Developing the Talents and Competencies of All Our Children

From: Gifted International, 5, (1988), p8-40

John Raven
Consultant on Education and Economic and Social Development
Edinburgh, Scotland

In this article I will show that 1) there is a need for radical change in education, 2) identify the competencies which the educational system needs to foster, 3) describe the way in which some teachers foster these competencies, and 4) discuss some of the barriers to wider dissemination of this work and their implications for research and practice.

There is a Real Problem in Education

If one needs evidence that there is something wrong with schools—and particularly secondary schools—they will find it in Goodlad's (1983) vast study of 8624 American parents, 1350 teachers, 17,163 students, and 1000 classrooms, published as "A Place Called School." Students spend most of their time in boring, non-cumulative, routine activities—largely being talked at in classes on language, spelling and arithmetic. Drill and practice predominate. The "academic" and "intellectual" activities undertaken barely deserve the name: they rarely involve analysis, evaluation, hypothesizing, interpretation, judgement, reconciling different points of view, or re-conceptualizing problems, let alone the identification and understanding of new problems. There is little inquiry-oriented activity, still less sensitive, respectful, facilitation of the development of students' particular talents. "Teachers did not respond to students because students rarely initiated anything." There is little opportunity for students to practice doing such things as thinking, planning, inventing, communicating, re-assuring, leading, working with others, or developing their own understanding of how society works and taking the initiative to influence it. They are therefore unable to experience the satisfactions which come from doing these things, develop the motivation to do them, or the abilities required to do them successfully. This is serious because surveys (DeLandsheere, 1977; Macbeth et al, 1981; Bill et al, 1974; Johnston & Bachinan, 1976; Raven, 1977) have shown that most parents, teachers, pupils and employers think that the main goals of education include fostering competence in these areas—and other research which will be summarized below shows that these opinions are correct.

Goodlad's work shows that students attach little importance to the content of their studies. They focus on grades (Morton & Williams, 1968; Raven, 1974, 1977; Collins, 1979; Dore, 1976; Jencks et al, 1973). They are goaded to work instead of being encouraged to develop self-direction and self-discipline. Students get little

help with their problems. Goodlad comments: "We would not put up for long with a physician who sent our child home with an 'F' for health, but no assistance in becoming healthy."

Only English and mathematics are considered *important* by more than two-thirds of high school students—and that for the future, not the present. Unfortunately, students will forget 80% of what they have been taught in two years, so even their hope that their studies will one day be of value to them is ill-founded. School subjects are boring: only Arts, P.E. and languages are rated as interesting by more than one-third of those taking them. Little is done to capitalize on potential sources of motivation—to, for example, encourage students to develop communication skills by first insuring that they have something that they *want* to communicate, and are therefore in a frame of mind to seek feed-back. Rather, time is devoted to communicating teacher-generated "rules" for "effective communication," and having students underline verbs and adverbs in sentences in the belief that this will lead them to write "correctly."

Traditional frontal teaching predominates. No real attempt is made to cater for the wide variety of talents and abilities which are present in every classroom. Little attempt is made to vary teaching methods and content so as to engage the attention of all of the students for at least some of the time.

Finally, there is no case for laying the blame for the current ills of schools on "progressive education." It just hasn't happened.

These results confirm, in virtually every detail, the results of studies which my colleagues and I have carried out in the UK over the past 20 years and which have been replicated by others in Belgium (DeLandsheeve, 1977), Ireland (Bill et al., 1974), and Scotland (HMI, 1980; Macbeath et al., 1981; Gray et al., 1983; CES, 1977; Gow & MacPherson, 1980). To reinforce Goodlad's conclusions, it may be mentioned that more than half of the adolescents we interviewed said that more than half of their subjects were *both* boring and useless. They wanted schools to do more to achieve more than 90% of the objectives we asked them about. Bill et al (1974) found that 98% said they were failures at school. Bachman et al (1978) found that 83% of young adults said that they had been better able to identify and develop their talents at work in comparison with school. Tyler (Flanagan, 1978), commenting on the implications of the data collected in Flanagan's follow-up of the Project Talent sample at 30 years of age, said that the most logical conclusion was that schools should be closed down. (She, of course, recognized that this could not be done since the main function of schools is the sociological one of keeping young adults out of the labor market.) Most of the employed adults we interviewed said that they had not at school learned things which were useful in their jobs or in their leisure (Raven, 1977). Although a significant proportion of those in middle class occupations said that their education had helped them to get a good job, working class people did not even derive this benefit from their education. However, compared with their bleak experience at school, more than 80% liked their jobs, liked their employers, and found their jobs interesting.

These results add up to the conclusion that some two thirds of the money spent on secondary education is wasted so far as the development of the talents and

competencies of young people is concerned. Schools are, for pupils, the worst working environments in our society. They are also the least developmental.

There is Need for Radical Change

There is a need for *radical* change in education. There is an urgent need to re-deploy the resources devoted to education and there is need for creativity, invention, and the exercise of political and administrative responsibility.

More fundamentally, the results show, as do the results of many other studies, that it is in the *social* sphere—and not in the production of widgets—that creativity and invention is required if modern society is to function effectively. In this context it is worth noting that, although a great deal of attention has been paid to the Japanese ability to produce high quality widgets, it is in the social sphere that they have made their most important inventions. These have included: new forms of work organization, the use of information technology to travel world-wide for, and collate, technical information, new structures to explore and draw out the possible implications of technical information, and new forms of national decision taking and consensus-building involving what is best thought of as a participative rather than a representative form of democracy.

A Nation Really at Risk

Two further conclusions may now be drawn out of the data so far presented. The first is that we need to change the way our educational system operates so as to foster such things as a commitment to act in the public interest, the competencies required to influence the way society works, and creativity and inventiveness in relation to social institutions. The second is that we need to change the procedures we use to select those to whom we offer senior positions in society so that we get people who possess such concerns and competencies into those positions. Without such changes—so different from those identified in *A Nation at Risk*—the United States really is a nation at risk, and the rest of the world with it.

Why did Goodlad not come to these conclusions? There are four main reasons:

FIRST:
He states that his data tell him that pupils and parents do not want schools to pursue "personal development" goals. Yet, there are three reasons why this conclusion is not warranted:.

(i) One cannot accept the widespread endorsement of academic education at its face value. As Goodlad shows, what most people want when they say they value academic education is a credential which will buy entry to a protected occupation. If that credential were based on other content it would serve just as well.

(ii) Despite the fact that his work shows that the words "academic" and "intellectual" are used to refer to activities which do not deserve to be so described, these words were used in the questionnaires which were circulated to parents and pupils to assess their priorities in education. Thus, while the words have an aura which commands the support of parents and pupils, that support cannot be interpreted to mean that they either want schools to continue to do what they are already doing or that they would like them to engage in activities which could genuinely be described as academic or intellectual.

(iii) Goodlad made use of forced-choice methodology when assessing the relative weight which teachers, pupils and parents attached to "academic," "personal development" and "social" goals in education. His respondents were unable to say that *some of both types* of goals were important and that others were not. Our own work (Raven, 1970, 1980) together with that of Johnston and Bachman (1973, 1976), Bill et al. (1974), Flanagan (1978), DeLandsheere (1977), and MacBeath (1981) shows that some "academic" goals—such as passing examinations—are highly valued while others—like learning more about academic subjects or subjects not required for examination purposes—are not. Likewise it shows that some "personal development" goals—such as developing the confidence and initiative needed to introduce change—are highly valued—indeed that they are more highly valued by adolescent boys than passing examinations—while others are not.

For these reasons Goodlad's claim that there is no "demand" for educational programs directed toward different goals cannot be accepted.

SECOND:
The reason why Goodlad does not conclude that radical change is needed is that he believes that major improvements can be made without changing educational objectives and assessment procedures. His main recommendations are to lower the age of entry to and exit from education and to adopt "mixed ability" groupings and teaching methods based on mastery learning and cross-age tutoring. These recommendations are based on an uncritical acceptance of myths derived from research into early childhood education, adolescence, and mastery learning.

