELL: In response to your inquiry concerning the ability of the Media Services and Captioned Films program to serve the nation's approximately six million handicapped children we are presenting the following information:

The present level of funding for Media Services severely restricts the capability to deliver appropriate educational technology services to the handicapped.

In fiscal year 1969, \$4,750,000 has been appropriated to support the distribution of these important services to nearly 6,000,000 children whose learning opportunities have been restricted not only by physical or mental handicapping conditions, but by a great shortage of qualified teachers for the classroom.

There are 85,000 teachers presently employed in the education of the handicapped. These teachers can provide services to only about 40% of the nation's handicapped children. By the year 1975, we expect that more than 300,000 teachers will be needed to supply services to all handicapped children in the country. The task of recruiting and training for that level of employment will be extremely difficult, if not impossible. A way must be found whereby this great demand can be mitigated to some degree. By providing educational media services we may be able to increase the effectiveness of teachers by 20% or more, therefore lowering the demand for classroom teachers in 1975 by at least 60,000. The effectiveness of reducing the need for teachers by that amount would approximate \$360,000,000. Currently, the \$4,750,000 appropriated for educational media and captioned film programs provides only \$2.25 for each of the 40% of handicapped children who now receive special education services. If we merely expanded the number of children served to all of the nearly six million and we do not increase this small annual per capita sum, the financial requirements would be \$13,500,000. Even this amount would fail to include appropriate sums to include:

- 1) appropriate instruction and training for teachers and other staff in the case of media in a teaching-learning situation.
- 2) instructional material libraries for handicapped children at the building and system level in local programs.
- 3) The required educational and cultural programs for the adult deaf.
- 4) provide instruction, training and research in the utilization of educational media to parents of handicapped children and other persons who work with the handicapped.

Under P.L. 89-258, when the Act served only deaf and hearing impaired children, the program of Media Services and Captioned Films provided media support for each hearing impaired child at approximately \$57.50 per child annually. This includes such things as, a captioned film library of 300 titles well over two million media items i.e., filmstrips, transparencies, slides, etc. basic audio-visual equipment for over 4,000 classrooms and media training for well over 3,000 teachers of the deaf.

The expansion of authority under P.L. 90-247, in order to provide service to all handicapped, has required a stretching of funds from serving only the deaf to providing services for all handicapped. It has meant that instead of serving 3,000 teachers of the deaf, there must be service for 85,000 teachers of all handicapped children.

We know that the media program has served the deaf well and that it can be put to good advantage in serving all handicapped children. We know that children have been provided with more materials and equipment. We know that change has occurred in teacher attitudes in that they are discovering the meaning of individualized instruction and are becoming adept at selection of materials and teaching equipment. In addition, there is an opportunity for greater utilization of nonprofessionals, volunteers, and parents due to the individualized nature of much of the equipment that could be introduced.

Technology can in a systematic manner increase the learning experiences of the handicapped child through group and individualized instruction. It can afford the child the best opportunity to learn at his pace in the style best suited to him.

Sincerely,

EDWIN W. MARTIN,
Deputy Associate Commissioner,
Bureau of Education for the Handicapped.

JOHNS HOPKINS UNIVERSITY,
Baltimore Md., April 30, 1969.

HON. CLAIBORNE PELL,
Chairman, Subcommittee on Education, Committee on Labor and Public Welfare,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: I appreciate the opportunity to comment on S. 1611. I feel that a National Center on Educational Media for the Handicapped would be extremely helpful and constructive, and I endorse the idea. I would also like to offer an additional suggestion for the legislation.

By way of background, I serve as chairman of the Subcommittee on Research of the President's Commission on Mental Retardation, and am a professor of pediatrics at Johns Hopkins University, with responsibility for a large service program in mental retardation, including special education.

In my experience working on programs for the handicapped, I have noted that the increased emphasis on technology over the last few years too often has resulted in equipment and materials for education of the handicapped being marketed without adequate testing and evaluation beforehand.

Many teaching machines currently on the market—for example, talking typewriters and other recently developed equipment—have not been tested on any sound, controlled basis. Education materials, such as new teaching methods for those with serious reading deficiencies, frequently are released without documentation as to their effectiveness.

Therefore, I recommend that one function of the National Center be to encourage full testing and evaluation, by manufacturers and other persons, of technology, materials and methods for teaching the handicapped, and to publicize the results of such tests and evaluations.

The contacts and experience and background which the Center will develop are ideally suited to such an effort.

Sincerely,

ROBERT E. COOK, M.D.,
Given Foundation Professor of Pediatrics.

Senator PELL. The meeting of the subcommittee will now adjourn.
(Thereupon, at 11:35 a.m. the hearing was recessed subject to the call of the Chair.)



