

SOME THOUGHTS ON THE TEACHING OF PUPILS OF LOWER ACADEMIC ABILITY

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Introduction

With the implementation of Government's plan to provide three years of secondary education for all children in Hong Kong, schools will find, and indeed have already begun to find, that the academic ability of many pupils is much lower than in the past. Teachers will be expected to teach pupils who until now have found it difficult to get into secondary schools at all.

The recent well-attended conference on problems associated with the teaching of pupils of lower academic ability in secondary schools showed that many teachers and administrators realize the need to think carefully about how such pupils are taught. Methods used for many years to teach pupils of average or above average academic ability will not necessarily apply to children at the lower end of the academic ability spectrum.

The intention of this article is to provide a few thoughts on the problems associated with teaching pupils of low academic ability and suggestions on what could be done to overcome these problems. This is a new arena of education in Hong Kong, and we do not want to repeat mistakes made overseas. Many comments made have a generally applicability to all pupils though there are certain aspects of teaching that need particular emphasis when dealing with children of low academic ability.

According to Gagné, the essential task of a teacher is to arrange the conditions of the learner's environment so that the process of learning will be activated, supported, enhanced, and maintained. With the pupil whose academic ability is low, too often this is not the case. Instead of support he is often reprimanded by teachers and parents alike for his difficulties; instead of enhancing and maintaining learning, formal learning may all but cease. What can teachers and schools do to prevent this? Some of the areas which could be crucial for effectively teaching these children are discussed in the remainder of the article.

The Curriculum

For our purposes curriculum is defined as 'the subjects found in the school timetable'. At present the curriculum for all pupils is more or less the same, irrespective of individual differences. The system until now has been simple if ruthless—pupils succeed or drop out! The periodic weeding out of pupils occurred following the Secondary School Entrance Examinations and still does occur with the Certificate of Education examinations. Now however, all pupils will attend secondary school for three years during which time there will be no weeding out, though there is

still to be some form of selection of the end of Form 3 to decide which pupils continue. We can assume that those pupils of lower than average academic ability will not go beyond Form 3.

There are alternatives to this system but they are not practical in Hong Kong. It has been suggested that all pupils be allowed to stay until Form 5. How much benefit lower ability pupils would gain from this is open to question, as the curriculum would be basically academic. Would it not be better to extend vocational and adult education so that Form 3 leavers could, if desired, continue formal learning of their choice? Such an extended system of education would be of benefit to those pupils whose abilities developed more slowly at secondary school.

The majority of schools have an academic curriculum. It is unwise to guide the pupil of low academic ability into such schools. Alternative courses need to be introduced—technical, commercial and homecraft being possible examples. New Territories schools could have a course in agriculture. We do have some pre-vocational schools but no major expansion in the building of such schools is envisaged. Present policy states that 25-30% of the curriculum in academic schools is to be in practical/technical subjects though it is likely that this will remain an appendage rather than a viable alternative to the academic curriculum.

Future schools should be more comprehensive. By incorporating vocational and academic streams in the same complex, pupils can then choose or be directed into streams where they are likely to achieve the best results. However, to prevent the vocational streams becoming synonymous with low ability streams, a core curriculum is necessary. This will also help overcome the tendency of certain subjects, e.g. Mathematics and English, becoming the prerogative of an academic elite.

Subject Syllabuses

By introducing a core curriculum, major changes will be needed in the syllabuses in each subject. (By syllabus we mean a course of study in a particular subject.) The content of the syllabus prescribed by the Education Department needs to be suitable for **all** Forms 1-3 pupils, with the depth of treatment varying from class to class. The provisional syllabuses for Forms 1-3 presently in use do describe in detail what is to be taught, though suggestions on extension work for the brighter children, and the limits teachers could reasonably expect from the less able pupils would be an improvement.

Such a scheme implies that different classes have different examinations. Examinations are unlikely to disappear from our educational scene for some time (if at all) but, if used wisely, can be used to help the pupil develop rather than merely to compare and select.

In order to realize these suggestions, a detailed task and skills analysis in each subject would be needed in both cognitive and affective areas. From this, detailed lists of specific behavioural objectives can be written. As pupils reach an objective, it can be ticked off. Impossible, you say? It is interesting to note that the Education Department has plans to prepare detailed behavioural objectives for subjects taught in the Technical Institutes, using a modified version of Bloom's taxonomy of educational objectives. A lot of work is involved but ultimately the stu-

dents should benefit, many of whom are of lower than average academic ability. The main advantages of having detailed objectives for a syllabus are: (1) day-by-day lessons can be prepared with teachers knowing precisely what the pupils are expected to learn, and (2) tests can be prepared to determine accurately whether or not these objectives have been achieved. Investigations with low ability pupils have shown that effective learning only takes place when content is broken down into very small parts and when plenty of reinforcement is used.