The recommendation to lower the age of entry to education is based on the "early childhood education" myth. While there is no doubt that parents of young children lay down some of the most important and enduring motivational dispositions required by society (such as adventurousness, the ability to problematise, and confidence in dealing with others), and develop in their children competencies and self-images which have a profound impact on their lives (McClelland, 1961, 1982), there is no evidence that the same is commonly done (except negatively) by teachers. On the contrary, there is good evidence that early education in schools has very little impact on the very educational outcomes with which Goodlad is preoccupied. For example, one of the clearest findings from the work of the International Association for the Evaluation of Educational Achievement (Walker, 1976) is that, by the time children are 11 years old, there is no difference between school systems which recruit

children at 4 and 7 years of age. Our task as a society must therefore be to support parents as educators who do things which few teachers do, not to get children into schools (Raven, 1980). It may be necessary to have day care facilities so that mothers can go out to work or so that children from today's small families can meet other children, but such needs must not be confused with the idea that traditional forms of school-based early childhood education increase scores on traditional attainment tests.

The recommendation to lower the school leaving age is based on the myth that adolescents are trivia-minded. Goodlad supports this myth by citing data on their television viewing habits. He then asserts that the values portrayed in these programes reflect adolescent values. The same logic would, however, lead him to conclude that most adults are preoccupied with thieving and murdering. In fact our own data (Raven, 1977) show that, not only do most adolescents want the educational system to foster important qualities like initiative, leadership, and the ability to understand and influence society, they also wish to take a pride in their work, to turn out high quality work, to work for the benefit of mankind, care for their families (parents) and take responsibility for others. However their teachers, like Goodlad, underestimate the importance they attach to these things and over-estimate their concern with money, hairstyles, pop music, dancing, and the opposite sex. The data also show that there are a whole range to untapped motives which could be harnessed to fuel enthusiasm for activities which would promote personal development among adolescents. The trivia-mindedness of adolescents is a myth. The reality is they have been seriously let down by adult society in general and the educational system in particular.

Finally, the myths of mastery learning, on which so many of Goodlad's recommendations are based, derive from deficient evaluation methodology. The hallmark of a good evaluation is its comprehensiveness (Raven, 1984, 1985). The evaluations of mastery learning are narrow—and deficient—in their coverage. It is what they do not reveal that is important. If one asks what mastery-learning pupils who finish first do once they have completed their assignments one finds that they help other pupils or go play football. They learn that they are "quicker" than their fellows and how to teach others or how to play football. All that has happened is that the variance between pupils on one dimension has been translated into increased variance between pupils on unexamined dimensions. This is not to say that those who espouse mastery learning do not have a point: A "normal" curve in educated abilities is an indictment of the educational system: there can be no justification for a pupil not learning something which it is important for him or her to learn. If it is not important for him to learn it he shouldn't be studying it. One way or the other, therefore, a "normal" distribution of test scores indicates that teachers have not done their job properly. But this is no justification for "educational" programs which force children to master trivial and out of date knowledge which (because of the knowledge explosion) is unlikely to be of use to them and which—on Goodlad's own evidence—will, in any case, be forgotten by the time it is needed. Such "mastery learning" programs often deprive pupils of opportunities to develop important competencies in the course of undertaking other activities.

Finally, despite the experience of the past quarter of a century, Goodlad recommends that it is possible to implement a form of mixed ability teaching which will work without radical change in educational objectives and procedures. He does not acknowledge the difficulties which mixed ability teaching has presented for teachers and pupils in the past or the "watering down" effects on academic curricula instead of changing the curriculum. He does not acknowledge that mixed ability teaching has not, as it was originally hoped, led "the best" teachers, when confronted by a cross section of pupils to whom a traditional curriculum was clearly unsuited, to invent ways of fostering all of their talents. Also he does not stress the research and development activities which are essential if the talents of all pupils are to be identified and developed. It is true that he does mention the need for programs of curriculum development, school development and staff training. But he apparently has little appreciation of the enormity of the task: there is no discussion of the serious conceptual, methodological, and psychometric problems which need to be tackled. There is no acknowledgement or discussion of the alternative motives which can be tapped to fuel developmental activity in different students. There is no discussion of the alternative talents which might be developed, or the educational processes which might be used to foster them. Had Goodlad embarked on such a discussion, it would have led him to discuss ways in which quite different educational goals could be achieved. It would have led him to focus on the development of qualities like initiative, inquisitiveness, the ability to make one's own observations, and the ability to communicate effectively. It would have led him to discuss ways in which these qualities can be assessed.

It may be useful to draw attention to another of Goodlad's interpretational errors. He found, as did we (Raven, 1977) that those students who would leave school earlier than others were more anxious to be taught things of direct use in a job. This leads him to recommend vocational education. Unfortunately, he did not note that the really important neglected vocational activity did not have to do with teaching *content*. It involved helping pupils to develop, and gain recognition for, their own personal strengths and talents. John Flanagan (1978) round exactly the same thing in his follow up of the Project Talent sample. Helping pupils to identify and develop their personal talents would take one far away6 from a narrow focus on subject matter. The problem with vocational education as it is most widely understood is that occupational groups—as Taylor et al. (1963) have shown for scientists and Price, Taylor et al. (1971) have shown for physicians—contain within them a wide variety of people who possess very different talents and do very different things. Occupational groups are not psychologically homogeneous. As Berg (1973) has shown, they are to be understood as sociological phenomena whose function is to keep people out and thereby maintain the scarcity value of their incumbents.

THIRD

The reason why Goodlad has not concluded that radical change is needed is that he has not examined the competencies adults need to do their jobs effectively and to use their leisure in satisfying ways. I will return to this shortly, because these are the data which will take us forward, but first I would like to make some more general comments about the book and highlight their implications.

In addition, the book is pervaded by a lack of analytic thinking and clear argument. For example, the words "learning" and "achievement" (in addition to "academic" and "intellectual)" are used throughout the book. They are used to command assent to Goodlad's propositions in exactly the same way as the words "academic" and "intellectual" were used in the questionnaires circulated to parents and pupils to command assent to his thoughts. Yet these words are ambiguous. The words academic and intellectual are used to denote activities which do not deserve the name. The word "achievement" is likewise used to denote mastery of low-level, trivial and out of date knowledge which is unlikely ever to be of use to the person concerned. The word "learning" is used only to refer to the processes involved in mastering this content. Yet it could be used to refer to learning that one is capable of understanding and influencing socio-political systems *without* the aid of instructors. It might also be used to refer to learning to observe, to invent, to lead, to get a group of people to work together effectively, or to generate new ideas. Thus, instead of asking only how debased and low-level forms of learning and achievement are to be promoted, Goodlad could have discussed what learning and achievement *mean*, and how alternative types of learning and achievement could be promoted. Had he done this he would have noted that it is impossible for students to practice inventing, leading, observing, thinking, following, communicating, persuading—or, indeed, any important competence—in the kinds of classrooms he endorses. In such classrooms they cannot learn to do these things.

The lesson to be drawn from this discussion is not that Goodlad has made some (understandable) mistakes—don't we all, and does not science advance by identifying and remedying mistakes?—but the insight it gives us into why we have problems in education. Here we have a book which was produced by one of the most highly esteemed and best funded researchers in the world—and which has been awarded the highest accolade available to the American Educational Research Association—but which lacks critical thinking, analytic thinking, intellectual rigor, and creativity. These are qualities which the educational system should be fostering and which we should require of people who are promoted into influential positions in society. If this is the best that the best known thinkers, researchers and writers in the land can offer by way of research and recommendations for improving education, then the United States is a nation at risk—and the rest of the world with it. What we need is, not better means of selecting students who will do well within our present educational system, but change in the objectives and procedures of educational programmes, change in the criteria and procedures we use to select and promote people in our institutions and society, and better mechanisms for releasing energy, creativity and initiative in our schools, workplaces and communities.

THE COMPETENCIES TO BE FOSTERED

Multiple Talents and Competencies

The second part of this article deals with the competencies to be fostered by the educational system. We have seen that most parents, teachers, pupils and employers stress the importance of fostering qualities like initiative, the ability to communicate, the ability to make one's own observations, and the ability to understand and influence the way society works. Is this just window dressing, or are these really

the qualities required at work and in society? I have published a summary of the available studies of the competencies required in my *Competence in Modern Society: Its Identification, Development and Release* (Raven, 1984) and will summarize the material very briefly here.

