

THE PURPOSES OF INDUSTRIAL ARTS EDUCATION IN WESTERN SAMOA

by Philip Fox,

FOREWORD

1. The purpose of this paper is to provoke, and provide a basis for, intelligent discussion of the subject: The purposes of Industrial Arts Education in Western Samoa. For that reason, it should not be regarded as in any way final but, rather, as a beginning. In some sections a didactic approach has been taken; this is deliberate as it is often the best way to stimulate meaningful discussion.
2. Because this paper is written to be read by both Samoans and non-Samoans, there are parts of it which some readers will inevitably find overly detailed due to previous knowledge.
3. This paper reflects only my own views. They may not be those of others at the Western Samoa Secondary Teachers' College, the Department of Education or any overseas agency or institution.
4. The writer of this paper is a foreigner with only two years of residence in Samoa. Its faults due to ignorance of Samoan conditions will, I hope, be rectified by those with much longer experience of the country. Only after such corrections will a final statement of policy be close to the real needs of Western Samoa.

INTRODUCTION

In most countries where Industrial Arts is a part of formal, institutionalised education it is regarded as part of a child's general education. It has no more relation to a future occupation than do many other school-taught subjects, but serves as background knowledge for a life in a culture where technology is as fundamental to every-day life as, say, the history of language of that culture. Such countries and cultures are, of course, those termed "developed".

Western Samoa is among those "developing" countries attempting to introduce formal Industrial Arts education, so the purpose of the subject must be analysed in the context of Samoa and its geographical region.

It is safe to say that the subject must be thought of from a fundamentally different viewpoint from that used in developed countries. The previous statement on developed countries with a cultural background of technology, when compared with Samoa which has no such background, implies opposite

poles of the static/dynamic continuum. The terms "developed" and "developing", which are often so loosely used, here have greater meaning. The past tense of the verb implies that development is complete, within the limits of present technology. In the same way "developing" means a process of dynamic change, a movement upward on the curve of development. The speed and direction of this change depend, to a greater or lesser extent, on the education now being planned for Samoan children.

It is worth adding here that the term "development" usually refers to industrial development. It is unlikely that industrialisation, as the term is understood in western countries, is either desirable or possible in Western Samoa. One of the purposes of Industrial Arts education in Samoa is therefore to provide a fundamental base of technological knowledge so as to enable the population as a whole, and the leaders in particular, to make educated decisions on the mode and direction that any industrial development should take. It also should aim to increase the options in this area that are open to both leaders and individuals.

Industrialisation is, of course, only the most easily recognised (and most widely discussed) factor in Samoa's future technological development. What cannot be ignored is the effect of imported small goods in the country. These are gradually forming part of everyday life in even the most remote villages. The acceptance of foreign technology in this form is already well rooted; it is too late to stop it, even if it were desirable to do so. In fact the demand for such household items will inevitably increase; the labour-saving of, for example, kitchen utensils cannot be denied, nor can one question the pleasure given to a family by a tape recorder.

In short therefore, Industrial Arts education in Western Samoa needs to be just as much a part of general education as it is in "developed" countries. The course prepares children to live in a culture where technology is an **existing** condition of everyday life, whereas in Samoa it must be directed to the preparation of children for a life of constant technological **change**. This condition of future change is not limited to factors that affect the nation as a whole, but includes those that affect the individual on a personal basis within the home.

Thus the subject must not be termed, nor treated as, a "vocational" one. While it is true that the introduction of Industrial Arts into the Samoan school system will, hopefully, lead a number of children into jobs in areas where the knowledge they have gained will be useful, the same applies to mathematics and, to a far greater extent, the teaching of English language. The far more important goal of Industrial Arts education is that of familiarising the population of Samoa with basic technology.

Socio-Cultural Factors

Some sociologists claim that the culture of Samoa is relatively static, that is to say, that change is avoided where possible. This claim can well be disputed, is worth discussing here, if only briefly.

It is argued that exposure to "western" influence over the last 150 years, particularly during and since the second world war, brought changes to Samoa and caused Samoans to realise that these changes cannot be avoided; in many cases, they are desirable. However it would be closer to the truth to say that changes in Samoa are approached with caution, and that this could well be called a sign of wisdom.

The Samoan reaction to new ideas from abroad seems, to a foreigner, ambivalent. While the value of a new idea may be appreciated, it is quite possible that it will be rejected, in part or wholly. It is, perhaps, the sophisticated selectiveness of the Samoan judgement in such matters that confuses the foreigner most: an idea that may seem, to an outsider, to be complete in itself may well be broken down into its constituent parts, some of which are accepted and others rejected. Rejection may be based on the cultural changes which the introduction of a new concept may bring about, or on something more concrete. In any case, the process of assessment, followed by acceptance or rejection, is hard, if not impossible, for a foreigner to follow. (It is, of course, an impertinence to assume that the patterns of logic that are used in one culture should apply in another).

