

CHAPTER 28

The Assessment of Competence

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Version Date: 19 September 2000

In previous chapters, I have shown that new forms of assessment are required so that:

1. Lecturers can manage individualised competency-oriented educational programmes. If high-level competencies are to be developed, students must be able to practise doing the things they need to do while undertaking activities they care about. If they are to be able to do this, lecturers must be able to help each student to identify his or her concerns, interests, and patterns of competence and monitor his or her reactions to his or her experiences.
2. Students can identify their own distinctive talents, monitor their progress as they develop them, and get credit for their accomplishments. New forms of assessment are also required to enable people to get credit for the talents they have developed at work and in the community, for this is where people obtain their most important developmental experience and information. Only in this way will it be possible to break the stranglehold that educational institutions currently have on job-entry qualifications.
3. Lecturers can get credit for their accomplishments in accountability exercises and evaluation studies. They, like the other public servants they really are, need to be able to get credit for doing such things as paying attention to their clients' needs and inventing better ways of meeting them.
4. Evaluators can design studies which will enable administrators to find out how to improve educational programmes and policies.
5. It becomes possible to implement a more effective manpower policy based on more sensible guidance, placement, and development procedures and selection policies that are better at getting the right people into, and excluding the wrong people from, important positions.
6. It becomes possible to encourage and recognise diversity and thus break the conceptual stranglehold currently held by single-factor concepts of ability, monocultures of mind, reductionist science, and authoritarian social control more generally.

In this chapter I will first suggest a basis on which an alternative measurement paradigm might be built. Later I will describe the ways in which this paradigm has already been operationalised and ways in which its implementation could be improved.

The place to begin to build an alternative *measurement* paradigm must be with the question What is competence? This has been discussed in earlier chapters and at greater length in my *Competence in Modern Society*. The discussion that follows will be limited to issues that are essential as a basis on which to build an alternative assessment paradigm and will pass over other

aspects of the topic, important though they are in themselves.

We will begin by taking an example--one that we have mentioned before--namely "initiative". As we have seen, initiative is a quality which it is vital for educators to foster. It is seen as essential to both competitive capitalism and successful socialism. What *is* initiative?

To take a successful initiative, people have to be self-motivated. Self-starting people must be persistent and devote a great deal of time, thought, and effort to the activity in which they are engaged. They need to initiate innovative action, monitor the effects of that action, and learn from those effects more about the problem they are trying to tackle; the social, political, and environmental context in which it is situated; and what is effective and ineffective about the strategies they are using. To succeed, they must anticipate obstacles in the future and invent ways of circumventing or overcoming them. They will need to build up their own, unique, store of *specialist* knowledge. They will have to get help from others. More often than not, it will be necessary to establish coalitions with others to gain control over social and political forces that would otherwise deflect them from their goals.

Perhaps the crucial point to be emphasised in attempting to clarify the nature of competence is that no-one is going to do any of these things unless they care about the activity they are undertaking. Values are, therefore, central.¹ In practice it turns out that what is valued may be a particular *outcome* (such as stopping a factory polluting a river) or it may be a particular *style of behaviour* (such as finding better ways of doing things or getting people to work together effectively).

What has been said has major implications for psychological and educational measurement. It means that one must know someone's values, preoccupations, or intentions before one attempts to assess his or her abilities. The exercise of important abilities demands time, energy, and effort. As a result, people will only display them when they are undertaking activities that are important to them. It does not make sense to attempt to assess abilities (including, as we saw in previous chapters, such things as "cognitive ability") except in relation to valued goals.

These observations are in sharp conflict with many traditional canons of psychometry. I have argued that one cannot assess abilities independently of values. This means that it is essential to adopt a two-stage approach when assessing competence. We must first find out which types of behaviour someone values, and then, and *only* then, assess his or her ability to bring to bear a wide variety of potentially important cognitive, affective, and conative components of competence to undertake the activity effectively.