Table 1
Competencies of More Effective Officers

- Takes initiaive: initiates new activities, communications, proposals; exhibits resourcefulness, persistence in the face of obstaces.
- Sets goals and reconsiders and redefines them.
- Coaches, by setting example and sharing information, feelings, and thought processes.
- Influences: by persuasion, mustering arguments, building political coalitions, making others feel strong.
- Conceptualises, analyses, and finds new ways of thinking about things.
- Builds teams, acts to promote co-operation and team work.
- Provides feedback to enable others to monitor their own performance. Helps them analyse problems and develop strategies for tackling them.
- Provides rewards and official recognition for contributions.
- Controls impulses, especially annoyance. Avoids snap decisions based on incomplete evidence.
- Plans and organises, including "domain Planning."
- Delegates.
- Optimises: analyses the capacity of individuals and resources and requirements of a job, matches the two and fully utilises the resources available.
- Monitors own behaviour and that of others.
- Resolves conflicts.
- Listens actively and initiates opportunities to give others a chance to talk.
- Has accurate empathy; makes explicit unexpressed thoughts and feelings of others.
- Helps.
- Has positive expectations of others' competence.

The Qualities Required at Work

Klemp, Munger and Spencer (1977) and Raven and Dolphin (1978) have shown (Table 1) that more effective managers are distinguished from less effective peers by their greater tendency to think about and develop the talents of their subordinates, move their subordinates into positions where they can capitalize on their talents and have their contributions recognized, listen to what lies behind what people say and do something about it, reflect on the workings of their organizations and intervent effectively in them, analyze the workings of the wider social system around their organizations and orchestrate effective inter-organizational activity to gain control over wider social forces. Our work also shows that the willingness and the

ability to do these things is a rare quality among British managers, but is much more widespread in Singapore and Japan (Graham, Raven & Smith, 1987).

Managerial competence is by no means the only area of competence which has been analyzed. Research has been carried out among navies (Sykes, 1969), bus drivers (Van Beinum, 1965), small businessmen (McClelland, 1961; Burgess & Pratt, 1970; Schwartz, 1987), civil servants (McClelland & Dailey, 1973, 1974), doctors (Price, Taylor et al, 1971), scientists (Taylor & Barrows, 1963; McClelland, 1962), and politicians (Raven, 1984). Here there is space for only one or two further examples. Table 2 shows the competencies which Flanagan and Burns (1955) found to distinguish more from less effective machine operatives. Their results have been confirmed recently in a study by the Industrial Training Research Unit in Great Britain (ITRU, 1979). We ourselves (Morton, Williams et al, 1968) found that what 20 year old "drop-outs" from school at 15 years of age liked about their job was the variety, the opportunity to take initiative, the opportunity to make the most of themselves, and the opportunity to develop and use their talents in ways not possible at school. They did not do the same thing all the time and do things they could not do. It emerges that work—even for this early leaving group—is anything but the soul destroying activity which many teachers take it to be. Grannis (1983) and Bachman et al. (1971, 1978) have found the same thing in the US. Finally, it is perhaps apposite to list (in Table 3)

Table 2
Competencies Distinguishing between More and Less Effective Machine Operatives.

- Dependability.
- Accuracy of Reporting.
- Tendency to respond to the needs of the situation without having to be given instructions.
- Ability to get on with others.
- Reponsibility.

Table 3
Competencies Distinguishing between More and Less Effective School Teachers.

- The ability to work with parents to establish community support networks which allow parents to create developmental environments for their children.
- The capacity to convince community members of the desirability of individualised, competence-oriented educational programmes of growth in schools.
- The willingness and the ability to analyse the role which sociological forces play in determining what happens in schools, and the ability to harness these sociological forces to push them in the direction in which they wish to go.
- The ability to handle the political problems which arise when pupils are encouraged to develop the capacities required to tackle pressing social problems such as pollution.
- The ability to identify the talents of all their pupils and to create group and individual educational processes which enable all children to develop their unique patterns of competence.
- The ability to evolve, in co-operation with other teachers, their own understanding of how growth is to be promoted and how to gain control over the wider constraints on education—instead of waiting for authority to tell them what to do.

Some of the qualities which have been found to distinguish more from less effective school teachers (Huff et al., 1982; Klemp et al., 1980; Schneider et al., 1981; Raven, Johnson & Varley, 1985). Taken as a whole, these data convincingly demonstrate that most parents, teachers, pupils and employers are correct when they say that the educational system should be primarily concerned with fostering such qualities as initiative, the ability to make one's own observations and to identify and solve problems, the ability to work with others, leadership, and critical thinking.

Civic Competence

But these are not the most important insights into the competencies to be fostered by the educational system which have emerged in the course of our work.

Some 20 years ago, I got an opportunity to study "values attitudes and institutional structures associated with economic and social development" in the Republic of Ireland. I approached my task, as a psychologist would, with such concepts as need achievement, leadership and creativity at the forefront of my mind. I thought I could get an idea of how important such qualities were by talking to people in a range of jobs and asking them to tell me about their jobs and their lives. When they got excited about some problem they had, I asked them what they could do about it.

One after another, said "There's nothing I can do about it; the Government must do it." I thought "Good gracious, what's happened to all our initiative, leadership and ability to persuade others to help us do something about our problems?" At first I did not notice that what they were actually saying related directly to my

interest in competence. However, it seemed somehow important to look at these beliefs in more detail, and, because we were in the fortunate position of not having to explain precisely why we were collecting particular data, we were able to undertake a number of studies of civic and political culture and political socialization (Raven, 1973; Raven & Litton, 1976; Litton & Raven, 1982; Raven et al., 1976).

Two things happened. First, I realized I had discovered that people's behavior is not mainly determined by such qualities as initiative, but by their beliefs about society, how it works, and their place in it. Or, rather, that whether people will take leadership or initiative is determined by these beliefs and perceptions. Appropriate beliefs in this area are therefore key ingredients in initiative and leadership. Second, I discovered that cumulated public opinion is a good guide to the truth. I found statistics which showed that 45% of GNP is, in all EEC countries, spent directly by their governments. This does not include the effects of grant and levy schemes, planning legislation, or health and safety legislation—which are all designed to lead people to spend much more of their "own" money in ways determined by government. When these are added in, the total comes to some 75%. So it was necessary—as my informants said—for the government to tackle their problems. Their task then became to influence the government...but they jibed at that—and for rational—but inadequate—reasons which I do not have time to go into here.

I finally realized the true import of these data nearly 15 years later, when I was working on the text of *Competence in Modern Society*. What I then found myself saying was that competence in modern society has centrally to do with the willingness and the ability to gain control over the wider social and political forces which come from outside one's job, but which primarily determine what one can do in it. So beliefs about such things as democracy, participation, management and citizenship turn out to be central to competence.

In an attempt to decide which competencies it is most important for schools to foster, we modified and replicated Flanagan and Russ-Eft's (1975) study. We conducted a quality of life survey to identify problems people had in leading their lives as they would like and then we asked ourselves what competencies and understandings they would need if they were to tackle these problems effectively.

We found that people *are* dissatisfied with the quality of their consumer goods. They are dissatisfied with the quality of the environments in which they live and work. And they are *most* dissatisfied with their relationships with the political and bureaucratic structures of modern society. These politico-bureaucratic structures govern the quality of their lives by controlling health services, welfare services, education services, manpower policy, prices, and international trade. But it is not the policies themselves which are the primary source of the problem. The most important problem is that citizens are unable to influence the policies which are implemented, to obtain diversified treatment suited to their own priorities from the bureaucracy, to provide adequate and effective feedback to policy makers, or to avoid demeaning, de-skilling and de-humanizing treatment from bureaucrats. One of the main sets of jobs which needs to be done is to make public policy more open, diversified and responsive. To do this we have to develop new ways of providing for accountability and variety in the public sector (Raven, 1984, 1987).

A large proportion of the other jobs which remain to be done are in the public domain. They have to do with the management of the world economic system and the relationships which are established between national economic systems and the international system. They have to do with health services—which need, for example, to establish much more effective community support networks for the isolated, the disturbed, the infirm, and the elderly. They have to do with the educational system—which needs to provide much more effective community development networks to promote the growth of competence and, in particular, the civic competencies which are required to operate modern political systems effectively. They have to do with staff placement and development within the public service. They have to do with the general environment—the livability of the built environment. And they have to do with broad ecological issues: the management of irreplaceable human, physical and biological resources.

