EDUCATION FOR TECHNOLOGICAL CHANGE IN RURAL CUBA

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Edgar Glenn Nesman

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EDUCATION FOR TECHNOLOGICAL CHANGE IN RURAL CUBA

By

EDGAR GLENN NESMAN

AN ABSTRACT

Submitted to the College of Agriculture
Michigan State University of Agriculture and
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MASTER OF SCIENCE

Department of Agricultural Extension

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Approved: George A. Axinn

EDGAR GLENN NESMAN

ABSTRACT

This thesis deals with the question of what kind of a program is most effective in educating for technological change in rural areas. The hypothesis is stated that "there are more elements of effective education for technological change in the community centered program than there are in the training school program."

This same idea has been stated by others in many parts of the world. In this case, the specific interest is rural Cuba and the work of the Methodist Church through their School of Agriculture and Industry, (Escuela Agricola e Industrial) as well as the Pilot Project in Community Development.

From the review of a large volume of literature, some elements for effective education are synthesized. The review of literature covered three major areas, learning theory, education for technological change and special conditions in Cuba relating to education in rural communities. The direct quotations from this review are gathered in Appendix I and a summary is found in a chapter of the main text.

The elements for effective education in rural Cuba are used as a basis of evaluation and comparison of two

actual programs. The training school program is that of the Escuela Agricola e Industrial, (E A e I) which is a vocational boarding school located in Oriente province. The Pilot Project in Community Development was also carried on in 5 rural communities in the same province.

The elements are as follows: an effective program for education for technological change in rural Cuba should: (1) work with all members of the family; (2) offer each individual in the community an opportunity to participate (even at the point of setting goals); (3) work toward basic skill development such as reading, writing and calculating; (4) use the satisfaction of achieving goals related to felt needs as the motivating factor for the individual to learn new behavior patterns; (5) use educators who are able to identify with those who seek to learn; (6) include the key people in the family and community in the educational process; (7) be prepared to deal with problems in all areas of life; (8) maintain the instruction situation as near like the application situation as possible; (9) offer any new information or skills at the time that it can be applied; and (10) develop some kind of an organization that will make the program self-perpetuating.

The Training School program is rated as having its strongest points in numbers 3, 5, and 7 while its weakest points are found in numbers 1 and 10. The Community

Development project has its strongest points in numbers 1, 4, 5, 8, and 9, while its weakest point is number 10. Comparing the two programs together, the Training School is rated higher on number 7 because of the concentration of resources that it has available to deal with the different areas of knowledge. The Community Development program rates higher in all of the other elements except number 10 where both programs are found to be weak.

The conclusions of this study indicate that there is a strong rationale to back up the hypothesis that community centered educational programs are likely to be more effective than training school programs for technological change in rural Cuba. A program is outlined for the establishment of a Community Development project incorporating the elements for effective education. It is suggested that such a program could be set up so that a statistical analysis of the two programs could be compared.

It is further suggested that the Training School might be able to do a more effective job by educating those who leave the communities to find jobs. Also a short course might be offered some time during the year for those who will stay in the communities as a means of suppliment to the community centered educational program.

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This thesis represents the results of many years of reading, listening, observing and thinking as well as the concentrated effort during this year. This work represents a clarification and a concentration of many past experiences as well as the new information that has been added during this school year at Michigan State University.

I would like to acknowledge the early help given by my father Glen W. Nesman, for 23 years a teacher of Vocational Agriculture. In more recent years much help and inspiration has been given by Dr. Richard G. Milk, Director of the Escuela Agricola e Industrial. During this year, Dr. George Axinn has been a constant guide who has made it possible for all of the past experiences and this year's study to find a means of expression in this thesis.

Many others have been instrumental in helping me see the importance of this area of study and at the same time clarifying some of the concepts. I would like to mention the following: Dr. I. W. Moomaw of Agricultural Missions, Inc. who has presented the challenge of Christian missions in a new way; Dr. Margaret Read, visiting professor of Anthropology at Michigan State University in 1960 who shared some of her vast experiences in the evaluation of Community Development programs for the United Nations; Dr. John Useem, head of the Department of Sociology and Anthropology at Michigan State University who guided the direction of this thesis through his stimulating teaching in the classroom as well as in private interviews; Dr. Eugene Jacobson of the Department of Psychology at Michigan State University who contributed much in the way of sources of information and his own personal experience related to the evaluation of the UNESCO programs of Fundamental Education; and finally, to all of those who labor daily to make possible the facilities for this kind of study at Michigan State University.

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INTRODUCTION

The ESCUELA AGRICOLA E INDUSTRIAL was founded in 1944.[1] It was established after 20 years of thinking and planning with the urgent needs of the rural people in mind. Since the time of its establishment there has been a constant evaluation of its program. Each fall before beginning the new school year, the faculty spends many hours looking over the accomplishments and failures to see how a better job can be done. Also, the Board of Directors along with the many other friends of the school, both as organized groups and as individuals have been helpful with their suggestions of ways that the school can be more effective.

This thesis is written with the same orientation in mind--that of evaluating and making recommendations. The concern of former evaluations has been based on the institutional program. This treatment will be broader in that it

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[1] The Escuela Agricola e Industrial (EA & I) is translated meaning "School of Agriculture and Industry". It is located in Oriente, the eastern most province of Cuba and more than 600 miles from the capital city of Havana. It is an institution of the Methodist Church although many other individuals and entities were instrumental in its founding and continued operation. Further data will be found in Chapter II entitled "Background Information" and in Appendix II.

relates more directly to the rural communities and the needs of the individuals that are striving for a higher level of living.

Basically, then, this paper is a review of literature as it relates to technological change in rural areas in Cuba--the major concern being that of the part that education plays in bringing about change. Related to this is the big question of how people learn, so that much of the data collected has to do with the learning process.

By searching out the dynamics of human behavior as they might apply to this situation it is hoped that some explanation or some valid elements can be found that might explain why educational effort at the community level has given greater results in a shorter time than educational effort in the training school situation. Interesting observations were made to the effect that more vegetable gardens were grown, more pigs vaccinated, more children registered in the Civil Registry, etc., etc. in one year of organized educational effort at the community level than had been gained by the selection of young people for training of EA & I over a ten year period.[2] Naturally, there are many factors working and observations may not be as valid as they appear, but the pilot project in Community

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[2]This refers to the Pilot Project in Community Development as described in Chapter II.

Development that was carried out was based on a belief that there are some more effective elements in this kind of a program.

By searching the literature for these elements that have been tested in other situations and by comparing them to the training school program (EA & I) and the community-centered program (Pilot Project in Community Development), it is expected that more of these effective educational elements will be found in the latter. This, of course, is not a real test or proof that one program is better than the other, but it should give the basis for recommendations for a larger scale and more effective educational program based on local needs.

Undoubtedly, the training school program will continue much as it is for years to come, for it has proven effective in many aspects. If this study can provide a basis for developing an informal educational program at the community level, then the two programs can provide a comparison for a more complete analysis with statistical measurement of results.

The organization of this study then is as follows: (1) A statement of the problem; (2) The setting in which the problem is found; (3) Statements related to a hypothesis concerning educational effort in the training school vs. the community-centered program; (4) A review of the literature related to learning theory, education for technological

change, and, special conditions in Cuba related to education; (5) An analysis of the literature reviewed to arrive at a group of "Elements (conditions) for Effective Education" that would be applicable to technological change in Cuba; (6) A comparison of these elements with the two programs as they are known to exist to see which program contains more of the elements; and finally (7) Conclusions and recommendations including a plan for future use of the resources available for more effective educational effort and suggestions for further testing in the future.

CHAPTER I

STATEMENT OF THE PROBLEM

The reason for this study stems from a belief that a real part of the educational process now attempted by the ESCUELA AGRICOLA E INDUSTRIAL could best be done in the rural community. Not only is this the place where some of the graduates now find themselves but it is where the future students will come from, it is where the rural church is located, and it is the place where the many problems of living are for a large percentage of the Cuban people--the very reason for establishing the school almost 15 years ago.

Recent evaluations of the educational goals and accomplishments indicate that in some areas, greater impact could be made by organized educational effort at the community level or to put it in other words,[1] that some aspects of the schools program could be best served by organization in the local community of special educational programs.

One of the goals of the ESCUELA AGRICOLA E INDUSTRIAL (EA & I) is as follows: "The selection of qualified young

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[1] See Appendix II.

men and women from the rural communities in order to offer them further training that they might return to their communities to help raise the level of living." This goal is not being met as well as it was hoped for, for it is found that only a small percentage of the graduates ever return to their home communities to live. The feedback of information from the communities from which students have come lead us to believe that there is a low amount of application of these practices. Also observations made by faculty members as they have made visits in the students homes and by other professional people indicate this. It has been impossible to make direct observation and measurement because many of the students come from as far as 600 miles away.

There are many things that seem to be operating here but there is no doubt that the opportunity to go to school is often used as a means to get away from the rural communities. Perhaps if this study opportunity had not been available, the young person would have used some other method to open up the future.

There is no doubt that another reason is the pattern of authority that does not make it easy for a young person to suggest changes that are likely to affect the way things are done by the parents and other adults. Then, there is always the possibility that the way the young person was taught is not really practical for the conditions that

actually exist in the home situation. Closely related to this is the fact that there is just no economic opportunity in many of the home communities. No land is available and there are no other professions open, especially without capital.

The students have often indicated that they feel more "at home" in the school than they do in the home that they came from. This is not strange for they spend most of their time at the school during the years they are a student. Incidental learning that takes place in the out-of-class hours related to living conditions, recreational facilities, social contacts or just the values expressed, work against returning to a situation where these items are lacking.

There are evidences that this situation is not unique in Cuba for the literature contains many such instances. The following quotations give some idea of this. There has been no attempt to organize these quotations in other than alphabetical order according to author. In some cases the inferences may be based more on speculation than experimentation, but there is little question that in general they represent keen observation of existing programs.

> For the most part, however, these schools tend to provide their pupils with a large amount of information about agriculture which is by no means the same as teaching them farming. A few develop proficiency in certain basic skills which are an important part, but not all, of this important occupation.

> Rare is the agricultural course in underdeveloped sections of the world that prepares rural youth . . .[2]
>
> Far too often it happens that the supposedly vocational institution weans its students away from the soil or makes unhappy misfits of those who attempt to return to the land.
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> . . . . . .
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> In addition, the size of the school farm is often completely out of proportion to the small-scale plots on which the parents of the students are forced to depend for survival. The implements are apt to be of the latest imported type, partly because of the extensive acreage to be tilled. Thus in a region of family-worked farms which are not only small but broken up into scattered pieces, the school may often be using machinery that is especially imported, costly, and impractical for general use.
>
> There is also the matter of living arrangements. Few institutions of this kind manage to provide accommodations which, while being sanitary and comfortable, reflect local customs and habits. Too frequently the pupils live and work in surroundings and with accessories which are totally foreign to their normal way of life.
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> . . . . . .
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> After four or five years in an environment basically Western and under a program of instruction unrelated to local needs and conditions, the graduate is expected to make his own adjustments when he attempts to apply his agricultural training. Is it any wonder that a large percentage of these boys, once they have their diplomas, seek Government jobs or find themselves in an unhappy situation if they do return to the land? This is one of the reasons why those with experience in the field insist that the period of training should be brief and intensive or, alternatively, that the total program of vocational instruction should be extended over several years in the form of a series of short unit courses.[3]

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[2]Harold B. Allen, Rural Reconstruction Action (Ithaca: Cornell University Press, 1953), p. 124.

[3]Ibid., pp. 125-26.

There are those who insist--and with good reason--that the most effective solution is not a school or vocational training course in the traditional sense, but rather an intensive form of rural extension service in the villages themselves. This system is based on extension workers who are trained on the job and who then organize the older boys and youths into future-farmers groups or modified 4-H Clubs. Through these channels and over a period of years, the younger generation is given right on the spot in its own environment systematic farming instruction of a practical nature. The merits of the system are such that our discussion might well be concluded at this point, for the method is not only relatively inexpensive but is by far the most effective way yet discovered for doing the job.[4]

Certain aspects of the farmer's vocation may be worthy of study but are not of sufficient immediate value to justify the extra training costs or the additional time the student has to spend away from home--an important consideration in underdeveloped rural areas. The course was therefore reduced from four years to three; that was, at any rate, a step in the right direction.[5]

Preparing rural youth for the hard business of farming in underdeveloped parts of the world is a task which is neither easy nor simple. The most earnest attempts to do the job well are certain to meet with serious obstacles. Many institutions with vocational aims require a thorough overhauling if they are to contribute to better farming in the next generation. But with proper organization, the application of a few sound principles of education, a little common sense, and a measure of caution, success in fair degree can usually be assured.[6]

In Pakistan, primarily a rural country, there are more than seven million children of primary school age, and only about 40% of them are in school. Of those who enter school, only about 20% complete

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[4] Ibid., p. 127.

[5] Ibid., p. 135.

[6] Ibid., p. 141.

the five year primary school program. One reason for this educational waste is that parents take their children out of school to help on the farms. Parents also believe that the children receive little economic advantage from the kind of school program offered.[7]

The concern of the traditional schoolroom for knowledge acquisition has blocked the conceptualization of education as process of behavior change. Traditional education has been relatively efficient in producing retention of verbal material but has been woefully ineffective in changing character, personality, marital adjustment, or management skills.[8]

Both the elementary schools and the high schools have important roles in educating for useful work, but they can offer little specialized education for particular occupations. High school students are immature and uncertain regarding their future occupations and often lack opportunities for practical experience related to their training in theory. Exceptions are carefully selected students in agriculture and home economics who often do serious work in the vocational subjects and lay good foundations for success in their life careers. Even in these fields, most vocational education must be provided for persons beyond high school age.

Changes in science and technology bring about apparent and striking changes in the ways in which occupations are conducted. It is usually conceded that vocational, technical, and professional education must be continued as long as workers are active. Many of the most vital and appreciated programs of adult education are programs which assist full-time workers in adapting to change, including change from one occupation to another occupation.[9]

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[7] C. W. Harris, and M. R. Liba, Encyclopedia of Educational Research, a project of the American Educational Research Association of the NEA (New York: The MacMillan Company, 1960), p. 1175.

[8] Malcolm S. Knowles, ed., Handbook of Adult Education in the United States (Chicago: Adult Education Association, 1960), p. 58.

[9] Ibid., p. 545.

Those possibilities have been recognized, also, by the Ministry of Education of Costa Rica. The Ministry of Education and the leaders in the Normal Schools felt that the efforts of teachers would have broader and more lasting influence if the school programs became more sensitive to the life of the villages in which they were located.[10]

For instance, one observes that many academic men in Latin America are loath to work with their hands. They seem to feel that they will lose social status if they "teach by doing". Consequently, they rarely go outside the classroom or laboratory to engage in demonstration work in the field. Likewise, some of them shun empirical investigations and show little interest in devising ways and means of applying science to the day-to-day problems of living. In some of the countries, the man of letters, the lawyer, the politician, and the army officer appear to have a higher social standing than the scientist, the industrialist, or the businessman. Furthermore, the curriculums of many Latin-American educational institutions emphasize language, rhetoric, mathematics, logic, and moral philosophy but put relatively less weight on science, engineering, agriculture, economics, and sociology.[11]

In summary, it can be safely predicted that the religious organizations would greatly improve the quality of their agricultural work in Latin America if they would (1) reduce the scale of their money-losing farming operations; (2) center the attention of their agricultural missionaries on community-improvement programs; (3) employ national technicians to work directly with farm families; and (4) emphasize the adoption of a few simple farm and home practices that will show immediate results in the early stages of each community-development program.[12]

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[10] Charles P. Loomis and others, Turrialba: Social Systems and the Introduction of Change (Glencoe, Illinois: The Free Press, 1953), pp. 268-69.

[11] James G. Maddox, Technical Assistance by Religious Agencies in Latin America (Chicago: The University of Chicago Press, 1956), p. 10.

[12] Ibid., pp. 117-18.

Specialized agricultural schools, on the other hand, are more numerous than those in home economics, attract more students, and appear to be influencing the culture slightly but steadily. Most of those that are under the auspices of religious agencies are serving young people below the university level. They usually draw their students from among farm boys who have had four to six years of primary schooling, and the boys, most of whom are boarding students, spend three or four hours each day working on the mission farm. The course of study, lasting three or four years, customarily includes training in Spanish, mathematics, geography, and some work in the social sciences, in addition to the specialized agricultural courses. Nevertheless, the graduates of these schools are sometimes so poorly prepared in fundamentals that they have a difficult time finding positions in which they can capitalize on their agricultural knowledge. In most of the Latin-American countries the graduates of these schools are not admitted to universities because they have not had the necessary preparation in a recognized secondary school. It is probable, if this type of agricultural school is to make a really pervasive contribution to Latin-American agriculture, that it will have to change its curriculum so as to turn out students with a better foundation in non-agricultural subjects.[13]

For many years schooling was not only ineffective, but also disruptive, because it was applied only to the young. Roles were reversed in the home, so that the children became the teachers of the parents, creating confusion in relationships, and resentment on the part of the displaced leaders. A "younger" generation in conflict with an "older" generation was created where there had been no such categories. In some societies, where the structuring of authority was felt strongly, the responsibility placed on the young to teach the old created insupportable conflict for them. Children, taught in school not to spit on the floor, to take baths regularly, to be inoculated against epidemics, lived in homes which taught the opposite. With the new conception of education as covering all areas of living came the recognition of society as the unit

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[13] Ibid., pp. 35-6.

to be educated. In China, the mass education programme initiated by James Yen was directed at adult groups as well as children, and covered simplified reading and writing as well as public health, agriculture, and similar areas.[14]

In many areas the introduction of a school system interferes with the established patterns of life. The Ngone of Nyasaland complain that their herds are in poor condition, since the boys who were traditional herders now go to school. In Basutoland and Bechuanaland there are twice as many girls as boys in school as boys stay with the herds. In some areas the level of health is too low to make school attendance easy; where there is little energy, as in many villages in India, the children are needed to do their share of the work. In rural Mexico the children are said to do hard work at home. Yet school often includes exhausting competitive games and gymnastics. Turkey, faced with the necessity of establishing schools in its 40,000 villages, adapted school work to the seasonal occupation of its villagers, "and class work, apart from the time devoted to practical training, has been reduced to 18 hours weekly". Under the rural reconstruction scheme for the Menouf District of Egypt it was agreed to introduce schools working on a "full day system by which the pupils spend the first half of the day learning theoretical studies and the second half in practical training.[15]

Agricultural schools in Burma and Latin America have not yet had sufficient effect in the agrarian picture because the graduates will not live with the peasants, will not soil their hands. After they study veterinary science or agronomy, they are ready to teach these subjects or work in laboratories, but not to set up demonstrations in rural areas or cultivate a demonstration plot. In Panama teachers refused to help with sanitation problems, in the Netherlands Indies and Burma nurses refused to do rural work since it involved manual work which in the urban hospitals was performed

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[14]Margaret Meade, Cultural Patterns and Technological Change, UNESCO (New York: Columbia University Press), p. 270.

[15]Ibid., p. 272.

by menials. In China higher education tended to create a group of unemployed, since it was beneath these people to accept any non-academic position. Specific cultural attitudes may make for difficulties in the specific area of instruction.[16]

And incentives must be created, strong enough to counteract the loss of a son who cannot now help in the fields, and will later feel above such work and will probably take a job in an urban centre. If the school can promise enough literacy to enable the son to read needed literature aloud to his illiterate father, and keep accounts, continuing his share in the familial system of interrelationships, a father might find enough incentive to encourage his son's attendance; because in this way the education would be for the family's welfare; it would not lead to separation, individual ends, atomization. In Lebanon a visiting emigrant endowed his village with a school without first educating the villagers in the value of literacy; in three years, the school was in disuse.[17]

To carry out this recommendation, reliance must again be placed on mature human beings. Instead of saying that in order to train a public health nurse we must first have an elementary school system patterned on the school system of the West--in which children will be rebuked and rewarded for the same sort of mistakes, learn to read the same kinds of directions, learn to fear the same kinds of errors in arithmetic and to hate the same kinds of tasks--we may experiment with how to teach particular practices to the most educated young adults we can find.[18]

However, great care must be used to gear the program to the life of the people who surround the center. There is always danger lest the center become a costly institution with undue emphasis upon its own development as a place of demonstration where guests are welcomed and public functions held.

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[16] Ibid., p. 273.

[17] Ibid.

[18] Ibid., p. 310.

Certain schools and other institutions are dedicated to the welfare of village people. Rural study courses are given and students and teachers often take field trips. But a central institution has limitations as an extension agency. Rural people do not readily lend their confidence to student teams who only make occasional sorties among them. Their complex problems are rarely tackled successfully by sporadic visits from inexperienced people. Such visits are limited largely to programs and speeches and they are not considered effective as an instrument of rural improvement.[19]

Pre-College Agricultural Education: The function of pre-college agricultural education is to give practical training in progressive farming and in the processes of a dynamic agriculture at the secondary school level to boys who are not going to continue to college.

The strengths of pre-college agricultural education are that it may be a good type of secondary education for skilled farm workers and it can be used to train operators of mechanized farm equipment.

The limitations of pre-college agricultural education as a field for technical co-operation, are more numerous:

a) It is of relatively little value to students who are to be farmers in the absence of well-established programs of extension education, inasmuch as a constant flow of new information is essential if these farmers are to practice what they have learned about the frequent changes required in progressive, de-dision-making farming.

b) This kind of education is inadequate for students who are to become agricultural technicians in ministries or who are to find their careers in other public programs devoted to agricultural development. At the present time most of the personnel of ministries of agriculture in several countries have had only this type of secondary education, but this is not an adequate pattern for the future. Such technicians need the education of agricultural colleges, and if they are to go on to this, a broad general secondary education is more appropriate to their need.

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[19]I. W. Moomaw, Better Field Programs (New York: Agricultural Missions Inc., 1959), p. 29.

c) The task of improving this kind of education is very formidable, since the schools are scattered in many parts of each country, and results per unit of effort are likely to be slight.

There are several instances of a technician-from-abroad making a significant contribution to the improvement of pre-college agricultural education, but this appears to be possible only when there is already considerable eagerness on the part of the principals of these schools to improve and/or when a technician has an opportunity to participate in the normal-school training of teachers for the secondary schools or for the Practical Schools of Agriculture.[20]

Experience from other parts of the world reinforces the conclusion that education must be an integral aspect of social and economic development if the village teacher is not to find that his education produces more frustrations than satisfactions.[21]

Most rural communities have not yet discovered what the founders of vocational education knew a half century ago: Effective vocational education must be provided largely after full-time schooling is over for persons already engaged in occupations. In far too many cases, the teaching of vocational subjects is confined to the schools' classrooms and shops, and the functional teaching that could be done outside the schools is neglected.[22]

Those who are to benefit from an organized and systematic program of vocational instruction must have access to opportunity within their own local community area. Few can afford either the time or

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[20]Arthur T. Mosher, Technical Co-Operation in Latin American Agriculture (Chicago: University of Chicago Press, 1957), p. 318.

[21]Lyle W. Shannon, Underdeveloped Areas (New York: Harper and Brothers, 1957), p. 420.

[22]Gordon I. Swanson, ed., Vocational Education for Rural America: Yearbook 1958-59 (Washington: Department of Rural Education of NEA, 1959), p. 141.

> the cost of attending a specialized school some distance from their home. Any program designed to equip local people for vocational competence and vocational adjustment must be accessible.[23]
>
> Insofar as the experience of the past has value, it has been demonstrated that rural people eagerly take advantage of vocational education programs when they are accessible to their local community. Through training, their proficiency, productivity, and adaptability are increased. Experience also shows, however, that when training opportunity is not within easy reach, few rural people get its benefits.[24]
>
> Latin American education even in the rural schools has a strong urban bias. The school reflects and inculcates the high prestige accorded to urban life and occupations and the low prestige accorded to agricultural labour; programmes intended to adapt schools and teachers to rural needs have thus far had only a limited influence. The rural schools are therefore sometimes accused of stimulating migration to the cities, although the strength of this influence is hard to assess. The training of the teacher, exclusively urban in character, is actually a negative factor in the training of future agriculturists. For this and other reasons, in the rural school, teaching merely reading and writing, has been an efficient factor in rural depopulation. It has prepared the child for the so-called "civilized" life and has created in him to a certain extent, a distaste of the soil. Unconsciously the teacher helps drive the people from the farm to the urban centres.[25]

The preceding quotations, for the most part, served to point out the inadequacies of traditional classroom

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[23] Ibid., p. 158.

[24] Ibid., p. 167.

[25] UN, Report of the World Social Situation (New York, 1957), p. 190.

education. Nevertheless, these educational programs were undertaken with the best of intentions and with the needs of the people in mind. The problem is not solved by condemning them. There are even indications that there is greater need for education than ever before.

> In the great lower-class population, there is tremendous waste of human resources in the form of a short life-span, ill-health, malnutrition, illiteracy, and lack of incentives. The door of opportunity, though never completely closed, is so narrowly open to most people of lower-class rank that many of them have little hope for significant improvement. Particularly in rural areas, they continue their plodding tasks from generation to generation, following in the footsteps of their forefathers in an incessant struggle to get their hands on enough food and clothing to keep body and soul together. In urban areas the level of living of the lower classes is usually somewhat better, though thousands live in slums where housing and sanitary conditions are unbelievably bad. It appears to be around the cities, however, that people of lower-class rank can most effectively climb the social and economic ladder to middle-class status. Moreover, the growth of industry around quite a few of the Latin-American cities is providing jobs for many illiterate country-people who a few decades ago had almost no opportunity outside their native rural communities. The building of roads is also doing much to put isolated rural villages in contact with the outside world and to open up new vistas to the people, as well as new markets for both urban and rural products.[26]

Where real physical needs exist to the degree that they have in rural Cuba, this is a compelling force in itself toward action. Action can take many forms, from the most direct, as in the case of giving relief to that of an

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[26]Maddox, op. cit., p. 12.

indirect type, such as education. The needs have been great enough in recent years to almost warrant direct relief giving of the basic material necessities in some cases. But unless resources are unlimited from the outside, then direct aid cannot continue. Also it is recognized that the giving of relief is only justified in the most extreme cases for it defeats the long run objectives of a permanent solution at the local level. The big problem that has faced agencies working in like situations is, how to develop a program that will help in solving some urgent problems now, and at the same time develop the internal resources for the future, including leadership.

Private agencies such as the church are further concerned with the allocation of scarce resources. Governments and international organizations are likely able to bring in more outside aid and for a longer time than churches. For this reason the church officials have only helped to meet human needs in those areas of endeavor where the larger organizations have not been able or willing to do it effectively. Because of scarce resources and the human needs that are not being met in the rural areas, it then becomes of increasing importance to constantly be looking for those things that most need to be done and to find out how these scarce resources can be allocated and organized to do the job. This gives some idea of the need for constant evaluation of the church related institutions

working in rural areas.

This relates back, then, to the statement of the original problem, is the training program of the Escuela Agricola e Industrial the best investment of church resources to help raise the level of living in Cuban rural communities?