It is important to emphasise that the widely held view that one can use one set of measures to assess values and another set of measures, independently, to assess knowledge, skills, abilities or competencies, simply does not make sense. The latter will only be developed and displayed when the situation in which the individual finds him or herself triggers or releases the former. Furthermore, since people often cannot tell one what their distinctive preoccupations and concerns are (since they do not know what other people's are) one of the best ways of finding out what people care about is to ask: "In the course of pursuing what kinds of activity does this person display multiple and high-level talents?"

Our example--initiative--also highlights another way in which the assumptions on which the dominant measurement paradigms in psychology and education are based fail to engage with important aspects of competence. Conventional psychometric theory places great stress on internal consistency or factorial purity. Scores derived from tests composed of items which do not correlate with each other are said to be meaningless. Yet it would seem from our example that

this assertion is not correct. People's initiatives are more likely to be successful the *more* independent and different components of competence they bring to bear to achieve their goals effectively. For example, they are more likely to be successful if they re-conceptualise the problem, obtain the help of others, persist over a long period of time, and so on. Yet their inclination and ability to do any one of these things in pursuit of their goals is unlikely to be closely related to their inclination and ability to do others. Furthermore, if they do any one of them particularly well that will, to some extent, compensate for their failure to do others.

It follows from the observations made in the last paragraph that, if we are to assess such qualities as initiative, instead of trying to develop measurement tools which are as internally consistent as possible, we need to try to develop *indices* made up of items which are as little correlated with each other as possible.² This is actually not so heretical as at first sight it appears, because it is standard practice to make use of multiple regression equations which involve summing over maximally independent variables in order to obtain the best predictions of behaviour.

The insights we have developed so far may be summarised as follows: If we are to find ways of assessing important human traits it will be necessary to abandon our desire to develop value-free, internally consistent measures. Instead, we will need to develop value-based, maximally-internally-heterogeneous *indices* which do justice to the psychological complexity of these qualities.

Cognitions of Institutional Structures

This is an appropriate point to introduce one more disturbing insight which has emerged in the course of our work: value-based cognitions of social processes are central to competent behaviour and need to be documented in any meaningful assessments of competence.

Behaviour is very much determined by such things as people's beliefs about how things *should* be done and who should relate to whom about what. It is very much influenced by their perceptions of roles--by what they think it is appropriate for someone in their position to do, by what they think other people expect them to do, and by how they think other people will react to their behaviour. It is determined by their understanding of what is meant by terms such as "management," "participation," "majority decision-taking," "managerial responsibility," "wealth," and "democracy." The disturbing conclusion is that if we are to assess competence in any meaningful way, it will be necessary to assess such beliefs.

Because this conclusion raises the spectre of social control and brainwashing, it is necessary to reinforce it by reminding the reader that, as I showed in an earlier chapter, we initially came to this conclusion from exactly the opposite starting point: When we compared more with less competent farmers, teachers, bus drivers, blacksmiths, managers, and military officers we found that, in each case, it was what the more effective people did to influence the social context in which they worked--viz. other people's expectations, the legal (regulatory) context, the economic context, and so on--that was most important. Put the other way round, the most important source of incompetent occupational behaviour in modern society is the inability and unwillingness to do something about the wider social, institutional, and political constraints arising from outside one's job--because it is these factors that overwhelmingly determine what one *can* do within it.

The Need to Describe the Situation in Which an Individual Finds Himself or Herself as an Integral Part of the Assessment

Although the way in which people define the situation in which they find themselves has a marked effect on their behaviour, that context has other direct and indirect effects. It influences their behaviour directly through the constraints it places on what they can do, and it influences it indirectly through the concepts, understandings, and competencies that people are able to practise and develop.