This is an appropriate point to emphasize that, because activities in these areas are so central to the quality of life in modern society, it is necessary to change the way we view them. We must come to view them as wealth-creating activities, not as consumption. But if these tasks are to be performed effectively, we need new concepts of economics, bureaucracy, participation, welfare and equality. We need new tools to administer public policy (including the so-called "private" sector) and to hold public servants accountable for achieving their goals. The ability to develop new civic and economic understandings, and the willingness to act on the understandings and judgments one has built up—and to support others who do so—therefore becomes the most important competence to be fostered by the educational system.

The Competencies Required in Modern Society: Summary Statement

Competent behavior is dependent on:

- The motivation and the ability to engage in high level activities like taking initiative, exercising responsibility, and analyzing the operation of organizations and political systems.

- The willingness and the ability to engage in value-laden activities like striving to influence what happens in one's organization or society.

- The willingness and the ability to contribute to a climate of support and encouragement for others who are trying to innovate, find better ways of doing things, or take a stand against unethical practices in both the public and private sectors.

- The ability to evolve accurate understandings of how the organization and society in which one lives and works operate and how it is to be influenced together with appropriate perceptions of one's own role, and that of others, in those organizations.

- Appropriate understandings of a number of concepts which relate to the running

of organizations. These include such things as risk-taking, efficiency, leadership, responsibility, accountability, communication, equality, participation, wealth, and democracy.

Finally, a wide variety of different patterns of competence are required. No one person could possibly develop all the concerns and patterns of competence of which we have spoken. Any one occupational group requires a wide range of people who do very different things. Taylor and his colleagues have shown that there are 20 different types of outstanding physicians and 12 different types of outstandingly creative scientists. And this is only the tip of the iceberg. In our own work we have not only shown that different pupils want very different things from their education and very different satisfactions from work, there is marked variation in the values and aspirations of pupils who come from similar backgrounds and this variation is related to the occupational destinations they are bound for. There is a great deal more inter-generational social mobility—both upward and downward—than many people would have us believe. Payne et al. (1979) showed that 72% of adults in Scotland had been upwardly or downwardly mobile by at least 1 category, and 20% of Class 1 occupants had come all the way from Class 7. The picture is a great deal more complex than we have been led to believe. The evidence points toward the need to respect and build on the variance in pupils values, priorities, and patterns of competence rather than to inculcate middle class values into working class children. The specter of teachers perpetuating socio-economic divisions and creating a caste society is unfounded.

PART III: HOW ARE THESE COMPETENCIES TO BE FOSTERED?

The Nature of Competence

By way of introduction to the third part of my paper—which deals with the way in which these competencies are fostered—it is useful, first, to say a little more about their nature. This is best done by taking "initiative" as an example. The feature of initiative I would like to draw attention to is that it is self-motivated. It does not make sense to describe as "initiative" any behavior which the individual concerned has been told to carry out. Next, it should be noted that, if an individual is to take a successful initiative, he has to devote a great deal of time, thought and effort to the activity: he has to take innovative action, monitor the effects of that action, and learn from those effects more about the problem he is trying to tackle and the strategy he is using to solve it. He has to wake up at night to seize on flickering glimmerings of understanding on the fringe of consciousness and bring them to the center of attention so that they become fully conscious and usable. He has to anticipate obstacles in the future and invent ways of circumventing them. He has to get help from other people. He has to build up his own, unique, set of specialist knowledge to tackle the problem. This will often involve building up his own understanding of how the organization in which he lives or works functions, identifying points at which it can be influenced, and taking on himself responsibility

for trying to influence it—without having been told to do so.

No-one is going to do any of these things unless he or she cares very much indeed about the goal in relation to which he or she is attempting to take initiative. The valued goal is therefore crucial. Values and intentions are crucial to fostering and assessing competence. It does not make sense to attempt to assess important components of competence except in relation to valued goals. Nor can people be expected to develop the components of competence unless they are practicing them in the course of pursuing goals which they care about. Both educational programes and assements therefore need to be individualized to relate to pupils' values.

Initiatives are more likely to be successful if the person concerned is able to perform successfully many of the component activities mentioned above. Thus initiative is not an internally consistent quality in the factorial sense: the more of these independent and substitutable components of competence an individual displays in pursuit of his or her valued goals the more likely he or she is to be successful. Measurement models which emphasize internal consistency are therefore off-target.

How do Effective Teachers Foster Such Qualities?

Two recent projects (Raven, 1980; Raven, Johnston & Varley, 1985) have enabled us to advance our understanding of the way in which the components of competence are to be fostered. These in turn build on the understanding of educational processes as project work and discussion lessons which we had built up in the course of earlier work (Raven, 1977).

When we observed the teachers whose work we portrayed in *Opening the Primary Classroom*—i.e., who successfully fostered competencies like those delineated—we found that they organized their pupils' work around project-based, enquiry-oriented, activities based on out-of-school visits. This made it possible for them to integrate traditional school subjects, and permitted them to discover each pupils' distinctive interests and talents. These interests could lie either in the types of behavior which made them enthusiastic (such as finding better ways of doing things, getting people to work together, or getting something done about pollution) or they might lie in particular content (such as Celtic civilization or aerodynamics). This enabled different pupils to do different things and it confronted the pupils with the fact that there are endless new problems waiting to be understood and solved: there is no need for them to be put in the position of having to master out-of-date knowledge about problems which have already been solved and the strategies to be used to solve them. The advantage of tackling new problems is that the teacher cannot tell pupils how to do it, but has to show them how to be an adventurer, learner, and discoverer.

The teachers created developmental environments in which pupils practiced and developed a selection of the competencies mentioned above in the course of undertaking activities they cared about. The teachers' task was to notice what it was that turned each pupil on, invent an opportunity for the pupil to pursue his or her interests

and in the process develop some of the competencies, monitor the pupil's response and take corrective action when necessary, and to support the pupil by helping to tackle problems which would otherwise have discouraged him or her and led him or her to give up.

These teachers used the environment around the school as a real laboratory, museum, or social system in need of change, a source of real problems to which they themselves did not know the answer, a source of genuine demands for information (e.g., from officials of voluntary agencies), and as a source of genuine opportunities to take moral action on the basis of incomplete evidence and in the face of genuine opposition and penalties.

But practice is not the only way in which people learn to behave competently. They also learn by example. Thus, good teachers, like good managers, coach their pupils by encouraging them to share in their thinking and their prioritizing. They share their hopes and their fears. They talk about their hunches, the auras which excite and beckon them, the cues which tell them when things are going to pay off and when they are going wrong—and thus when corrective action has to be taken. They share their constant re-formulations of the goal and the problems which need to be surmounted to reach it—re-formations which occur as a result of (often play-like) rumination and reflection on the effects of action (Jackson, 1986).

In some of the classrooms we studied teachers shared their own thoughts and feelings with their pupils. They shared their planning and anticipations, their concern with excellence, innovation and efficiency, their disdain for petty regulations, their anticipation of obstacles and their search for ways round them, their concern with aesthetics, and their feeling of being in control of their destinies. They demonstrated how to capitalize upon whatever resources were available—indeed to tailor their purposes to those resources instead of, as was characteristic of many other teachers, complaining about the lack of resources to do what they wanted to do. In these ways they communicated their values to their pupils and portrayed effective, competent, behavior in such a way that pupils could emulate it. It was not only the overt behavior which was portrayed in this way for the pupils, but the entire pattern of thinking, feeling and striving which normally lies behind it. By eschewing the role of expert and provider of wisdom—by regularly trying to do things which they did not know how to do—they showed their pupils how to be learners and innovators. By accepting pupils' suggestions, they showed them that authorities and leaders are not best regarded as sources of information and organization, but as people who, at best, help other people to articulate and share what they know, acknowledge what others have contributed, and lead others to feel capable of achieving, and motivated to achieve, their own goals.

In a similar way the pupils learned a great deal from, and came to rely more extensively on, their fellow-pupils. They developed a partnership in learning. Aided by a vocabulary supplied by their teacher, they became able to think about, and value, the contributions of others. The teachers enlisted the help of their pupils in trying to find ways of tapping the energies of other—perhaps in some ways disruptive—pupils. In this way the teachers helped them to develop and use multiple-talent concepts of competence instead of classifying their fellows only as "bright" or "dumb." They made explicit both the fact that not everyone contributes in the

same way to a group process, and also the thought processes which contribute to effective leadership and management, i.e., to the processes which are involved in identifying, developing and using the talents of each member of the work group. By involving their pupils in this process the teachers helped them to develop leadership and management skills.