If schools and teachers have objectives that can be achieved by lower ability pupils during their three years at secondary school, these pupils will leave school as successes rather than as dropouts.

Instructional Methods

It might be imagined that the ultimate aim in the development and use of instructional methods is to adapt these to the needs of the individual, in much the same way as diets can be adapted to individual needs or methods of training for athletes. To some extent this is already done by teachers—one pupil receives individual help, another is asked certain questions, while another may be asked to read a book and obtain information for himself. At present, though, teachers base instructional methods on their intuitive judgement rather than on any instructional theory.

But there are dangers in attempting to modify individual treatment too much. Teachers are not clinicians! Available evidence shows that modifying treatment too much to adapt to individual differences is worse than teaching all pupils alike. Methods that work best on average for the whole class are preferable.

Instructional methods are not a function of mental age — good pupils will still do well by any method. But with many of the traditional instructional methods in use, low ability pupils tend to do worse than they need do.

Two instructional methods for which many claims are made as to their effectiveness are (1) programmed instruction, and (2) the activity approach. How effective are these for low ability children?

(1) **Programmed Instruction:** There appear to be good reasons for using programmed instructional material. Active learning takes place, feedback is good —the pupil knows immediately whether he is right or wrong, and programs provide for individual instruction whereby pupils can move at their own speed. Proponents of programmed instruction also maintain that it overcomes some of the problems found in the classroom. For example, many pupils learn only to escape the teacher's displeasure, criticism by peers, or low marks. By removing these negative reinforcers, programs are supposed to improve the learning process.

But how good are these claims, especially for children of low academic ability? Work by the present writer with such children in Mathematics showed that there was no significant difference between groups taught by programmed instruction and groups having "traditional" instructional methods. However teacher personality had a positive effect on the traditional

approach and there was evidence that the groups benefited overall by having had **both** approaches. Further work needs to be done to find out if a variety of instructional methods is best with pupils of low academic ability.

(2) **The 'Activity' Approach:** This has been a primary system in many countries in recent years and has now been adopted in Hong Kong. Emphasis on activity is evident in Integrated Science and in Social Studies. This approach attempts to stimulate the senses, feelings, and awarenesses of the learner in interaction with his social and personal environment so as to give him a 'total' educational experience. The emphasis is on active participation, so shifting the traditional emphasis from 'teaching' to 'learning.'

It is relevant to emphasise here that 'learning by doing' is sometimes less efficient than 'learning by observation', for insights into problems are cultivated through mental rather than physical activity. Galperin et. al. go so far as to conclude that "practical activity tends to inhibit thinking, and that children learn better by observing a demonstration and verbally anticipating the teacher's steps." This can be seen during an Integrated Science lesson when pupils work in groups of 2-4 in the laboratory. Those who organize and observe the experiments often develop a deeper insight into the subject than those who actually perform them. Similarly, when teachers hold role-playing sessions, who benefits most — the observers or the participants?

The actual concept of activity as seen by Dewey is much wider than just **physical** activity!

At present insufficient knowledge is available to say which instructional methods are best, least of all pupils of low academic ability. The approach which uses a variety of methods is, however, appealing. Low ability classes should be taught by teachers experienced in a variety of instructional methods and who are sensitive to the needs of these pupils. Only the best teachers should be used — new or unqualified teachers should not be given low ability classes.

Modes of Communication

The mode of communication that leads most easily to successful understanding will generally be preferred since pupils are motivated by experiences that lead towards success and are discouraged by those that seem to produce failure. There is a close link between preferred modes of communication and intelligence. To appreciate this, we need to comment on the preferred modes of communication of high, average, and low ability children.

High ability children tend to prefer a verbal/abstract mode. This preference comes from their ability to understand the meanings of a large number of words. These pupils like to receive information in the form of technical words, abstractions, and generalizations, which give a great deal of precise information rapidly. Because of good background experience, the highly intelligent pupil can perceive quickly by matching new information against his store of facts and concepts to give associations and connections that other pupils cannot discover.

Children of average ability find too much abstraction difficult. They prefer to receive information in the form of particular cases rather than in general cases. These are the children who are attracted to the illustrations and photographs in a textbook rather than the text: Average

ability children like personal contact and are better able to attend to difficult information if it comes from the teacher rather than from a book.