It therefore emerges that, if one wishes to assess competence, it is necessary to assess both the perceived and the actual institutional context in which it occurs. As we saw earlier, it is either meaningless or wildly prejudicial to say that people lack the ability to do something that they have never had the opportunity to practise doing. That is why a “back to basics” approach reinforces a “single-factor” model of ability. The only way out of the dilemma is to make assessment of the context part of the assessment of the individual.

Identification of Values and Cognitions

Although satisfactory measures of competence must be value-based and include the wider social and civic perceptions and understandings just mentioned, one unfortunately cannot discover these simply by asking people to identify the behaviours they value and their beliefs about how society works and their role in it. Because they do not know much about the values, preoccupations, and thoughtways of others, they cannot perceive, still less identify, the ways in which they themselves are distinctive. That is why it is impossible for students who have come through one type of educational programme to tell one how the issues on which they will in future tend to focus, and their ways of approaching those problems, differ from those of others who have come through other programmes.

Not only are people unable to perceive and identify their own distinctive values and beliefs, they are also often unable to identify important *shared* value-based social cognitions because they are common to all members of their cultural group.

Recapitulation and Restatement

In the course of these remarks I have introduced some ideas that my colleagues and I have taken many years to stumble upon and make explicit--and that contrast sharply with many traditional assumptions in psychology and education. For this reason, many people have found it helpful for me to re-present the same ideas in different way. I will now do this, making use of a three-dimensional diagram proposed by Ron Johnson, shown in Figure 28.1.

of competencies that individuals display in many situations over a long period of time in order to reach their valued goals that we need to assess, not their level of ability in relation to any one of them. Any *overall* index of a person's "ability" or "motivation" is virtually meaningless.

3. The situation in which an individual is placed influences the values which are aroused and the competencies which are practised and developed directly--quite apart from its influence on the behaviour that emerges at the end--when a person with a particular pattern of motivation and abilities is placed in a particular situation. Not only do environments have the power to transform people, people actively select themselves into, and attend and respond to different features of, particular environments. Johnson's diagram does not recognise this. It gives the impression that a change in some feature of the environment will lead to an increase (or decrease) in the quality or frequency of a particular behaviour and that the motivation and ability of the actor will remain the same.

Despite these limitations, Johnson's diagram is useful because it emphasises (1) that it is important to assess all three sets of variables, (2) that behaviour is a product of all three sets of variables, (3) that the components of competence can only be assessed in relation to a task the individual cares about, (4) that behaviour is influenced by people's perceptions of the situation in which they find themselves, their understandings of the way the organisation works, and the reactions they expect from others, and (5) that people will only display the levels of competence of which they are capable if they define the situation in which they are placed as one that will enable them to undertake activities they care about.

Above all, the diagram emphasises that the competence with which people perform tasks they are given--the resultant--cannot, on its own, be treated as a meaningful index of their current competence to perform those tasks, let alone as an index of the competencies they possess.

The diagram can also be used to illustrate the fact that other people's ratings of observed behaviour--the resultant--are even less valid indices of the ratee's competence than is the behaviour itself, for what raters perceive depends on their own values and priorities, what they take to be the demands of the task and situation, and their subjective ability to manage the ratee--who has values, priorities, and talents that may well differ from their own. Many lecturers (and managers) lack confidence in their own ability to manage independent, thoughtful, questioning students. This makes them unwilling to create situations in which such qualities could be developed and displayed. And it has a marked effect on the interpretation they place on such behaviour when it occurs.

Having said that, it is important to note that it is only the (already "contaminated") "resultant" behaviour, further contaminated by their own values and abilities, that any observer can see with the unaided eye. The only way round this difficulty involves, on the one hand, getting inside the ratee's head, and, on the other, making the values, priorities, assumptions, and competencies of the rater as explicit as possible.

A Formal Model of Competence, Motivation, and Behaviour and Its Assessment

We return now to the task of elaborating our model of competence and the way in which its components are to be assessed. We have seen that it is inappropriate to try to assess the self-motivated competencies that make for effective behaviour except in relation to activities

which the person concerned cares about. We have also seen that there are many components of competence, that many of them are relatively independent of each other, and that these competencies are cumulative and substitutable.