CHAPTER II

BACKGROUND INFORMATION

Life in Cuba

Geographically Cuba is found lying only about 100 miles south of Key West, Florida, but at the same time is even closer to Haiti to the east and Jamaica to the south. The Yucatan peninsula is also close-by on the western tip. The size is comparable to the state of Pennsylvania, although the shape is long and narrow so that it stretches over 800 miles from east to west. It is well within the tropical zone, so that the climate combines with the rich soil and abundant rainfall to make it a country with rich agricultural possibilities. There are numerous mountain ranges that make transportation difficult in some parts.

The living pattern has aptly been recorded by Stabler in his study of Bejucal in the following words:[1]

> The rural population (of Bejucal) lives on scattered family-sized farms for the most part. Sometimes the rural dwellings are located on the principal rural roads, but more often they are situated at the end of a lane to the house (away from the public rural road).

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[1]Bejucal is a small village near the city of Havana.

> Thus, most rural homes and farm buildings are located at the center of the farms (fincas). Consequently many houses are one-third to three quarters of a mile from any other house. Usually the farm lane leads off a public road or path, but there are some farms which must be reached through the private roads of others.[2]
>
> The rural zone of Bejucal is today largely divided into small farms. Some of these are general farms producing little to sell. These are largely subsistence farms. There are other farms having one or more cash specialties. Probably dairying is the most common, with fruit and vegetable production close behind. There are only three or four farms producing sugar cane for shipment to the nearest sugar plant (Central Toledo) and only one producing any tobacco for commercial sale. Many farmers raise chickens (for eggs and meat) and a few raise pigs for urban sale.[3]

This gives a general picture of a part of rural life in Cuba. Bejucal is an area near Havana which is influenced largely by this city of over 1,000,000 population. In reality, the family farm is not as common as this might indicate for the census made at the time of the formation of the new Agrarian Reform law indicates that only about 1.6% of the land owners own 46% of the agricultural land.[4] There are nearly 150 sugar mills that process cane and most of these have had huge areas of cane that were owned directly by them.

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[2]George M. Stabler, Bejucal: Social Values and Changes in Agricultural Practices in a Rural Community (Unpublished Ph.D. Dissertation, M.S.U., 1958), p. 29.

[3]Ibid., p. 33.

[4]Cuban Government, Agrarian Reform Law (Ley Revolucionnario Numero 3, 1959).

Fray Bartolome, an early Spanish priest, estimated that, at the time of the landing of Columbus in 1492, there were more than 300,000 Indians inhabiting Cuba. Twenty years after the first landing, 300 Spaniards landed to settle. The Indian population decreased rapidly so that in 1537 the cross section of the population was as follows: 300 Spanish, 5,000 Indians and 500 negro slaves. Today the racial cross section of population is given as follows: white, 73%; negro, 13%; mixed 14%; and the Indian is not considered as measurable for there are so few. The total population of Cuba today is approximately 6,000,000. The province of Oriente, which is furthest from Havana, varies from this in that the "white" classification accounts for only 60%.[5]

For a more specific view of the conditions in a typical rural community in Oriente province, the following information is given. It is not an actual community although it is much like many that are in existance. The figures in some cases are actually taken from community surveys. The name of "El Barrio" is used to denote the name of this community.

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[5]Antonio Nunez Jimenez, Geografia de Cuba (La Habana: Editorial Lex, 1959), p. 176.

There are 650 people that consider themselves residents of El Barrio and they reside in 95 different homes. The average family has six children at home but in many cases there are older ones that are already married and live nearby. There are 350 children under 16 although only 95 are in school. There are 150 men that can be considered the adult working force although there are almost 150 older boys and young men that work also.

The families all have some land, varying from 4 acres to 15 acres and in all cases the income is supplimented in some way but mostly by working for the sugar plantation during the sugar harvest. The average income would not exceed $500 although 10 men who have special jobs that take them outside the community at least part of the year, earn up to $1000 yearly. There are large land holdings bordering the area but none of these holders live in El Barrio.

Most of the residents have lived here all of their lives as did their parents and the land has been subdivided many times. The adults have had less than 3 years of schooling on the average and there are 50 people over 16 who do not read or write. Less than half of the couples are legally married and only half of the children have their births registered.

Sixty of the homes have floors of either cement or wood; the rest are dirt. In 20 homes kerosene pressure

stoves are used for cooking, in the remainder of the homes it is done in open fires with charcoal or dried wood. Wood and charcoal are becoming increasingly hard to get. The water is obtained from the river which is about a half mile from most of the homes; in 10 cases there are wells that function except in the dry season. It is not a common practice to boil the water in 65 of the homes. All of the homes have radios. Wick kerosene lamps are used in all of the homes and in 12 cases there are pressure lamps that are usually used. The two small stores in the community have small electric light plants and they also have the only kerosene refrigerators. Some attempt at kitchen improvement has been made in 8 homes and great satisfaction was expressed. In 26 cases, sewing machines were found and these were used by other women also so that almost all of the women's clothing is made at home and some of the men and childrens' also.

A hard surfaced highway borders El Barrio and it leads to "Sugar Mill Town" five miles away. Here some credit is available to the families of 72 of the men who are considered yearly employees of the company. Limited medical and retirement benefits are given also. The Sugar Workers Union is available for help in some cases of need. The highway also leads to "Central City" which is 15 miles away and where many more complete facilities of all kinds are available. Bus and inexpensive taxi service are available at all times on the highway.

The local school goes to the 6th grade but would be extremely inadequate if all children finished the 6th grade. Further schooling must be done outside the community. About half of the homes have books for reading and in 75 homes it is the custom to buy the weekly popular magazine.

The figures given by the United Nations Report of the World Social Situation published in 1957 give a further indication of schooling and literacy in Cuba.

TABLE I

UNITED NATIONS REPORT OF THE WORLD SOCIAL SITUATION IN PERCENTAGES OF AGE GROUPS IN SCHOOL AND PERCENTAGE OF LITERACY OF THOSE OVER TEN YEARS OLD AS OF 1957 IN CUBA.*

	Ages in School			Per cent literate over 10 years
	5-14	15-19	20-24	
Havana	77.4	37.4	12.9	95.0
Total Urban	69.0	27.1	8.4	88.4
Rural Population	34.9	7.0	1.6	58.3

*United Nations, Report of the World Social Situation (New York, 1957), p. 189.

Returning to the information on "El Barrio", in all cases, some animals are raised and in all cases some root crops are grown for home consumption. 35 homes have fruit trees and 12 have kitchen gardens. The crops most commonly grown for sale are plantains and corn. Oxen are the main source of power used other than hand tools for farming

operations. There are 12 yokes of oxen and no tractors in the community.

From these small holdings the owner or operator will market products daily that might be saleable. In some cases it is a few bunches of bananas, some tubers, some milk or fruits. This is often sold directly to a store in the nearest village where he will in turn buy the daily food needs of rice, beans, coffee, lard, sugar, other small staples and sometimes meat. The daily trip to town for many is time consuming but also serves as a social outlet for the men. There is at least one crop of corn grown in most localities that brings in a larger amount of money at one time. The pigs and chickens that are maintained serve as a savings account to a degree in that in case of emergency they are sold for cash.

Escuela Agricola e Industrial

Dr. Richard G. Milk describes this educational institution in the following words:

> The Agricultural and Industrial School situated in a little country neighborhood of Playa Manteca in the municipio (county) of Mayari, with a postal address of Preston, was founded in July, 1944. The United Fruit Sugar Company which operates the Preston sugar plantation, leased 300 acres of land to the Methodist Church for the establishment of the school, and has donated generously subventions, water, electricity and other gracious facilities. Over 500 employees of the company have given either time or money to the school in the 15-year period. A Bethlehem Steel Company subsidiary and the Atlantic Gulf Sugar Co. have also contributed, as well as a number of other business men in Cuba. However, the money for nearly all of the

> buildings and over half of the yearly running expenses have come through our Methodist Mission Board from interested church friends in the U.S.A.
>
> From an abandoned cane field with two buildings and no fences, there has grown an educational plant with 22 buildings, and a varied accumulation of plantings and agricultural capital. Altogether 300 young people have been given an education. When last operating there were 75 boarding students and 12 teachers. A four-year course (above the 6th grade level) in agriculture and home economics is offered. About 50 young people have graduated from the school. Many of the early students were older youth still in primary grades. Educational requirements have been lifted as the demand for entry far exceeded the openings available.[6]

The school is governed by a board of directors which is a representative group of the church, the United Fruit Company, alumnae and members elected at large by the board. The Board of Directors meets twice a year en masse and the executive committee meets monthly. This group deals mostly with financial matters and general policy. The director who is appointed by the church makes the day to day decisions. The faculty as an organized group also help make many of these decisions. The students have organized groups that deal with many of the problems of living in a boarding school including minor discipline. The alumnae are organized but as yet they have not been influential in policy making.

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[6]Richard G. Milk, An Evaluation of the Education Offered at the Escuela Agricola e Industrial at Preston, Oriente, Cuba (Unpublished report made at Ames, Iowa, March, 1959)

The school has made a special effort to use effective teaching methods, as near as possible all classroom teaching is supplimented with special problems and projects to give actual practice in the skills being taught. Each student works in related labors four hours each day and the work program is rotated to give each student varied experience.

The school is located in the center of a large plantation area. The number of day students in the prevocational course has never been more than 10, and they came from cane workers' families. All of the regular 4 year vocational students live at the school for the 9 months while classes are on. They may go to their homes twice a month, but as many of them come from some distance away, they may not visit home except at Christmas time and during the summer vacation.[7]

Extension experience.--One of the major concerns of all of those connected with the school and particularly the founders is the level of living in the rural areas. It has been traditionally a life of poverty and hard work. The trend has been of migration to the cities, but in many cases the life awaiting those that left the country for the city is even more uncertain. The school was founded mainly to

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[7]For further details see Appendix II.

improve the conditions in these rural areas. For this reason there have been many efforts to make direct contact with the rural communities.

In the early years special visitor's days were begun in which special exhibits and demonstrations were held. These days were entertaining as well as instructional and they were also directed toward public relations. Later excursions were prepared by the students and faculty to take programs directly to the communities using drama as well as exhibit and demonstrations to accomplish the same three objectives of the visitor's days at the school. In an effort to make a more concentrated impact on a particular problem, students were organized in teams to work over a period of time in the same area. This was limited by transportation to relatively nearby communities which were mostly cane field workers and their families living in company housing. A feeling of greater success was felt in the projects carried out in the few communities of small farms that were included.

The Pilot Project in Community Development

From the experience that the early work in extension had given and the observed results in other areas of the world, the feeling was of the worth of attempting a project centered at the community level that would use the school as one of many resources but not depending entirely on it.

For this project one of the older graduates was selected and a small salary from a special grant was provided for him so that he could use his home farm as a base and work also in 5 other communities that were nearby. This project was also related to the Methodist Church that had been working in all of these communities for more than two years. Besides the work of religious nature, there had previously been special projects on such things as literacy, malaria control, and recreation; these helped to give a favorable image of the church.

Many people were interested in the project and were eager to offer help in the way of suggestions. Monthly community meetings were held with resource people often invited to help with expressed problems. The farms and homes were visited constantly by this young man (agent) and from these visits further needs became evident. In each case help was offered in the way of information, demonstration, or by contacting other people who could be of more immediate assistance such as others who had solved the same problem. Surveys were completed in two of these communities and they served to indicate to the agent and to the people, areas of concern that they would like to work on as a community. Based on this, goals were established of things that they would like to accomplish within a year's time. In general, goals were established in the areas of agricultural problems, household problems, health problems and recreational-

cultural problems. A calendar of events was prepared, special resources and materials were located and like programs were coordinated among the communities. After a year, the progress was evaluated and with great enthusiasm the second year began, built up on the first year's experience. The special funds were used up after the second year although many elements of the program were incorporated in the general plan of work of the church. The agent is now working in another area as a full time religious worker.

CHAPTER III

A HYPOTHESIS RELATED TO EDUCATION AND TECHNOLOGICAL CHANGE

Based on observations made of the program of the Escuela Agricola e Industrial of Cuba and those observations stated in the first chapter, a hypothesis can be stated in the following words: "There are more elements of effective education for technological change in the community-centered program than there are in the training school program." Stated in another way this says that for the same amount of outside resources involved, a greater number of recommended practices will be adopted because of the conditions that are conducive to effective learning. This is also related to the conditions that contribute to the adoption of educational objectives.

In terms of this hypothesis, the previously stated goal of EA & I could be restated as follows: "A community centered educational program will have more elements of effective education than the selection of qualified young men and women from the rural communities in order to offer them further training (outside of the community in a training school), that they might return to their communities to help raise the level of living."

It should be emphasized here that the goal related to "the selection of young people from the rural communities in order to offer them further training that they might return to help raise the level of living" is not the only one on which the educational program of EA & I is based. The evaluation report states this goal in slightly different terms but the program has other aims as can be noted in the report.[1] From the point of view of this study, this is the only one in question.

From a point of view of those living in the rural communities, one of the great needs is for some kind of training for those who must leave because of a lack of economic opportunity. It is not uncommon to find four or five boys in a family and just barely enough land for one to continue on. The training school can be of real assistance in this case to open up new vocational opportunities. This study is concerned with those who will stay, or are likely to stay, in the rural communities and not those who need training for other occupations.

Throughout the world today there is much concern about education and technological change in rural areas. There have been many terms and special words used that are not always fully understood. Even the word "education" is

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[1]See Appendix II.

one that means different things to different people. The remaining part of this chapter is dedicated to the task of defining some of these terms as they will be used in this paper. The first two topics deal with the close relationship of "change" and "education".

Change and planned change.--One big question that arises when the idea of planning for better conditions is whether or not it is necessary. In the thinking of many people in the world, there is found an attitude of destiny or fatalism which does not allow man much say in the way things in the world will go. It is really a basic philosophic question as to whether man has a right to tinker with the universe or if he is merely to accept what comes and adapt to it.

Primitive man is found to look at change as something bad, but he also has a concept of the environment as being at times hostile; nature itself is seen as working against him in his fight for survival. There have been different ideas about change in history; the "lost paradise" idea which says that the world was once perfect but is constantly getting worse; the "cycle" idea which indicates that things are better for a while, then they return to a worse state and the cycle goes on continually; the "ascent to destruction" idea which admits that things are getting better,

but in the end it will all be destroyed.[2] No doubt there could be found traces of this kind of thinking today as there have been throughout history.

It is felt that the doors to modern progress were opened by Bacon and Descartes and from their thinking the doctrine of "indefinite social perfectability" was developed, in which man is seen to be moving upward continually in his struggle to make life better as he defines "better".[3]

It has been said that the only thing certain in life is change itself; nothing is static, and as Darwin and Spencer have indicated, the law of change rules every sphere of life. The following words by Tyler give a good picture of change:

> Every organism is continually meeting its needs, that is, reacting in such a way as to relieve these forces (tensions that produce disequilibrium) that bring about inbalance . . . Prescott classifies these needs in three types: physical needs such as food, water, activity, sex, etc.; social needs, such as affection, belonging, status and respect from his social group; and integrative needs: the need to relate one's self to something larger and beyond one's self, that is, the need for a philosophy of life.[4]

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[2]Newell L. Sims, The Problem of Social Change (New York: Thomas Y. Crowell Co., 1939), p. 3.

[3]Ibid., p. 19.

[4]Ralph W. Tyler, Basic Principles of Curriculum and Instruction (Chicago: University of Chicago Press, 1950), p. 5.

There is no doubt that changes come whether we want them to or not. No matter what theory that one holds about the future of the universe, it has to be admitted that there are forces of change constantly at work that men can do little about. Also it seems true that there are many changes taking place that man is responsible for, although there may not have been a written plan made out ahead of time. All men have goals of both immediate and ultimate variety. As they work toward these goals, changes will take place and these changes extend into many spheres and over great distances. Speaking in terms of cultural change, the following statements are made:

> All cultural change is planned to some degree although the planning may be indirect and in another area, but it brings adaptations and counter adaptations.[5]

> There is at all times and seasons a vast amount of effort being directed toward easing or improving the human lot.[6]

So we see that to a degree all cultural change has been planned; many times the planning has been based on selfish desires of individuals more than a desire to improve the lot of mankind. At the community level all of this holds true; changes are constantly taking place; in the action and reaction of the members of the community things

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[5]Sims, op. cit., p. 286.

[6]Ibid., p. 315.

are usually improving. The big question here then is: CAN THINGS BE IMPROVED MORE THAN THIS BY ORGANIZED PLANNING? Sorokin in his book, "The Reconstruction of Humanity" which is based on the proposed need to convert egotism into altruism, makes the following statement:

> In speaking of the ideal society that we desire, only by studying these forces and conditions (those which render human beings, groups, and social and cultural institutions altruistic) can we draft an adequate plan for the elimination of social conflicts and for the establishment of a harmonious and creative social and cultural order.[7]

Recent experiences throughout the world have indicated that planned change can accelerate the fulfillment of basic human needs and at the same time eliminate some of the more undesirable consequences that social change usually bring.

Change and education.--Education and change are two closely related terms if we consider that for learning to have taken place there must be some change in the individual.[8] The change may be one of attitude, understanding or skill but the educational experience has made an impact at

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[7]Pitirim A. Sorokin, The Reconstruction of Humanity (Boston: The Beacon Press, 1948), p. 54.

[8]C. M. Ferguson, Administrator, Federal Extension Service, USDA, "The Contribution of the Agricultural Missionary to Rural Development Through Extension Methods of Education," a talk given in Washington, March 1, 1960.

some point. As we read the following words of Tyler, this becomes more clear:

> Essentially, learning takes place through the experiences that the learner has; that is, through the reactions he makes to the environment in which he is placed. Learning takes place through the active behavior of the student; it is what he does that he learns, not what the teacher does. . . . The teachers methods of controlling the learning experience is through the manipulation of the environment in such a way as to set up stimulation situations that will evoke the kind of behavior desired.[9]

Not always has education been thought of in terms of change. It is interesting to note the trend of education since the beginning of the Industrial Revolution.[10] The present areas covered by higher learning is but one example of this trend, and it can be seen in the growth of the concept of the "peoples' colleges". This would indicate that in the areas in our society where needs existed it was felt that organized planned experience could change individuals who in turn would change society to meet these needs.

Many times education has been merely thought of as that which goes on in the classroom, or the memorizing of what a teacher says; it has been thought by others to be activity for the sake of new experiences; other have suggested that the process must be entertaining. It would seem that all of these might be a part of education but none

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[9]Tyler, op. cit., p. 41.

[10]Ibid., p. 11.

of them alone would fit into Tyler's definition which states that, "Education is a process of changing the behavior patterns of people."[11] Or as Warner has said, "Teaching is not telling; it is helping others discover."[12] Read describes education from an anthropological point of view as, "in its broadest aspect . . ., a process of cultural contact," (culture being defined as, "patterns of behavior, methods of earning a living, forms of laws and government, kinship and family structure, modes of thought, and the value-attitudes system.").[13]

It is true that change can come by other methods; revolution brings change but in a free and ideal society the term of evolution has more meaning. Revolution is an imposed change by force while evolution works in terms of change at the level of the individual through new experiences. This brings us back to the two terms, "change" and "education"; education means change and evolutionary planned change in society must come through the introduction of

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[11] Ibid., p. 4.

[12] K. F. Warner, Professor of Extension, University of Maryland, "Analysis of a Local Situation and Development of a plan of Work," talk before agricultural missionaries, Washington, March 2, 1960.

[13] Margaret Read, Education and Social Change in Tropical Areas (London: Thomas Nelson & Sons Ltd., 1956), p. 96.

the individual to new experiences which is education. So we find that the two terms are related two ways.[14]

Technological change.--For our purposes this term deals with the adoption of such techniques as are explained in the following quotation:

> The term "technical assistance" has traditionally carried two connotations. On the one hand, it has meant the introduction of techniques derived from physical and biological sciences for the solution of material problems. On the other hand, it refers to the use of methods developed by the social or behavioural sciences for increasing the smoothness and the rewards of social interaction and social organizations.
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> In Latin America, until recently, outside and local agencies alike have tended to emphasize the first aspect and to place their confidence in the improvement of technology in engineering, industry, agriculture, and public health. During the last few years, however, experts and policy makers have become increasingly aware that technology of this sort does not operate spontaneously. It must be put into operation by the populations it is intended to serve; it must be assimilated to the customary behaviour patterns and social organization of the people. And if this is to take place, a systematic knowledge of the existing culture and social organization is required, as well as a scientific comprehension of how cultural and social systems may be changed under control. In such "directed social and cultural change" the level of community development, particularly in predominantly rural areas like Latin America, is of first importance, for the reason that most innovations reach the people through their community organization and in terms of local culture patterns.[15]

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[14]This does not mean that all "change" is "education".

[15]Phillips Ruopp, ed., Approaches to Community Development (The Hague: W. VanHowve Ltd., 1953), p. 331.

In this study the term "technological change" which is another way of saying "changes in techniques" (ways of doing things), is closely related to behavior change (changes in understanding, attitudes and skills). The preceding pages have indicated the relation of education and behavior change.

Community development.--This is another widely used term but for our purposes it deals with the eduational aspect of an even broader concept:

> 1. The term community development has come into international usage to connote the processes by which the efforts of the people themselves are united with those of governmental authorities to improve the economic, social and cultural conditions of communities, to integrate these communities into the life of the nation, and to enable them to contribute fully to national progress.
> 2. This complex of processes is then made up of two essential elements: the participation by the people themselves in efforts to improve their level of living with as much reliance as possible on their own initiative; and the provision of technical and other services in ways which encourage initiative, self-help and mutual help and make these more effective. It is expressed in programs designed to achieve a wide variety of specific improvements.
> 3. These programs are usually concerned with local communities, because of the fact that the people living together in a locality have many and varied interests in common. Some of these interests are expressed through functional groups organized to further a more limited range of interests not primarily determined by locality.[16]

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[16] Hernan Santa Cruz, FAO's Role in Rural Welfare (Rome: United Nations, 1959), p. 46.

> If we can borrow a term from the field of pedagogy, community development is essentially a direct method of teaching. Instead of standing on the side lines and assuming that instruction done out of context (say in a night class on municipal government) will somehow automatically lead to a productive attack on local problems, community development helps the learner make the connection between his learning and its application directly and without the interference of intervening factors. It may deal with concrete data or concepts and at times be highly intellectual, but in any case relevance is the chief characteristic of its approach.[17]

> It seems possible to isolate, for purposes of investigation, at least three distinct types of situation in which community development can and does and should operate. The first is where large-scale economic changes are taking place;
>
> The second type of situation is one where urgent action is called for to deal with an emergency. . .
>
> The third type . . . can be described as helping people to pull themselves up by their own bootstraps.[18]

> The movement which in China and Turkey and Mexico is called "mass education", is now for the most part called "community development" in British colonial areas. It can be briefly described as a general attempt to raise the level of living in underdeveloped and backward areas, carried out as far as possible by the people themselves on a self-help principle with the advice of experts. (conservation; agricultural extension; homecraft; nutrition; sanitation; health; markets; co-ops; roads).[19]

Very often other terms have been used to describe community development. Examples of these are: "community

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[17]Malcolm S. Knowles, ed., Handbook of Adult Education in the United States (Chicago: Adult Education Association, 1960), p. 419.

[18]Read, op. cit., p. 89.

[19]Ibid., p. 78.

uplift", "rural reconstruction", "informal community education", and even the term "extension" has been used. Extension is usually taken to mean "programs that extend out from an institution" so it does not fit here as well. The term "community development", on the other hand, is a community centered program that seeks aid, when necessary, from different sources and does not represent directly an institution.

Fundamental education.--This term is used widely by UNESCO. It denotes the following kind of program:

> Although a precise definition is generally lacking, it is obvious from the literature that "fundamental education" at the elementary and secondary levels encompasses a type of program that is related directly to the experiences of the people concerned, that utilizes the resources and needs of the students in the progress of teaching the fundamental tool subjects, and that is concerned with the creation of "better living" through attention to such mundane matters as health and health habits, clothing, dietary practices, esthetics and practices of housing and home surroundings, public sanitation, immediate and practical ways of making a living, the production of a home food supply and training in vocational knowledge and skills.[20]

Informal education.--This could best be described as the kind of education that takes place outside of the classroom. It is the result of the experiences that one undergoes in everyday life that give a resultant change in behavior

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[20] C. W. Harris and M. R. Liba, Encyclopedia of Educational Research, a project of the American Educational Research Association of the NEA. (New York: The Macmillan Company, 1960), p. 1174.

in the way of understanding, attitudes or skills. It can be well organized, as in the case of youth clubs like the Boy Scouts, or it may be a result of the incidental happenings of daily living.

Training school.--For the purposes of this paper, this refers to institutions located outside of the local community where specialized training is offered that usually takes from a year to three or more to complete. It is the type of program offered at the Escuela Agricola e Industrial.

CHAPTER IV

SUMMARY OF LITERATURE REVIEWED

Literature was reviewed in three general areas, learning theory, education for technological change and, special conditions in Cuba related to education. In the last area mentioned, the amount of literature is comparatively limited but in the other two areas an overwhelming amount has been written. As a means of limiting the field, only literature that has been written or revised in the last ten years was used for the most part. Also, the areas of vocational education, adult education, extension education and education for social change were used as a starting point. Books that dealt directly with these subjects then gave references to further materials that were helpful.

It should be mentioned here that the literature reviewed represents only a small portion of all that has been written. At the end of Appendix I can be found the list of references used. Appendix I represents the direct results of the review of the literature but the volume is too large to be included in the text of this chapter. Any summary that could be made will never be able to reproduce

the exact thoughts of the original author or the results of the original experimentation; for this reason Appendix I is included.

The categories in the summary follow those of the original review. These are arranged in alphabetical order according to the term used. These terms are used because they were referred to by more than one author. If the data were to be organized logically, it is likely that many combinations of these categories could be made or that other categories would be needed.

Learning Theory

All senses.--There is close agreement that learning must be experience centered and that experience is "all sensory input to the organism" (Knowles) or in other words the result of "perception" (Krech and Crutchfield).[1] Experiments are giving further proof to the observations of many educators in the past that as sight, hearing, and touch are combined, the learning situation becomes more meaningful. Even the senses of taste and smell can be included in the total experience; much of the literature also deals with thinking as almost a sixth sense.

Practice and experience are not the same thing if

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[1] See category, "All Senses" in Appendix I.

practice means only repetition. Practice is only valid if each practice results in some further organization and coordination of the parts. This is helped by constant evaluation of efforts. Interesting experiments have shown that rhythm helps in the organizing and coordination process.

Learning by doing is a term that follows this recommendation for the whole organism is involved. Learning is seen as active and not passive.

Behavior change.--Learning is generally defined as being directly related to experience and behavior change. The educational experience must bring about a change in behavior of the human organism if learning has taken place. This change may be manifested in values, understandings, attitudes, appreciations, abilities, and skills.

Behavior change depends on the active environment of the individual in the educational experience in planning, execution and evaluation.