Although the resistance to externally inflicted change may have been overemphasised, it is true nevertheless that the majority of Samoans are not internally motivated to bring about changes, even though they may themselves see the desirability of a change. (Admittedly, there are a minority for whom this is completely untrue.)

If we restrict this generalisation to the subject of Industrial Arts and narrow the term "change" to the use of a new small object in the home, the problem becomes more clear. To use a rather simple example, a strong and adequate toilet roll holder can easily be made out of wood using nothing more than a bush knife, and a hammer to fix the holder in place. The average villager appreciates the value of a toilet roll holder but does not possess one because, rather than thinking, "How can I make it?", he thinks "Can I afford to buy one?". Since the cost of an imported holder is absurdly high in proportion to its value to the family, it usually remains unbought. To sum up, the concept that the individual is able to, and free to, bring about desirable minor changes by using his own mind and muscle is absent from the average Samoan.

Since it is essential that invention and innovation be encouraged, it is clear

that a Samoan Industrial Arts course must not only teach skills but be designed to bring about an attitudinal change in the area of creative problem-solving. The possibility that this change in attitude may in itself cause cultural conflict is one that has to be recognised and discussed.

Another cultural problem that must be faced in Samoa, as in all developing countries that are now entering the phase of technological development, is the absence of manual dexterity in handling tools and of the fundamental comprehension of how and why tools and materials function. Therefore, a course designed for Samoan children has to start at a more basic level than would one for children in "developed" countries. In such countries there is a high level of informal education in this area which is inevitably absent in all pre-technological cultures. For example, children in "developed" countries learn that a knob protruding from an object is usually meant to be turned; the average child learns this **before** learning to talk. Soon he learns that a knob, when turned, affects some variable within the object to which it is attached so that, by about age 3, a child can usually adjust the various knobs on, say, a television set with reasonable accuracy. This informal education in technology is absent in a culture where knobs etc. are absent. (It need hardly be said that, at the same age, a child in Samoa will be adept at other skills which a foreign child would have difficulty in learning at a later age.)

The problem is compounded by the fact that there were, in the area of Western Polynesia of which Samoa forms a part, no highly developed indigenous art forms involving the manipulation of material. While song, oratory and dance were, and still are, highly developed and creative, the level of carving, painting etc. was low when compared to, say, in the Solomon Islands, New Zealand, or most areas of Papua-New Guinea.

Samoa is thus faced with a double problem in Industrial Arts education, the absence of fundamental skills and of an innovative approach to problem-solving. It is worth adding that the mere possession of skills does **not** bring about the creative application of these skills. Examples of this can be seen in any Samoan woodwork shop, where the articles may be excellently made but are invariably either the simple traditional products such as the mortar used for crushing cacao beans, or copies of foreign designs. The extent of copying can be appreciated when one realises that the lavalava chest (which could now almost be regarded as traditional!) is, in fact, a copy of cabin trucks brought by early settlers.

To resolve this double problem, it is essential that both skills and creativity be taught in an integrated form.

THE ECONOMIC FACTOR

The present economic situation of Western Samoa is rather unstable, according to some government sources. To quote a government publication,¹ it is "... characterised by high inflation, a sizable trade deficit on the balance of payments, and low international reserves."

The trade deficit for 1979 varies between \$WS 34,737,753 and \$WS45,856,756 depending on which figures are used for the cost of imports.² In either case, when these figures are compared to the value of exports — \$WS15,339,758 — they are frighteningly large.

Although there is an increase in the deficit when compared to that of 1978 (whichever figures are used) it should be added that the rate of increase is less in either case. The rate, which had been increasing exponentially since 1959 (the last year in which trade figures balanced), is perhaps slowing down due to the devaluation of the tala and other measures taken to restrain imports.

It is not enough, of course, to reduce the rate of deficit increase — a progressive decrease must be seen, or the country will have to depend on ever greater international aid and remittances from Samoans living overseas. Since neither of these (particularly the latter) are very likely to increase it may well be that the government will have to take draconian steps to restrain imports still further.

As stated before, Samoa is not suited to a massive programme of industrialisation even if the government chose this course. The most probable development policy will therefore be one of encouraging the formation of what is often termed "cottage industry" aimed, at least at first, at import substitution and, later, the exportation of finished goods.