This way of thinking about competence may be made more concrete by reference to Grid 1.

On it, some of the types of behaviour which people value have been listed across the top. These behaviours have been grouped into the three clusters (achievement, affiliation, and power) identified by McClelland in 1958 and confirmed empirically in our own previous work.³ Down the side are listed a number of components of competence which, if present, are likely to result in the activity being successful. These components of competence include cognitive activities such as making plans and thinking about obstacles to goal achievement, affective activities such as enjoying the activity or wishing that a necessary but distasteful task was completed, and conative activities such as exercising will, being determined, and persisting. However, also listed are a number of other factors which contribute to successful performance--such as having the support of others and believing that one's behaviour is consistent with both one's own and others' views of what it is appropriate for someone in one's position to do.⁴

The importance of separating these value and efficacy components in assessment can be re-emphasised by taking another example. An individual who values success at football may show a great deal of initiative in relation to football, be very sensitive to feedback from the environment, seek the help of others to improve performance, monitor, and continuously improve his or her style, seek out new techniques and ideas, be sensitive to minor cues that suggest ways to improve, be sensitive to the approval or disapproval of his or her peers, have the willpower to persist in the face of difficulty, and be able and willing to persuade local politicians to provide a pitch or field. Nevertheless, if the ability of this same person to engage in these complex, cognitive, affective, social, and conative activities is assessed in relation to performance at mathematics--a goal which, for the sake of argument, we may assume this individual does not value--then one might erroneously conclude that he or she is unable (and not just unmotivated) to engage in the activities that have been mentioned. Teachers, psychologists, and managers have, in the past, too frequently been guilty of drawing such erroneous conclusions.

Attention should be drawn to the fact that, while this model is readily comprehended as a model designed to help us to understand and assess motivation--the styles of behaviour someone values and his or her ability to pursue those goals effectively--it is, in reality, a model of competence.

Descriptive Statements and Profiles

In principle, Grid 1 can be used to identify the behaviours that people value and the components of competence they tend to display in pursuit of them. For any one person, an assessor could, after having made relevant observations, enter ticks in the appropriate cells under the behaviours the person values. By adding up the ticks in any one column, the assessor can obtain an index of how likely it is that the person concerned will undertake that kind of behaviour effectively. By summing the scores obtained in adjacent columns under each of the overall headings, scores which indicate the probability that a person will reach achievement, affiliation, and power goals can be obtained.

This yields a profile which is directly comparable with those published by McClelland, and which he (in the present context, misleadingly) refers to as profiles of motivation.

It is important to note, however, that because, as has been indicated, the Grid should be considerably extended, the procedure would become cumbersome if it were applied whole-heartedly. A way round this problem will be suggested shortly.

Heterogeneous Indices or Internally Consistent Factor Scores?

Not only must values be assessed as an integral part of the assessment of competence, the components of competence we have identified cannot be meaningfully analysed or identified in factorial or dimensional terms. The scores obtained by summing down the columns in Grid 1 are, quite obviously, not unidimensional. Indeed, the more independent and heterogeneous the competencies that are composited, the better--provided, of course, each relates to goal achievement. At this point many readers will (as a result of their training in the dominant internal-consistency, factor-analytic, measurement paradigm) be thinking "Such scores are not meaningful!" It is therefore important to note that, while the factor analysts' claim that such heterogeneity shows that the scores which are obtained are not unidimensional is correct, the assumed corollary--that they are not meaningful--does not necessarily follow. No one would argue that multiple regression coefficients are meaningless simply because they are calculated by summing across as many maximally independent predictors of performance as possible.