Complexity of material.--As the material becomes more complex the likelihood of learning is lessened and only as it becomes organized does it become meaningful. If there is some central point in common to tie everything to, then it is more meaningful and in turn becomes useful. Complex material in itself is complex because it has no distinguishing characteristics that help to integrate it easily with the products of previous learning.

Conditioned response.--This has been shown to be of greater importance for younger children and is not such an important process for adults. It is seen to increase up to the age of four years and then decrease in its importance as a learning mechanism. This is the manner in which many childhood fears are developed. It also accounts for many of our more subtle reactions for it takes place in the learning organism almost automatically. Things become related and alike if they are perceived close in space, time or appear to have elements of similarity. It is a short circuited stimulus-response reaction where a new stimulus is seen like a former one so that the old response is given. With practice it becomes automatic and may be even stronger than the response to the old stimulus.

Discovery and insight.--In every day life, this may be one of the most important parts of learning. One important part of the learning process is the internal reorganization of previous experiences to make some new meaning. This may not come from any sensory stimulus but results from a synthesis of retained experiences. There is also indication that this reorganization process may not be done by conscious thinking for it is often found that new concepts or answers appear after periods of rest or relaxation.

The trial and error method of discovering new relationships is also important. Learning that comes about in this way is found to be retained longer than rote learning.

Learning from insight and trial and error increase with age, a questioning attitude, and ability to evaluate.

Felt needs.--It has been found that unless learning is motivated by felt needs, then some kind of coercion must be used, for in its absence, there is no incentive to learn. Felt needs come from many different sources and in some cases it would be hard to determine if the motivation for learning arose from the individuals desire or an artificial means imposed by the educator which would be close to coercion.

Felt needs arise from tension within the individual, and being a tension-reducing organism, learning becomes a means to an end. Interesting experiments have shown that if the need is too great then there is blockage so that there is no possibility for learning, instead usually violent reaction results.

Needs are seen to be in a hierarchy of order: (1) pysiological (for oxygen, food, water, etc.); (2) security (to be loved); (3) to love others; (4) self esteem; (5) self actualization (the need to know, express, etc.). Maslow's experiments indicate that these usually come in order; the first one must be satisfied before the second one is of great interest, etc.[2]

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[2]M. Rokeach, Lectures on "Psychology of Human Relationships," Spring term, 1960 at Michigan State University.

Because learning is so closely related to felt needs, the emphasis is being placed on problem solving activity as an important part of all educational programs. It is felt that organized education can help individuals with a process that can be used all through life whereas it is impossible to give information and skills in the classroom that will fit all of the problems that will confront the student later.

Goals.--Learning is related directly to the degree that the individual has a clear goal in mind. The goal is closely related to the felt needs of the individual in that there has to be a desire to attain it. The goal must be his and not the educator's. The role of the educator is best seen as giving help to clarify the goal that will really satisfy the felt need, for often the student cannot see all of the aspects of the tension producing situation.

As goals become more specific, they become attainable and then evaluation is possible. Here again the educator can guide the learner. Unless goals are attainable to a degree that brings some satisfaction, there is likely to be tension increase instead of reduction. This seems to block out the repetition of the same process. This has meaning for educators because they may be rejected as guides unless some satisfaction is obtained.

Individual difference.--Intelligence does have an effect on learning but it is not as crucial a determining

factor as once thought. For any given learning situation the previous experience of the individual and his motivation are usually more important. Age is not as important as experience and felt needs although it is true that behavior patterns become more rigid as one grows older, this being due to much repetition. Sex has not been shown as a determining factor either, in the ability to learn.

An effective educational program must take into account individual differences, which means that flexibility and imagination are necessary in an organized situation.

Meaningfulness.--The rate of learning and the degree of meaningfulness are closely correlated. Retention is also higher if the experience is meaningful. Mere experience and practice in themselves do not insure desired behavior change unless they can be related to former learning.

To be meaningful any experience must "start where one is" and then reorganize or add to that. Unless there is perceived relation it is never integrated into the behavior pattern.

Retention.--Retention depends on the amount of learning, the complexity of the material, the meaningfulness of the material and the amount of interference that takes place during or near the time of learning experience.

Forgetting is not merely a gradual fading away but is closely related to a covering up by later learning. Verbal

materials are forgotten sooner than motor skills, which relates back to the use of the senses in learning. As the whole organism is involved there is less likelihood of forgetting. Overlearning by meaningful practice adds greatly to the retention.

Rewards.--Perhaps both reward and punishment should be discussed, for traditional education has often used both as motivation for learning. To the degree that the motivation moves away from a felt need by the individual, the amount of learning is decreased. The individual will work more toward the solving the problem that is most immediate to him.

As artificial rewards are used, the results of learning behavior can never be completely determined. The goals that the educator assumes are in effect, may become distorted and the individual may use strange means to reach them. Rewards in the way of satisfaction should come close to the response that follows the stimulus. New behavior patterns will be adopted when the new response is more satisfying than the old.

Fear and coercion are generally recognized as being self defeating in the learning process for they develop an unpleasant atmosphere that leads to forgetting.

Sequence.--This is of importance when we realize that new meaningful experience is built on old meaningful

experience. As was indicated in talking about age, past experience is more important in determining the readiness of an individual to learn new things. For this reason each individual must start at his own level and he will learn as he relates the new experience to that. Unless related, the new experience will soon be forgotten as it is buried by other more meaningful experiences that are seen as having relation to things already known.

Social motivation.--As we look at the needs of the human organism we see that satisfaction is often related directly to a response from other individuals. The desire for social acceptance is so great that all behavior except in an extreme crises situation is effected by it. Experiments have shown that in the majority of cases the individual will even react contrary to reality as indicated by his senses if the reaction is felt not to be socially accepted. Some individuals conform more than others to social expectations to the degree that they have a sense of personal security.

If learning is directed at changing behavior in thinking, attitudes or skills, then the social atmosphere must be considered. For this reason it is found that learning often takes place to a higher degree when a group is working together and there is interaction among them. The educator must know something of the social atmosphere in which the learner lives if he is to help him develop new

patterns of behavior that will be satisfying.

Transfer.--All learning situations are artificial to the degree that they can never be reproduced again in exactly the same way. The theory of transfer states that learning from one experience will be applicable in another situation. As has been stated, the more nearly alike the learning situation and application situation the more transfer of desired behavior.

In organized education it is impossible to even approach in likeness the vast number of situations in which the individual will be required to react to meet his needs. For this reason it is important that generalizations and ideals be clearly indicated for these are the things that will be transferred. This can be implimented if the individual is aided in seeing applications of the behavior learned to varied situations with which he is familiar.

Whole-part.--The individual cannot retain isolated facts or experiences in any number. It is necessary to have some goal, concept or central idea to tie them all to. In general it is agreed that presentation of the whole thing at one time is best, when possible. This may mean a superficial experience of the whole so that later the parts can be elaborated on but the learner has the whole to tie them to.

Education for Technological Change in Rural Areas

Democratic planning.--All that has been said about

felt needs, beginning with the individual where he is experience-wise, involvement of the whole individual, the effect of social environment, etc., have relation to the reason why democratic planning helps for effective learning.

In the adoption of new behavior patterns of action it is important to think in terms of those who might be responsible for this area of specialization in society.[3] If there is need to change farming practices, then great help can be offered by an advisory group of farmers. The advisory councils, or community committees can bridge the gap between needs, sources of help and learning.

Felt needs.--This was treated in the section on learning theory also. In terms of education for technological change in rural areas this may be a reason why schools have not been more effective. The educational program must start with the problems that are being faced daily if it is to make any impact.

Home centered.--Realizing the effect of social expectations on the individual's behavior it is clear why the home is so important as a molder of the individual. In the more traditional societies this has even more influence

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[3]Margaret Read, Lectures on "Patterns of Authority in Cultural Change," Spring Term, 1960 at Michigan State University.

than some of the more advanced technologically. Even in the latter it is of greater importance than most organized educational programs.

Organized educational efforts that do not consider the needs and the resources of the home may have little effect. The home influence may cancel out the efforts on one hand, or, even worse, cut the individual off from his heritage by making his new behavior completely incompatible with that represented in the home. The home is another link that can help smooth over the impact of technology on a traditional culture.

Integration.--This is related to the whole-part discussion of learning. For an experience to be meaningful it must be integrated with former experiences and some kind of an overall picture must be gotten from the beginning to tie the fragments to.

Methodology.--Demonstration has been found to be very effective as a teaching method in almost all circumstances. This is especially so for education for technological change.

The very thing that makes demonstration effective can be found in other methods or combinations of methods. From learning theory we find that any situation that involves the whole individual in socially accepted ways will be effective.

The process.--Rather than thinking of great technological advances as the immediate goal of education it is seen as more of a participation in, and learning of, a process. The process once learned leads to problem solving at the individual and community level which will, in turn, bring the technological advances necessary to meet the fundamental needs of the people.

Resources.--The educator has often tried to play the role of the authority instead of a guide. In education for technological change, no one person can possibly know enough to be an authority in all of the fields where problems must be solved. The same could be said of material items needed for the necessary change.

As the educator becomes more of a coordinator and guide, then resources of all kinds can be collected to work on the problem situation. In this way the majority of the resources are found locally for a sharing relationship is inaugurated. In any problem situation, whether on the individual, family or community level, there is already a vast storehouse of internal experience as well as material resources and energy that can be applied to solve the problem.

Social and cultural relationship.--As the amount of literature attests, this is an area of increasing concern. When an educator works in a cultural setting analogous to the one in which he was born and reared this is not a major problem. When, on the other hand, an educator finds himself

in a situation different because of cultural background or because of accelerated technological change, he finds there are factors at work with which he is not able to cope. Such appears to be the case in many educational situations today.

All of the things that go together to make up what we call culture are inter-related to such a degree that a change in one spot will call for a readjusting in others. The literature is full of situations where technological change has been inaugurated in one place because it worked in another in spite of the fact that the cultures were completely different. Some questions could be asked about any proposed change that might help prevent undesirable side effects; "How does this relate to underlying values?"; "Who is now considered an authority in this area?"; "What other things are likely to be changed if this is adopted?"; "Who will lose if this is adopted?"; "Who must legitamize--innovate--if it is to be adopted?"; "What will be the reward that the individual is seeking if he adopts this practice?"; "Why hasn't this been adopted before?"; etc.

Survey.--From individual problem solving all the way to international planning, survey is an early step in making changes. In education for technological change there may be different levels of survey and for different purposes. The anthropological survey may determine all of the factors that go to make up the culture including the basic value structure. This is of great help to an educator

who is an "outsider" to a greater or lesser degree. It has been suggested that most professional change agents (educators) are "outsiders".

Another level of survey might indicate felt needs, related problems and resources. This survey is one that the individual can best participate in, for while doing it there is an automatic inventory being made with a built-in incentive to change things.

Where to educate.--It has been suggested that needs which come to bear on the individual cannot be satisfied without changes at the international level. This could also be said for nation, district, the community, and the family. It is true that educational effort and change in behavior will have to come in and through the institutions and organizations represented by these levels; yet it is the individual as an individual and as a participating unit that will be changed if the change meets a felt need and the resultant behavior is satisfying. As Mills said, "Keep your eye on the image of man" and this is certainly true in education for technological change in rural areas.[4]

Cultural Factors in Cuba

General summary.--The cultural background has already been touched in Chapter II. The framework of the

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[4]C. Wright Mills, The Sociological Imagination (New York: Oxford University Press, 1959), p. 212.

summary written by Del Rio and Laboy can be used to outline the values and attitudes in rural Cuba.[5] This is only a generalization and no individual would fit completely into this pattern.

Land.--Up to now the majority of the people are landless but everyone dreams of owning his own farm. Those who have had means consider land one of the only real securities and thus have invested in it for holding.

Cultural practices and taboos in agriculture.--There is general belief in following the moon and other best times and ways to do things but if a new practice can be demonstrated as practical it is usually adopted.

Solution of local problems.--It is generally felt that it is the central government's responsibility to solve all of the public problems. As tax money is collected locally for federal government only and there is little local autonomy, this feeling is strengthened.

Governmental activities.--There has not been much confidence in the past in the government as an effective or efficient organization.

Technical assistance agencies.--There have only been

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[5]Fernando Del Rio and Maria J. Laboy, "Latin America, The Interamerican Institute of Agricultural Sciences and Its Project 39," National Extension Services of Selected Countries in the Americas, CEP # 8 (New York: Cornell University, 1959), p. 19.

pilot projects in operation in Cuba but the people have accepted them and the agents when the programs were practical.

Family and kin groups.--Families are usually large (at least 6 children) and they remain close together. What ever differences there may be among the members it rarely leads to rejection. The family represents a united front to the world and the authority of the elder members is respected.

Relation of the sexes.--The world is considered a man's world but the woman has a great deal of influence over the children. Women are revered and protected but at the same time considered fair game. There is a high incidence of children born out of wedlock but in many cases it is a common law marriage that has a stronger bond than most legal marriages. Women have the right to vote and as jobs open up to them they are exercising more influence. Education at all levels is open to women.

Division of society.--There are three divisions, the upper class who have money, land and high positions in business; the middle class which is composed of the professionals; and the laboring class which accounts for the majority. The middle and lower classes are becoming stronger politically so that some of the inequalities of former times no longer exist.

Religion.--Catholicism is not as strong as in other

Latin American countries, particularly in the country areas. Spiritism and Protestantism are also present. There is respect for the varying religious beliefs and contact of some kind is maintained with some religious authority that can be called upon in time of need. There is also a tendency to ascribe results to things beyond one's control, often spoken of as "fate" or "destiny".

Work.--The traditional pattern has been for a large percentage of the population to work as day laborers in the sugar plantations under a foreman or small owner (patron). Manual labor is not too highly regarded and a successful man is seen as one who has gained a position where it is no longer necessary.

Living standards.--Living standards have not been considered adequate, especially in relation to diet and sanitary conditions. To be able to buy rice and have it daily at meals is considered a standard worth achieving. Vegetables are not widely used even in the country areas.

Public institutions.--The individual is of more importance than the institution and all relations are highly personal. Good personal relations are considered of more importance than getting a job done or of being frank about all details. Institutions are not considered the source of benefits as much as individuals.

This concludes the summary of the review of liter-

ature and again the reader is reminded that Appendix I contains the quotations that this summary was taken from.

CHAPTER V

ELEMENTS OF EFFECTIVE EDUCATION FOR TECHNOLOGICAL CHANGE

The exerpts from the literature as found in Appendix I present only a summary of the tremendous volume that has been written in relation to this subject. These exerpts were then summarized again to develop the material that is found in Chapter IV. The present chapter is in many ways a further summarization of the already summarized material.

Some of the categories listed in Chapter IV appear in almost the same wording in the "elements" found in this chapter. For the most part, however, the "elements" are cross-combinations of various categories. There are many different elements that combine to make up the total that is called "behavior change". The ten listed below include the key things that the literature has indicated as important.

Family centered.--Because of the importance of the family in Cuban culture this seems to be one of the most important elements of any educational program. The individual depends on his family for meeting all of his basic needs; it is impossible for any other agency to meet all of these needs so it should help the family do a better job instead of trying to compete. New practices adopted by any

member should be accepted at least to the point of understanding and appreciation by all members of the family unit.

Democratic.--Each individual should have an opportunity, as an individual or through his family or special interest group, to participate at all levels of education for change. This would include survey of conditions, analysis of needs, goal setting for desired changes, actual program of change, and finally, evaluation of results. His participation should be voluntary at any point, but each individual should have the opportunity.

Works toward basic skill development.--Each individual should have the opportunity to acquire basic understandings, attitudes and skills related to reading, writing, calculations and appreciation for the cultural and natural resource heritage.

Individual participation motivated by satisfaction of achieving goals related to felt needs.--The satisfaction may come from increasing material gain to satisfy a physical need or it may be related to a social or psychological need but in any case, it brings a direct feeling of satisfaction as something concrete is achieved. For this behavior change to become adopted permanently it must continue to produce satisfaction. Because of this the motivation in the training situation must be the same as the motivation in the application situation.

Use educators (professional change agents) who are able to identify.--The amount of participation of the agent in any community will vary but he should see himself as a guide, a catalyst, a channel, a coordinator, an introducer of new experiences more than an authority or the final word in decision making in the process of change. He will identify if he understands and appreciates the cultural background of the community.

Key person centered.--This takes into account that in any behavior pattern (set way of doing things) there are reasons (sometimes called vested interests) for continuation of that pattern. Sometimes these reasons are economic but many times they are based on reasons of personal dignity and social prestige. Because of personalism and the dignity of the individual in Cuba, the key people who are affected directly by a proposed change should become, participants in the change process. This is not always possible but change (as an educational process) based on coercion is not as lasting as change based on satisfaction of all concerned.

Prepared to deal with all areas of life.--The individual is a unity, and needs in one area that are not met lead to tension and frustration for the whole organism. Some have looked at the individual as having physical needs, intellectual needs and spiritual needs. There have been other divisions made in relation to other educational programs but it is merely a way to be sure that the program is

prepared to deal with all phases of life. Often resources in the way of knowledge or specialists must be sought from outside the community. In this case the problems that stem from felt needs are categorized according to the areas of speciality in the professions.

Similarity in instruction and application situation.--This relates to the use of resources (including methods of instruction) in the instruction situation that are the same as the resources in the application situation. Transfer only occurs where there is similarity seen in the elements of the learning and application situation. As artificiality is decreased, the chance of adoption is increased, for this reason the result demonstration has worked well.

Timely instruction.--The program offers information and skills at a time that they can be applied immediately to the problem situation so that new behavior patterns will be adopted to the degree that the change brings satisfaction. Retention of understanding, attitudes and skills will decrease with the lapse of time unless there is practice.

Self perpetuating.--The program develops understanding, appreciation and skill in the problem solving method as the way that individuals, families and communities can meet felt needs. The establishing of some kind of a unit (organization) within the community that is responsible for guiding the program will help in this. The motivation

that would foster participation in such an organization would have to be built-in so that it would continue on its own.

It should be emphasized here that these "elements" are being considered only in relation to effective education for technological change in rural Cuba. They are subject to all of the limitations as indicated by the terminology defined in Chapter III. Further, these elements have not been tested beyond the point of being related back to tested learning theory. They are in themselves more of the nature of hypotheses than tested conclusions.

CHAPTER VI

COMPARISON OF ELEMENTS IN EXISTING EDUCATIONAL PROGRAM

With the synthesizing of the Elements for Effective Education for technological change from the large amount of literature reviewed, we now have some guides to judge existing programs that are attempting this task. Going back to the original hypothesis, it was stated that "more of these elements are likely to be found in a community-centered program than a training school program." This all is related to the big question, where should the resources of an agency such as the church be used to best help in the adoption of improvement practices that will change behavior patterns in the rural communities to meet basic felt needs?

In using these elements to look at and compare the training school program of EA & I and the Pilot Project in Community Development it is impossible to give statistical results. All that we can measure are tendencies, for both of the programs have a degree of each of the elements. A rating could be given that could be used to compare the two; but if a numerical rating is used then some attempt will have to be made to balance the elements, for one may be of more importance than another. For this reason a rating system of A, B, C, and D is used to indicate the level of

effectiveness, A being the most effective and D being the least effective level. With this in mind the elements will be used one by one to make a comparison of the two programs. At this point it should be emphasized that the judgements are likely to be inaccurate to the degree of personal bias.

Family Centered

Training school.--Because of the distance to the homes and the absence of contact in most cases this would have to receive a very low rating. Rating: D

Community development.--The survey is basically information of present condition and needs at the family level, so it would be rated high. Rating: A

Democratic

Training school.--The individual at the community level has little to say about the curriculum. The students who do attend, study problems related to special interests in some courses, but any one community would not likely have more than 3 students at the most in attendance. Rating: C

Community development.--To varying degrees the people participated at all stages from "survey" to "evaluation". Some decisions were made outside of the community as to setting goals. Rating: B

Works Toward Basic Skill Development

Training school.--For those who attend, this is very high, but the other factor is that a small percentage of the individuals are able to participate in the training school program. Rating: B

Community development.--The program in itself does not have a systematic program of instruction for these things although it has a direct interest in a day school held for the children. Here the quality is lower but it is available for all children. Through the mobile library and special adult literacy classes further help is given. Rating: C

Individual Participation Motivated by Satisfaction of Achieving Goals Related to Felt Needs

Training school.--The project method is used in many of the classes so that the student is motivated to learn, to complete the project satisfactorily. Still, grades and graduation figure strongly in the total motivation. In general the motivation is not the same that would come from the application situation. Rating: C

Community development.--Usually each individual participated in the particular aspect of the program that satisfies an immediate need. As he is free to participate or not, in any or all parts, his motivation in any training situation is directly related to the degree that the same satisfaction will come when he applies it. Rating: A

Uses Educators Who Are Able to Identify

Training school.--In this particular case the educators for the most part do try to identify. On points like dress, terminology and appreciation for country life there is a high degree of identification, on the level of household conveniences there is quite a difference. Rating: B

Community development.--The agent lives in the area and is one of the people in every way except that of advanced training. Rating: A

Key Person Centered

Training school.--On the community level the key persons who are usually adults are not directly affected by the educational program. The only case where they might be affected is where they were close enough to observe some demonstrations or exhibitions. If the key person is considered as the father or mother in the family of a student then they would be influenced to the degree that they picked up new practices through their children or upon visiting the school, if they are close enough. Again this is limited by the fact that few young people in any one community have a chance to attend. Rating: C

Community development.--There is much more likelihood here of the program reaching directly the one who is in a position to change to a new way of doing things. The

farmer in his fields and the housewife in her home are good examples. As for key figures in the community that effect such big problems as land-holding, roads, etc.; perhaps these people have not been motivated tc participate as yet. Rating: B

Prepared to Deal With All Areas of Life

Training school.--The very fact that a training school is a concentration of resources for educational purposes indicates that this is likely to be so. In this case it is true that a large amount of knowledge, skill, tools and materials are available to deal with most problems whether they be spiritual, physical or intellectual. Rating: A

Community development.--This is the area of greatest need at the community level. Resources of all kinds are scarce. The agent in himself is not an authority in any field except to deal with superficial problems so that he must look for help outside. Special help is available but not at hand for immediate use. Rating: C

Similarity in Instruction and Application Situations

Training school.--The motto of "learning by doing" is used in most of the courses. The vocational courses are spent mostly in the shops and fields so that some of the artificiality is reduced. Due to the resources available and the difference in the school farm or shops from

the resources available at home, it still is quite different. Sometimes the absence of some small item at home is the limiting factor in the adoption of a new practice. Rating: C

Community development.--In some cases the instruction is done in a central location but often it is done in the homes and on the farms so that the resources at hand are used. If the instruction is a success it can be applied in the same way. There is less tendency here to apply artificial resources for anything available to teach, is available for use later. It has been noticed that sometimes special tools are needed but if the recommended practice is practical, this tool will have to be available. Rating: A

Timely Instruction

Training school.--The instruction program and the work program are closely coordinated so that teaching takes place as near as possible to the time that it is to be applied. From the point of view of the home community this advantage is lost for it may be two or three years at the least before the student will be able to apply it in his own home situation. Rating: C

Community development.--This is the same as the previous element. The instruction is done at the time of felt needs which is to say, that the application will come

immediately. This is one of the real strong points of education at the community level. Rating: A

Self Perpetuating

Training school.--From the point of view of the community there is little that they can do to insure the continuation of this educational program. Many students pay fees but in no case do they pay all costs. Neither do they have a voice in determining policies except indirectly through church officials and the Board of Directors. The community is dependent on outside help for the continuation of this program. Rating: D

Community development.--The agent in this case was supported from a special grant from outside of the community. The maintainance of the community organization as a functioning unit was quite dependent on his initiative so that upon termination of the project, it has not continued with the same vigor. This appears to be a weak point. Rating: D

To summarize the ratings so that a closer over-all picture can be given Table II (page 77) is used.

Tabulation is not possible so as to arrive at data that will either prove or disprove the original hypothesis as was stated earlier; there are too many elements of bias that enter in. The results of this comparison do indicate

TABLE II

COMPARISON OF SYNTHESIZED ELEMENTS FOR EFFECTIVE EDUCATION FOR TECHNOLOGICAL CHANGE IN RURAL CUBA AS FOUND IN TRAINING SCHOOL PROGRAM AND COMMUNITY DEVELOPMENT PROJECT

Element	Rating[a]	
	Training School[b]	Community Development[c]
Family centered	D	A
Democratic	C	B
Work toward basic skill development	B	C
Motivation by felt needs	C	A
Identifying agent	B	A
Key person centered	C	B
All areas of life	A	C
Similarity in situation	C	A
Timely instruction	C	A
Self perpetuating	D	D

[a]Programs rated from A to D, A is highest.

[b]Refers to Escuela Agricola e Industrial, Preston, Oriente, Cuba, (May 1960).

[c]Refers to Pilot Project in Community Development sponsored by Methodist Church in Cuba, (ended June 1959).

that there are some good reasons why this hypothesis might be true that can be traced back to tested learning theory. The same reasons seem valid as we look at the recorded evaluations of educational programs for technological change

in different parts of the world. The evidence is strong enough to say that the community centered educational program is likely to be more effective than the training school program in raising the level of living in a rural community for the same amount of input involved.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

The results of this study are more of the nature of a rationale than a proven hypothesis. The only tested data that was incorporated was that of tested learning theory. This makes up only one part of the Elements for Effective Education that were arrived at. The rationale that was developed in the first three chapters then has now become a much stronger rationale.

On the basis of this study it seems safe to recommend that the Pilot Project in Community Development is a sound one that is worthy of developing to a larger scale. Here it should be mentioned that the field evaluations made after the first and second years of this project indicated the same thing, but this evaluation was based on the participation of the people and only superficial recording of practices adopted.

This study is directed at more than just finding out if the Pilot Project made educational progress; it is interesting in finding out if the inputs by an outside agency, namely the Methodist Church, are as well used here as they are in the training of young people on the campus of the

Escuela Agricola e Industrial. If the goal is, the raising of the level of living in the rural communities, the indications of this study are that it is even a more effective way.

Again it should be stated that this is not the only goal of the Agricultural School and the recommendation from this study would never indicate a, one or the other, situation. Perhaps in the final analysis it will be a complementing role that the two programs will play.

The comparison of the two programs is made because the on-campus program will continue much as it has in the past because of the circumstances that result from the material investment already made. At the same time, the school has been the instrument of the church for work in the rural area. The results of this study would indicate that serious thought should be given to the establishment of a community educational service that would have backing in resources. The relation to the Escuela Agricola e Industrial of such a program would be a close one, but the use of funds and personnel should be separate. Experience has indicated that the resources of personnel and money are never adequate to do the job that needs to be done on campus so that it is hard for these resources to be deferred. Also, according to the present by-laws of the constitution of the school, funds cannot be used for on-going off-campus projects.

Another aspect of having two separate programs is that it will then offer a situation in which a further study can be made, in which actual statistical tests can be taken for the hypothesis that has been treated here.

Assuming that there are prospects for establishing such a program the following section is devoted to a proposed community development program.