In Samoa the existing social and economic infrastructure of village and aiga (extended family) organisations should provide a stable base for such small industries without dependence on imported capital or the development of the economic "dualism" that is a major problem in many developing countries. In the long term, such a policy should lead to the growth of some industries beyond the "cottage" level and therefore to the development of a stable, decentralised industrial base appropriate to the needs of the country.³

Such a plan would depend on the education of individuals who would be sufficiently innovative as to form a rural "entrepreneurial" class (which hardly exists at present in Samoa) within the existing cultural framework. It could be said that the encouragement of the personal development of such individuals is the most important economic purpose of Industrial Arts education in Western Samoa.⁴

Agriculture

Samoa's dependence on agriculture (including forestry) cannot be over-emphasised as this, with fishing, is the only natural resource available to the nation. While agriculture and fishery per se are outside the domain of Industrial Arts, the following points are relevant.

The terrain of Samoa, and also the system of land tenure, minimise the use of large agricultural machines, so the country will have to rely largely on hand tools or small machine tools. In relation to an Industrial Arts course in schools this means that, in preparing individuals for the small scale industrial development foreseen, the following factors should be emphasised:

1. In the case of agricultural hand tools that are at present made in Samoa, teachers and children should be encouraged to produce these more cheaply and to make them more durable. This should be extended to imported hand tools, which should be investigated in order to determine if they could be produced in schools. This should also include the possibility of improving a foreign design so as to make it more suitable for use in Samoa.
2. In the case of small machine tools, the most important area for effort in education is in their maintenance. Such tools will continue to be a drain on Samoa's reserves of foreign currency, and are also affected by import restrictions, so every effort must be made to keep them working as long and efficiently as possible. This emphasis on maintenance applies, not only to agricultural equipment, but also to a wide range of imported machines like generators, sewing machines and kerosene lamps to name a few.
3. Wood is the only locally available raw material, so great emphasis must be put not only on the teaching of appropriate skills needed for the manufacturer of artefacts known to be locally useful, but also on the development of innovative, problem-solving techniques, so that locally developed and made wooden articles will take the place of articles now made of imported materials or imported in finished form.
4. All imported machines (including, in this case, automobiles and other non-agricultural machines) will, no matter how well maintained, finally wear out beyond repair. Such broken down machines are, and should be "cannibalised" to supply spare parts for other machines. Even after that is done there will still be a large quantity of metal left. At present this is thrown away or left to rust: a waste of expensive imported material. It is therefore important to teach methods of re-cycling metal. Sheet-metal courses in schools should concentrate on the use of such material as the panelling of cars (and also on tin cans) and a course on blacksmith's work should be introduced in order to use the heavier pieces of metal to make useful tools and other articles.

5. The Industrial Arts and the Agricultural Science courses in Junior High Schools should be integrated in the area of appropriate agricultural technology.

The Division of Labour

There exists in most "western" countries a prejudice against manual work in favour of "white collar" work. This extends to education, so that Manual Arts was, for a long time (and in some countries still is) regarded as inferior to the "academic" subjects.⁶

In most developed countries this educational discrimination has been recognised as undesirable, and adequate moves have been, or are being, made to rectify the situation. Unfortunately, before these moves were made, the discrimination had already been exported to "developing" countries which had modelled their educational systems on those in the "developed" countries. This, to a large extent, is true also of Samoa which adopted (or had thrust upon it) the New Zealand educational system. The prejudice, however, goes strongly against the traditional Samoan ethics of work, and so has not taken very firm root. Hopefully it will be possible to pull out what roots there are without too much difficulty.

It is important that this be done if Industrial Arts teaching is to fulfil the purpose of broadening the popular appreciation of the value of skilled manual work. This does not refer to the bland statements often found in Industrial Arts programmes some years ago (and still found in some places) referring to the moral rectitude of manual labour. What is implied is that it should be realised by all that a skilled motor mechanic, for example, has to be competent in a greater number of skills than a bank manager.

In a developed country the mechanic and the bank manager might, perhaps, receive salaries that are similar, although the social status of the latter would be higher. In a developing country the mechanic would certainly not receive either money or status approaching that of the manager. In order to overcome this prejudice, and also to enable those who occupy managerial positions to appreciate and value the abilities of artisans who work with (rather than "for") them, it is essential that all should have worked alongside each other in (continuing the previous example) learning how to maintain the engine of a car.

Conclusion

While it is essential that Industrial Arts skills be taught in Samoan Junior High Schools, and that these be backed up by adequate and appropriate theoretical knowledge of tools and materials, it has been repeatedly emphasised in this

paper that these are inadequate to the needs of Samoa, if creativity and innovation are not simultaneously inculcated.