Overall Indices Versus Detailed Descriptive Statements

In practice, an account of the types of behaviour which a person values and the competencies they display in the course of carrying out those activities provides much more useful information than a single 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 behaviour is best described and understood in terms of people's relative scores on a small number of dimensions. The assumption behind the model developed here is that behaviour is best to be understood by identifying people's values, compulsions, perceptions, and

expectations and the components of competence they tend to display spontaneously in pursuit of their valued goals.

“Atomic” Versus “Variable” Models

The difference between factorial profiles and descriptive statements can be illustrated by using examples from physics and chemistry. Physicists have shown that the behaviour of a projectile is best described by some such equation as:

$$s = ut + \frac{1}{2}ft^2$$

(The distance travelled at a particular time is determined by the initial velocity multiplied by the time elapsed plus half the acceleration multiplied by the square of the elapsed time.)

The factor analysts' model is analogous. For example, it may assert that the degree of leadership which will be displayed is a function of the person's scores on variables such as extroversion and intelligence.

Unlike physicists, chemists have found a very different type of equation to be most useful in their work. They argue that substances and the environments in which they are placed are best described by listing the elements of which they are composed and the relationship between these elements. The descriptors (elements) are drawn from a large set known to all chemists. The elements that are not present do not need to be listed. The behaviour of the substance in a particular environment is then described by equations that make it possible to describe transformations as well as monotonic combination:



(Copper plus sulphuric acid yields copper sulphate, water, and sulphur dioxide.)

It is being argued here that human beings might best be described and understood by adopting a model that has more in common with that used by chemists than that used by physicists. Such a framework would enable us to indicate people's values and the components of competence they show a spontaneous tendency to display in pursuit of them, and together with the relevant and significant features of their environments without restricting us to the small number of variables that characterise factor-analytic models.⁵

We will now push the chemical analogy further. If we were to pursue this model we would find ourselves writing *summary* descriptions of people and the environments in which they live and work. This might take the following form (the symbols that are used are exemplary only and should in no way be taken to suggest that we have developed even a preliminary version of a more complete table of “human elements”):



Such a statement might be interpreted to mean that the individual concerned showed a spontaneous tendency to display four components of competence in pursuit of achievement goals and three components of competence in pursuit of power goals. Four items that contribute to the set dealing with authoritarian perceptions of society, and only two of the set dealing with participatory citizenship, were endorsed. Four aspects of the environment were supportive of the

individual's goals: The manager modelled achievement behaviour but did not delegate, encourage participation, or create developmental tasks for his or her subordinates. There was "hostile press" from other people in the individual's environment. Concern with efficiency and effective leadership were scorned. The task that the individual was set had little developmental potential: It was a routine task that prevented the person concerned from developing perceptions and expectations appropriate to innovation.

If the equation were written in some way that permitted movement, one would conclude that the individual would be likely to become frustrated and lose motivation to engage in achievement and leadership behaviours.

In fact, of course, such summary statements could be filled out in a great deal more detail, and very usefully too. One could identify exactly what type of achievement or power behaviour the individual thought it was important to engage in, one could identify exactly which competencies were brought to bear in pursuit of each interest, one could identify the particular perceptions and expectations that encouraged and prevented the person concerned from engaging in such behaviour, and one could say more about the role models to whom he or she was exposed by managers, colleagues, and subordinates.

The next point to be made is that such *statements* about people can be extended to include statements about their environments. One can identify the way in which the motives and competencies of other people in the environment "engage with" those of the individual and result in emergent--and vitally important--*group* characteristics not possessed by any individual within it or achievable by "summing the parts"; one can identify the way in which the presence or absence of other people and particular working arrangements--which facilitate or inhibit certain types of behaviour--*transform* the individual and result in motives, competencies, and behaviours that would not otherwise be displayed; one can say something about the tasks set and their probable effects on the person's future development and motivation. Such statements enable us to describe (or, more correctly, model) the *transformational* processes that occur in homes, educational institutions, and workplaces.