Children of low ability cannot cope with abstractions — theirs is a concrete world. They do not read at all unless they have to. Relatively simple line drawings such as those found in comic strips are preferred. Low ability children also find it especially difficult to 'filter out' irrelevant features of a situation. Many classrooms have a profusion of pictures and objects — is this always desirable with a class of low ability children? Books for these pupils should contain many simple diagrams, photographs, and relevant cartoons. Because low ability children have not had or have not benefited from previous experience, the need for first hand experiences is essential. Learning through personal involvement is generally best.

To see how this can be applied to the classroom situation, two examples are given — one from Integrated Science, the other from Social Studies.

(1) **Law of Moments:** This topic is usually taught at Form 2 level in Integrated Science. High ability pupils very quickly appreciate the abstract relationship shown in Figure 1, i.e. $aA + bB = cC$. Average pupils normally establish the principle quickly when using a beam balance of the type shown in Figure 2. Low ability pupils are restricted to specific examples using the beam balance. It is not likely that such pupils will progress to the state where they could abstract the general principle. To extend the application of the principle, see-saws, market scales and similar apparatus would be used. Their knowledge remains rooted in the concrete.

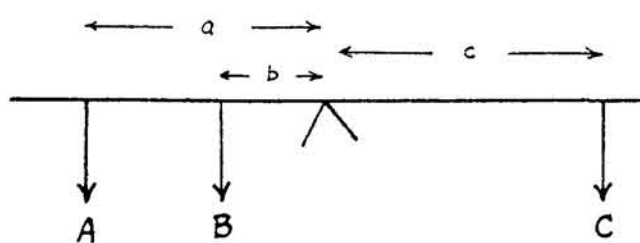


Figure 1

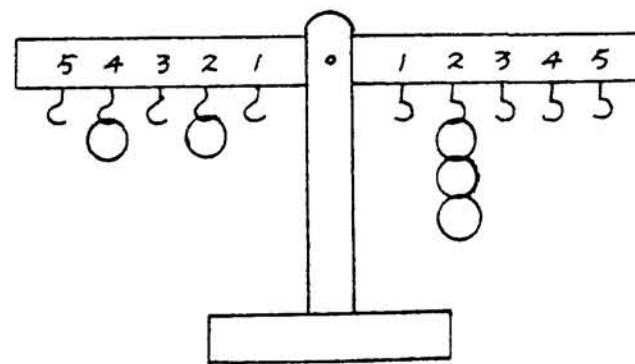


Figure 2

(2) **Use of Statistics:** Social studies teachers often refer to statistics. These are rarely understood, except by the brightest children. Take for example, cost-of-living indices. To the average ability child, these are less instructive than are concrete examples like "your rice will cost 20¢ a catty more". The person of low intelligence understands best by being involved himself. To him unemployment statistics are meaningless, photographs of unemployed make little impact; it is being unemployed that really has meaning!

We should also note that understanding through experience or by concrete examples also benefit the bright child. Piaget points out that such experience is essential before thought in the abstract is possible. But low ability children are probably incapable of abstract thought. Too often, teachers have tried to teach these pupils in the verbal/abstract mode. The results are unsuccessful. To develop the cognitive abilities of low ability pupils to the maximum, a concrete/experiential mode of learning has to be used.

Motivation

The sense of failure is often great in low ability children, and they tend to lose confidence in what they can do. One of the important tasks of the teachers is to build up this confidence again by arranging learning situations through which success can take place.

It appears from research that structured lessons are particularly helpful to pupils not motivated well to achieve, or for those who are anxious about succeeding. These pupils learn best if the teacher sets short-term goals that can be achieved, gives a maximum of explanation and guidance, and obtains feedback at short intervals to keep pupils on the track. That is, the teacher needs to arrange the lesson to give the maximum opportunity for dependence. This implies that there would be less learning using 'discovery' methods which by their very nature are less structured and entail a greater risk that nothing will be learnt.

But can, or should the whole curriculum be taught by this approach? Some part of the school programme needs to be designed to increase the self-assurance and independence of the pupils. Perhaps those areas of learning regarded as less important could be used for this while the 'essential' part of the curriculum could be more heavily structured.

Two other aspects affecting motivation need to be mentioned. These are: (1) the use of competition, and (2) the level of aspiration set by teachers and parents for low ability pupils.

Competition is one of the most powerful means of getting motivation. Competing is a natural activity and teachers cannot avoid it if they try. But the negative aspects of competition evident in our secondary schools must be avoided, especially in regard to examinations. Low ability pupils will never be able to compete successfully with high ability pupils while the cognitive side of learning is the only side assessed.