Proposed Organization and Procedures for Community Development Program

What we are really talking about is an organized process of change. To best describe this proposed process the imaginary (but typical) community of "El Barrio" that was described in Chapter II, on page 23 will be used. In describing this process many of the things discussed in the review of the literature and related directly to the Elements for Effective Education will be pointed out. The process described follows in many ways the one used in the Pilot Project but it is hoped here to add strengthening points beyond this.

One thing that was not mentioned is that El Barrio is chosen as a community to work in because the church has been working there. This gives a tremendous head start for there is already some structure there to work through, some chance for perpetuation, and the agent has common ground for identification from the very beginning. It should be remembered also that the proposed Community Development

is a church sponsored program.

Previous activities.--There has been no coordinated informal educational program in El Barrio in the past, although a great deal has been done. The public school has had special youth programs on special days such as "Tree Day". The Cuban Department of Agriculture sponsored a special educational mission in 1957 in which food preservation, sewing, and family health were emphasized; this was for two weeks duration. The protestant Church has been active in this community for 9 years. The following list of activities have taken place during that time: Sunday School, Daily Vacation Bible School in the summer, Older Youth Group, Intermediate Youth Group, Sunday Services, special plays and dramas of educational nature, organized clinical visits of doctors, community agricultural fairs, community night programs held once a month in recent years, women's group and special campaigns for typhoid vaccination, etc.

All of these activities have had a high degree of success if measured by participation of the people and changes in behavior that resulted. At times there has been a feeling of frustration in that each group seems to be working on their own activity and almost in competition with other groups for the available resources of time, space and materials. Also it is felt that some projects that need the backing of the whole community, have not been pushed by anyone outside of the interested group that

initiated the project. In short, there has been an expressed need for more coordination of community activities.

Survey.--The first actual step in the process is the making of a survey. In "El Barrio" it may be possible to make a survey almost immediately. Here the agent would work with other natural leaders of the community who have shown interest in the proposed program. The survey is made from house to house and in as informal a manner as possible. Some kind of a written guide should be used that is prepared to include all areas of life.

To be more specific about the areas of life, the following are listed:

Tyler suggests the following division: (a) health; (b) family; (c) recreation; (d) vocational; (e) religion; (f) consumption; and (g) civic.[1] The Report of the 1946 Extention Administration Workshop held at the University of Wisconsin lists the following areas: (1) Improvement of the economic, social and spiritual well-being of the farm family; (2) Improvement of farm income through application of science and mechanization; (3) Encouragement of people to be wiser consumers; (4) Health improvement; (5) Family living improvement; (6) Improvements of educational

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[1]Ralph W. Tyler, Basic Principles of Curriculum and Instruction (Chicago: University of Chicago Press, 1950), p. 13.

facilities; (7) Better citizenship and (8) The conservation of resources.[2]

Dr. Thomas Jesse Jones who was of great help in setting up the program of Rural Education for the Near East Foundation work in Greece suggested four areas only: (1) Health and sanitation; (2) Appreciation and use of ones environment; (3) Household and home; and (4) Recreation in the broader sense of the word.[3]

For the purpose of this program, the following areas are recommended: Health and Sanitation, Agricultural, House and Home, Recreational and Cultural, and Spiritual.

After the survey is finished some kind of tabulation should be done so that all can see the picture of their community.

Changes anticipated in the situation.--For purposes of this study it can be assumed that it has been expressed by the informal leaders in the community, as a desire, that there be a coordinated program of betterment in the community that all groups that are now organized can participate in, and that it will also offer a way that others who have

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[2]Iowa Cooperative Extension Service, The Iowa Extension Program Planning Guide (Iowa State College).

[3]Harold B. Allen, Come Over Into Macedonia (New Brunswick: Rutgers University Press, 1953), p. 69.

not participated in the past can feel free to participate. There is an expressed desire for more harmony in the community, less sickness, better farming practices that will bring in more money, better opportunity for education and advancement for the children and better means of recreation for all. These could be termed as long-time goals and are not too different from the desires of mankind in all places and at all times.

Educational objectives for the year ahead.--As a help in formulating the working objectives for the year, at hand is the summary of the survey which is tabulated, there are some general goals or things that are felt desirable and needed as expressed by the people of the community; at hand are some stated goals of the church for its work in rural areas; there is the amplifications of the expressed needs of the people by local leaders; and at hand is an idea of some of the activities of educational nature that have been effected in El Barrio in the past. At this point it will be helpful to have a written list of recommended practices that have found application in like communities such as: the planting of kitchen gardens, the yearly injection of pigs to prevent cholera, the planting of hybrid seed corn, the attendance of adults at Sunday School, the formation of an agricultural equipment cooperative, the appreciation of reading good books, etc.

With all of this information at hand a list of working

objectives can be made that will be the basis for the work during the coming year.[4] Here again it should be repeated that all areas of life should be considered and objectives listed for each of these areas. As has been pointed out, it will be wise to choose projects in which a degree of success can be expected in the beginning of a program and perhaps not too many so that there can be more concentration. One of the problem areas that has been obvious, and at the same time expressed, is that of ill health. The expression by the people themselves of a desire for better health indicates this. A helpful tool at this point is the use of the question "HOW" and as the answer to this question is sought, a point will be reached where the answer will be an expression of a changed behavior pattern that could be actually observed if it were accomplished.[5] In this case, this procedure could be used and would easily come to, "the use of vegetables for the home food supply."[6]

In all five areas any number of working objectives

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[4]John M. Fenley, Establishing a Young Extension Service, Comparative Extension Publication Mimeo Release # 1 (Ithaca: Cornell University, 1959), p. 1.

[5]George Axinn, Class notes from Graduate Extension Seminar, Michigan State University, Winter, 1960.

[6]Fenley, op. cit., p. 17.

should be listed. It would be good to have even more than can be used so that later some selection can be used. Later, as the program plan is developed, some may have to be dropped and it will be seen that many can be combined at the point of specific activities.

Reasons why these objectives have not already been achieved.--An interesting question that should be asked at this point (after preparing the list of working objectives) is, "If these are such good ideas, why haven't they been done before?" Some things may be rather obvious to professional change agents and semi-professional community leaders but as Warner has stated, "until we arrive at a question that only the people themselves can answer, we are likely to be missing the real reasons."[7]

At this point it would be wise also to ask those questions about the proposed change that would give an idea of the impact that it will have on the over-all cultural pattern.[8]

Taking the working objective mentioned above, that of "The production of vegetables for the home food supply"

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[7]K. F. Warner, Professor of Extension, University of Maryland, "Analysis of a Local Situation and Development of a Plan of Work." Talk before agricultural missionaries, Washington, March 2, 1960.

[8]See Chapter IV, page 59.

and following through with it as an example, it is likely that many reasons will be found why it hasn't been done. Such things as, lack of reliable seed sources, problem of insects and diseases, no experience in gardening; no appreciation for the value of vegetables in the diet, and no knowledge of how to prepare interesting vegetable dishes, are a few good examples. Unless these barriers are overcome, there can never be much hope of reaching the desired objective.

Audience to be reached.--This particular objective would be directed at the whole family for as we look at the implications it is hoped that the whole family will benefit from better health by eating the vegetables from the garden. But at the same time each member of the family does not have the same part in reaching the objective so that they really represent different audiences. In this case there would be a division into, mothers and young women, fathers and young men, and younger boys and girls.

Behavior changes in each group.--In speaking of behavior changes it is good to think in terms of attitudes and understanding as well as actual skill in doing something. For the women, the behavior change related to the production of vegetables for the home food supply is more in the area of attitude and understanding. This can be worked on best in the related objective of "the use of vegetables in the daily diet." At the same time, women would have an

understanding and appreciation of actual skills that go into producing vegetables. In some cases even, it is the woman that will be doing the gardening, but not often.

For the men, unless they in turn have an attitude and appreciation of the value of eating vegetables, they are not likely to be as interested in taking the effort of learning the skills to adopt the practice of planting a garden. For the children again it will be more of a behavior change of attitudes and understanding, although they can do a great deal in developing and practicing skills in vegetable production.

Resources available for affecting these changes.-- Here, a selection can be made from the total list of resources of such things that seem most helpful as, land, water, bamboo for fencing, soil tillage tools, tobacco residue for insect control, local individuals who have had experience, agricultural supply salesmen who are willing to help with supplies and information, a pressure hand sprayer, a typewriter, a mimeograph machine, government bulletins, information and personnel from the School of Agriculture and Industry, three months time before planting season begins, etc.[9]

Also to be considered as a resource or perhaps

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[9]The planting season follows the fall rains which begin after September 15th.

better stated as channels, are the organized groups now in existance in the community. If contact can be made in the public school, in the organized church groups, and in the special church meetings, then a greater impact can be made on the family as a unit to accept new practices.

Activities designed to bring about desired behavior changes.--Perhaps a better name for activities would be "educational experiences" or from the point of view of the professional educator, "teaching methods". Research has shown that to expect any degree of success in education, the educator must use from 6 to 9 different methods. Further, those that are found of the most value are those using all of the five senses plus thinking during the learning process. By having a list of teaching methods at hand some ideas of those that might best fit this objective can easily be gotten. Here could be used, posters, bulletins, handout sheets, public talks and announcements, farm visits, radio talks, drama, exhibitions, slides, tours or field trips, demonstrations, discussions, etc.

A calendar for work.--Unless the "when" part of the educational experience relating to working objectives is stated, the plan is of little practical value. It has been found that the sequence of learning experiences is often the important factor in actually achieving the desired result. This is important from the standpoint of the learner but

from the point of view of the educator it usually is the difference between reverting back to the old and often times ineffective teaching methods for lack of time for preparation, or by good timing, the use of methods that produce a higher impact-output for the same amount of effort-input.

Assuming that this program starts in July; then a calendar like this for the stated objective, "the production of vegetables for the home food supply": July: farm visits by agent that brings up question of vegetables and gardens among other things; a drama relating to "Better Health Through Kitchen Gardens" presented at the annual Agricultural and Industrial Fair for the area held in "Sugar Mill Town"; simple information sheet distributed at the fair; August: Slides at monthly Community Night held at the church; special sermon during month on related subjects; posters prepared and placed in the two stores, the church and other points of congregation; give material to the Sunday School teachers in their area wide meeting that they can use in class related to the subject; hold organized discussion at monthly women's group meeting relating to vegetables and diet; September special program in the public school with picture, trying to stimulate interest in planting a school garden and small home gardens; special program with young people's groups and give out more literature; farm visits with indications of plots of ground that "could make good garden spots" and emphasizing early plowing; October: planned

trip of men to an area that has an earlier planting season to see what others have done; community night meeting in which public expression of interest in actually planting gardens is expressed; demonstration prepared and given on preparing seed beds and planting; November: help given where requested in actual planting; public demonstration given on control of insects and diseases; time given during monthly Community Night for expression of experiences relating to gardening; demonstration and practice in women's group on tasty ways of preparing vegetables; December: idea presented of having a local garden products fair in farm visits, at public school and in women's group; further discussion of fair and date set during Community night meeting for January 15th, each group takes some responsibility for fair; January: Special discussion with men on the growing of vegetables "off season" and literature handed out. Women introduced to related topic of "preservation of home grown vegetables"; February, March, April, May and June: frequent reference made to gardening in farm visits, casual meetings and organized meetings; some kind of simple information given out each month at Community Night.

Evaluation of activities.--The main evaluation has to be made in relation to the stated working objective;[10]

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[10]Fenley, op. cit., p. 43.

did we get the behavior change of the production of vegetables for the home food supply or no? At this point it can be seen that the more measurable an objective is with the common tools of measurement, the easier that it is to evaluate. It would be better for this reason to actually state the objective a little more specifically, such as "The production of vegetables for the home food supply in 20 homes that have never done it before."

If a program has many objectives and has had a lot of experience it may be enough just to count the number of new gardens, but usually it will be helpful to evaluate such things as timing and educational methods used so that future programs can be more realistic. It will be helpful to break down the skill area in jobs such as, "how to prepare the soil for a garden;" "how to make a seed bed;" "how to plant different vegetables;" "how to control diseases and insects;" etc. By attacking these as separate skills to be learned and by observing the results as indicated in farm visits and the conversations that are overheard, one can evaluate the areas of weakness. Some activities such as demonstrations, dramas, discussions, practices can be evaluated to some degree on the spot by the participation, expression of approval and questions asked, but much cannot be really checked until the actual families that have made the change are counted.

Further data for evaluation could be collected on such questions as: How much area is there in your garden? What vegetables did you grow? How many days in the year did you have home grown vegetables to eat? What economic value does your garden represent in food produced?

Here only one of the objectives from one area has been carried through and it should be remembered that objectives will be formulated in all of the five areas. It is interesting to note that this particular objective will lead up to higher long-time or general goals in three areas as the question"why?" is asked. It leads us up to Improved Health, Improved Agricultural Practices and Improved Home practices. This is true of almost any working objective and any activity that is used to reach the objective. For this reason one must be careful in the methods and educational experiences used so that our efforts of reaching another goal are not cancelled. An example of this would be to introduce a highly competitive activity in the community to reach the objective of home vegetable production. Here the harmony and unity within the community which has been stated as one of the general goals of betterment by the people themselves might likely be reduced.

Summary.--The program plan that would be written out and serve as a guide for the coming year should include the following items:

1. A general statement of overall goals.
2. A number of working objectives in each of the five areas stated in terms of behavior changes for a specific person or group.
3. For each of the working objectives: (a) a list of reasons why this is not now being practiced; (b) a list of learning experiences (teaching methods) that will help to accomplish it; (c) a list of materials and resources available that can be used to accomplish it; (d) a schedule of activities by the month for the whole year; and (e) a means of evaluating the outcome.
4. An integrated calendar of work for the year for the complete program in El Barrio.

Resources would never be such as to allow an agent to dedicate full time to a community the size of El Barrio, but it is felt that each community should be planned as a unit and then these individual plans be integrated at the points of use of the agents time and combined area activities. It is doubtful that the particular problems of any two communities are enough alike that a whole area can be planned for, simultaneously, from the beginning.

Selection and Training of Agents

The process as outlined above is of little value

without the right kind of a person to direct it. To a greater or lesser degree everyone that lives in the community is somewhat of a change agent in that he brings unique experiences to it. Also visitors act as change agents as they come and go in the community. The agent that we are concerned with here is the trained educator who feels a special responsibility toward implimenting the process. It is beyond the scope of this study to do an exhaustive analysis of the selection and training of agents but a few points should be touched briefly. What kind of a person should he be and how can he be trained, are two questions that need answering.

In the review of the literature that was done for Chapter IV some direct references to these questions were encountered that are included here. First of all, related to the personal characteristics of the individual:

> Was he a man of the people?
> Could he work in his own community?
> What concerns had he shown for the problems of his community?
> What were his attitudes toward authoritarianism?
> Was he a secure person?
> Did he have a set of moral values which he used on all situations and all people indiscriminately?
> What was his attitude toward the opinions of others?
> Was he a static personality or did he possess the capacity for growth?[11]

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[11]Lyle W. Shannon, Underdeveloped Areas (New York: Harper and Brothers, 1957), pp. 25053.

An examination of the role of the fieldworker makes it clear that no group organizer thinks of himself as a "leader" in any community in which he works. In no way does he accept this function or title. He is alert to see that the people do not look to him to solve a problem, to make contacts for them, to plead special privileges with influential people.

Though an accomplished technician in his own field of educational orientation, no group organizer considers himself a professional in the specialized areas of health, sanitation, agriculture, labor, or other related subjects. He knows personally many in these professions through his period of training and through contacts he has made in his area. He does not try to duplicate these services. Instead he orients the community to seek out the professional and to ask for his technical assistance.

The group organizer does not assume that until he arrived on the scene no community action existed in the island. He is aware of the history of the "juntas," and during training he has visited a number of centers where community activity is already underway. There is no problem of his competing with "already established programs" or existing committees," for it is not in his thinking or in his way of working to "establish committees" or "organize" people. Any action taken will be action taken by the community itself.

In this close relationship with people a group organizer can best be described as a catalytic agent. When he visits a community, he takes the time, whether he is distributing books, putting up posters, or showing a film, to listen to all the talk and discussion of the people around him. His manner is easy and permissive. He never pushes people into a reaction; he never himself states in a declarative way which he believes should be done; he does not try through words to mould opinion or to have the people come to a decision he himself may consider sound. He is not in a hurry. He wants the people to meet together when they desire it and to discuss all matters that they themselves deem most important. All of this takes time.[12]

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[12] Verna A. Corley, "Community Education and the School," Education for Better Living, Bulletin # 9 (U.S. Office of Education, 1956), p. 285.

If we were to pursue this even deeper and go into the suggestions for leaders in the informal group situation, we can find some good suggestions in George Homans book, The Human Group. Among the many suggestions for leaders stated in this book, the following seem to be particularly important: the leader will keep in mind the values held in common by the people with whom he works and will try to live up to them himself; he will lead the group by being the initiator of activities, either directly or indirectly; he will be careful not to give any orders that will not or cannot be followed; he will use established channels for his communications and orders; he will not thrust himself on his followers in social occasions; he will not blame nor praise members of the group before other members, (in general, "praise in private") although with care it might be used in some circumstances in front of the group; he will try to create the conditions that help the group discipline itself, instead of trying to inflict punishment himself; he will listen because he knows that the followers tell a leader what they think he wants to hear, so he will want to hear everything; and finally, the leader will know himself and find out what are his own weaknesses that he must battle against.

> If therefore, he (the leader) must know his men well, he must know himself still better. He must know the passions in him that, unchecked, will destroy

him as a leader, and he must know their sources in his personality. For how can we control a force, the source of whose energy we do not know? Self-knowledge is the first step in self control.[13]

The following excerpts deal with the kind of training best suited for agents:

a. To provide the group organizer with an understanding of his historical and cultural past.
b. To give the group organizer a broad view of our present-day social and economic problems.
c. To acquaint the group organizer with the programs of the various agencies working in the rural areas.
d. To help the group organizer analyze existing attitudes and practices and community participation.
e. To make a start on the never-ending process of developing methods and techniques for helping communities find democratic means for solving some of their own problems.
f. To help the field worker organize a program of work, keep adequate records, and have a positive attitude toward supervision.[14]

These interests led to the organization of special short courses for rural teachers of the Turrialba area and the inclusion of a course in the Normal School curriculum on community development. These courses were designed to alter the concept of the teacher in his role as community professional by enlarging his interests in the area of broad community development. Teachers were encouraged to stimulate the processes of community development without neglecting the training of the children. The suggestion was advanced that many activities of community development could be integrated with the training of children. It was expected that this would enhance the value of the training without causing a net increase in the teacher's work load.[15]

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[13]George C. Homans, The Human Group (New York: Harcourt, Brace, 1950), p. 440.

[14]Shannon, op. cit., p. 354.

[15]Charles P. Loomis and others, Turrialba: Social Systems and the Introduction of Change (Glencoe: The Free Press, 1953), p. 269.

The implications of this study for technical aid programs seem to be quite clear. If the extension system in a country to which technical aid is to be extended has a stated policy "not to force people to do anything against their will," then it must be recognized that adoption of new practices can come only if the people involved understand their importance, see them work out successfully in practice, and find in them distinct advantages over the old practices. This means that, although the conditioning influences can come through mass media, yet the influences leading to adoption must come from trusted and reliable agents in the community, who can find and convince those of influence among the people to try out and use the new practice. Technological training is important, but it is not enough; agents must have training as well in how to analyze local social situations and how to work with the people and the groups of which they are a part.[16]

In most teacher-training institutions, the staff does not really know how to participate in the preparation of teaching personnel for community education. The professors, themselves, are almost certain to be products of highly formalized educational systems based on status, persons who had had no first-hand experience with informal, functional types of education. Even the most brilliant lacks acquaintance with the ABC's of democratic educational procedures. They do not know, for example, what is involved in learning how to chair a meeting; how to participate in group discussion; how to plan for cooperative problem-solving; how to be the kind of group leader who encourages each individual member of a group to contribute as much as he can to the solution of a common problem, who feels and shows a sincere respect for each individual contribution, who can analyze and present the outcomes of discussion so that a group is able to evaluate its programs in terms of its needs and objectives, appreciating material gains but valuing more the development of self confidence, faith in cooperative educational processes, skill in applying them, and determination to continue to improve through their use.

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[16]David E. Lindstrom, "Diffusion of Agricultural and Home Economics Practices in a Japanese Rural Community," Rural Sociology, Vol. 23, No. 2, June 1958, p. 183.

[17]Corley, op. cit., p. 285.

In the way of summary concerning the agents that will be responsible for the community educational programs for technological change in Cuba, the personal qualities of the individual are the starting point. It would seem advisable that he have at least the equivalent of a general high-school education plus some special training in the many facets of working with people in informal education. This special training could be accomplished by a short-course as introduction and continued help while actually working later.

At least to begin the program, young men would fit in better than women and they should have enough maturity to be able to gain the respect of the adults. Graduates of the EA & I that have had some experience since graduation, rural pastors and rural school teachers could all be used. It would not even seem necessary that the person be able to give full time and might be doing this work in addition to his own regular job; in some cases a fully paid worker, in other cases on part-time salary, or, a completely volunteer worker. In all cases the compensation, whether it be material or other benefits, should be sufficient to insure a personal responsibility for the program.

Further Recommendations

Related directly to the training of agents, many questions are left unanswered. The actual course of

training needs to be outlined that will include what things are needed and how the agents are to be taught. This is important for the "process" of community education for technological change is quite different from traditional educational programs. Other than traditional methods will need to be used in training the agents also.

The basis for this whole study is that it is used to establish a program that can be closely observed and that the original hypothesis, relating to the most effective way to educate for technological change, be tested. It is recommended then, that an outline be developed for the continuation of this study.

The best point of measurement of results appear to be "the adoption of approved practices". This should be measured in the rural communities. The variables must be controlled so that a direct relation of "adoption training school program" can be compared to "Adoption-Community Development program".

At this point some questions should be asked about the instruction program at E A e I. If there are strong indications that the training school program is not too effective in preparing young people to return to their home communities to live and work, would it not be better to use the facilities to train those who must leave the community to seek economic opportunities elsewhere? Also, could the training school facilities be used for short-courses during

some period in the year to compliment the education offered in the communities for those who will continue to live there?

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APPENDIX I

REVIEW OF LITERATURE

RELATED TO EDUCATION FOR TECHNOLOGICAL CHANGE IN CUBA

by Edgar G. Nesman

Much has been written about the learning process as it relates to technological change. It has been attacked from as many different points as it has been related to different programs throughout the world. For this reason any review of literature could be organized in any number of ways. To cover the areas of special interest for this study the following general sections are used: (1) Learning Theory; (2) education for technological change, and; (3) special conditions in Cuba related to education.

May 1960

SECTION I LITERATURE RELATED TO LEARNING THEORY

In reviewing the literature, the same areas of interest were treated by most of the authors dealing with the psychology of learning in general; also are included the results of special studies. It would be difficult to organize the following quotations in an order of importance for they are all inter-related. It is found also that different authors use slightly different terminology. For this reason the categories are arranged in alphabetical order according to the idea that is predominant in the excerpt. At the end are some quotations of some summaries of overall views of the educational process.

ALL SENSES: This covers some of the findings about the use of the 5 senses and the results of practice in learning skills.

"The addition of kinaesthetic to visual or auditory stimulation exerts a positive effect which is more uniform in appearance and usually larger in amount thant that of combined auditory and visual stimulation. While the conclusions stated in this paragraph have been reached primarily by the use of disparate serial lists, there is evidence that they hold in some cases for connected meaningful materials." (37-481)*

"Learning must be experience-centered. All sensory input to the organism is, of course, "experience". The problem for the teacher who is to develop a climate for learning is to help provide the optimal kinds of experiences that will relate to the problems of the learner. The learner must get data upon his problem." (26-58)

"A distinction should be made beween practice and repetition. Drill is required for the acquisition of any skill. Mere repetition, however, does not automatically ensure a perfect result. Attention must constantly be directed toward a clear defined and result, with evaluation of the effectiveness of the practice at each step of the procedure. Failure to attain skill is often due to this lack of evaluation or self-criticism. "Am I doing it right? If not, wherein am I wrong?"

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*(37-481) 37 indicates source number and 481 indicates page number. A numbered list of references will be found at the end of Section III.

One should know immediately after each practice just what the score is. Did you do it right or wrong? Knowing at this time aids the person to get the feel of the right way and to make corrections when the performance falls short. Merely doing an act over and over does not make for perfect performance.

Imagination also can come to your aid. Once you know how a procedure ought to be done, by vividly imagining yourself carring out the procedure you will experience a gain in real practice." (36-174)

"Learning by doing", to be effective, as emphasized by Dockeray, means that each trial is an opportunity for hitting upon the proper organization. When you read material once and with apurpose to understand its content, you may partially succeed. A second reading with the same purpose in mind should further your success. Understanding content, however, calls for relationship thinking. In trying to see relationships, you are organizing as you read. On the other hand, if you "read over" your assignment two or three times, doing exactly the same thing each time, little or no additional learning occurs. "It is not the number of repetitions but the organization that takes place with each repetition that counts." (13-94)

"Thus, in the acquisition of any skill it should be remembered that the total organism is always involved. Recall your first efforts to swim; you were taught how to breathe correctly, to hold the head and body in a certain position, kick your legs, use your arms, and relax--all isolated movements which did not propel you in the water. Only as you were able to integrate, to react as a whole, did swimming result. It is the integration of all these partial responses into a higher-order act that produces skill.

Not alone in motor skills but in all man's reactions, the total organism is involved. But remember that no organism exists in a vacuum. There must be an environment which will not only stimulate the organism but also provide the situations to which it responds." (36-180)

"Acts of skill are often regarded as being less well-adapted than verbal materials to rhythmization. The timing of gold shots, typing, and many other perceptual-motor acts lies close, however, to the category of rhythm. Harding (1933) has studied the behavior of trained typists and has found that the more rhythmical group in the typing of test words was the faster. The attempt to superimpose a rhythm aided some learners and hindered others.

The effectiveness of rhythm probably results in part from the way in which it assists in organizing the material into units which are readily perceived together, in part from the accent it gives to certain words as serial positions, which makes them stand out as reference points, and in part from the fact that it assists an active attitude on the part of the learner". (37-477)

BEHAVIOR CHANGE: Most of the literature reviewed is related closely to behavior change but these exerpts deal directly with it.

"Social psychologists, psychotherapists, and other social scientists, working in relative independence of traditional learning theory,

are discovering the conditions under which people may make behavior changes of significance. These conitions include intrinsic determination of goals, emotional participation in the experience of decision making, active involvement in planning the learning experience, expression of feelings and integration of feeling into the learning process, and various forms of person centering". (26-58)

"The term BEHAVIOR CHANGE, then covers more than the term LEARNING. The behavior of the individual can change when 1. the individual is placed in a problem situation, 2. when significant changes occurs in his physcological state, and 3. through the operation of the dynamic factors involved in retention." (27-111)

COMPLEXITY OF MATERIAL: This includes the learning of meaningful material also as well as attention getting factors.