Well-trying curricula designed to achieve this end exist in many countries.* The work of the curriculum developer in Samoa will therefore require a thorough knowledge of other countries' curricula in this area, and a background adequate to enable him to select those parts, concepts or approaches which are appropriate to Samoa. While the Samoan curriculum must involve the use of local materials to make locally required items, and so a general knowledge of the country is essential, it is safe to say that it will not require much original thought but rather the intelligent selection of existing ideas.

RECOMMENDATIONS ARISING FROM THIS PAPER:

APPENDIX

A. Educational, but Outside the Junior High Schools.

1. To overcome the problems outlined on p.56, paragraph 2, it is strongly recommended that basic concepts of technology be taught at the earliest possible level of schooling. For example, play dough should be freely available in pre-schools in order to inculcate the concept that materials can be shaped by humans. Toys and games that teach measurement and very simple construction should also be available. Likewise, a well-planned craft course must be taught in primary schools, and this must be designed to lead into secondary school Industrial Arts education. (The present Arts and Crafts scheme, prepared by the Western Samoa Department of Education, Malifa, seems adequate but has yet to be trialled.) Without these prerequisites it is unlikely that the planned introduction of Industrial Arts into the Junior High Schools will succeed as well as it could.
2. It is recommended that Industrial Arts be taught in the government Senior Secondary Schools. At one time some pupils from Samoa College studied Industrial Arts at the Technical College. The subject was taught at Avele College up to about five years ago. The workshop at Vaipouli College has not been used since September 1979. This decline of interest in Industrial Arts at the senior level is very unfortunate for a number of reasons:
 - (a) It denies to the senior school pupils an avenue to success in fields such as engineering, where a School Certificate pass in Industrial Arts is of value in further education.
 - (b) By preventing the technological education of the more able Samoan children, it prolongs the time that Samoa will be dependent on foreigners to work in any managerial position where knowledge of technology is at all important.

- (c) It serves only to increase the division of labour previously discussed, since the people at the managerial level of most Samoan enterprises are educated at these schools. Since the government is trying to introduce Industrial Arts into other schools (both government and mission schools) while allowing it to disappear in the government's own senior schools, this can only have a divisive effect and may cause general resentment.
- (d) The absence of the subject from the Government Senior Secondary School curriculum will inevitably be seen by the 85% (approx) of children who do not achieve the entrance qualifications to these schools as an indication that the subject is relatively unimportant, and thus minimise the motivation of both teachers and children to make a success of it.

B. Recommendations Outside The Education Field

1. That, in order to encourage the formation of cottage industries and, on a smaller scale, to encourage the individual use of knowledge gained in Industrial Arts education, there should be no duty charged on imported hand tools. The loss of the 45% duty currently in force on these can be easily made up by the savings in foreign funds due to import substitution. The present high rate of duty puts many such tools beyond the financial reach of those who would buy them and use them, so that, on a national level, it is counter-productive. After investigation, this same duty should, perhaps, also be removed from the smaller machine tools such as electric drills, sanders, etc.
2. That the number of models of any one imported machine should be restricted. An example here might be that of outboard motors. There are at present five different makes on sale in Apia, with about five models available of each make, an approximate total of 25 different motors. Each motor requires slightly different servicing techniques, so that no serviceman can hope to be adequately trained to cope with all types and each one necessitates a different stock of spare parts. Moreover, an adequate stock of spares is unobtainable as it would be prohibitively expensive for the dealer to carry them, given the small number of each model that could ever be sold in the Samoan market.
3. That it be made possible for the potential village "entrepreneur" to learn simple business management methods (not only bookkeeping).

Notes

1. Annual Development Plan for 1980. Department of Economic Development, Apia, April 1980.
2. *ibid.*
3. For a wider discussion of this path of development in Pacific Island countries, see: Bollard, The SPC Rural Employment Promotion Project, and Salato,

"A Pacific Approach to Rural Development", both from South Pacific Commission, Noumea, 1978.

4. For a thorough discussion of education leading to such an end see **Bowmen, M.J.: Rural people and rural economic development.** Paris: International Institute for Educational Planning, Unesco, 1976.
5. For a thorough discussion of this and its implications for educators in developing countries, see **Visalberghi, A. "Education and the division of labour in the developed world"** in Morsy, Z. (Ed.): **Learning and Working.** Paris: UNESCO, 1979.
6. See, for example, New South Wales Department of Education: "Syllabus 9 and 10"; the C.S.E. or O-level curricula from the U.K., or Years 1 and 2 from Tonga (Year 3 has yet to be adequately trialled and revised). For an excellent historical and philosophical background to this type of Industrial Arts curriculum, see Prof. John Egglestone's "Developments in Design Education", Open Books, London, 1976.