By insisting that statements about the individual are accompanied by statements about both the situation in which the observations were made and the relevant previous experience of the individual--and thus prior opportunities to learn--we can also overcome the serious challenges to faith in the possibility of "objective" psychological and educational assessment that are typically levelled at work in this area. In previous chapters we have seen that: (1) values are triggered, and competencies thus released or suppressed, by the situations in which people find themselves; (2) people can only have developed high-level competencies if the situations in which they have previously found themselves have tapped their values (or, put the other way round and in a more concrete form, they may be perfectly capable of learning to do something they are currently unable and unwilling to do if they are placed in a situation that engages their values); and (3) people may be able to unleash high-level competencies that they currently do not display if they come to value the task they are being expected to undertake.

Our position is, therefore, that a description of the situations that have in the past tapped people's motives, the competencies they displayed in those situations (and would therefore probably transfer to any new task they might now come to value), and whether the situation in that they currently find themselves (and are now perhaps being observed and assessed) taps their values must form an integral part of any meaningful assessment of their competence.

For the sake of clarity, I will now briefly recapitulate the argument that has just been presented. We first noted that people's areas of competence can be identified by putting ticks in the cells of a two-dimensional grid which has valued behaviours across the top and components of competence down the side. We then noted that the internally-heterogeneous summary scores (analogous to multiple regression correlation coefficients) that can be obtained by summing the ticks in adjacent columns of the grid are conceptually identical to McClelland's "motivation" scores. However, we also noted that the original (tick-based) "description" of the behaviours the individual valued and the competencies displayed whilst undertaking those activities was much more revealing than the profile of summary scores. We further noted that since the printed grid was only an illustrative sample drawn from a much larger theoretically definable grid (with the result that putting ticks on the grid would become cumbersome if pursued wholeheartedly), we could achieve the desired effect by writing "chemist-style" descriptive statements about people. These identify the behaviours they "value" and the competencies they display whilst undertaking those activities. We then noted that this very same procedure would enable us to describe the relevant (and only the relevant) features of the environments in which people live and work--and those in which they had previously lived and worked. We would be able to identify different types of group having different emergent properties not derivable from summing the parts. (But we also noted that this would make the identification of the basic characteristics of the individual difficult.) We finally noted that this way of proceeding would enable us to both model the transformational processes that have proved so intractable in developmental psychology and education and to handle the problems that the situational specificity of behaviour pose for conventional (trait-based) concepts of "ability."

One final observation may be made about our research and the nature of the future scenario that would stem from its adoption. The crucial--almost idiosyncratic--feature of what we have been doing has been that we have been mapping and sampling relevant *domains* of competence--including their motivational basis and their cognitive, affective, and conative components. At the present stage in the development of our science, this has been no routine, activity. Quite the opposite: It is only possible to carry it out effectively after one has developed a thorough understanding of the area one is dealing with. To pursue such work one needs not so much a new methodology as a climate that emphasises that scientists should devote a considerable amount of time to what is, after all, the crucial phase of any scientific enquiry worth the name--namely developing concepts and understanding. However, as the framework for thinking about and mapping the domains of competence becomes clearer, the task of assessing people will become more like carrying out a chemical analysis than "measuring" their height with a ruler or taking their temperature with a thermometer after the manner of a physicist.

Implementing Generic Competence Assessments

Assessment performs many functions. Teachers and lecturers need it to monitor the effects of their actions. Students need it to find out how well they are doing and improve their performance. Administrators need it to study the effects of individual teachers and lecturers, educational institutions, and groups of such institutions. Summative assessments are required at

the point of interface between educational institutions and society so that students can get recognition for the competencies they have developed and thus get an opportunity to use them--and develop them further--in the course of employment.