"Moral: Everything else being equal, the number of persons who will adopt a recommendation varies inversely with the number of points of complexity in the recommendation itself." (6-355)

"These studies relate to the memorization of rote material rather than meaningful material. But when subject matter is full of meaning, the advantage of the short, distributed practice periods is not maintained". (36-185)

"When relative size does influence rate of learning, it seems to do so by virtue of novelty and "attention value" and by serving to introduce pattern and isolation into what would otherwise be monotonous materials". (37-475)

"Introduction into a series of an item of unique color, shape, or size may be a method of producing "isolation" of that item." (37-475)

CONDITIONED RESPONSES: This could have well been included in another category on "rewards" or on "generalization" also.

"Attaching the old response to the new stimulus requires learning. Much ofthis type of learning occurs during the first few years. Findings conclude that susceptibility to conditioning increases up to the fourth year, and then diminishes, to adulthood." 36-173)

"In conditioning you do not learn new skills or how to pronounce strange words. What you learn is how to form a new connection between a stimulus and a response already learned." (36-170)

"The concept of conditioned emotional learning accounts for many of our human fears. A child grows up mortally afraid of thunder storms because he was frightened in very early life; or he is afraid of the dark and refuses to go to sleep without a light. But conditioning is not limited to fears. Since it is a law of learning, it operates in acquiring many kinds of learning. Conditioning can be adapted to large groups of people or to abstract learning of the highest level. Whole nations

are conditioned by a political philosophy. Even Paul, in preaching to the Athenians, took cognizance of the altar "To the Unknown God" to present the living God." (36-171)

DISCOVERY AND INSIGHT: These are related to a great deal of learning that goes on outside of the formal organized school. But it has also received some attention from school teachers interested in teaching for creativity. One item on incidental learning is included here also.

"One phase of the psychology of learning which has been somewhat neglected experimentally, but which is of great significance in the everyday learning of people, is the "discovery" phase. In almost every learning situation, a certain amount of so-called trial-and-error behavior precedes the making of study of learning, and, for that matter, in many of the formal educational situations provided by the school, this discovery phase is minimal in scope. On the other hand, in many of the informal learning situations which abound in every day life, the discovery phase is often the most prominent feature of the learning process." (37-572)

"In this type of learning you see a relation between parts and whole, or a solution to a problem or puzzle. It is under standing. This experience comes suddenly. Once a solution occurs with insight not only can it be repeated promptly but it can be applied in new situations. What is learned is not a specific stimulus-response pattern but a relationship between the parts or facts as they bear upon the problem. Insightful learning is far more valuable to the student than rote learning or mechanized skills. It is the good teacher who will try to arrange problems so that their essentials are brought out, from which the student seeks the understanding of their basic relationships.

Learning with insight increases with age, intelligence, knowledge. A questioning attitude aids in its development." (36-175)

"By this means, the child in school may not only acquire certain skills in, let us say, geography, but he may simultaneously learn habits of studying and emotional reactions to the school situation which will facilitate and/or inhibit the present course of learning of geography and which will influence further school achievement in various ways." (37-373)

FELT NEEDS: This is one of the most often encountered terms to be found in the educational literature. It is interesting to note that it is dealt with in all levels of educational organization and for all ages.

"If adult education is to broaden the base for participation it must move away from traditional institutional approaches and concepts of participation. Research is needed to discover whether the better-educated participate more because their previous experience prompts them

to seek solutions to needs through traditional and familiar patterns; while the less-educated, with less experience in organized education, do not perceive that pattern as the way to solve their needs." (8-110)

"a- whatever boys and girls learn in school results from the way they perceive themselves and the demands of the situations with which they must cope.

b- changes in perceptions lead to changes in behavior.

c- to the degree that these perceptions correspond more ad more closely with reality--physical and social--behavior becomes more appropriate.

d.- a major responsibility of the high school teacher is to help boys and girls extend their perceptions, diffeentiate cause and effect relationships among them, and generalize more effectively from behavior that is based upon them." (45-61)

"Lorge's paradigm for the study of incentives for learning in adult education offers many items under the categories of what "people want to gain", "want to be", "want to do", and "want to save". If this formulation were found to be truly useful for research, it might serve to define the types of learning in specified areas of adult education according to their effective incentives". (8-32)

"Extension people must recognize and meet the interests (expressed desire to learn, sudy or gain more information about some object in the environment which he believes will give him satisfaction) of farm people. They must use the known interests as "spring-boards" for developing further interests; for their responsibility is not . . . merely to "serve" the people, because this is saying in reality that the actual is the same as the ideal." (30)

"It was found that geographic accessibility influenced attendance at five types of adult education activities studied. The lower the socio-economic status of the area, the higher was the proportion of persons who wanted such activities located within their neighborhoods. This was not merely a question of physcial accessibility. Even more the factor of "psychological accessiblility" was determinative. Persons from er-status areas in unaccustomed surroundings had feelings of "not belonging" and of being unwelcome." (8-134)

"Formal programs such as lectures and courses attracted the better educated, economically advantaged persons from the higher ranking areas. Among these was some overlapping of offerings. Increasing the number of possible activities resulted in increasing the aggregate attendance. While many of the factors covered in this study are discussed in the chapter on participation, this last finding has a definite bearing on program building, especially in situations where an attempt is being made to develop a coordinated program of adult education on a community basis." (8-134)

"The principal that people learn most readily (or only) when they are interested leads us to conclude that local people should participate both in the analysis of their current problems and in selecting objectives for the extension program. Hence, in all discussions of program building,

we give considerable attention to the methods whereby this local participation in program building can be made effective." (15-18)

"Learning must be problem centered. For the most significant kinds of learnings that adults do, the problem must be a problem for the learner, not a problem of the teacher. When the learner sees a real problem he is motivated to seek some kind of solution. The teacher cannot "give" another person a problem, cannot expect "read chapter four" to be a guiding problem. In the learning situation the problems must arise in the experiences, perflexities, doubts, and thinkings of the learner."

"Learning must be motivated. The problem serves to provide energy, direction, and sustaining force to the activities of the learner. To be maximally effective the motivation must be intrinsic. The problems cannot be imposed from an extrinsic need system: the teacher's ideals society's demands, the textbooks's admonitions, the grading system." (26-58)

"Teaching in terms of the child's life and surroundings is the best way to teach or to preach, no matter what may be his or her future business or occupation." (6-52)

"Learning becomes interesting and challenging when the learner is aware of his need. Even though the task is difficult, the learner is motivated in proportion as he understands his goal.

Appeals based on reason or facts seldom influence people; to be effective the appeal to reason must be coupled with some want or need. The goals students set for themselves, the training they desire, and their interests make learning a dynamic process." (36-185)

"The cues to learning are largely in terms of need. As pointed out in the chapter on motivation, unfulfilled needs create tensions which lead to a variety of activities in an effort to reduce tension. An activity that restores equilibrium tends to be repeated when the same need re-occurs." (36-155)

"Under the stress of great need, the cognitive organization involving the goal object and the most obvious and immediately perceived possible route to the goal object becomes simplified and isolated from all other objects and events in the individual's field of experience. The immediately perceived barrier to the goal becomes a more and more dominant object, attention tends to become centered on this one object, and the result is a very narrow isolated, rigid organization. The stronger the tension, the stronger the emotional "tone" of the situation, the less likely that cognitive reorganization will occur. A man desperately in need of food will persist in maintaining his original notion of how to get the food--he will not be able to "think through" new solutions, discover new round about routes. The maxim "Necessity is the mother of invention" is true only if the necessity is not too great." (27-141)

"In terms of the propositions already examined in this book, the result of the above two experiments can be summarized as follows: 1. Cognitive reorganization will take place when a blocked goal exists in

the individual's field; 2. at any given moment, the objects in the problem situation that will be perceived and hence available for the cognitive reorganization will be selected in terms of the need; 3. under conditions of intense need, the resulting cognitive reorganizations may prove to be inadequate or bizarre; 4. but whatever the nature of the cognitive-reorganization, it can be seen as directed toward tension reduction." (27-115)

"There is evidence that when learning activities are related to the needs and interests of some students but unrelated to the needs of others, the former will learn more rapidly and their learning will have greater permanence. In a situation free from coercion the latter will make no effort to learn. This principle applies frequently without receiving conscious attention from the teacher. It is of course, part of the problem of the relation of meaning to learning. The teacher can do much to make clear the relationship existing but not apprehended by the students at the beginning of their learning experience. When this is done, learning is facilited; when interest or need leads to continued use, retention is superior. Anderson and Gates have pointed out that the best kind of practice is that which occurs in a functional educational experience. Under such conditions students use skills and apply facts previously learned and thus maintain learning in a meaningful context." (21-857)

GOALS: This section is closely related to "rewards" and "felt needs".

There is an indication here also of how the goals should be arrived at.

"These findings are consonant with the analysis made by a psychiatrist of cast studies of individuals 25-35 years of age. Dr. Billings finds that this period of "mid-life is a transition period in which bodily changes and social role changes necessitate a re-ordering of personality organizations. . . . The major focus of reorganization seems to be the new perception of time as no longer unlimited; there is greater awareness of past, present and future, and actions of the present are more clearly defined as means to a future end. As a result, goals must be modified and made more specific. The implication for adult education seems clear--for personal adjustment, as well as for learning, it is important that goals be well-defined and clearly related to action." (8-38)

"The goals must be set and the search organized by the learner. Several experiments indicate that the active learner is a more effective learning organism than the passive learner. In order that problems be problems to the learner, it is significant that the goals of the broad learning quest be set by the learner. It is also significant that the learner participate in the organization of the total learning situation.

For maximum learning the learner must interact with other learners in such a way as to expose his attitudes and gaps in knowledge and skills to himself and to others." (26-59)

"The above findings, as they stand, seem to have strong implications for adult education program planning and policy. They stress particularly the importance of well-defined goals for particular programs; of

clear statements about the difficulties and possibilities of achieving these goals, and if total achievement is remote, of planning the program in clear stages which can be successively attained; and lastly of allowing each individual to have some knowledge of his achievement at appropriate points." (8-31)

INDIVIDUAL DIFFERENCE: Such things as age, sex and personal motivation are contained in these exerpts.

"Learning, in its rate and amount, is partially determined by intelligence. This relationship is not impressively high, however, and it would be unwise to assume that ability to learn and intelligence may be identified, or, indeed, that there is a general learning ability. The specific correlations between rate of learning and intelligence which have been obtained probably are too low, however, due to the homogeneity of the samples studied, the unreliability of the scores obtained, and the lack of variety among the learning tasks employed." (37-562)

"Sex differences in rate of learning are small and do not consistently favor one sex or the other. Which sex will prove superior in a given experiment is a function of amount of specific practice involved in the measurements and of the character of the activity or material. Both conditions are a matter of training, the first of training at the specific test activity, the second training at related things." (37--555)

"Nicholson found, as did the authors just cited, that there were usually several motives with one or more dominant, and that most people had some specific educational motive. The most significant variables were sex and amount of formal schooling; if these were similar for several people, their motives tended to be similar. Vocational motives were dominant at ages 20-40, and for married men, separated or divorced women and for people planning an occupational change. Intellectual--cultural motives were highest for women, single men, and people with higher previous education." (8-44)

"It was suggested that precisely because of their previous interests, many people were not satisfied or stimulated by a program aimed at the general community, which often did not reach their own levels of knowledge in the respective fields." (8-80)

"The evidence available at the present time does not reveal any one best approach to teaching method. Certainly it does not support the belief that successful teaching is possible only through the use of some specific methodology. A reasonable inference from existing data is that methods which provide for adaptation to individual differences, encourage student initiative, and stimulate individual and group participation are superior to those methods which do not. However, there are a number of approaches to teaching method which incorporate these features, and it is a mistake to suppose that they are attributable only to one type of approach. It may be said further that some methods permit more flexibility, give teachers more opportunity to use intelligence

and imagination in the teaching process, and are more adaptable to varying conditions. These are values of considerable importance in a decentralized and pluralistic system of public education such as that of the United States." (21-853)

"Experience must be meaningful to the learner. The experience that bears upon the problem must be suited to some degree to the learner's innate capacity to perceive, his age, his interests, his readiness, and his capacity to understand." (26-58)

MEANINGFULNESS: These deal in general with meaningfulness and a further relation of learning, perception and experience.

"It is probable, on the basis of the available data, that there is a very high positive correlation between meaning and rate of learning." (37-471)

"The conclusion that there is a high positive correlation between meaningfulness of material and rate of learning holds under a very wide range of conditions. The greater effectiveness of the logical than of the rote method seems to hold over almost as wide a range. The first conclusion implies the generality of positive transfer; the second suggests that learning is not a passive chaining of adjacent items, but requires instead an active, analytic mode of response.

All these are not radically different from the logical method in verbal learning. In both cases the learner is seeking to organize meanings to the end of controlling overt response thereby. The pervasive presence of representative devices and meaningful relations in the learning of perceptual-motor acts emphasizes the ubiquity of meaning." (37-479)

"Learning from experience: The generalization that it is not the frequency of occurrence of an event or the objective sequence of cause and effect which determines the nature of the resulting cognitive organization but that only those things which are perceived and attended to will play a role in the new cognitive organizations can help us to understand the apparent failure of people to learn from experience." (27-120)

"People do learn from experience, but not from the sequence of events as experienced by the political scientists, by the economists, or by the social changer. People learn from the sequence of events that they themselves perceive--and their perceptions may not include monopolies or imperialism or graft." (27-121)

"Thus, the tendency of the human mind to organize and simplify may be invoked by grafting new forms of behaviour onto old forms so that the new seems old and familiar, or by letting one break in traditional behaviour carry a number of other breaks.

As memory is selective just as perception is, great attention must be given, in all educational efforts, to allowing for sufficient time and enough repetition so that facts which are less easy to assimilate are not lightly forgotten.

Sometimes a perception will be so dependent upon an underlying set of fundamental beliefs that it will not be possible to change a practice without altering the whole structure of belief. Thus, a desire to lower the infant death rate may not develop until there is a new conception of the importance of each human individual, or a desire to compete with other nations in the field of vital statistics." (38-301)

RETENTION: Retention or the factors related to forgetting are of interest to educators in all of the fields. As it can be seen these same items are related to other sections.

"Significant material is more slowly forgotten than nonsense syllables. Nonsense material barely learned is almost forgotten in four months, but poetry barely learned has been known to be retained after twenty years. Material in which the elements are related as parts of a whole is more readily learned than nonsense material. This is due to interrelationships, which in turn depend on past experiences. The reader would probably have not such background to utilize in committing to memory a sentence written in Greek." (36-187)

"The conclusion for verbal materials has been that some degree of recall (or recitation) with prompting during practice is a more effective condition of learning than is presentation alone. The few experiments which have studied recall without prompting have obtained a similar result.

(1) Recitation furnishes the subject with progressive knowledge of results. This information (a) acts as an incentive condition, (b) brings the law of effect directly to bear, (c) favors early elimination of wrong responses, and (d) by informing the subject which items have been learned, promotes a more effective distribution of effort over the material.

(2) Recitation favors articulation of the items and leads to the utilization of accent and rhythm. (3) It likewise promotes grouping of the items, localization in the series, and the search for meaningful connections. (4) In recitation, the subject is practicing the material more nearly in the way in which it is to be tested and used--that is, without direct stimulation from the copy. It constitutes, therefore, a more immediately relevant form of practice." (37-507)

"The cause of forgetting has often been considered a fading out due to time. But investigations indicate that factors other than time increase forgetting. If a learning session is followed by a period of passive activity, more is retained than would result with an active period following the learning interval. That is, intervening activities between the times of learning and recall decrease the retention."

"There are variations in the kinds of material to be learned. Motor learning obviously involves the use of muscles. Learning to sew, cook type, barber, or play ball are samples. These learnings might be classed as nonverbal. Arithmetic, foreign languages, and reading are examples of verbal learning. This classification involves the use of words. Many tasks involve a combination of verbal and motor learning, such as dramatics and piano playing."

"The rate of forgetting verbal material is more rapid than the rate for nonverbal. Typing skill can be brought back to par after a long period of disuse, with a short refresher practice period, but this is not true for a foreign language skill. However, verbal material accompanied by motor activity of some sort will be retained for a longer period. The writer can still recall her first class period in high school German when the teacher had the class actually perform her German commands. Think of the boy who complains about his poor memory in history but knows the names and batting averages of an astonishing number of baseball players."

"Passive learning is not as effective as active learning. How often have you reread your assignments and then commented "I don't remember a thing"? But if you question the content, relate it to previous learning, or organize it, you will find a plus result. This is active learning."

"Effective retention is dependent upon the kind of material learned as well as the type of learning carried on."

"A great deal of study has gone into this problem of "whole" and "part" learning. The investigations are somewhat contradictory. For children and certain individuals the part learning is more effective. They sense a feeling of immediate accomplishment. Probably the real crux of the problem is in the material to be learned. That is, "whole" learning is recommended for learning those associations or skills which form an integrated, functional unit." (36-189 to 192)

"For the sake of convenience, the distinction between learning and retention has been given a different meaning than the logically analytic one, learning being used to designate the acquisition of changes in behavior during a specified time or up to a certain level, and retention being used to mean any measured persistence of these changes after practice ceases. Any failure of such persistence is called forgetting.

Fixation and retention thus mutually interact in the course of what we call learning. It may also be stated briefly here, to be elaborated much later, that learning pervades retention in the sense that one of the conditions of forgetting is the learning of their responses. That is, one forgets by learning other things." (37-6)

REWARDS: This, like the section on felt needs is an area that is much written about.

"In a similar fashion, the academic student may acquire habits of flashy, but superficial scholarship which bring him immediate rewards at an elementary level, but which may prevent his success in the rigorous work of professional or graduate college." (37-577)

"When educational activities are essentially voluntary and do not lead to degrees and formal institutional approval, the motivational patterns leading to learning shift radically and impose new demands upon an engineering-learning theory." (26-62)

"The learner must have feedback about progress toward goals. Students of learning have long emphasized the importance of knowledge of results in acquiring skills. Evaluation of progress toward goals, particularly when goals have been set by the learner, is highly important. Some indication of success or failure, some frame of reference for determining adequacy of problem solution, some corroboration that the alley is not blind, some reality factor with which to assess one's achievement against one's level of aspiration, some knowledge of success or failure--all are necessary in the functional feedback process." (26-60)

"There are a few important general principles concerning the use of reward in training situations. First, and perhaps most important, is the desirability of insuring frequent and regular experiences of success-or reinforcement throughout all phases of learning, but particularly in the earlier, and generally more difficult, phases."

"A second major principle concerns the desirability of continuous use of knowlege of results. The operation has two important functions that go beyond its direct reinforcing role. First, it provides information that is often necessary to gauge and adjust performance; this is most apparent in regard to the improvement of motor skills. Second, it is a very important motivator in its own right; this is particularly necessary in training situation where original interest is low or strong extraneous competition is present for attention and effort."

"It is generally recognized that the deliberate use of fear as a motivator, or the use of punishment or threat of punishment with fear as an almost unavoidable consequence, may have highly undesirable effects."

"As advertising practitioners have long realized, one of the most effective ways to motivate people is to allow them to sample at least a small amount of the incentive in advance of the instrumental activity." (21-896 to 898)

"Teachers are typically cautioned not to put too much dependence on such extrinsic motivators as prizes, gold stars, and the like."

"Recent experimentation on curiosity and exploratory motivation has initiated experimental and theoretical interest in these important sources of human motivation. . . . . for example, the most effective experimental treatment was that in which the student was carried through the entire process of investigation, including a full account of difficulties and the attempts to overcome them.

Judicious use of external incentives can also be helpful in preventing initial discouragement. This is a most important problem, because using general social or schoolroom pressures to force students to go through the motions of studying difficult material without sufficient relevant motivation is one of the surest ways to produce a permanent loss of interest and ability in a subject matter; mathematics is probably a prime example here." (21-898)

"Evidence of this kind would appear to indicate that one of the most effective means of motivation available to the teacher lies in arranging

learning situations so that every student experiences a reasonable degree of success. The evidence is strong that success breeds success and a failure breed failure.

The results of such studies favor individual rewards over group recognition." (21-856)

"The strongest safeguard against an undesireable use of these psychological principles will be in leaving new learning in the hands of the group involved and helping them to develop means of making the new learning rewarding, and the old learning unrewarding. Where people do things themselves, for themselves, but with expert help in the psychological principles which they invoke, the dangers of exploitation and manipulation, although never absent, are minimized.

To summarize: The learning of desired new behaviours and attitudes can be achieved by the learner's living through a long series of situations in which the new behavior is made highly satisfying--without exception if possible--and the old not satisfying." (38-293; 294)

"The more effective educational program will be based on desire to learn based on a desire to know the thing being taught instead of artificial motivations such as grades, titles, etc." (21-850)

"As a rule, an individual's behaviours, beliefs and attitudes grow and change only to the minimal extent that is called for by the demands of his immediate situation in life. All that is required is that his daily behaviours and his daily perceptions have meaning and integration. So a boy, when he marries, must alter his behaviour to that of a married man; a married man must learn to be a father; a newly elected official must alter his behaviour to suit his new role. But when an individual is confronted not by an expected change in role, but by a chaotic external environment to which he cannot adjust with emotional satisfaction, and which he cannot explain to himself, he is impelled to seek a new adjustment--which relieves his tension. He tends also to seek a new explanation of changed environmental situation, and his new explanation also relieves his tension." (38-299; 300)

"People are motivated to learn if they can satisfy a basic need through learning. Basic needs, wants, desires, motives, incentives, or urges have been classified in a variety of ways. The following categories are reasonably adequate for extension teaching purposes: 1. The desire for security--economic, social psychological, and spiritual security. 2. The desire for new experience--adventure, new interests, new ideas, new friends and new ways of doing things. 3. The desire for affection or response--companionship, gregariousness, and social-mindedness; the need for a feeling of belonging. 4. The desire for recognition--status, prestige, achievement, and being looked up to." (66-5)

"Stimulation should slightly precede response for the learning to be most efficient. It may also be noted that the mediation of language can operate in man to reduce the need for close temporal contiguity. Thus, we can learn to respond to the symbolic representation of a situation and later transfer that learning to the situation itself. The

success of such training probably depends upon the degree to which the appropriate symbolic-motor habits have been established in the past.

Temporal contiguity, alone, however, is not productive of learning. Reinforcement or reward is also necessary. This reinforcement, in order to be effective, must closely follow the response which is to be learned. We thus have two laws of contiguity, the one between stimulus and response and the other between the response and the reward. The concept of reinforcement, in turn, implies the condition of motivation. This motivation must operate either at the time of learning or must have operated at some prior time, in order that the reinforcement will be effective." (37-571)

"Satisfactions result principally from four major causes: (1) Economical saving of money, time, and energy; (2) self-preservation--health, accident-prevention, food, clothing, shelter, and temperature; (3) imitation--following the example set by those worthy of being imitated; (4) helping others.

Annoyances result principally from four major causes: (1) Fixing new habits of though or action; (2) breaking old habits of thought or action; (3) prejudices and jealousies; (4) fears.

It must be stated once more that we are teaching persons as well as subjects. Of the two, persons probably require the greater knowledge and skill on the part of the teacher. He must keep in mind the five impulses--group loving, sympathy or understanding, imitation, egoism, and altruism.

Whether working with an individual or a group, giving approval to the saving of time, energy, or money, or all of them, gives satisfaction; the withholding of warranted approval produces annoyances; it shows lack of understanding; it does not appeal to the ego as does approval or recognition." (6-224)

SEQUENCE: This section could also be entitled readiness for it deals with the timing of learning acitivities.

"In order to bring about the desired changes in the behavior of people, the extension teacher needs to organize activities so that there will be repetition of the desired behavior, each successive repetition building on the one before it. This conscious attention to organization of teaching activities in a sequence greatly increases the efficiency of learning. This is the advantage of an educational program over incidental and occasional exposure to learning. The extension teacher, therefore, plans and arranges situations and activities whereby the thing to be learned is called to the attention of the prospective learner; his interest developed, desire aroused, and action promoted." (66-7)

"It cannot be emphasized too strongly that readiness for learning is a factor at all educational levels. Readiness programs limited to just kindergarten and the first grade are not enough. The unevenness of development in the various aptitudes is all too apparent. As Cook has demonstrated, intraindividual variability is 80% as great as inter-individual variability. A curriculum which places a standard and inflexible seriers of topics by grade level and which by implication

results in an expectancy of common learnings at each grade is bound to miss the mark with many students. For optimum individual development which leaves no child behind and holds none back there must be curricular arrangements which make it possible to meet each student at his own level." (21-1085)

"Thorndike early in his career developed a number of laws of learning. One of these was known as the Law of Readiness. This law describes the circumstances under which an individual will become annoyed or satisfied during the learning process. The law has three parts, as follows: a) when a conduction unit is ready to conduct, conduction by it is satisfying, if nothing is done to alter its action; b) for a conduction unit ready to conduct, not to conduct is annoying and provokes whatever responses nature provides in connection with that particular lack; c) when a conduction unit unready for conduction is forced to conduct, conduction by it is annoying. This law clearly emphasizes that satisfaction or frustration of the individual depends to a great extent upon what he is prepared to do. An individual is ready for a learning experience when he has an appropriate set for that experience; he is unready when he does not have it. This notion of readiness is still very prevalent today and has much validity. The child who is interested and motivated is certainly partially prepared for learning a given activity. This represents one aspect of readiness." (21-1081)

"It should not be forgotten that the development of an ability-any ability-is, in general, merely the final phase of a four step teaching process. That process begins, as we must understand by now with the development of an INTEREST in the ability to be acquired. After this comes the teacher's effort to lead the pupils to adopt the IDEAL, or purpose, of becoming genuinely skillful, or proficient, in such ability. The UNDERSTANDING of the process to be performed may then be taken up separately; or instead, the understanding and ability may be taught together. This does not matter. The important thing is to see that all of these together constitute a single continuous teaching process, which may extend through several class periods, and that in this ongoing process, each phase passes over into the next so easily and naturally that the pupils are not conscious of the slightest change or break at any point." (28-88)

SOCIAL MOTIVATION: As education has left the classroom this area has been increasingly important. There are two aspects, the social atmosphere of the learning situation and the social atmosphere of the location where the resulting change in behavior is applied. This last aspect comes out in the literature of the section dealing with education for technological change which follows.

"Learning is most rapid when motivation is strong and goals are clear, and in all adult educational programs the social situation in both community and group terms influences both participation and outcomes." (8-23)

"We may also take into account psychological findings about resistance to new learning.

New information psychologically avialable to an individual, but contradictory to his customary behaviour, beliefs, and attitudes, may not even be perceived. Even if he is actually forced to recognize its existence, it may be rationalized away, or almost immediately forgotten. Thus, a people who insist that majic is necessary to grow yams may have it pointed out to them that the foreign missionaries are growing larger yams by using improved agricultural techniques instead of magic. They will counter the evidence of their senses about the size of the mission yams by insisting that the yams are a different kind, or that the missionaries used their own magic, not an improved technology.