While these examples come from primary schools, Winter, McClelland and Stewart (1981), in a study of colleges in the United States, have shown that the same processes operate at this level. The course content is not important. Neither is residential experience. What is important is participating in challenging activities which demand high levels of initiative, self reliance, leadership and specialist knowledge and exposure to mentors who portray the thoughts, feelings and behaviors which are characteristic of competent people. However, just as few primary schools provide the kind of experience we have described, so Winter, McClelland and Stewart have demonstrated that few universities do so either.

It is useful to say a little more about the educational processes so far described in abstract terms because this will enable us to identify some of the barriers to their wider dissemination.

In one of the schools we visited, one of the pupils had, in the course of his environmental studies, become an expert on the distribution of different species of butterfly in the locality, another on the history of a particular agricultural implement, a third on the social structure of the area: who knew whom, and what they talked about.

It is hard to give credit in traditional ways for such unique specialist knowledge because separate tests would be required to identify each child's knowledge.

But this is the least of the problems—because the first pupil had developed the skills of the scientist—not a knowledge of science. He had become sensitive to the cues which told him that he had an unresolved problem. he had developed developed the tendency to try to make glimmers of insight on the fringe of consciousness explicit. He had experienced the satisfactions which come from noticing, and beginning to understand, something which no one had noticed or understood before. He had contacted university lecturers who were interested in the same problem and spoken to them as equals. He had sharpened up his ideas by sparring with them. He had learned not only that he had a right to ask questions and that his questions were as good as those posed by others, but also that he had a right to expect others to help him answer them. He had learned to tolerate the frustrations which are involved in trying to find better ways of thinking about things. He had learned to find ways of summarizing his insights—not only in words, but also in diagrams and mathematical formulae.

The second pupil had developed the self-motivated competencies, pre-occupations, sensitivities, thoughtways and perceptions required to be a historian. And the third had developed the competencies required to be a sociologist.

Traditional assessment procedures are even less able to document the growth of the subtle skills, motivated habits, thoughtways and pre-occupations which go to make up the repertoire of the scientist, historian, or sociologist than they are to cope with the problem of idiosyncratic knowledge.

Even this does not exhaust the problems which the educational process we have

described pose for evaluation and certification. Because the pupils had worked as a group, one pupil had become good a coordinating the activities of others, another at putting others at ease and smoothing over difficulties, another at presenting the results of other people's work to external visitors—a communicator rather than a scientist. In the course of doing these things all pupils learned to communicate, to invent, to make their own observations, to work with others, and to lead and to follow. These competencies defy conventional measurement.

It is important to emphasize that the competency-oriented educational process which has been described is quite different from the content-oriented educational programmes which dominate English, Scottish and American schools and from the activities which have been pursued under the guise of "Progressive Education" in America (Parker, 1894; Dewey, 1902; Kilpatrick, 1918; Bourne, 1916; Rugg & Schumaker, 1928; Messessygori, 1936; Aiken, 1942; Cremin, 1961; Newton Public Schools, 1972; Barth, 1972; Froley, 1981). Such educational programmes have remained heavily content-oriented. The shifts we are talking about can therefore best be captured by phrases such as: "From teaching as telling to teaching as facilitating growth" and "From content-oriented to competency-oriented education."

PART IV: WHAT ARE THE BARRIERS TO THE WIDER DISSEMINATION OF SUCH WORK?

One of the most important reasons why such educational programmes have not been more widely implemented may well be that the goals to be achieved and the processes to be used to reach them have not been fully articulated. It is also true that these programmes do have something in common with Dewey-type "progressive education." As Fraley (1981) has shown, vast funds and amounts of time for teachers and curriculum-development specialists have been poured into trying to operationalize these ideals with scant success. Under the circumstances, one would have thought that more teachers would have stumbled across the type of educational process described above if that was all that was necessary. So that the reader may truly appreciate that goodwill, time, and funds are not enough. It may be mentioned, that in Dewey's school, there was one teacher for every four pupils and, second, in the 30s and 50s, four or five school systems spent over a billion dollars on curriculum development activities in the Progressive Education area. Even under these favorable conditions only about 5% of teachers were able to implement the desired programmes.

In the course of our research we have identified a number of serious barriers to the implementation and dissemination of competency-oriented educational programmes: There are no tools to help teachers to implement them. The assessment procedures which are available do not enable teachers or students to get credit for their accomplishments. The qualities to be fostered are value-laden rather than value-free. There is a basic need for a paradigm shift in the way in which we think about competence and ability. We will look at some of these in more detail.

The Assessment Problem: The Need for a New Psychometric Paradigm

The assessment problem is of the essence because our research shows that what happens in schools is not determined by the wishes of parents, pupils, teachers, employers or ministers of education but by what is assessed in the certification and placement process which takes place at the interface between schools and society (Raven, 1977; Adams et al., 1981). Furthermore, unless teachers, pupils, administrators and researchers in the course of evaluation studies, can find out how well they are doing—and see the effects of their actions and take corrective action when necessary—they tend rapidly to lose sight of important objectives. They are just too intangible.

We have already seen that, if we are to find out whether people are able to behave competently, we must first find out what they care about. Psychologists and educators have too often said that people are unable to do such things as plan, persist, think, communicate, and persuade when, in reality, those concerned simply did not wish to expend the energy to do these things in the course of undertaking a task they did not care about.

The observations we have made about the nature of initiative and other components of competence point to conclusions which conflict markedly with many traditional canons of psychometry. We have, for example, asserted that one cannot assess abilities independently of values. It is, therefore, essential to adopt a two-stage (not a two-factor) approach when assessing these qualities. This means that, instead of pursuing a value-free measurement paradigm, we must develop a value-based one. We must assess people's values as an integral component in our measures of their competence. One cannot expect to see people inventing, thinking, planning, persuading, negotiating, or communicating except in relation to goals they care about.

Our observations also suggest that such qualities are factionally complex. It is the individual's willingness to do a number of different things which will result in successful goal achievement. The person concerned has to analyze, get help from others, and develop his own understanding of (and influence) the workings of social and political systems. His ability to do any of these things in pursuit of his goals is unlikely to be closely related to his willingness to do others. Yet the more of these independent things he does in pursuit of his goals, the more likely he is to be successful. On the other hand, if he does any of these things particularly well, it will, to some extent, compensate for his failure to do others. The implication of these observations is that factor-analysts have been wrong to argue that important human qualities can only be meaningfully assessed by adopting scales made up of items which are highly correlated with each other. Our reflections suggest that, far from needing to make use of factionally pure scales, we need to make use of indices made up of items which are as little correlated with each other as possible.

In actual practice, it turns out that detailed cognitive-affective maps of people's interests, perceptions and expectations are a great deal more revealing than any overall score. In other words, category-based descriptive statements about people's values and talents—and the environments in which they are placed—are more useful than profiles of scale scores.

This is, however, only the tip of the iceberg, because the way in which the other people with whom someone lives and works think overwhelmingly determines the way he thinks himself. As we have seen in our discussion of the importance of political assumptions, these shared thoughtways are the main determinants of behavior. Important perceptions, thoughtways and understandings include beliefs about how things should be done, who should relate to whom, and about what. They include other role expectations as well. What does one think it is appropriate to do oneself? What does one think others expect one to do? How does one think others should react? How does one actually expect them to react? Assessment of the institutional context of behavior (both perceived and actual) is not, therefore, independent of the assessment of competence.

In view of the importance of changing the assessments which control educational practice and the interest expressed in the identification of multiple talents and the varieties of giftedness (Raven, 1984) contains a fuller discussion of the measurement model we have been developing.

Tools to Help Teachers to Manage Multiple, Individualized, Competency-Oriented Educational Programmes

We have seen that the management of competency-oriented educational programmes is a difficult and demanding job: teachers have to find out what each pupil cares about and is good at, invent an activity which will enable the pupil to practice a number of types of competent behavior in the course of pursuing activities he cares about, monitor the pupil's reaction to that experience, and take corrective action when necessary. When small proportion (about 5%) of teachers who do these things have painstakingly developed the necessary skills and sensitivities over perhaps 20 years. If more teachers are to do what they do it will be necessary to provide them with tools to help them to do so. The widespread availability of cheap computers means that it is not unrealistic to envisage providing teachers with such tools.