The preoccupation with traditional tests and the criteria established to assess test “quality” has not only resulted in invalid, unreliable, and dysfunctional tests, it has also resulted in the failure to develop diagnostic and prescriptive tools more suited to such purposes as evaluating and improving educational programmes on the one hand, and to diagnosing and remedying students’ learning difficulties (e.g., in reading) and offering individualised programmes of competence-based education geared to each student’s interests, values, and talents, on the other. To either assist with reading difficulties or implement competency-oriented education, teachers and lecturers need to be able to obtain information about the motives and potential interests of each student, invent a possibly developmental experience for that student (i.e., one that harnesses the students’ motives, builds on the competencies that have already been developed, and addresses the problems the student has in pursuing his or her own goals), monitor the student’s reactions to that experience (especially his or her specific difficulties), and take corrective action when necessary.

In addition, authenticating and governing Boards need to be able to assess particular policies and programmes of study: They need to be able to document the distinctive features of the programmes and demonstrate that they have distinctive consequences for those who pass through them. They also need to be able to find out whether individual lecturers are identifying and developing at least some of the talents of each of the students enrolled in their courses. Educational officials, administrators, lecturers, students, and employers need to be able to undertake stock-taking exercises to look at the human resources available. To do these things they must, both individually and collectively, assess the quality of the developmental environments and experiences that are available and their probable consequences. For these purposes there is a need for a set of “mirrors” that enable people, individually or collectively, to take stock of what is happening so that they can, if appropriate, decide to change it.

In the remainder of this chapter I will summarise what we have been able to do, using the model developed above, to fill some of these gaps. In the course of so doing, the methodologies we have employed to operationalise the model will be illustrated. However, if the reader is not to be too disappointed with what is to follow, it is important for him or her to approach the material with realistic expectations. Virtually all the work on which this discussion has been based has been carried out in “spare time,” on an unfunded basis, as private skirmishes on the edges of a series of unrelated and non-cumulative projects that were commissioned for reasons having little to do with the central theme of this book. Given the unquestioning acceptance of the dominant paradigm by those who control funds and review research proposals, and given the desire for quick returns and immediate answers among those who commission research and evaluation studies, it has proved impossible to obtain funds for research that would have addressed these issues directly.

In setting appropriate expectations it is also important to say that, precisely because there has been no continuity in funding or projects, there has been no continuity in staffing either. No sooner have those concerned been socialised into (earlier versions) of the way of thinking presented here than they--complete with their hard-won insights and expertise--have had to move on.

In this context, the progress that has been made looks less insignificant. It has proved possible to use the measurement model outlined above without difficulty in programme evaluation.

It was used in both our evaluation of the Lothian Region Educational Home Visiting project (which was a Levenstein-like programme of adult education designed to “emphasise the unique and irreplaceable role of the mother in promoting the development of her children”⁶), and in our evaluation of the links established between primary schools and agencies of non-formal education, such as zoos and museums.⁷ In both cases, it enabled us to show that, contrary to the received wisdom, adults (whether parents or teachers) had, for better or worse, dramatic effects on both children’s and adults’ values and on their competence to undertake valued activities effectively. It has also been employed without difficulty when assessing what might loosely be called national and organisational climates and patterns of competence associated with economic and social development and decline.⁸

We have had more difficulty in using it for *individual* assessment purposes. However, even here, one set of procedures (Behavioural Event Interviewing and Records) provides relevant and useful information in an elegant and cost-effective way, and other procedures (based on value-expectancy methodology) have been shown to have considerable potential. In this chapter, methods based on externally generated *statements* will be reviewed first, followed by behavioural event interview methods, and then methods based on value-expectancy-instrumentality theory.