Individual exposed to facts or experinece contradicting a strong system of behaviours, beliefs and attitudes can withdraw themselves from them, sometimes even physically. Such withdrawal permits the system to remain unchanged. It is, as we have noted above, one of the less beneficial consequences of sustained tension or frustration. The dismissal of any political information which is uncongenial as the propaganda of an enemy country, which sould not be attended to, is a common contemporary examples of this mechanism.

Finally, as an individual's behaviour, belief and attitudes are shared with members of his cultural group, it may be necessary to effect a change in the goals or systems of behaviour of the whole group before any given individual's behaviour will change in some particular respect. This is particularly likely to be so if the need of the individual for group acceptance is very great--either because of his own psychological make-up or because of his position in society. Thus, it may be the chief or prince who can most easily adopt a new practice, or, on the other hand, a group may force such a leader to maintain the staus quo after all the rest of the group have changed, providing a sort of anchorage for the rest of the group. No knowledge of the way an individual of a given constitution and capacity may be able to accept or reject change can ever be used alone, without giving due weight to the nature of the culture of which he is a part, and his position in the particular social group within which he lives." (38-294; 295)

"For instance, Kelley and Volkart found that the extent to which a group member's attitudes will be influenced by a communication, the content of which runs counter to group values, is inversely related to how highly he values his membership in the group. Duncan and Krietlow, also, found that the more cohesive or homogeneous a neightborhood area was as to certain cultural attributes, i.e. religious and ethnic group affiliation, the less likely that area was to adopt new attitudes and techniques. (8-61)

"When social competence and adjustment are accepted as important objectives of the educational process, available evidence supports the concept that the social climate of the school must be in consonance with the social ideals of the society in which the school exists." (21-848)

"Members of this group--whose teachers had superior knowledge of their students--made greater gains in achievement, had better attitudes toward school, enjoyed school more, showed more mutual acceptance,

exhibited fewer feelings of personal inferiority, revealed a decrease in personal maladjustments, and possessed a more logical motivation toward school work. Ojemann and Wilkinson also concluded that the attitudes of teachers toward their students were improved as a result of increased knowledge of their problems of adjustment." (21-849)

"It was in connection with this point of view that Hopkins developed his theory of democratic interaction. His analysis involved the principle that an educational theory based on democratic interaction will place more importance on the quality of the process of learning than on the outcome of learning. He maintained further that the kind of social climate which obtains in a democratic group is one which provides for a high level of cooperation on the part of all members of the group in a. determining purposed to be achieved, b. making plans for achieveing these purposes, c. devising methods for carrying out plans, d. evaluating results, and, e. selecting new purposes involving continued cooperative planning and action.

A number of studies have indicated that social climate is related to productivity and to the quality of interpersonal relations." (21-850)

"The learner must be free to look at the experience. Much has been written about the appropriate climate for learning. This climate is described in various ways, as permissive, supportive, accepting, free, spontaneous, reality-centered, or person-centered. Learning is a social experience." (26-60)

TRANSFER: This is an area in which there has been a great deal of discussion and experimentation. The results have effected the traditional view of education.

"In its broader sense, something like transfer of training is basic to the whole notion of schooling. Those who support schools, like those who conduct them, must assume that the thing being taught at this particular moment will have some value at a later moment and in a somewhat different situation. We assume that today's lesson in geometry will surely help in tomorrow's lesson in the same subject, that it may also help somewhat later in the study of analytic geometry, and, more ambitiously, that it may induce an apprereciation of logic that will profoundly affect the student's entire way of life. Without some reliance on transfer, teaching would be hopelessly specific. It would be necessary to train each student in every specific situation he might ever face.

It is in the field of the curriculum that the problem of transfer has had the most interesting and most stormy history. In some approaches to the curriculum, of course, the problem of transfer plays little part. It may be held, for instance, that knowledge of literature is a good thing in and of itself, or that such knowledge is necessary if we are to achieve the prestige and acceptance that we desire. Here transfer is involved only slightly, if at all. When the curriculum is justified on the grounds of utility, however, the case becomes very different. What, then, can we say in defense of subjects that have little

obvious claim to immediate utility? The proponents of the modified residual theory would have us invoke an exceedingly remote future utility. These theorists claim that at any given time some societies may cultivate many skills as making designs on a rock "just for the fun of it", and that later generations may suddenly find these playful skills to have tremendous utility when their usefulness for such a thing as communication is unexpectedly appreciated. But this modified residual theory is rarely stressed. Much more frequently the "useless" subjects have been justified by claiming a substantial transfer value for the subjects in question. The tendency to endow certain subjects with tremendous transfer powers received its most systematic development in the classical doctrine of formal discipline. According to this doctrine, the study of cultural subjects such as Latin could be depended upon to transfer to a great many activities. In most versions of the doctrine it was held that this transfer took place by improving the entire "mind", or by strengthening some very broad "faculty" of the mind, such as memory, jent, or ability to reason. This entire issue has received a tremendous amount of attention and has played an important part in the history of education." (21-1535)

"This conclusion is reasonable on the grounds of what is known about transfer. Practice at learning keeps active one's methods of study, yields an increasing body of potentially transferable knowledge, and may indirectly increase motivation. The operation of continued practice may be a powerful determiner of the increasing scores with age up to early maturity, and its absence may be a determiner of the decline during later maturity." (37-541)

"The increase in rate of learning with age over the years to early maturity, its relative constancy during the next decade, and its slow decline thereafter appear over a very wide range of conditions and are among the more general facts of the psychology of learning." (37-544)

"Thus, children may master motor skills more slowly than more mature learners because of a less well-developed motor equipment, while the aged may learn more slowly because of sensory, connecting or motor mechanisms which are less effective than they were at maturity. Children may learn ideational materials more slowly than the mature because of less retained experience which will transfer positively to the new, and perhaps because of less effective motivation to learn such materials. The aged may learn similar things more slowly than the mature because of negative transfer, or because they are less highly motivated to learn them. In many ways, the two sets of conditions may operate together and, to extents now unknown, may be functions of each other." (37-551)

"This same philosophy is inherent in Judd's writing when he states that education is training in generalization, that experience is changed in quality by its organization, that no item of experience has significance except as a part of some larger whole or organized consciousness. Abstraction is not a particular item of experience; it is a method of thought. The highest powers of mind are general, not particular. Mental development consists not in storing the mind with items of knowledge but with power to think abstractly and to form general ideas.

When these ends are attained, transfer has taken place.

Surely unless there is transfer in teaching the principles, ideals, and attitudes of good conduct we waste our time. Human nature is something more than mechanistic connections. Training a nurse to keep a patient's room neat may not carry over to keeping her own room neat. Only by teaching the ideal of neatness can a carry-over be expected.

In determining transfer, how you study is far more important than what you study. Transfer does not occur automatically. You must plan for it. Relationships must be noted; applicability of principles must be ascertained. Then try to relate what you read with other knowledge. Transfer takes place because experience and learning are generalized. A most promising subject can be turned into an intellectually barren performance if presented by an instructor who has no breadth of outlook and does not know how to teach students to generalize their experience." (36-178)

"A second argument for the study of contemporary life grows out of the findings relating to transfer of training. As long as educators believed that it was possible for a student to train his mind and the various faculties under whatever conditions might be appropriate, there was less need for analyzing contemporary life to suggest objectives. According to this view the important objectives were to develop the several faculties of the mind and as life developed the student would be able to use this trained mind to meet the conditions that he encountered. Studies of transfer of training, however, indicated that the student was much more likely to apply his learning when he recognized the similarity between the situations encountered in life and the situations in which the learning took place. Furthermore, the student was more likely to perceive the similarity between the life situations and the learning situations when two conditions were met: 1. the life situations and learning situations were obviously alike in many respects, and 2. the student was given practice in seeking illustrations in his life outside of school for the application of things learned in school. These findings are used to support the value of analyzing contemporary life to identify learning objectives for the school that can easily be related to the conditions and opportunities of contemporary life for use of these kinds of learning." (60-12)

WHOLE-PART: Recent findings indicate that there is particular need to take this concept into account when beliefs and attitudes are being dealt with.

"A fourth variable is whether the beliefs of a new system (political, religious, scientific, etc.) are exposed, imposed, taught, or promulgated all at once or gradually. In those with relatively closed systems, problem-solving is clearly facilitated when the parts of the new system are presented all at once "on a silver platter". The dish is very tempting, and therefore swallowed whole. There is no need to pre-digest it beacuse little or no resistence to synthesis is offered by the everyday belief system. Consequently, problem-solving proceeds more smoothly in closed persons when new beliefs are presented all at once than when presented gradually. However, it makes no difference to

those with relatively open systems whether the beliefs are presented gradually or all at once. The total solution of problems takes just as long in either case, suggesting that open persons genuinely feel the need to work through, to reconcile the new with the old, even if they do not have to." (67-287;288)

"There is reason to believe, however, that meaning and unity are important conditions favoring the whole method, but that they may be outweighed by other conditions, when these are present in sufficient degree. Conversely, disparateness of materials and relative lack of meaning, which seem to favor the part methods, may be counterbalanced by other conditions which give advantage to the whole methods." (37-503)

"Many learning curves do not show plateaus. In certain areas it is possible to manage your learning effort in such a way that no plateau will occur. Investigations have shown that if the learner deals with a whole performance as a unit rather than with its specific elements, plateaus do not appear. By attacking the problem of wholes at the beginning of his learning task, the individual fuses the various elements and a smoother learning curve results." (36-195)

"One very broad generalization will aid teachers and curriculum workers on any level; the items within any given learning situation should have some relation to each other, and all of them must be related to some whole which is the real reason for the given learning situation. This holds for all levels of general or special education.

Stated in extreme form for emphasis this means that separate, fragmentary items, be they fact or concept, have no meaning for the learner. They have, in fact, no meaning for anyone. This reemphasizes the absurdity of learning all sorts of facts and skills (dates, capitals, geographical locations, names of prominent persons, battles successions of kings or presidents, grammar rules, and ten thousand other items) in isolation and by themselves, apart from use in meaningful situations. Valuable useful learning arises out of meaningful situations and includes relationship as among the most important outcomes." (9-216)

SUMMARIES OF LEARNING: A number of authors have sought to summarize the laws of learning for their specific situations. Almost all of the previous literature cited deals with the same items covered here although some were related to specific experiments.

"1. Principles of good pedagogy apply to adults as well as to school children.

2. Learning is more rapid and efficient when the learner is a participant rather than simply a spectator.

3. When a visible and tangible product appears as a result of a learner's activity, interest is greater and the learning will be longer continued. There is a high interest in knowledge of the results of learning.

4. Group learning is better, i.e. more effective, than individual

5. The greater the number of sensory channels used in the learning process, the greater is the actual amount of learning.
6. Learning must be used to be retained." (4-ch4)

"1. The learner is a behaving organizm. Activity is primary and continuous.
2. The learner is a goal-seeking organism. Activity is directed toward and controlled by purposes. The remote general purpose is to restore and maintain equilibrium and comfort.
3. The learner reacts to whole situations or total patterns and not to isolated or abstracted parts thereof.
4. The learner reacts as a whole. He reacts all over, intellectual, emotional, and physical reactions being simultaneous.
5. The learner racts in a unified way. Unless interference occurs, his total reaction, intellectual, emotional, physical, is coordinated and integrating toward achievement of purpose." (9-212)

"1. Society and education are static and authoritarian.
2. The learner is passive and receptive
3. The learning process is associative or additive (the terms atomistic and mechanistic are often used).
4. The teacher is a task-setter and drill-master. . . . . .

- or -

1. Society and education are dynamic and democratic.
2. The learner is a behaving organism, an active participant in his own education.
3. The learning process is continuous, interactive, purposeful experienceing.
4. The teacher is a participating guide.

The two teaching procedures cannot possibly produce the same results. The one aims at molding individuals in conformity with a static and authoritarian society through unrelieved imposition of selected segments of the cultural heritage. The other aims at developing responsible, creative individuals who will realize their unique possibilities within a flexible, cooperatively determined society. This group will discover the cultural heritage instead of having it thrust upon them. More important, they will discover how it was produced, and hence what it means." (9-230)

"1. Adults learn best (most rapidly) when they have a strong desire to learn.
2. Adults learn best when they have clear goals.
3. Adults learn best when they put forth an effort to learn.
4. Adults learn best when they receive satisfaction from what they have learned." (66-6)

"It is practical education, applying science to real-life situations on a learn-to-do-by-doing basis.

It is education for action, action by individuals in improving their farm and home skills and management, their health and other individual needs, action by groups to improve such environmental, economic, and social factors as marketing, purchasing, community health, recreation, soil conservation, and the like.

It is education that through participation builds the individual

mentally to exercise effectively his own thinking, judgment, and leadership in solving his own problems and, in cooperation with others to solve group problems.

It is education that recognizes the psychology and habits of the people in each community and utilizes those techniques that, in terms of local interest and understanding, have maximum effectiveness." (53)

"The first law seems to be that we learn by action, rather than by absorption.

We learn to do by doing, rather than by talking about doing.

We learn to think by thinking, rather than by memorizing what someone else has taught.

We learn to live by living, rather than by having someone tell us how to live.

The duty of a college is to be a supplement to experience.

The temptation of a college is to become a substitute for experience.

All he expected that first school to do was to direct his sons in getting their experience in the least wasteful way.

We, his successors, have too often thought we could deliver canned experience to our sons--in textbooks and lectures.

We cannot, and the sooner we organize all our schools in terms of learning by action, rather than by absorption, the better." (18)

"I. The perceptual and cognitive field in its natural state is organized and meaningful.

II. Perception is functionally selective.

III. The perceptual and cognitive properties of a substructure are determined in large measure by the properties of the structure of which it is a part.

1. When an individual is apprehended as a member of a group, each of those characteristics of the individual which correspond to the characteristics of the group is affected by his group membership, the effect being in the direction either of accimilation or of contrast.

2. Other things being equal, a change introduced into the psychological field will be absorbed in such a way as to produce the smallest effect on a strong structure.

IV. Objects or events that are close to each other in space or time or resemble each other tend to be apprehended as parts of a common structure." (27-107)

"I. As long as there is a blockage to the attainment of a goal, cognitive reorganization tends to take place; the nature of the reorganization is such as to reduce the tension induced by the frustrating situation.

II. The cognitive reorganization process typically consists of a hierarchiacally related series of organizations.

III. Cognitive structure, over time, undergo progressive changes in accordance with the principles of organizations.

IV. The ease and rapidity of the cognitive reorganization process is a function of the differentiation, isolation, and rigidity of the original cognitive structure.....The conclusion is made that simple and isolated structure are more amenable to reorganization by direct attack whereas differentiated and interdependent structure are more amenable to restructuring by indirect attack." (27-142)

"GENERAL DEFINITION: Learning is the process of acquiring useful responses and controls of response through experiencing them."

"1. The learning process is experiencing, reacting doing, undergoing. Scores of different learning activities are utilized.

2. The learning products are responses and controls of response, values, understandings, attitudes, appreciations, special abilities, skills.

3. The learning process proceeds best when the numerous and varied activities are unified around a central core of purpose, when the learner's interest is in the activities and products, when the learner identifies himself with the purpose through originating or accepting it.

4. The learning products accepted by the learner are those which satisfy a need, which are useful and meaningful. Learning products which are extraneous to need and purpose are either rejected or learned only superficially. (Actually they are not truly learned at all.)

5. The learning process proceeds and the learner grows through continuous individuation of new patters out of original wholes and the reintegration of the new wholes into the total personality pattern.

6. The learning products are perfected through a series of discrete, identifiable experiences. The number of experiences necessary for the production of a change in the learning organism will vary from one to a great number depending upon: the type of learning, the adjustment between difficulty of learning and maturity of the learner, the relativity of the learning situation to the life of the learner, the speed with which insight develops, and many other factors.

7. The process of organization implied in 5 and 6 may be slow and gradual, or relatively rapid, or sudden. Good learning situations will stimulate continuous changes in the pattern of response toward an ever better organization. The better organized into systems the learning experiences are, the less likely they will be forgotten. Isolated and fragmentary items are soon forgotten.

8. The learning products when properly acquired, are complex and adaptable, not simple and static. They are transposable from situation to situation, or more simply, there is transfer of training.

9. The learning experiences, to be of maximum value, must possess lifelikeness for the learner. They must satisfy a current purpose, be continuous with on-going experience, and be interactive with a wide and rich environment.

10. The learning experience, initiated by need and purpose, is likely to be motivated continuously by its own incompleteness. Further stimulation through subsidiary purposes suggested by the teacher may be necessary.

11. The learning process and its products are conditioned by heredity and environment.

Hereditary factors: a plastic nervous system, glandular balance, chemical composition and secretions, the various physiological systems, organic drives, etc.

Environmental factors are: the cultural heritage, the mores, customs and institutions of society, pressures of many kinds, economic status, informal educational influences, the school system, etc.

12. The learning process and its products are affected by the level of maturity of the learner as indicated by various measures of chrono-

logical, mental, emotional, physiological, and social age; by the nature and amount of previous experience as indicated by tests of informational background, interests, needs; by fatigue, etc.

13. The influence of previous experience upon learning is regarded quite differently by the two major schools. The associationists stress its importance and note the value of knowing the learner's background of experience. The principle of "apperception" is important. The field-theory group places more emphasis upon the clarity and organization of the field of pattern, upon subsequent differentiation through insight. The sensible view would seem to be that both emphases are important.

14. The presence of many errors in a learning experience is usually though not always an indication that the experience is too difficult for the learner's level of maturity. Better pacing is needed.

15. The learning process and the acquisition of products are materially affected by individual differences among the learners.

16. The learning process proceeds best when the learner has knowledge of his status and progress. The satisfaction accruing from success, from challenge to overcome difficulties, and to rectify failure definitely aids learning. Failure imposed by others, or by arbitrary standars beyond the control of the learner, is not an educative situation.

17. The learning process is unified functionally, but distinguishable types of learning may be separated for discussion; perceptual, sensori-motor, memoriter, problem-solving or conceptual, efffective.

18. The learning products are interrelated functionally but may be listed separately for discussion. Values, understandings, attitudes, appreciations, abilities, and skills are all interrelated in any one given learning product possessed by the learner.

19. The learning process proceeds more effectively under that type of teaching which guides and stimulates without dominating or coercing." (9-212; 213)

DEMOCRATIC PLANNING: Most of the experiences listed here deal with other than classroom education but the same topic was often referred to in general learning theory.

"Departments of vocational agriculture also have pioneered in the use of lay advisory committees. Citizens committees and lay advisory committees for school systems as a whole only recently have come into rather general use. In many states lay advisory committees have been assisting in the planning of curriculum content and the use of facilities for vocational education in agriculture for a number of years. Like many other educational innovations the use of lay assistance is a procedure which has undergone major development in vocational programs before being adopted in other school activities." (59-180)

"Application of "dynamic factors" to adult education. When control of the direction of the program or activity is not widely and democratically distributed, identification with the program and with the offering agency is inhibited. Activity will take place only in terms of the specific benefits and satisfactions derived. When, however, participation also means a measure of control over direction of the programs and responsibility for development and achievement of its goals, the participant will tend to identify himself more closely with the group and its objectives. His motivation for participation is thereby increased.

At the same time the institution (or the teacher) loses a measure of control over the process and direction of the activities of the group. The passive conception of participation frequently expressed by adult educators (class attendance, public relations, etc.), by community planners (limited advisory committees), and by organizational personnel (docile membership), may well reflect a feeling of insecurity resulting from partial recognition that active participation involves a transfer of control from the "leader" to the group." (8-113)

"As a general recommendation, then, it is possible to say that it is dangerous ever to make any plan, or to try to execute any plan, without the active participation of members of the culture, of the particular professions, and of the administrative apparatus concerned; as soon as any planned change has a specific population group as its object, members of that group--through demonstration villages pilot projects, etc.--must be brought into the planning.

Whether we focus on the need for homogeneity in type of practice or on the need for reconciling widely different basic ideologies and values, this procedure is necessary. The arrogant self-assurance which makes more industrialized countries force their methods on the less industrialized, the touchy eagerness to prove themselves that characterizes young nations, the missionary zeal of the apostles of the scientific viewpoint, and the defensive measures of the religiously orthodox,

may all be welded into a working whole if exponents of each position plan together.

It will be recognized that this recommendation is again based on the principle that culture is mediated through persons, and that a culture, or a profession, or a level of administration, or a point of view, cannot be represented by a charter, a diagram, or a printed description, but only by living human beings who themselves embody the position which is to be taken into account." (38-307; 308)

"Experience has taught us that change can best be introduced not through centralized planning, but after a study of local needs. In China the mass education programme was carried out by intellectuals who lived in the villages and learned the needs of the people. When this principle is not followed, the education programme fails, or even works harm. In many Latin American demonstration farms, for example, ways of keeping records on the basis of tractors and combines are shown to farmers who use only a foot-plough, and agronomist, trained according to principles developed on the national level, present to the cultivator material which is inapplicable on the local level." (38-274)

"The development of a curriculum designed to prepare individuals for a particular occupation or family of occupations for which a need has been identified should be based upon a careful analysis of the occupation. Such an analysis is based upon a systematic study of what it is that a successful worker does and needs to know in the practice of his occupation.

The same technique is used in revising courses and curriculums so as to reflect changes in the practices in the occupation." (21-1560)

"Advisory committees are important because training young people and adults is a cooperative undertaking shared by the school and the community. The committees' function is to counsel with and advise the school with respect to improving the vocational program, to foster closer cooperation between agriculture, industry, business, the home, and the school, and thus to aid in the development of an educational program that will more adequately meet the needs of the community. They have no administrative or legislative authority and are not created to usurp the prerogatives of boards of education and administrative staff." (21-1560)

FELT NEEDS: This is another category that is repeated.

"Extension education moves along the line of the current interests and needs of rural people. The extension process follows the line of the interests of rural people because it is along lines of existing interest that people want to learn and are most ready to move and to make responsible decisions. Some people would not add the word "needs" at all, since this opens the possibility of substituting emphasis on the allegedly greater needs of people (as judged by extension personnel) for emphasis on matters in which the people are currently interested. However, while following the current interests of people for the most part, the extension process may rightfully include helping people learn to identify, understand, and become concerned about needs which they had

not previously "felt" Hence, "current interest" is named first, but "needs" are also included." (41-13)

"Rural education involves the development of curriculums based upon the experiences, environment, and life interests and needs of the students involved--both children and adults--and the preservice and inservice education of teachers who can develop and use such curriculums. Rural education as a distinctive field arises from the premises that individuals learn in terms of their past experiences and from environmental influences and that rural children and youth have unique experience and environmental influences. These aspects are designated as qualitative, philosophical, and internal." (21-1166)

"Excellent results, on the other hand, are reported cases where the programme of education was based on local needs. In the village of El-Manayel in Egypt the building of a schoolhouse, carried out on the basis of discussions with the villagers, according to specific local needs, meant village co-operation in the filling in of an unhealthy pond for the school site, the levelling of the village streets to get material for filling in the pond and, as an indirect result, better communication." (38-275)

"The needs felt by the people, as distinguished from those felt by the innovators, constitute one of the most important factors pertaining to the acceptability of an innovation in any particular case. If the people fail to feel or to recognize the need for an innovation, it may prove impossible to introduce it on a voluntary basis." (54-297)

HOME CENTERED: Although this comes out in other categories, much space is dedicated to it in the literature dealing with technical change. It is not only present in relation to Home-economics education but is related to the family as one of the fundamental units of society.

"It is also realized that the great force that readjusts the world originates in the home. Home conditions will ultimately mold the man's life. The home eventually controls the viewpoint of a man; and you may do all that you are of a mind to in schools, but unless you reach in and get hold of that home and change its conditions you are nullifying the uplift of the school. We are reaching for the home. If the home lacks culture and the boy fails to get the right training, there is a weak spot in his character that no future teaching can help very much.

The matter of paramount importance in the world is the readjustment of the home. It is the greatest problem with which we have to deal, because it is the most delicate and most difficult of all problems." (6-44)

"Probably no other single phase of our educational program has done more to bring parents into close contact with the affairs of the secondary school and with the progress and the problems of their youngsters than has vocational agriculture. Since each student carries on some form of supervised work-experience or project activities, generally at

home, it is mandatory that vocational agriculture teachers visit and confer with these boys to instruct and guide them in the conduct of these activities. Home projects necessarily involve the use of facilities on the farm, and parents, almost without exception, are brought into the picture and become a part of the instructional program of the school. The following statement made by one farmer would undoubtedly apply in thousands of cases throughout this country: "The only time any other teacher comes out here is when my boy is in trouble. Naturally, we welcome the vo-ag teacher's visits."

The value of using community resources in teaching at all levels is increasingly being recognized. This commendable, development offers limitless possibilities for a meaningful and adaptable curricular experience for children. Use of local resources and real experiences has been inherent in the teaching of vocational agriculture from its beginnings, for agriculture is not a subject which can be confined within a classroom. Realizing that the farms of the community offered a rich laboratory for putting into practice many of the principles and theories learned in the classroom, vocational agriculture teachers long ago accepted this method of teaching. Even yet, unfortunately, agriculture departments are perhaps the only place in our total educational effort where one might report with confidence that community resources are regularly used." (59-179; 180)

"Basic to the philosophy of every homemaking program is a conviction that educational efforts can contribute most to individual growth and development when they are directed toward particular backgrounds, needs, interests, and concerns. It becomes important in implementing this belief for the homemaking teacher to:

1. Think in terms of the values and practices of different families in our own communities, and not of families in general.
2. Recognize the worth and dignity of each individual in the family.
3. Believe in the importance of cooperative effort in solving family problems.
4. Deal with all phases of subject matter, not in isolation, but to use problems in teaching which cut across several areas of family living; and
5. Believe in the importance of choice making because individuals and families face and solve problems in different ways." (59-243)

INTEGRATION: In planning educational programs there is usually a division made of specialities dealing with different areas of life. This literature deals with the need to have all dimensions dealt with in an effective program.

"Extension work in Latin America, being in the formative stage, could well avoid some mistakes made in other countries. In various parts of the world, experiments have demonstrated that most progress is made when the different agencies work together on the whole range of needs and wants of the local community. If different, poorly-integrated administrative units are established for all activities of separate bureaus, much competition, overlapping duplication, and frustration of

work and purpose and general inefficiency are the inevitable results. It, therefore, is common sense to recommend that the extension program should be established in such a manner that the extension agent utilizes the resources of all bureaus to solve rural problems." (7-132)

"The agents of change have a wide choice of methods; they can attempt to influence the perceiving individual directly; they can alter the environment so that it will in turn alter his perception; they can create situations within which he will continue to remain in contact with the new situations; they can attempt to satisfy the needs and emotions which lie at the root of the existing behaviours in a way which will include the proposed change; they may create social support for the individual who adopts the new behaviours. Taken together, these methods involve working through many or all of the personality-forming agencies in a society--institutions, individual people, objects. Any programme aimed at successful change needs to be multi-dimensional." (38-301)

"The cultural development of several of them shows that, in this respect, no advance is possible, even for energetic and progressive c community, unless an overall plan, supported by the State, is brought into effect. Any such undertaking must be based on a firm, determination to improve conditions in the communities. This means that a comprehensive' campaign is necessary." (61)

"Today there is fairly general recognition that the promulgation of Christianity cannot be limited exclusively to preaching. Leading t theologians agree that a wide area of social service activity is a necessary part of church responsibility. Most denominations will insist that "the source of these social services must always be the redeeming Gospel, never mere humanitarianism." That salvation is in Christ, not in modern technqiues and technology, is a point emphasized by Protestants and Catholics alike. There are doctrinal differences, but most modern-minded church leaders will agree that "the fruits of creation and redemption must be used and enjoyed by the integral man. The work of the missioner cannot be one-sided." (35-17)

"Point Four Administration has come to the viewpoint that special projects, at least in agriculture and health, are not as effective as integrated community projects, and these, in turn, are not as effective as regional projects." (54-416)

METHODOLOGY: Methods of education is a complete study in itself but it is so closely related to educational theory that it naturally enters into the discussion. It has often been suggested that it is at the point of application that educational programs break down.