It is, however, important to note that most parents and managers are in a much better position to manage such individualized programmes of growth than most teachers. That is why many homes and workplaces turn out to be so much more developmental than most schools. Schools are the least developmental environments in our society—worse than the largest factories and offices. Unless we develop the tools which are required to enable teachers to implement such programmes we should close down schools and hand over more of the responsibility for promoting personal development to parents and managers. Many of them do it already: parents are their children's most important educators, not in the sense that they do what schools do, but in the sense that they facilitate the development of these vitally important components of competence. At the other end of the scale 80% of young adults say they have been better able to identify and develop their talents at work compared with school (Raven, 1980; Raven, 1977; Bachman, 1971, 1978).

Value Conflicts and Equality

Important competencies are value-laden. What this means is that any teacher who

attempts to foster these competencies will be confronted by parents and pupils who do not value them. This problem cannot be simply resolved by saying that different children should be able to develop their own talents—for four reasons: first, the idea that teachers should treat different children in different ways runs counter to the current emphasis on equality in public provision. Second, fostering such competencies means influencing pupils' political, economic and civic beliefs—and there is a widespread fear of teachers brain-washing pupils. Third, many of these values are incompatible: one cannot in the same classroom encourage some children to value strong leadership, do what they are told, and learn what is put in front of them—and others to develop the sensitivities which make for creativity and the ability to challenge the social order. And, forth, there are widespread value conflicts: parents often want their children to have the economic benefits which come from creativity or being a good manager, but they do not want to have to answer their children's questions, to justify their commands, to tolerate the scrapes that adventurous children who practice taking initiative inevitably get into, or to have them become intellectual and take an interest in books. Yet, although, for these reasons, they do not really want their own children to develop these qualities, they do not want schools to help other people's children to develop them either—because they realize all too well that those other children will then do "better" in life than their own children.

To come to terms with this problem we therefore need to create more opportunities for adults to resolve such value-dilemmas and develop new beliefs about how public policy should operate. Adult civic education therefore turns out to be a prerequisite to educational reform.

Staff Appraisal and Concepts of the Job of the Public Servant

Finally, as we have seen, competency-oriented education requires teachers to be inventors, to get together with other teachers to find better ways of meeting pupils' needs, to find ways of influencing the tests which are available from test publishers, and to influence the expectations and political and social beliefs of parents. Unfortunately, teachers, like other public servants, are not generally expected to be inventors and activists. They are viewed as mere hired hands whose job it is to do the bidding of elected representatives. To solve this problem we not only need to re-think our beliefs about how the public service should operate and to create structures (Kanter, 1985) which promote innovation, we also need new tools for use in staff appraisal—so that teachers can get credit for engaging in these difficult, demanding and frustrating activities.

Conclusion

It will be apparent that the effective pursuit of the main goals of general education requires a great deal of classical, fundamental (if applied), research to make explicit the developmental processes which are to be used, to develop the tools which are required to implement these programmes, to provide means whereby pupils and teachers can get credit for the outcomes, and to develop the tools and structures of

staff appraisal which are required if the public sector is to function effectively. Teachers, through their professional organizations, have a crucial role to play in pressing for such work.

SUMMARY

In the course of this article it has been shown that:

- Schools are currently stultifying environments which fail to foster most of the competencies of most of our children. In fact, schools exist, not mainly to educate, but, in Jencks et al. (1973) phrase, to legitimize the rationing of privilege.

- Given the overwhelming evidence that there is something very seriously wrong with schools, and particularly secondary schools, the inability of the esteemed researchers and academics in the land to recognize the seriousness of the situation and make realistic but radical proposals for what should be done is disturbing.

- In fact it is worse than that: on the one hand there is a lack of creativity, critical thinking, and analytic research competence—all qualities which the educational system should be concerned with fostering—among those who have been selected into the most influential positions in the educational world and awarded the largest research budgets and highest accolades. On the other hand, there is the problem that the structures and processes for funding research have facilitated neither the fundamental research for which any serious attempt to tackle applied problems reveals a need, nor the development activities which are required to translate research into practice.

- These observations suggest that the United States really is a nation at risk and the rest of the world with it, but not for the reasons given in *A Nation at Risk*. The real need is to foster qualities like creativity and leadership. Inventiveness and intervention are needed most urgently in the social—and not "technical"—domain. This is where the Japanese have really scored. It is their social inventions which have enabled them to travel worldwide for technical information, coordinate that information, and use it once it has been obtained. Their social innovations have enabled them to debate the kind of society they want to create in the future—and set about creating it. And it is their social innovations which have enabled them to build up an understanding of how every political economy known to mankind works and invent a way of penetrating it to their own advantage.

- There is ample evidence that at work, as citizens, and in "leisure" there is need for people at all levels of society to possess competencies such as initiative, leadership, creativity, the ability to make their own observations and identify and tackle the problems identified in the course of making those observations,

and the ability to understand and influence what happens in society.

- These qualities are not highly correlated with each other and have little in common with "academic ability" as operationally defined in schools.

- Such qualities can be fostered in homes, schools and workplaces. They are not inborn. However, they cannot be understood in the way in which psychologists have tried to conceptualize "abilities." They are value-laden, psychologically complex, qualities—not value-free, unitary, qualities.

- Important features of the educational processes adopted by teachers who foster these qualities effectively include:

  changing from a concept of teaching as "telling" to a concept of teaching as "facilitating growth."

  changing from a focus on conveying a knowledge of common and out-of-date subject matter ("content)" to fostering competence.

  focusing on activities to be encouraged rather than knowledge to be conveyed.

  thinking in terms of "abilities" and the "areas of giftedness of each child" instead of in terms of "ability" and "gifted children."

  creating developmental environments in which each pupil practices and develops a number of competencies in the course of undertaking demanding activities which he or she cares about.

  modelling—in person and through the use of literature—the cognitive, affective and cognitive components of competence in such a way that pupils can emulate them.

  working with parents, directors of education, heads of other schools, and others outside schools to influence the expectations of parents, those who control the flow of pupils into other "educational" institutions, and the tests to assess pupils' competence. It is what teachers do outside their classrooms to influence these wider social forces which primarily determines what they can do inside them, and by taking steps to get control over these social and political forces, teachers exemplify one of the more surprising conclusions of our research: it is people's ability to influence the wider social constraints on what they can do in their jobs which primarily determines their competence. Thus civic competence and leadership become some of the most important competencies for teachers to foster in pupils. By portraying such behavior themselves, teachers communicate an important message to pupils.

- If generic-competency-oriented education is to be more widely disseminated the following are necessary:

  tools which will help teachers to manage multiple, individualized, competency-oriented programs of growth.

  tests which will enable pupils to get credit for possessing such qualities and teachers for fostering them.

  activities to resolve the dilemmas inherent in educational programs which promote diversity instead of equality.

  changed expectations of public servants (including teachers). They, for example, need to be expected to do, and held accountable for doing, such things as paying attention to, and inventing better ways of meeting, clients' needs.

- All of the above imply changes in the perceived role of applied social researchers. They, too, need to be expected to be adventurers and inventors, not mere hired hands whose job it is to collect the "facts needed by administrators."

- It is worth emphasizing that our work provides no support for the most commonly advocated "solutions" to the "problems" of the educational system—testing children on the 3Rs, testing teachers' competence at the 3Rs, and improving teachers' opportunities for promotion. There are nine good reasons why schools rarely pursue the educational objectives which most parents, pupils, teachers and employers believe to be the most important—and teacher laziness and incompetence are not among them.

If there is a single note on which I would like to conclude it is, above all, that the pursuit of multiple competence oriented educational programs is anything but a wishy-washy, do-as-you-please, mess. It is a demanding, structured, process, directed toward different—and much more important—goals than those embraced by most schools at the present time. It has embedded within it a paradigm shift relating to concepts of ability and competence and their development, recognition, and use in society. It has implications for the way we organize society. But without the creativity, leadership, initiative, commitment to society and commitment to developing and harnessing all the talents available to mankind which generic-competency-oriented education sets out to foster, we are, indeed, a world at risk.

APPENDIX

The model described in the text may be made more concrete by reference to Grid 1.

On it, some of the types of behavior which an individual may value have been listed across the top. These behaviors have been grouped into McClelland's three clusters (Achievement, Affiliation, Power). Down the side are listed a number of components of effective behavior which, if present, are likely to result in the overall activity being successful. These components of competence include cognitive activities like making plans and thinking about obstacles to goal achievement, affective activities like turning one's emotions into the task, and conative behaviors like will and determination. However, also listed are a number of other factors which contribute to successful performance—like having the support of others and believing that one's behavior is consistent with both one's own and others' views of what it is appropriate for someone in one's position to do.

