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ABSTRACT

Recently, various national commissions have expressed concerns about the failure of the nation's schools to develop in students appropriate levels of competence in science and technology. As a complement to the school system, the 4-H program can be an asset for improving children's academic performance. In fact, such 4-H programs can be a second chance for students to learn more about science and technology. 4-H is the largest informal youth education program in the United States, with approximately 5 million members. Designing and implementing 4-H programs to be responsive to the needs of academic education would seem to be very appropriate to the mission of Extension 4-H. Extension 4-H programs embody the practical application of land-grant university knowledge by participants. From this base, 4-H programs can be developed to complement academic education. Many state 4-H programs are considering efforts to offer more science and technology programs. 4-H could also provide more summer programs in science and technology in out-of-school environments. Increasing the science and technology content of 4-H will give an impetus to academic education while contribution to the credibility, prestige, and public support of the state Cooperative Extension Services. (KC)

4-H PROGRAMS: TIME TO COMPLEMENT ACADEMIC EDUCATION

By

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4-H PROGRAMS: TIME TO COMPLEMENT ACADEMIC EDUCATION

The United States has become an information society as a result the creation, utilization, and communication of science and technology. Advancements in science and technology are vitally important for continued progress in the quality of life, economic strength, leadership, and increasing opportunities for individuals and society[1]. Faced with a need for a functional work force with literacy in science and technology, America is looking to its elementary and secondary schools as starting points in finding qualified trainees.

Crisis in Academic Education

Recently, various national commissions have expressed concerns about the failure of the nation's schools, specifically at the secondary level, to develop in students appropriate level of competence in science and technology[2]. The greatest area of need is for the majority of students to develop scientific and technological literacy. Almost every sector of society has shown concern about the availability of quality academic education in science and technology. Evidently, more educational opportunities must be provided for students through a stronger national commitment to quality education at elementary and secondary levels. Unless such a commitment is made by all educational agencies involved in the development and improvement of public

education, both the state and the nation will lose long-range high technology leadership[3]. Critical questions facing the educational agencies are:

1. To what extent can they contribute to improve student performance in science and technology?
2. What must be done to strengthen the quality of elementary and secondary education?

Engaging the Energies of Educational Agencies

The effort to improve academic education must be massive and engage the resources and facilities of all formal and informal educational agencies. The largest informal youth education program in the United States is 4-H. Participants in 4-H activities are primarily between the ages of 9 and 19 and encompass a wide range of socio-economic characteristics. The most recent statistics indicate that there are approximately 5 million boys and girls involved in this youth educational program of Extension[4]. The majority of them are pursuing their academic education either at elementary or secondary schools.

Traditionally, 4-H programs contribute to personal growth and development of their participants and promote practical activities to enable them to meet the challenges of the future. But one of the major challenges facing the formal and informal education agencies is to help improve academic performance of school children in science and technology. Our younger generations need more and more opportunities to expand their knowledge and skills in these areas. Designing and implementing 4-H programs to be responsive to the needs of academic education seem to be very appropriate to the mission of Extension 4-H.

Complementing Academic Education

Extension 4-H programs embody the practical application of land-grant university knowledge by participants. This knowledge base is derived from many disciplines such as plants and soil sciences, animal sciences, home and family sciences, and career and community development sciences. Most of this knowledge base is not intended to complement academic education per-sc. However, this is the ideal time to develop 4-H programs to complement academic education. Thus, 4-H mission and its programs can adapt to meet the prevailing and pressing needs of the present and the future.

There are several reasons why 4-H programs should complement academic education:

1. 4-H Extension agents already are associated with various groups of students by involving them in their 4-H programs.
2. There are encouragements from the 4-H staff to develop a more sophisticated and creative curricula for 4-H participants[5].
3. According to a joint report of the National science Foundation and the Department of Education, some schools may lack the capacity to prepare students to pursue majors in science and technology[6].
4. With commitments outside the family increasing, less time is spent by either single or two-parent families in their children's educations. Thus, families are relying more and more on institutions and youth programs to provide learning experiences[7].

Practical Feasibility for Supporting Academic Education

It is possible to develop curricula for 4-H programs to contribute to the performance of students in science and technology. Many state 4-H programs are considering efforts to offer more science and technology programs which complement the regular school-based education of their participants. For example, the California Cooperative Extension Service has created new positions of 4-H specialists for development and delivery of 4-H programs in the area of science and technology.

Subject matter expertise of 4-H agents and school teachers and resources and facilities of both land-grant institutions and schools could be mobilized to strengthen curricula and deliver learning experiences to support science and technology literacy of students of 4-H programs. Volunteer teachers could be engaged effectively to extend their educational expertise to locally determined programs.

Personal development courses such as health, physical education, consumer education, and art and music education are now occupying a significant portion of a student's time in the general track of the nation's academic education. Such personal development learning experiences have traditionally been an important focus of 4-H programs and in all likelihood will continue to be emphasized. There is, however, a pressing need to increase the contribution of 4-H to scientific and technological literacy of younger generation.

Further, during the summer vacation students are provided with a great deal of free time. This excess time could be effectively used by Extension 4-H programs to engage students to learn more science and technology in out-of-school environments.

Conclusion

Educational programs targeted toward the younger generations should be organized around acquisition of knowledge, development of intellectual skills, and understanding of national and international ideas and values in science and technology. These three areas of learning opportunity should certainly be the major educational direction for future years. The Extension service as an educational agency can develop curricula for 4-H programs to give a "big-push" to academic education to increase performance. In fact, such 4-H programs can be a second chance for students to learn more about science and technology.

Certainly, participating in improving the quality of academic education through complementary 4-H programs will bring credibility, prestige, and public support to the Extension. In fact, this observation is now under consideration in many state Cooperative Extension Service in the United States.

FOOTNOTES

1. John Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (New York, NY: Warner Books, Inc., 1984).

2. B.F. Brown, *Crisis in Secondary Education* (Englewood Clif, NJ: Prentice-Hall, Inc, 1984).

3. Ibid., p.47.

4. National 4-H Council, *Building on Experiences-A Commitment to Excellence* (Chevy Chase,MD: National 4-H Council Publication series, 1985).

5. USDA/Extension Service, *Extension's 4-H: Toward the '90s* (Washington, DC: Government Printing Office, 1984).

6. National Science Foundation-Department of Education, *Science and Engineering Education for the 1980's and Beyond* (Washington, DC: Government Printing Office, 1980).

7. USDA/Extension Service, *4-H Update 1983* (Washington, DC: Government Printing Office, 1983).