"It has been ascertained that the actual demonstration of a thing is the most effective. A farmer is rather prejudiced; he is conservative and rather hard-headed; he is a man of sense and wants to be shown; and he is skeptical until he is shown. If you can take his farm and show him that things can be done on it differently from the way in which

he is doing those things and that results can be secured, then he is likely to follow. That seems to have been the conclusion from the demonstration work that the federal government and the state departments of agriculture have undertaken. Personally I know today of no better way of reaching the farmers than through this demonstration process." (6-97)

"Everywhere, however, demonstration techniques carefully carried out have been found to be effective; in the Middle East they are indispensable, and have worked even when religious tenets threatened the effectiveness of the programme. Demonstration has been effective in India, Africa, Greece. Films of the entire process are sometimes effective, but only when they are taken against a local background. Lambert showed New Guinea groups graphic representations of the progress of hookworm through the intestinal tract, with good results. In the Middle East, however, where "slowly-slowly" is a maxim, movies are not entirely effective, as they move too fast for people who have to mull over things." (38-275)

"For example, a critical observer, watching from a distance, may be impressed with the way in which local officials in the Indonesian Republic have adapted the traditional shadow play to their programmes of keeping the people of the villages informed about the changes which are being vigorously pursued throughout Indonesia. . . .If, however, some programme of information is entrusted to village leaders, who entertain no such scepticism and who themselves feel the shadow play to be a most appropriate way of educating the people to take part in the work of developing their country, then there is no such question as compromise or insincerity. The play will be furnished with new pages of new agricultural practices and new health measures, in the mind of the script writer and in the minds of his audiences, a new synthesis will take place, which is organic because it has occurred within the same human organisms, which is harmonious because it is an expression of individual human beings' efforts to make sense of their own lives.

As each culture is a whole, however sorely torn at the moment--whole in the sense that is is the system by which and through which its members live--in all relationships between cultures, each must be accorded dignity and value. Much of the present phrasing of technical assistance planning, and much of the present evaluation of change within a country, is conducted with explicit or implicit denial of the dignity of members of those countries which, while often the inheritors of much older traditions, have not been in the vanguard of those aspects of culture which stem from modern science. This is self-defeating, in that it arouses violent resistances and attempts at compensation and retaliation from those whose feelings of self-esteem have been violated; it is also contrary to the findings of modern psychiatric practice, which insist on the recognition of the patient's validity as a human being." (38-314)

"In the choice of methods to be used for introducing change, whether technical or compensatory, the criteria of involvement of the whole personality should be used. A great deal of discussion is wasted over the relative desirability of using print or radio, films or discussion groups, cartoons or dramas, practice or demonstration or illustration,

as ways of teaching new procedures and attitudes. These discussions tend to ignore the fact that all media for dissemination of new knowledge are to be judged in terms of effectiveness, and effectiveness in turn is a function of the extent to which the new practice becomes part of the way of life of the people among whom the change is to be introduced. Any reliance on a method which is purely intellectual, or purely aesthetic, purely emotional, or purely moralistic, purely social or purely individual, will necessarily restrict the area of involvement." (38-317)

The PROCESS: This is methodology thought of in broader terms. Here we are thinking in terms of the human relations aspect of technological change.

"1. The client system discovers the need for help, sometimes with stimulation by the change agent.
2. The helping relationship is established and defined.
3. The change problem is identified and clarified.
4. Alternative possibilities for change are examined; change goals or intention are established.
5. Change efforts in the "reality situation" are attempted
6. Change is generalized and stabilized.
7. The helping relationship ends or a different type of continuing relationship is defined." (32-123)

"For the Division of Community Education the "process" comes first. It is more important than the material accomplishments, for it is the mind, the heart, and the spirit of the growing community. The "process" will build the community and if it is successful, the community will build the "things".

"We are trying to bring deeper insights into the community: 1. a greater understanding of cultural values a people posses or may posses, 2. broader general information, and 3. advantages to be gained when people work beside their neighbors in the solution of their problems." (63-29)

RESOURCES: This too is like methodology in that, for any given situation a large number of resources can be solicited to help in the change process.

"Rural communities are rich in resources to draw upon. Individuals, the local school, the facilities of the agricultural extension service, nearby local branches of the state-federal employment service, farm organizations, community organizations of various kinds--all are available. Any individual or group could spark a systematic inventory of vocational opportunities and training needs. All could assist in bringing together the best possible knowledge of local conditions. Such group activity will not occur without leadership and organization. . . . without community recognition and acceptance and responsibility." (59-168)

"If, instead, we draw on an image in which two adults--one experienced in one skill, another in a different skill--pool their knowledge so that each can use the skill of the other for a particular task, as when foreign explorer and local guide venture together into a forest, much more viable relationships can be set up. Leaders of the newest countries, only recently established by revolution or mandate or negotiation, are young adults, not children--less experienced but not less adult than those upon whose skills and resources they need to draw." (38-315)

SOCIAL AND CULTURAL RELATIONSHIPS: As the amount of literature attests, this is an area of increasing concern. When an educator works in a cultural setting analogous to the one in which he was born and reared this is not a major problem. When, on the other hand, an educator finds himself in a situation different because of cultural background or because of accelerated technological change, he finds there are factors at work that he is not able to cope with. Such appears to be the case in many educational situations today.

"In the first place the educator will need to consider the character structure of the people, those regularities in their behavior, which can be attributed to their having been reared in a common culture. These regularities can be conveniently described under the headings of motivation, incentives and values, on the one hand, and ways of thought on the other. Our educational systems are bound up almost inextricably with our own character structure, so that it seems natural to us to build an educational system on such concepts as competition, reward and punishment, graduated success and failure, etc. But in working within other cultural contexts it is necessary to discard these cultural limitations and study first what are the incentives under which an individual will study and learn, and what are the conditions which may make the use of our methods definitely inappropriate.

It is apparent, therefore, that any system of education should be developed against a very thorough background of a knowledge of the culture of the people to be educated." (54-343; 344)

"This need for a new awareness of different values and attitudes applies obviously to foreign workers in a backward area. It applies also to the town-bred educated nationals of the area who are almost as far removed, ...Highly qualified scientists often make poor educators because their own thinking is so far removed from the point of view of the people they have to instruct. .....and one essential of the new techniques in instruction is .....WHY people carry out certain activities as well as HOW they perform them." (48-80)

"The most important social systems that probably will receive lesser emphasis following change will be those carrying on the religious

and familial functions. Those to receive greater emphasis will be systems related to the production, distribution, financial, and professional functions. Rural locality systems of all types, particularly neighborhood groupings, will become of lesser importance. Locality systems of cities and towns will become of greater importance. These same changes are to be anticipated in those societies which follow the communistic road to industrial technology. However, in such societies, at least for a time, the governmental and production functions must merge and be handled by those in the status-roles to which high rank, power, and facilities are given." (33-456)

"Nevertheless, the social systems which carry the responsibilities of the professions and vocations, which come more and more to operate outside the family will receive much higher priority than the family, the dominant system in most underdeveloped areas." (33-457)

"Social change can only occur if human beings themselves change, and can only be lasting if human beings find it rewarding to develop new ways of valuing time, material goods and even social relationships." (5-376)

"In a very summary form these principles are: every culture is a living unity, and a change in any one aspect will have repercussions on other aspects of the culture; changes within a culture will produce changes in the personality of individuals living within the changing culture; purposive technological change involves responsibility for the effects of such change upon the lives of the people concerned; each change is unique, and therefore it is impossible to lay down general prescriptions but, through an identification of the process as it occurs, experts will be able to act in terms of the fullest knowledge, changes should be introduced with the fullest possible consent and participation of the people and in ways that are familiar and acceptable." (54-422)

"Young-farmer organizations have been the central point, and the instruction given by teachers and visiting instructors has been more or less at the request of members of the organization to meet specific and immediate needs. Those who have participated in this type of program attest to the benefits they have received, both from the point of view of technical assistance and technical education as well as from the opportunity to socialize and to participate in an organization of young people with mutual interests. Yet, the fact is that the number of young farmers involved in these programs has been small." (59-181)

"We may also take into account psychological findings about resistance to new learning.

New information psychologically available to an individual, but contradictory to his customary behavior, beliefs and attitudes, may not even be perceived. Even if he is actually forced to recognize its existence, it may be rationalized away, or almost immediately forgotten. Thus, a people who insist that magic is necessary to grow yams may have it pointed out to them that the foreign missionairies are growing larger yams by using improved agricultural techniques instead of magic. They will counter the evidence of their senses about the size of the mission yams by insisting that the yams are a different kind, or that the

missionaries used their own magic, not an improved technology." (38-294)

"Individuals exposed to facts or experience contradicting a strong system of behaviors, beliefs and attitudes can withdraw themselves from them, sometimes even physically. Such withdrawal permits the system to remain unchanged. It is, as we have noted above, one of the less beneficial consequences of sustained tension or frustration. The dismissal of any political information which is uncongenial as the propaganda of an enemy country, which should not get attended to, is a common contemporary example of this mechanism.

Finally, as an individual's behavior, belief and attitudes are shared with members of his cultural group, it may be necessary to effect a change in the goals or systems of behavior of the whole group before any given individual's behavior will change in some particular respect. This is particularly likely to be so if the need of the individual for group acceptance is very great--either because of his own psychological make-up or because of his position in society. Thus, it may be the chief or prince who can most easily adopt a new practice, or, on the other hand, a group may force such a leader to maintain the status quo after all the rest of the group have changed, providing a sort of anchorage for the rest of the group. No knowledge of the way an individual of a given constitution and capacity may be able to accept or reject change can ever be used alone, with out giving due weight to the nature of the culture of which he is a part, and his position in the particular social group within which he lives." (38-295)

"But from the standpoint of mental health, the hazards of change are actually not as great for those who are involved thus immediately as they are for their children. The peasant who comes to the city brings with him all the stability derived from a childhood spent within a traditional and coherent social order. His personality reflects that experience and he often withstands enormous pressures, and meets crisis after crisis with courage and imagination. It is not among the first-generation immigrants from country to city, from agricultural country to industrial country, from simple levels of life to complex levels, that we find the principal disturbances which accompany technical change. Rather, it is in the lives of their children, reared in conditions within which no stable patterns have been developed, by parents who, while they may be able to weather the storm themselves by drawing on a different childhood experience, have no charts to give their children." (38-302)

"In brief, if there is to be purposive change, directed by those with power and resources, to introduce programmes of vast scope with unprecedented speed, so as to add 20 years to the expectation of life within a single generation, or alter the level of literacy from 10 per cent to 90 per cent within a decade, it is necessary to develop substitutes for "experience", so that people may learn in a few weeks what they once learned in a lifetime, and yet learn it with all of the complexity of genuine human experience. Failure to provide such corrections carries automatic penalties, for either the desired changes cannot be carried out at all, or methods of force and manipulation have to be

used which, while introducing a particular technology, decrease the well-being of the people as a whole." (38-317)

"In order to preserve the process of change in each culture as a living one, through which each generation of human beings increasingly are able to use the knowledge of every part of the human race to solve their emerging problems and advance towards a realization of their highest aspirations, efforts should be directed towards the establishment, within each country--and often within each locality--of institutions which will make it possible to assay this ongoing process. Instead of working our blueprints for health and welfare, nutrition and longevity, towards the fulfillment of which populations are relentlessly propelled, it is possible to establish patterns of social evaluation, so that communities and countries may take stock of themselves, assess the present state of nutrition against the present state of agricultural resources and present state of community facilities, match the projected population curve against the present rate of building elementary schools or homes for the aged, project needs for new kinds of personnel and begin to train them 10 years before the need develops." (38-318)

"Background of problem. In the past the introduction of new techniques and practices into the life of so-called under-developed peoples has usually been undertaken without adequate consideration of the effects of such changes on mental health and social adjustment. The changes planned will undoubtedly affect many areas of activity--sanitation, nutrition, wages and conditions of labor, agricultural techniques, pediatrics, obstetrics, preventive medicine, etc. Such changes are bound to alter the "way of life" of the group, the relations between parents and children, the hierarchy of authority, the acquisition of status and prestige, etc. These are precisely aspects of existence which are important for personality development and which give to individuals their feelings of happiness or unhappiness, security or insecurity, respectively. No programme of technological development can hope to succeed in the long run if it leaves people unhappy and madadjusted. In the long run also, such unhappy and maladjusted people are the ones who are more likely to turn to violence and even war, because of their dissatisfaction with the conditions under which they live. This is not a necessary consequence of technological development, but it is a possible one. It can be rendered much less probable if adequate attention is paid to the effect of technological development on people. The most important single fact to be kept in mind is that new techniques must be introduced with proper regard for the existing culture and with as little violence as possible to the folkeays of the groups concerned." (38-319)

"Finally, it has been proved by experience that the vernacular is the most effective and the most emotionally satisfying medium of instruction. In this way literacy is not merely associated with the foreign, but becomes an instrument in familiar life. Learning to read and write can be experienced within the security of the known, and the hurdle of a new medium need not be surmounted. And in educating in areas of living, the use of the vernacular provides the greatest facilitation, as it can express immediately the meanings and specific concepts of the culture. What is true of the vernacular is true of all aspects of living.

Working through the known patterns and the existing social groupings has proved to be the most effective procedure in fundamental education." (38-278)

SURVEY: This is another word that is coming into the educational literature with more frequency.

"For purposes of planning local programs of vocational education, more specific information is needed in regard to the kind and character of the manpower needs of the community served by a particular school or school district. Surveys made in order to determine the specific nature of manpower needs for purposes of planning vocational training programs are sometimes done on a county or regional basis.

Obviously the first step in the development of a vocational education program is to discover training needs. The community occupational survey is, perhaps, the most frequently used technique; such a survey might be comprehensive enough to provide a complete picture of the labor force in the area to be served." (21-1557)

"Whether dignified by the term survey or not, studying the situation is unquestionably a useful device in promoting successful adult education programs.

There is practically unanimous agreement in all studies that the maximum involvement of potential and actual constituents in program building produces the best results." (8-131)

WHERE TO EDUCATE: This could also be intitled, "How to Organize". It suggests the manner in which people are grouped for organized educational programs.

I. COMMUNITY LEVEL

"Community development originates, develops, operates with reference to a single community, which remains the locus of al controlling decisions. What is done may be unique or may be an adaptation of that tried earlier elsewhere but which local people accept as an answer to their situation. Planned activities are largely within resources of the single community.

Indigenous lay leadership may be wholly responsible, although outside consultants may have played a catalytic role.

Objective is to help that specific community.

II. REGIONAL OR DISTRICT

This focus is used in dealing with problems commonly affecting many communities and beyond resources of any one.

Stress is upon consideration of services of several specialists, any one of which can be made available temporarily to a local community.

Problem is that of tying in services available to felt needs of people, of developing local leaders who will incorporate as their own a program formulated outside of their community. Local communities are

not ends in themselves but units through which regional or district personnel must work.

III. NATIONAL

This focus is frequently expressed in terms of national needs to bring a country to a more advanced technological stage. Allocation of personnel and funds as well as scheduled quota of accomplishments is determined by agencies of national government or organization. Specific program details may be worked out at regional or community level but within carefully defined options set at national level.

Generally speaking, the community is the beneficiary rather than the active agent in basic decisions but is a partner in carrying out details of the program." (51-8)

"The Report states that "in order to be fully effective, vocational training programs in agriculture should normally include:
a. prevocational training in rural primary schools
b. agricultural teaching in rural secondary schools
c. technical agricultural schools, of a general or specialized nature;
d. short courses for general or specific training;
e. training on the owner's farm and, where appropriate, apprenticeship;
f. agricultural extension
g. the training of teachers and rural leaders;
h. the production of teaching aids and materials;
i. agricultural research." (42-62)

GENERAL SUMMARIES: As in the previous section, there are many authors who have made a summary of the important points in relation to education for technological change.

"The four great principles underlying extension services are: (1) the individual is supreme in a democracy; (2) the home is a fundamental unit in a civilization; (3) the family is the first training group of the human race; and (4) the foundation of any permanent civilization must rest on the partnership of man and the land." (6-172)

"The Division's personnel must have a clear, strong and motivating goal
a. total community involvement
b. unified and cooperative effort
c. satisfaction of community members' individual needs
d. active means for communication and expression
e. inter-individual respect
f. general self-direction
g. positive motivation

Subsidiary principles are, for instance:
1) Progress can only be made at the pace set by the group and cannot be accelerated by an element within or outside the group unless it is accepted and assimilated by the group.
2) The content of action must be the content of community problems: relevance is determined by the community.

3) The stimulus for development must be group stimulus.
4) Progress is impossible without communication and shared perceptions of needs, plans, consequences, goals, means, etc.
5) The process is continuous, requiring continued growth, readjustment, new insights, etc." (10-54)

"Characteristics of County Extension Program.
1. Built on needs of people
2. Flexible
3. Educational in character and attracts all to help people change interests, attitudes, and judgements as well as to give information.
4. Emphasizes over all well-being instead of profit only.
5. Adapts to resources (available for program implimentation)
6. Cooridinated with program of other agencies.
7. Preserves family unity.
8. Starts where people are.
9. Uses local leaders
10. The program should be timely." (25)

"Learning does not occur: -when the attitudes to be learned would contradict deep-lying personality orientations.
-in the face of defensive stereotypes which one nation maintains about another.
-at the points where two cultures differ widely in values or conceptual frame of reference.
Learning does occur: -when new information can be assimilated to a pre-existing frame of reference. (relates to concepts, information, values, emotional attitudes)
-takes place at points where people of two cultures seem to be approaching the same problem from different points of view. Under these conditions, there is no possibility of discarding the different behavior as irrelevant." (64-48; 49)

"1. New techniques should be fitted, whereever possible, into the organizational principles of the native society.
2. Optimum use should be made of local values. Their rightout destruction is likely to lead to severe strains and, in extreme cases, to anomie and social disorganization.
3. An effort must be made to single out the person or persons who are most appropriate as carriers of the innovation.
4. A technical assistance worker should look at the problems of introducing a new technique not from the purely specialized view point of the science or art in which the technique is located, but he should be aware of the totality of the adopting culture and the interdependence of its parts. In particular, he should try to become aware of the function which the new technique will play in the cultural whole and what other parts of social behaviour will be affected by it.
5. The overriding requirement for the technical assistance worker is that he gain the trust of the people with whom he works. Familiarity with their culture and habits, non-ostentatious behaviour, humility, consideration, and kindness, are only some of the external traits necessary to acheive this result." (54-413; 414; 415)

"A very general formula on a specific aspect of change follows from the analysis which was made in the preceding chapter: in the fields of agriculture, health, and nutrition (other things being equal), an item or practice will be accepted by a group so long as a need is felt for it; it fits into the culture of the group and there is objective proof of its workability." (2-156)

"7. Recognition of responsibility of the local community to assist in developing the program.
9. Broad involvement of the community in building the program.
10. Increasing use of qualified citizens under adequate staff supervision.
11. In-service training for all having responsibilities in the program.
12. Continuous evaluation of the program.
13. A wide range of offerings tailor-made to meet the needs of the community.
14. Willingness to take the program to the people where they are.
15. Use of a variety of appropriate materials, such as pamphlets, films, recordings, etc.
17. Flexibility in schedule as to time of day, length of class period, and of unit of course, thus adjusting so far as possible to the needs of the participants.

DeGroat found, for instance, that an informal atmosphere permitting contact and sociability with persons of similar interests was a very real factor in winning a "success" rating." (8-129)

"Social change can sometimes occur with great rapidity, especially if new procedures offer a welcome release from a crippling traditional system. However, revolutionary transformations are rare, and the expert should not depend on them.

Social change is related to the size of the community under pressure. The larger the community the more numerous will be the different statuses and occupations, the more numerous also the misfits and rebels.

Social change always takes place over a process of time. Perhaps like the flight of a bird a social group advances rapidly in some phases, and at other times tends to remain stable and unchanging as if consolidating its gains. The past history of the group may give insights into its probable present reactions.

Social change is more probable where the groups in contact are what Levi-Strauss calls 'natural partners', having similar value systems, though their expression will be superficially very different. Similar value systems should make themselves evident in projective personality tests and in an objective 'creative symbiosis'.

Social change depends upon differential receptivity among members of a peasant society. Age, sex, and occupation--as these statuses are culturally phrased--will often provide clues to probable change. Some authorities fend women more conservative than men, others less so. Closer analysis of the social structure would enable us to define the manner in which the cultural conditioning of sex roles leads to freedom of choice or resistance to change.

Social change depends upon the evident utility of the goods or practices that are offered by technology. Sewing machines, bicycles, iron fish-hooks and soap all fulfill this criterion and are usually highly desirable. On the other hand effort is culturally valued. Even

though something is useful, the effort to attain it (harder work, longer hours, migration from home) may not be judged worth the result.

Social change may be blocked if the expert sees underdeveloped communities through stereotypes he has built up about the nature of peasant societies. Not all peasant societies are co-operative by nature, not all possess traditional associations that can be modernized into credit unions, co-operative marketing or producing groups. Keeping the gap between stereotype and reality as narrow as possible is a first rule for the change expert.

Social change cannot occur if a people are too impoverished to afford the risks of even small technological changes. It is only in those sectors of life where needs are less imperative that willingness and freedom intelligently to experiment with a new technique can be expected.

Social change that occurs readily and quickly may be neither deep nor lasting. It may only be peripheral change adopted because of novelty or politeness. Time, therefore, is required for new elements to be absorbed into the social and economic life of the group. After 50 years, the West is still learning more about the implications of the invention of the automobile.

Social change may come to a standstill when new techniques, at first bringing immediate advantages, are seen to result in long-range economic and social disorganization, making the rich richer and more powerful, the poor more impoverished and exploited. One change at a time may not be enough. A wide programme of changes may be required in a given socio-political situation.

Social change may slow down because the expert cannot realize that what is obvious to him is not so obvious to the peasant. DDT kills insect pests. It is not so clear that boiling water kills typhoid germs.

Social change may also be slowed down because the expert is either unwilling for a scientific technique to become part of a magico-religious tradition, or is himself unwilling to play a magico-religious role in addition to being a change agent trained in a western scientific tradition. The expert must re-examine his scientific conscience if he is to solve this problem.

Social change will be hastened if energy is concentrated on the persons most likely to change their ways in a given time. Pin-pointing the key group for a specific programme will avoid much wasted effort.

Fundamental social change always takes longer than the experts' sober estimate, far longer than his or the administrator's optimistic estimate. It is probably correct to say that more action projects have failed because of administrative and financial time limits than for any other single reason. Though true, this is only a partial truth. It does not absolve the expert from the responsibility of learning all he can about the process of social change." (5-384; 385)

"Rural adult Education (with emphasis on the extension process should:

I. be based on conditions that exist (local, regional and national).
II. involve people in actions that promote their welfare.
III. develop programs gradually.
IV. aim basically at people's interests and needs.
V. use democratic methods.
VI. keep programs flexible.

VII. work through understanding of the culture.
VIII. use local leaders.
IX. use existing agencies.
X. utilize trained specialists.
XI. work with all members of the family.
XII. make programs as broad as needs of rural people.
XIII. evaluate continuously.
XIV. work with all classes of the society.
XV. keep in line with national policies.
XVI. use the community approach.
XVII. help people recognize their needs." (17-9)

"1. What, if anything, will be introduced trait replace?
2. What other tools and techniques are likely to be modified as a result of the introduction?
3. What other tools and techniques will have to be modified if the new trait is accepted?
4. For what new tools and techniques is there likely to be a demand as a result of the introduction?
5. Who in the society will have to abandon or change their occupations, if there is replacement? Who will be likely to modify their occupations and who will be given new occupations?
6. Who within the society will benefit immediately from the introduction? Will the benefits be in terms of economic advantage, increased prestige, or what?
7. Who, if anyone, is likely to suffer immediately? In terms of real or fancied threat to economic security? In terms of social status?
8. Will shifts in occupation affect the division of labor between men and women?
9. What are the formal and informal social organizations in which those affected participate?
10. How are these social organizations likely to be affected? Will their power or social position be enhances or lowered?
11. Is there a possibility of the introduction opening up new forms of cooperation? Of conflict?
12. Do the individuals and group leaders affected understand the nature of the introduction?
13. Who has participated in the planning of the change? Who has not participated?
14. What customs, other than the technology, are likely to be affected? Food habits? Relations of young and old? Marriage customs? Ceremonials? Religious beliefs? Major values?
15. Does the change reinforce these customs or conflict with them?
16. What are the attitudes toward the innovator (the field worker) as a person? Toward the ethnic group of which he is a member?
17. What is the recent history of the relations between the introducing group and the people?
18. What is the history of similar introductions to this group?" (56-91)

SECTION III SPECIAL CONDITIONS IN CUBA RELATING TO EDUCATION

From a psychological point of view, the learning organism is the same no matter what the culture. Never-the-less, as was indicated in the previous two sections, learning at any one time is dependent upon all of the experiences that the individual has had up to that moment. For this reason, the cultural setting becomes important for it tells us something about the composite of experiences that have come to bear on the individual.

The review of the literature in this section is limited to Cuba and Latin America where like conditions exist. This particular cultural type has been described by Gillen in his article, "Latin America" as follows:

"The fourth culture type of Latin America may be termed Modern Latin American. In Spanish it is often called la cultura criolla. This is the dominant culture type of the area today. Although it shows many local and class sub-varieties, its fundamental characteristics are found in all significant parts of the area." (49-333)

The following review of material has been divided into categories as were the two preceding sections. Most of the material is found in the excerpts giving a broad general summary in the last category.

EDUCATIONAL TRENDS: Some of the data concerning education in Cuba has been already presented in the background information of Chapter II of the related thesis.

"Bejucal farm people learn most of their habits and attitudes within the family group. It is there that they learn the habits of language, of personal care, of proper behavior toward others, and of conventional ways of thinking. It is there that boys learn the occupational skills of farming and girls the skills of homemaking."