Grid 1 can be used to identify the behaviors which people value and the components of competence they tend to display in pursuit of them. For any one person, this can be done by checking appropriate cells under the behaviors the person values. By adding up the check marks in any one column one can obtain an index of how likely it is that the person concerned will achieve goals in that area. By summing the scores obtained in adjacent columns, under one of the overall headings, scores for achievement, affiliation and power "motivation" can be obtained. This yields a profile which is directly comparable with those published by McClelland. However, because, as has been indicated, the grid should be considerably extended along both axes, this procedure would become cumbersome if it were applied whole-heartedly.

In practice, a description of the types of behavior which people value and the competencies they show a spontaneous tendency to display in pursuit of them gives much more useful information than a total score. Such a description is radically different from a profile of scores across a series of factorially independent dimensions. The assumptions behind a factorial profile are that peoples' behavior is best to be described and understood in terms of their scores on a small number of dimensions. The assumption behind the model developed here is that behavior is best to be understood by identifying people's values, perceptions and expectations, and the components of competence they tend to display spontaneously in pursuit of their valued goals.

It is useful to relate what is being said here to the categories used in Baldwin's Identification Matrix (Baldwin, 1984). Baldwin, like Taylor and his colleagues (see Maker, 1982 for a summary), has attempted to broaden the concept of giftedness. Although she has not joined Taylor (1971, 1976) in asserting that the task is to identify the area of giftedness of each child, her Matrix encourages teachers first to consider various types of cognitive performance, and then to go on to assess Psychosocial, Psychomotor, and Motivational performances. In the Psychosocial area she encourages teachers to note such things as pupils' leadership ability, planning ability, and ability to analyze behavior. In the Psychomotor area she encourages them to note such things their use of gestures and movements to communicate and their persistence. However, what is being said here is that one always has to ask in relation to what tasks pupils are exercising—or failing to display—such competencies. It may well be possible to find a task which would lead any given pupil to practice and develop such competencies. Substitution of Grid 1 for Baldwin's Matrix would—although it has exactly the same goals and format—be more likely to encourage teachers to reflect on the types of task which would lead each pupil to do each of these—and other—things. It would also lead them to view these competencies as a sub-set of a much larger set of developable competencies which can be exercised and assessed in the course of educational activities. And it would

lead them back from Bloom's unfortunate taxonomical classification of educational activities to analyzing competencies in terms of their intertwined, but psychologically very distinct, cognitive, affective and conative components. Encouraging teachers to use such a Matrix would therefore lead Baldwin and the many teachers who work with her toward quite different concepts of giftedness, away from scale scores and ratings, and toward statement-based assessments.

REFERENCES

Adams, E., Robbins, D. & Stephens, J. (1981). *Validity and valuation in higher education.* Research Papers 1-4 and Summary Report. London: North East London Polytechnic, School of Independent Studies.

Aiken, W. M. (1942). *The story of the eight year study.* New York: Harper.

Bachman, J. G. et al. (1971). *Youth in transition III: Dropping out - Problem or symptom?* Ann Arbor, MI: The Institute for Social Research.

Bachman, J. G., O'Malley, P. M. & Johnston, J. (1978). *Adolescence to adulthood: Change and stability in the lives of young men.* Ann Arbor, MI: The Institute for Social Research.

Baldwin, A. (1984). *Baldwin identification matrix 2 for the identification of gifted and talented.* New York: Trillium Press.

Barth, R. S. (1972). *Open education and the American school.* New York: Agathon Press.

Bennett, N. (1976). *Teaching styles and pupil progress.* London: Open Books.

Berg, I. (1973). *Education and jobs: The great training robbery.* London: Penguin Books.

Bill, J. M., Trew, C. J. & Wilson, J. A. (1974). *Early leaving in northern Ireland.* Belfast: Northern Ireland Council for Educational Research.

Bourne, R. S. (1916). *The gary schools.* New York: Houghton Mifflin.

Burgess, T. & Pratt, J. (1970). *Polytechnics in Pakistan.* London: North East London Ploytechnic.

Centre for Educational Sociology, University of Edinburgh. (1977). *Collaborative research dictionary.*

Collins, R. (1979). *The credential society.* New York: Academic Press.

Cremin, L. A. (1961). *The transformation of the school.* New York: Knopf.

DeLandsheere, V. (1977). On defining educational objectives. *Evaluation in Education, 1*(2), 73-190. Oxford: Pergamon Press.

Dewey, J. (1902). *The child and the curriculum.* Chicago: University of Chicago Press.

Dore, R. (1976). *The diploma disease.* London: Allen and Unwin.

Flanagan, J. C. (1978). *Perspectives on improving education from a study of 10,000 30-year-olds.* New York: Praeger Publishers..

Flanagan, J. C. & Burns, R. K. (1955). The employee performance record. *Harvard Business Review, 33,* 95-102.

GRID 1
A Model of Competence

Components of effective behaviour	Doing things which have not been done before	Inventing things.	Doing things more efficiently than they have been done before.	Finding better ways of thinking about things.
COGNITIVE				
Thinking about what is to be achieved and how it is to be achieved.				
Anticipating obstacles to achievement and taking steps to avoid them.				
Monitoring the effects of one's actions to discover what they have to tell one about the nature of the situation with which one is dealing.				
Making one's value conflicts explicit and trying to solve them.				
Having a appropriate understanding of how society works.				
Believing that other people whose opinions one values will expect one to engage in activity				
Believing one's actions to be in the best interests of mankind.				
AFFECTIVE				
Turning one's emotions into the task				
Selecting tasks one enjoys & facing up to the need to complete necessary but unpleasant tasks.				
Anticipating the delights of success & the misery of failure.				
CONATIVE				
Putting in extra effort to reduce the amount of risk involved in the activity.				
Summoning up energy/determination & will-power.				
Persisting in the face of difficulties.				
HABITS & EXPERIENCE				
A range of appropriate routine, but flexibly contingent behaviours, each triggered by cues which one may not be able to articulate & which may be imperceptible to others.				
Experience of the satisfactions which have come from having accomplished similar tasks in the past.				

GRID 1
A Model of Competence

Providing support & facilitation for someoneconcerned with achievement	Ensuring that a group works together without conflict.	Establishing warm, convivial relationships with others.	Establishing effective group discussion procedures.	Ensuring that grp members share knowso good decisions can be taken.	Articulating group goals & releasing the energies of others in pursuit of them.	Ensuring effective compliance with one's demands.

Flanagan, J. C. & Russ-Eft, D. (1975). *An empirical study to aid in formulating educational goals.* American Institutes for Research, Palo-Alto, CA.

Fraley, A. (1981). *Schooling and innovation: The rhetoric and the reality.* New York: Tyler Gibson.

Galton, M. & Simon, B. (1980). *Progress and performance in the primary classroom.* London: Routledge and Kegan Paul.

Galton, M., Simon, B. & Croll, P. (1980). *Inside the primary classroom.* London: Routledge and Kegan Paul.

Goodlad, J. (1983). *A place called school.* New York: McGraw-Hill.

Gow, L. & McPherson, A. (eds.). (1980). *Tell them from me: Scottish school leavers write about school and life afterwards.* Aberdeen University Press.

Graham, M. A., Raven, J. & Smith, P. C. Identification of high level competence: Cross-cultural analysis between British, American, Asian and Polynesian labourers. To be published in *Organization Forum.*

Grannis, J. C. (1983). Ecological observation of experimental education settings. *Environment and Behavior, 15,* 21-52.

Gray, J. et al. (1983). *Reconstructions of secondary education: Theory, myth and practice since the war.* London: Routledge & Kegan Paul.

HMI (Scotland). (1980). *Learning and teaching in primary 4 and primary 7.* Edinburgh: HMSO.

Huff, S., Lake, D. & Schaalman, M. L. (1982). *Principal differences: Excellence in school leadership and management.* Boston: McBer & Co.

ITRU. (1979). *The a-z study: Differences between improvers and non-improvers among young unskilled workers.* Cambridge: The Industrial Training Research Unit.

Jackson, P. W. (1986). *The practice of teaching.* New York: Teachers College Press.