How then can teachers employ constructive competition? Here are two suggestions:

- Get pupils to compete against **themselves**. For example, test scores can be kept private and not used to compare one pupil's performance with another. A pupil can be encouraged to try to score higher the next time.

- Give each pupil some experience with success. Although a pupil obtains low marks in a test, his diagrams may be of a high standard — this fact can be mentioned. Qualities such as dependability, diligence, etc. can be recognised. Learning improves with success!

The level of aspiration set by teachers and parents alike for low ability pupils is normally too high. Evidence is available to show that pupils, when motivated, set themselves goals which they think will be achieved but which are still high enough to risk failure. Teachers and schools can help here by:

- Not setting standards that are impossible to reach. The abolition of the proposed Junior Certificate of Education examination could help to free teachers from the temptation to set such standards.

- Acknowledging that overall standards of academic attainment will not be as high as they may be now. A better atmosphere amongst pupils in classes of below average academic ability will result.

Verbal Ability

Success at school is related to verbal ability. One reason for this is that concepts eventually require a symbolic form and this is mainly a verbal form. Secondly all our school subjects tend to be taught using verbal/abstract methods. As already mentioned in this article, this second reason is not always necessary and for low ability pupils at least we can overcome it.

Whatever teaching methods are used, demands **must** be made on the verbal ability of the less gifted child. To keep the low-verbal child in a verbally impoverished environment would be a disaster. By the time the child leaves school, he must have developed his verbal skills to the point where he can efficiently communicate with others. In order to do this, more time has to be allotted to language classes — perhaps 8-10 periods a week. Along with this will have to go appropriate teaching aids. If overseas experience is an indication, many of the pupils entering Form 1 will be barely literate. Conventional language books will be unsuitable for these pupils — picture/story books, or even comic-strip type books will be needed.

For non-language subjects, teachers must be aware of the verbal level of the pupils. The vocabulary used by the teacher must be deliberately chosen and at a level lower than that used in the language class.

It hardly needs to be said the medium of instruction is Chinese. Should English be taught to pupils of low academic ability? Probably not. However, to avoid the problem of a foreign language becoming the exclusive possession of a selected group, it will probably remain part of the curriculum.

Remedial Work

Remedial work is often associated with lower ability pupils in the minds of many people. But if an individual pupil works at his own speed with adequate feedback there is little need

for remedial work. In a classroom situation, where the whole class is expected to progress together, some pupils will inevitably fall behind at various times, and some form of remedial programme is needed to identify and correct deficiencies in learning before they become too serious.

Remedial work should be part of the normal day-to-day teaching pattern. The key to this would seem to be in the use of the behavioural objectives and heavily structured lessons as discussed earlier. In this way mistakes or deficiencies could be identified immediately and corrected.

Teacher's Personality

The personality of the teacher is possibly the crucial factor in the teaching of pupils of low ability. Researchers have shown that the low ability child is dependent on the teacher and that he responds to teaching that is direct, supportive, and warm in tone. The personality of the teacher affects his behaviour, such as the way he interacts with pupils, the teaching methods he uses and the learning experiences he chooses for his class. Attitudes held by slower learners towards the teacher affect their attitudes towards the courses taught by the teacher.

Factors associated by several research workers with the personality of a good teacher include 'warmth' 'friendliness' 'effectiveness in discipline' and 'flexibility in teaching methods'. Teachers also need to be 'human', sensitive, enthusiastic, encouraging, and clear in explanation.

To what extent do Hong Kong teachers have these qualities? Lew et. al. conducted a survey of pupil perception of teacher personality. They found that many secondary school teachers in Hong Kong **do** possess the personality traits of a good teacher. Providing such teachers have the necessary teaching experience, schools should encourage them to teach the pupils of low academic ability now entering our secondary schools. If necessary, incentives such as a lighter timetable load should be offered, as the demands made on teachers of low ability pupils are often greater than on other teachers.

Concluding Remarks

With the introduction of a Form 1-3 education for all, an increasing number of pupils of low academic ability will be receiving a secondary education. In order for these pupils to benefit to the fullest extent from this education and to prevent some of the deficiencies evident in other countries, consideration needs to be given to several points. These include:

- the building of schools that are more comprehensive than at present,
- the preparation of syllabuses suitable for pupils of low academic ability together with detailed specific learning objectives,
- not too much emphasis on the activity approach to learning, and
- the provision of incentives to enable the most suitable teachers to teach these pupils.

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