"Farm people in Bejucal have ambivalent attitudes toward formal education for their children. Some education in reading, writing, and simple arithmetic is believed necessary, but additional formal education

is often looked upon as unnecessary." (57-70)

"Cuba:

84% literate
6253 public schools with 20,000 teachers, 520,000 students
635 private schools (182 religious), 140,000 students
Primary school 567,000 (about 50% of school age children 5-13 yrs. in school)
1st grade - 180,370
8th grade - 4,852
High school - 26,000 (2500 graduates a year)
21 high schools, 10 normal schools, 45 trade schools
Other total enrollment about 54,000 or under 10% of ages 13-18
University of Habana - 14,000-18,000 enrollment
(Catolica, Masonica, Santa Clara, Oriente, Candler, Holguin, Camaguey, Pinar del Rio are private universities, rather recent in foundation).

(b) Rural education:

Percent of population of school age in school in 1942-43:

Havana Province, Cuba - 68.6%
All Cuba - 35.1%
Oriente Province - 20.4%

Schools for rural children's education for 7th and 8th grades, 39 in Cuba with about 30 boys each.

Extreme centralization of all education, even rural, in the ministry of education in Havana

(c) Agricultural education:

The University curriculum in agriculture is essentially an engineering course, with no education courses included. In each province there is an agricultural school with a 3 year course (above the 8th grade) for about 40 boys.
There is no agricultural extension service." (40)

"In general L.A. rural schools have suffered from neglect. In most of the countries few pupils receive education beyond the fourth grade of the primary school. In some countries, the majority receive no more than one to two years. School buildings are inadequate. Rural teachers are meagerly paid. There is an inadequate supply of teachers, and many of them have not only had no teacher training but may have themselves received not more than 4 to 6 years of primary schooling. Curriculums in the rural schools have been identical with those for the urban schools. Until quite recently rote learning was almost universal.--- Instruction has little bearing on pupil's environment and needs." (20-57)

"On the other hand, the number of educational institutions has doubled since the middle thirites, according to the statistics here used. An effort is also being made to adapt the rural schools to the requirements and characteristics of the population which is to use them and to modernize the educational curriculum with stress on instruction in practical matters, with training in agriculture to receive foremost attention in rural primary schools as well as in normal schools and in special

agricultural training establishments. Educational policy is moving away from the classical system of the three R's and rote learning and toward relating schooling to the daily life of the rural dweller, particularly the Indian." (50-65)

SOCIAL ORGANIZATION: There are two articles of interest here and more will be found in the summary materials.

"The plantation system of agriculture, with feudalistic tenure relationships, a strong military class with important political power, highly centralized government, and Catholic tenets, with the church having close ties to the state, were four institutions imported from sixteenth-century Spain which have had great influence in shaping the broad outlines of Latin-American society. These institutions have undergone significant changes over the last four centuries and have lost much of their original force, particularly in such countries as Mexico, Uruguay, and Costa Rica. Nevertheless, the large landowner, the army officer, and the Catholic priest are still important influences in most of the Latin-American countries. They, along with a growing group of well-to-do industrial and commercial families, tend to constitute an elite class, the size and strength of which varies from country to country but which usually exercises significant political power and often sets the norms of opinion with respect to many types of economic and social relations." (35-9)

"Experience in fundamental education in a number of countries points to the importance of working through local leadership, both for the acceptance of the project and for ensuring its continuing success. In Costa Rica the peasants look to both lay and church dignitaries for direction; but these must be their own dignitaries, with whom they are in an established PATRON relationship!" (38-277)

GENERAL SUMMARIES OF CUBAN AND LATIN AMERICAN CULTURE: The special distinguishing characteristics of general Latin American culture and more specifically, the cultural type found in Cuba can be seen at specific points. It will be noted in the following quotations that importance is placed on family and kinship ties, individualism, class structure, land ownership, attitudes toward work, religion and the attitude toward authority. These summaries are generalizations and the observations of Stabler in Bejucal give a more specific view of how close in some cases and how different in other cases these generalizations are. In a country changing as rapidly as Cuba is today there is likely to be some shifting of the former patterns and even the underlying value structure.

"Cultural Characteristics Significant for Extension Work:
Great Importance of Personal Relations
Superiority and Subordination.
Lack of Local Responsibility for Local and National Welfare.
The Great Importance of Familism.
The Importance of the Village." (7-118 to 122)

"Anyone who looks mainly at our public life, which leaves so little scope for liberal practices, or our social life, which is but rarely distinguished by respect for other people's privacy, may wonder wherein lies this individualism, which is as often vaunted as it is condemned. There is no doubt that, generally speaking, we do not consider our neighbour as an individual who, as such is a priori possed of the same rights and obligations as anyone else. Nor do we consider a member of the community to be entitled to our respect solely because he is a member of it. .....For it is clear that, with this basic attitude, each man's ego is the central and supreme doing of reference, the measure of every value. This means that we are governed by personal sentiment, which affects us both for good and ill. Hence that lack of a sense of social unity, which accounts for the rarity in our countries, in contrast to the Anglo-Saxon world, of charitable foundations, benevolent institutions or privately organized public charity. We are more inclined to conceive and practice charity from man to man, which is of little use in modern, industrialized society, with its mass populations and its giant cities.

It is for this same reason that we have so little respect for public institutions. The state is merely a fictitious person, not considered as deserving of the probity of dealing which would be demanded in relations between individuals, so that our people refuse to admit that it has any moral claims. .....All this is no doubt wrong and distressing, but it is characteristic of that type of individualism which values the particular individual above everything, and therefore refuses to respect impersonal values. It is in fact the concimitant of the rule of personal sentiment.

Yet this type of radical individualism, which is not an ideology but an attitude of life, has, along with its defects, great virtues. The most important of these is that it tends always to treat the individual as a human being, endowed with moral responsibility, and not as a means or tool to allegedly higher ends. Even in dealing with an enemy, the man-to-man relationship is close, direct, and strong, so that while anger or bitterness may rage, we do at least avoid that cold inhumanity which has in recent years been such a horrible feature of some forms of social technique." (1-238)

"1. Kinship ties are much more important than in present day United States or England, for example. Not only does the individual have important interaction patterns with kinsmen by blood and by marriage, but 'ceremonial' kinship plays an unusually important role (the so-called compadrazgo system). Until these kinship systems weaken it is impossible to organize effective units of co-operation without taking into account the affiliations (and the antagonisms) based on kinship.

2. Latin American society is strongly class-organized. The middle class is numerically small in most countries and middle class values, which are said to be dominant in the United States and England, do not

permeate Modern Latin American Culture. Traditionally there has been a large gap between the upper and the lower classes, and the relationship between them has been one of dominance-submission and an unequal distribution of privileges in favor of the upper classes.

3. Wealth and economic power have been based on land, the larger part of which has been held by a relatively few owners in great estates worked by landless peasants or by small landowners ekeing out the returns from their own inadequate holdings. There are exceptions to this rule, of course, but latifundismo (the large estate system) is almost everywhere recognized to be not only an economic problem, but also a hindrance to community development. For the large estates are almost invariably organized on an authoritarian basis, with the owner or his administrator in complete charge. The workers, who in many cases number in the thousands, are allowed little or no opportunity for political freedom, individual or group economic initiative, or voluntary organization for community and civic welfare. The same patron (authoritarian) system was extended to mining and manufacturing industry. Labour organizations in some countries have within the last twenty years succeeded in obtaining certain rights for workers in industry, and more recently have advocated the right of agricultural workers to organize into unions. (This right has been constitutionally guaranteed in Guatemala, for instance, since 1945.) However, experience in independent community organization, either by private citizens or in the form of co-operative or communal groups (communidades), is not very widespread among the common people of the region.

4. The Roman Catholic Church is virtually ubiquitous among Latinos, all but an insignificant number of whom are at least nominal members. The Church, as an institution, is of course an authoritarian structure and during colonial times had a pervading influence in politics and economics as well as in religious life. Although the 'liberal' revolutions of the later nineteenth century reduced the Church's official privileges in some countries, the tradition and practice (although sometimes indirect) of the Church's influence in 'worldly' affairs can seldom be overlooked even today. Furthermore, the Church monopolized certain functions--education, charity work, administration of hospitals--which in certain other areas were much earlier regarded as obligations of the local community or of the state. The Church still attempts to carry on these activities, in some cases in competition with government or lay agencies. Sodalities and cults of saints are prominent and afford laymen an opportunity for voluntary participation.

5. Many socalled 'bourgeois virtues' do not exist in the form encountered in North American or British society, so that the planner of community development must attempt to instill them or else must capitalize on those virtues which are present. For instance, voluntary charity of the 'civic' type is not traditional; neither is the habit of thrift general, in the sense of saving money to be put into banks or insurance policies; service clubs of the Rotary type are recent innovations in some of the cities, but the secular organization supposedly devoted to civic betterment is not traditional. Since wealthy people do not identify themselves with the lower classes, they do not on the whole show much of that responsibility for the community as a whole which is expected of them in the United States. On the other hand, there is in Latin America a tradition of co-operation in community work, as when all the able-bodied men turn out to clean up the plaza or repair a bridge.

There is also a tradition of frequently getting together in fiestas and other forms of merrymaking. Social clubs for the more well-to-do exist in all but the smallest localities, while the cantina or bar serves as a daily meeting place for poorer people. In general, there is a great deal of sociability in Latin American life which can be channeled for community development." (49-335; 336)

"Both Latin America and the United States grew out of the great stream of Western European culture. We have much in common that will not be discussed here. Furthermore, any general discussion of the culture of an area is bound to be an oversimplification, since there are important differences from country to country in Latin America and even among the regions of the United States. Finally, cultures change and no description can adequately reflect the flow of change.

Nevertheless, for all of these qualifications, we can present a picture of contrasting cultures that should help the North American to orient himself in Latin America.

As a result of this, social relationships in Latin America are more rigidly structured than they are in the United States, and are patterned along the lines of dependence and submission rather than independence and freedom. In such a system people are brought up to believe that a person is born to a social position in life and that little that he does during the course of his career is likely to affect this state of affairs. Rather, in much of South America the aristocratic tradition still holds sway and a well-defined middle class has yet to emerge. This does not mean that social mobility is lacking in Latin-American society, for we know that people of a very modest social heritage have gained entrance to upper-class groups and are doing so now at an accelerating rate. It is simply that the opportunities for social mobility were relatively restricted in the past so that the people who today fall between the high and the low status groups have not yet crystallized into a group we may properly term a middle class.

The social structure then, was built upon dominance and sub-ordination.

Almost everyone who has written about the cultures of Latin America has called attention to a phenomenon called personalism, a characteristic, which, like the outlook on the structure of society, was inherited from the mother country of Spain. In a sense, personalism may be regarded as a variety of individualism, but it is not the same kind of individualism that is either practiced or preached here in the United States. In Latin America it is more than the doctrine that the individual and not society, is of paramount importance in human life. Personalism goes even deeper than this. Not man in the abstract, but man in the concrete, becomes the center of the universe. And the concrete man in the center of the universe is the person himself.

The differential emphasis and value placed on the personalized relation in Latin America as compared with the United States can hardly be overemphasized. Here we tend to assign high value to the status and role which an individual occupies; we tend to respect an office which he holds or a position which he fills, such as the presidency of the country,

or the head of a large corporation. This, however, does not seem to be so much the case in most of Latin America, where prime emphasis is placed on the person who occupies the office, on the individual who holds the position. It is more the particular human being, the unique personality, that becomes the focus of attention and respect and not so much the status and role which he occupies. To a large extent, of course, this difference in emphasis is a reflection of a difference in the concept of the individual himself. Here an individual, despite his personality, is deserving of respect because of his position; there an individual, despite his position, is deserving of respect because of his personality. This is borne out by the emotional reactions that accompany a breach of these norms. In the United States a violation of the dignity of an office is considered a serious offense; in Latin America an insult to the personal dignity of an individual constitutes the supreme affront.

Another point of prime significance for an understanding of human relations problems in Latin America is the high value placed on the family as an institution and on kinship relations in general. While the family, of course, is a fundamental institution in all societies, in Latin America kinship and family play a more significant role in the patterning of human relations than they do in the United States. Descent and family name are highly significant distinguishing marks of an individual in Latin America, particularly in those countries where the aristocratic tradition still prevails.

The North American can best understand the Latin-American family if he recognizes that it performs different functions from our own. In Latin America, family relations are extensive and stable while governments (in some countries) are notably unstable. In the United States, the family is relatively unstable, while our governments (state and federal) are among the most stable in the world. If we look only at government in some parts of Latin America, we get a highly misleading impression of a chaotic society. There, it is the family which provides for society the stability we acheive through other institutional forms.

In connection with the family, some mention should be made of the relationship between the sexes. On the whole, Latin America has been and still is a male-dominated society. This does not mean that men are necessarily regarded as superior to women in all departments of life, but the notion of the equality of the sexes, like the equality of people, is certainly not a part of the cultural heritage. On the contrary, there has always been a fairly sharp separation, recognized by both sexes, between the roles of women and those of men in Latin-American society.

In Latin America, there has been frequent contact among people of different status levels, and yet, in the past such contacts have tended to follow a standard, formalized pattern such as we find in the relationship between master and servant.

In Latin America, we can assume, in general, a greater tendency to accept the authority of the boss. This does not necessarily mean that Latin-American workers will be content with actions of the boss which would be offensive to North American workers. They may be just as

resentful, but they are less likely to challenge authority directly, in a face-to-face situation. At the same time, the Latin-American boss--at least if he comes from a social status higher than his sub-ordinates--is less likely than the North American to have self-doubts regarding the justification of his own authority.

Much more than the Latin Americans, we try to avoid referring our local problems to some remote and higher authority. The pattern of thinking we use in problem solving conforms to the organizational level at which we feel problems should be solved. We like to try to solve problems in terms of the practical details rather than in terms of some general, abstract principle.

The Latin American differs with us in these respects. He does not look upon frankness as a virtue. He places a much higher value on courtesy. He tends to express himself in such a way that personal relations will remain harmonious--at least on the surface. Our simplicity and brevity may seem abrupt to him. He tends to couch his statements in a much more ealborate framework.

In most of Latin America work is necessary for some people at least, but it is not a particularly esteemed or dignified activity. It is nothing in itself to be rewarded for. It is rather a necessary burden that must be borne by some people as part of the pattern of living. Particularly unfortunate are those who must perform the undignified hard labor of everyday life, but that is the way of the world. It is the nature of things that some are born to leisure and others are born to work, even though the latter may not be particularly happy with their lot nor value the work activities they perform. Thus on the part of socially mobile people, who were not fortunate enough to be born to the leisure class, there is almost everywhere in Latin America a tendency to avoid the stigma of manual labor, for it identified one with the lower class. A true gentlemen, if he works at all, works only with his mind. He regards it as undignified to dirty his hands on anything that is identified with physical labor.

The reason for such attitudes toward work, of course, is simply that higher value is assigned to other activities. There is much more to life than work, than the humdrum activities of everyday life. These are a necessary part of living, to be sure, but they are not the things in life that count. There is something more dramatic, more poetic in the universe than can be captured through the routine activities of life. It is rather through deep emotional feeling and expressive behavior that one experiences the greatest rewards in life.

It certainly does not fit the classic model of economic man. Understanding it lies in appreciating the fact that the Latin American places higher esteem on emotional gratification and spiritual values than on the pursuit of wealth of wealth's sake.

To us, time is money, as we often say. Our conception of time tends to color our view of other people. The responsible, dependable individual is not only the man who does what he says he will do; he is the man who does it at the time that he says he will. In general, Latin

Americans do not submit so easily to the tyranny of the clock. Even men in business and governmental circles are not likely to attach any great importance to the time of appointments. There the time element plays a much less important role in the evaluation of the responsible and dependable man.

The prevalent view held in Spain and introduced into Latin America was that, for the large mass of people at least, this was a naturally ordained world of inequality, oppression, and suffering which if endured according to holy scripture, however, would produce its reward in the end--eternal bliss in heaven. There was little that one could do to change this static state of affairs. Thus one had to resign himself to his fate and his destiny; one had to put himself in the hands of higher powers and hope for the best through religious activity.

It is perhaps in past due to such attitudes as these that Latin Americans sometimes seem unwilling to assume personal responsibility, especially in cases of failure. One is constantly at the mercy of forces beyond his control so that if something goes wrong the responsibility lies there, not with oneself. If someone misses an appointment some force beyond his control prevented him from making it on time; if someone misses a train or plane, it is they that are at fault, not he." (65-2 to 11)

"Because Latin American countries have similar racial and cultural backgrounds, the following list points out some of the more common attitudes and values held by Latin American peoples.

1. While the vast majority of the people are landless there is in general a high regard for land ownership.
2. Cultural practices among the small farmers need great improvement. Some taboos and beliefs among the less educated people inhibit the adoption of certain practices.
3. There is a widespread feeling of dependence upon the central governments to solve local problems.
4. In seeming contradiction to this, there is a lack of confidence in many governmental activities. It generally requires great effort and a lot of lost motion on the part of government officials to break through this barrier.
5. Despite these feelings of apprehension, there is usually a relatively favorable attitude toward programs of the technical assistance agencies, which not only must change attitudes of the people but must also face governmental resistance.
6. Throughout all of Latin America a high value is placed on the family. In addition to the nuclear family, relatives are frequently organized into it, giving the larger or extended family.
7. On the whole, Latin American society has always been male-dominated. This is not to say that men are necessarily regarded as superior in all departments of life, but the notion of equality of the sexes is certainly not a part of the cultural heritage. There has always been a fairly sharp separation between the roles of men and women.
8. Society may be divided into three main classes. The upper class includes people with money, land, education, family name and high positions in government and church. Middle class people are mostly profes-

sionals, and the lower class is made up of the uneducated masses, the landless, and the poor.
9. Catholicism is the main religious faith, and people in general have deep religious feelings. The church is the most important social institution outside the family.
10. A large portion of the agricultural population lives and works as peons on huge haciendas controlled by a land-lord or patron.
11. Living standards are very low for rural people. Housing is inadequate, nutrition is low, and delibitating disease are numerous.
12. Although manual work is necessary for most people, it is not highly esteemed or dignified. This feeling is a direct carry-over from the colonial period when manual labor was done only by the peons, allowing the rich and educated to live a life of idleness." (11-15)

CLOSING COMMENTS:

The number and length of the exerpts in the three sections of this review of the literature has been large. It is by no means all that has been written that would have bearing on Education for Techological change in Cuba.. In reality, each one of these sources leads to further ones at a multiplying rate. There has been an attempt to review sources that might give a representation of all aspects of the problem.

As will be noted by the authors and the publishers, the majority of this literature is of North American origin. It would seem likely that by including more writers from other countries greater breadth could be added to this review. There are many reasons why more of this literature is not available but the level of development of the social sciences and publishing facilities could be included.

APPENDIX I

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for

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APPENDIX II

Excerpts from:

"An Evaluation of the Education offered at the Escuela Agricola e Industrial of Preston, Oriente, Cuba"

Ames, Iowa March 1959 Richard G. Milk

III

An Examination of Several Goals That Have Been Held by Various Groups During the Past Fifteen Years.

Goals	Entities that have emphasized these goals	Degree of success in achievement	Major obstacles to fuller achievement
1. Prepare youth for adequate social and spiritual adjustments to meet the complex problems of life in a modern world.	Faculty	Good	None (normally the major obstacle to goals 1 and 2 are competent and dedicated faculty. We have been exceptionally gifted for these two goals.
2. Prepare youth for democracy, by trying to practice democracy at all levels within the school structure.	Faculty	Good	
3. Train semi-skilled workers for industrial work.	Industrial firms of the region.	Poor* in terms of young men attending who would have liked to go into this kind of work.	(a) Regulations of labor unions are contrary to this. (b) Costs involved for teachers and equipment. (c) Lack of accreditation for this purpose.
4. Train semi-skilled workers for agricultural employment	Agricultural firms family and corporate	Fair, in terms of young men attending who would have liked to go into this kind of work.	(a) Nepotism, that is large landowners prefer an untrained nephew to a trained stranger. (b) Lack of accreditation as an agricultural school.
5. Train workers for business related to agriculture	Agricultural machinery, feed, seed firms, and sugar corporation.	Poor	Would require a good commercial course be combined with present studies.
6. Train farm youth for operation of home farm.	(a) School faculty (b) Individual trustees (c) Church leaders**	Moderate	(a) Father still active, no second man really needed. (b) Capital for securing other farm opportunities impossible to get. (c) Farms too small for economic opportunities. (d) Students too young to know what they really want to do--they may begin studies with this goal and end up with goal 16.

Footnotes:

* To avoid complete ambiguity of these terms, the common expressions of degree of success are given special meaning in terms of approximate percentages achieving specific goals.

Slight	less than 10%	Moderate	50-60%
Poor	10-25%	Good	60-75%
Fair	25-50%	Excellent	Over 75%

** When we speak of "churches", I refer to Protestant groups affiliated with the Cuban Council of Churches (some 17 denominations). Although culturally Cuba is Roman Catholic, less than one-fifth of the people are active in the Roman faith. The rural areas are mainly unchurched and over one-fourth of the population have not had even the remotest tie with the traditional church. Spiritism, voodooism, and crude paganism are common in rural areas.

Goals	Entities that have emphasized these goals	Degree of success in achievement	Major obstacles to fuller achievement
7. Prepare girls for family responsibilities *	(a) School faculty (b) Individual trustees (c) Church leaders (d) Interested donors in U.S.	Moderate, in terms of number of girls who have been in school.	Student body quite young. Very few male students ready for marriage after graduation.
8. Prepare for some paid job opportunity	(a) Students (b) Parents	Fair (See 3-5)	Many students too young at termination. Also see 3-5 above.
9. Extend information on better health to rural population, at least those accessible from our rural churches.	Church leaders, especially those of the Rural Committee of the Cuban Council of churches, first of all Methodists.	Moderate, expressed in percent of rural church membership actually in Cuba.	Lack of direct communication to rural communities.
10. Extend information similarly about betterment of home conditions.	See above	Moderate (see above)	See above
11. Extend information similarly about improvements in subsistence agriculture.	See above	Poor (see above) Lower than 9 & 10 because girl graduates are more dispersed than boy graduates.	See above
12. Extend information about commercial agriculture.	Faculty members of school. Landowners.	Very limited in general sense, but quite definite for visitors. Probably 80% of visitors benefited.	See above. Capital limitations for agricultural development.

Footnote: * This training for family responsibility is not very prevalent in the Cuban educational circles. Many "schools of the home" are offered in the cities but they are quite superficial and are offered for girls only and not as part of a co-educational institution. An excerpt from a UNESCO publication is quite pertinent at this point. Unesco. Education in a Technological Society. Paris. 1952. p. 48.
"....in cultural, artistic, intellectual, and political activities women are expected to play, and do play, an important part in the life of the nation. At the same time research in sociology and psychology alike have shown the woman's part in homemaking and child-rearing to be of even greater importance than was originally thought."

Goals	Entities that have emphasized these goals	Degree of success in achievement	Major obstacles to fuller achievement
13. Assume rearing and educational responsibility for unfortunate children.	(a) Many original sponsors of school in Mayari-plantation area. (b) Cuban pastors	Excellent for those educated. Slight in terms of the total number of children for which entrance was requested.	(a) Financial resources beyond reasonable expectations. (b) Seriously conflicts with other objectives. (c) Age of needs is also age of greatest costs. (d) Begins an investment in individual that tends to grow instead of terminate.
14. Attain "self-support"(i.e. not require church funds from U.S.A.) having all support local & parental.	Many prominent leaders of Cuban churches	Moderate, in terms of total annual budget (excluding missionary salaries) Fair, in terms of budget, including missionary salary.	(a) Conflicts with other goals. (b) Resources for rural youth are far below those of urban youth.
15. Provide a primary education as a pre-requisite to continuing education, i.e. grades 1 through 5.	(a) Parents of children (b) Prominent church leaders (c) Implicitly the Cuban education system in that to date our only accreditation has been at this point.	Fair, in terms of those attending with little previous schooling (Many drop outs in early years of E.A.I. school).	(a) Problems of homogeneity of group. (b) Faculty too specialized for primary education. (c) Goal can be met more cheaply in local communities.
16. Provide 6, 7, & 8th grades as prerequisite to further education.	a & b above.	Not attempted until 2 years ago.	(a) Lack of accreditation. (b) Difficult to combine with vocational courses.
17. Have a comprenehsive community high school such as offered in U.S.A.	U. S. educators with whom conferences have been held	Not attempted	(a) Educational system vastly different (b) Costs beyond conceivable resources. (c) Difficult to combine boarding and day students. (d) Transportation problems.
18. Demonstration of improved agricultural practices.	Agricultural business firms, commercial farm operators, sugar corporations.	Imputations of value added to region's agriculture by practices initiated by E.A.I. exceed one million dollars.	(a) Lack of capital (b) Lack of managerial force (c) Lack of ways of communicating findings. (d) Only part of those benefiting contributing to costs.

Goals	Entities that have emphasized these goals	Degree of success in achievement	Major obstacles to fuller achievement
19. Offer short courses to semi-literate young adults (already in jobs or farm operations)	Church leaders	Slight	(a) Conflicts with vacation plans of school staff
20. Combat illiteracy within scope of influence of rural churches.	(a) Church leaders (b) Faculty	Moderate, to extent graduates have been interested in this program (some have schools in areas not served by public school.)	(a) Difficulty of financing schools where government has none. (b) Impossibility of official teaching certificates for girls who undertake this as pioneer work.
21. Provide weekend rural institutes in rural churches.	Cuban church leaders	Slight	(a) Disadvantages of geographical location. (b) No budgetary support for this activity. (c) Communications facilities lacking
22. Serve as provincial center for church youth activities.	Young people's groups. Leaders in church groups. Faculty.	Slight	(a) Lack of swimming facilities. (b) Transportation problems (resolved partially in past two years).
23. Provide atmosphere conducive to training leadership for local churches.	Parent Missionary Society. Individual donors in U.S.A. Cuban church leaders.	Excellent, in terms of young people who have attended that are active in church work in their communities.	(a) Difficult to maintain as an independent and exclusive goal--unless other goals are met, it cannot exist (especially goal 8).
24. Serve as an educational and cultural center for the region.	(a) Many board trustees (b) Several faculty members	Slight	(a) This involves wholehearted cooperation from all segments of population; perhaps goal 23 is basically in conflict (as far as the attitude of members of the Traditional Church group are concerned). (b) Physical plant facilities not too adequate. (c) Historically, the intense interest locally in goals 13 and 15 may have impeded this goal.

Goals	Entities that have emphasized these goals	Degree of success in achievement	Major obstacles to fuller achievement
24. Continued.			(d) Inadequate communications facilities. (e) Inadequate public relations.
25. Provide agricultural and home industry products for sale.	Consumers in Mayari, Preston, Felton, Cueto, and Nicaro areas.	Slight, in terms of demand for products in these places. Moderate - in demand at school. Slight in terms of potential self-support in this area.	(a) Financial resources necessary for development impossible to get. (b) Very difficult to get personnel that is both competent, and willing to put this goal at bottom of the list.
26. Basic research in agriculture.	Faculty	None	(a) No financial backing. (b) No personnel.