Jencks, C., Smith, M., Acland, H., Bane, M. J., Cohen, D., Gintis, H., Heyns, B. & Michelson, S. (1972). *Inequality: A reassessment of the effect of family and schooling in America.* New York: Basic Books; London, England: Penguin Books.

Johnston, L. D. (1973). *The American high school: Its social system and effects.* Ann Arbor, MI: Institute for Social Research.

Johnston, L. D. & Bachman, J. G. (1976). Educational institutions. In J. F. Adams (Ed.), *Understanding Adolescence,* IIIrd Edition. Boston: Allyn and Bacon.

Kanter, R. M. (1985). *The change masters: Corporate entrepreneurs at work.* Hemel Hempstead: Unwin Paperbacks.

Kilpatrick, W. H. (1918). The project method. *Teachers College Record, 19,* 319-35.

Klemp, G. O., Huff, S. M. & Gentile, J. D. G. (1980). *The guardians of campus change: A study of leadership in non traditional college programmes.* Boston: McBer & Co.

Klemp, G. O. & McClelland, D. C. (1986). What characterizes intelligent functioning among senior managers? In R. J. Sternberg & R. K. Wagner, *Practical Intelligence.* New York: Cambridge University Press.

Klemp, G. O., Munger, M. T. & Spencer, L. M. (1977). *An analysis of leadership and management competencies of commissioned and non-commissioned naval officers in the Pacific and Atlantic fleets.* Boston: McBer.

MacBeath, J., Mearns, D., Thomson, B. & How, S. (1981). *Social education: The Scottish approach.* Glasgow: Jordanhill College of Education.

McClelland, D. C. (1961). *The achieving society.* New York: Van Nostrand.

McClelland, D. C. (1962). On the psychodynamics of creative physical scientists. In H. E. Gruber (Ed.), *Contemporary Approaches to Creative Thinking.* New York: Atherton.

McClelland, D. C. (1982). *Education for values.* New York: Irvington.

McClelland, D. C. (1982). What behavioral scientists have learned about how children acquire values. In D. C. McClelland (Ed.), *The Development of Social Maturity.* New York: Irvington Press.

McClelland, D. C. & Dailey, C. (1973). *Evaluating new methods of measuring the qualities needed in superior foreign service workers.* Boston: McBer and Co.

McClelland, D. C. & Dailey, C. (1974). *Professional competencies of human service workers.* Boxton: McBer and Co.

Maker, C. J. (1982). *Teaching models in education of the gifted.* Rockville, MD: Aspen Publications.

Mayhew, K. C. & Edwards, A. C. (1936). *The Dewey school.* New York: Appleton.

Mississippi State Department of Education. (1936). *A guide for curriculum planning.* Jackson, MS: State Department of Education.

Morton-Williams, R., Finch, S., Poll, C., Raven, J. & Ritchie, J. (1968). *Young school leavers.* London: H.M.S.O.

Newton Public Schools. (1972). *Blowing on a candle.* Newton Mass Public Schools.

ORACLE See Galton & Simon (1980), Galton, Simon & Croll (1980), Simon & Willcocks (1981).

Parker, F. W. (1894, 1969). *Talks on pedagogics.* New York: Arno Press (originally, E. L. Kellogg).

Payne, G., Ford, G. & Ulas, M. (1979). *Education and social mobility: Some social and theoretical developments.* Organization of Sociologists in Polytechnics. Paper No. 8.

Price, P. B., Taylor, C. W., Nelson, D. E. et al. (1971). *Measurement and predictors of physician performance: Two decades of intermittently sustained research.* Salt Lake City: University of Utah, Department of Psychology.

Rathbone, C. H. (Ed.). (1971). *Open education: The informal classroom.* New York: Citation Press.

Raven, J. (1973). Values, attitudes and perceptions of socio-institutional structures in Ireland. *Economic and Social Review, 4,* 553-587.

Raven, J. (1976). *Pupil motivation and values.* Dublin: Irish Association for Curriculum Development.

Raven, J. (1977). *Education, values and society: The objectives of education and the nature and development of competence.* London: H. K. Lewis; New York: The Psychological Corporation.

Raven, J. (1980). The most important problem in education is to come to terms with values. *Oxford Review of Education, 7,* 253-272.

Raven, J. (1980). *Parents, teachers and children.* Edinburgh: The Scottish Council for Research in Education.

Raven, J. (1983). The relationship between educational institutions and society with particular reference to the role of assessment. *International Review of Applied Psychology, 42,* 249-272.

Raven, J. (1983). Towards new concepts and institutions in modern society. *Universities Quarterly, 37,* 100-118.

Raven, J. (1984). *Competence in modern society: Its identification, development and release.* London: H. K. Lewis.

Raven, J. (1984). Some barriers to educational innovation from outside the school system. *Teachers College Record, 85,* 431-443.

Raven, J. (1984). Some limitations of the standards. *Evaluation and Program Planning, 7,* 363-370.

Raven, J. (1985). The institutional framework required for, and process of, educational evaluation: Some lessons from three case studies. In B. Searle (Ed.), *Evaluation in World Bank Education Projects: Lessons from Three Case Studies.* Washington, D.C.: The World Bank, Education and Training Department Report EDT5, 141-170.

Raven, J. (1986). A nation really at risk: A review of Goodlad's "A Place Called School." *Higher Education Review, 18,* 65-79.

Raven, J. (1987). Choice in a modern economy: New concepts of democracy and bureaucracy. In S. Maital (Ed.), *Applied Behavioral Economics.* Brighton: Wheatsheaf Books.

Raven, J. (1987). The role of the psychologist in the modern economy. *Proc. ESRC/BPS Conference on the Future of the Psychological Sciences,* 122-140.

Raven, J. & Dolphin, T. (1978). *The consequences of behaving: the ability of irish organizations to tap know-how, initiative, leadership and goodwill. Edinburgh: The Competency Motivation Project.*

Raven, J., Hannon, G., Handy, R., Benson, C. & Henry, E. A. (1975). A survey of attitudes of post primary teachers and pupils, volume 2: Pupils' perceptions of educational objectives and their reactions to school and school subjects. Dublin: Irish Association for Curriculum Development.

Raven, J., Johnstone, J. & Varley, T. (1985). *Opening the primary classroom.* Edinburgh: The Scottish Council for Research in Education.

Raven, J. & Litton, F. (1976). Irish pupils' civic attitudes in an international context. *Oideas,* Spring, 16-30.

Raven, J. & Litton, F. (1982). Aspects of civics education in Ireland. *Collected original Resources in Education, 6*(2), F4E7.

Raven, J. & Whelan, C. T. (1976). Irish adults' perceptions of their civic institutions. In J. Raven, C. T Whelan, P. A. Pfretzschner & D. M. Borock, *Political Culture in Ireland.* Dublin: Institute of Public Administration.

Rugg, H. & Shumaker, A. (1928). *The child-centered school.* Yonkers: George Harrap.

Schneider, C., Klemp, G. O. & Kastendiek, S. (1981). *The balancing act: Competencies of effective teachers and mentors in degree programs for adults.* Boston: McBer & Co.

Schwartz, H. H. (1987). Perceptions, judgment and motivation in manufacturing enterprises. *J. Econ. Behav. and Organization.* (in press).

Simon, B. & Willcocks, J. (1981). *Research and practice in the primary classroom.* London: Routledge.

Sykes, A. J. M. (1969). Navvies: Their work attitudes. *Sociology, 3,* 21, 157.

Taylor, C. W. (1971). *All of our children are educationally underprivileged.* Dept. of Psychology: University of Utah.

Taylor, C. W. (1976). *Talent ignition guide.* Salt Lake City: University of Utah and Bellvista Public School.

Taylor, C. W. & Barron, F. (Eds.). (1963). *Scientific creativity.* New York: Wiley.

Taylor, C. W., Smith, W. R. & Ghiselin, B. (1963). The creative and other contributions of one sample of research scientists. In C. W. Taylor & F. Barron (Eds.), *Scientific Creativity: Its Recognition and Development.* New York: Wiley.

Van Beinum, H. (1965). *The morale of the Dublin busman.* London: Tavistock Institute of Human Relations.

Walker, D. A. (1976). *The IEA six subject survey: An empirical study of education in twenty one countries.* New York: John Wiley.

Winter, D. G., McClelland, D. C. & Stewart, A. J. (1981). *A new case for the liberal arts.* San Francisco: Jossey Bass.