Statements

There are two essential prerequisites to obtaining meaningful external assessments of competence. First: assessors should be thoroughly familiar with the conceptual framework summarised above and developed more fully in *Competence in Modern Society*.⁹ Second, they, like good mothers¹⁰ and managers,¹¹ should both have gone out of their way to pay attention to what their children and subordinates say and do (and to the meanings of their gestures and innuendoes) and thereafter have created situations in which students or subordinates can enthusiastically pursue activities that they care about, growing in confidence and competence in the process. If they have done these things, teachers, lecturers, and managers will, if they are good observers, find it relatively easy to put ticks in the cells of an extended version of Grid 1 to indicate which activities their students or subordinates value and the competencies they display spontaneously whilst pursuing them. An alternative is for assessors simply to list, after the manner of a chemist (or doctor, when writing a prescription), the behaviours that those being assessed value and the competencies they display while pursuing those valued activities. The lists of values and components of competence published in *Competence in Modern Society* may be used as aides-mémoire for this purpose. If this approach is adopted, teachers and managers can also usefully describe the situations in which students and subordinates have worked, using the framework presented for describing classroom and organisational climates (in terms of the motives they tend to arouse and the behaviours they tend to encourage) presented in my *Education, Values and Society* and *Competence in Modern Society*.

It is important to note that whereas most external assessments of people take the form of *ratings* (going from, e.g. “intelligent” to “stupid”), what one gets by following the procedures described above is a series of *statements* about, or descriptions of, people and the environments in which they have been observed. Ratings are made on a small number of scales assumed to be adequate to map the totality of the individual’s competence. Statements draw on a vast pool of potential descriptors to make succinct statements about the individual and context.

It will be readily apparent that this procedure requires teachers, lecturers, and managers

first to become thoroughly familiar with the ideas summarised above (a task no more difficult than that required of every student who aspires to be a chemist) and then to devote a considerable amount of time to the process of (1) studying students' or subordinates' interests and talents and (2) creating situations in which those talents can be expressed. (If lecturers, teachers, or managers have failed to create appropriate individualised developmental environments, or failed to make their observations in such environments, any statements made about--or ratings made of--high-level competencies will be meaningless.) Because of the time required, the use of rating systems--such as are often found in staff appraisal systems--is not a feasible, or at least a sensible, proposition in many settings. On the other hand, familiarity with (indeed, day-to-day use of) the competency framework is crucial to the development, release, and effective deployment of human resources. It is therefore essential that teachers, lecturers, and managers develop the habit of thinking more carefully about their students' and subordinates' talents and how best they can be developed and deployed. This objective might best be achieved, however, not by pitching them directly into assessing these qualities, but by encouraging them to use the results of the more student-based assessment procedures and climate surveys to be described below.

In the past we have experimented with, indeed advocated the use of, behaviourally anchored rating scales.¹² In essence, this procedure requires raters to agree on, for example, precisely what level of initiative is indicated by a specific behaviour of a particular ratee. At first, the approach appeared to be very promising. However, we encountered serious difficulties when trying to implement the necessary procedures. The reason for this took some time to emerge. Although it was obvious from our earliest trials that behaviour that one teacher would describe as "initiative" would be described by another as "the student trying to ingratiate himself with his teacher," it was not until we had recognised the centrality of values in the assessment of competence that we were able to appreciate that this problem could not be resolved without first finding out what the *student's* values were and then respecting those values, *whatever* they were. Once that was done, we could begin to get some agreement about what was meant by such qualities as "initiative" in relation to the student's own priorities. But, even then, if one wished to assess his or her competence, one had to develop behaviourally anchored scales for *all* the competencies listed in *Competence in Modern Society* in relation to all possible goals. The task became even more cumbersome than putting ticks in an extended version of Grid 1. We backed off.

Behavioural Event Interviews

*Behavioural Event Interviews*¹³--or their development as collections of personal reports on critical incidents (or records of behavioural events)--require teachers and lecturers to share more of the responsibility for assessment with students. Students are asked to think of--or keep records of--times when things went particularly well and particularly badly for them; they are asked to report both events that they were particularly pleased about and events that led them to feel frustrated and uncomfortable. They are asked to record what happened, what led up to the situation, and what the outcome was. They are asked to say what they were trying to do or accomplish.

(In this connection care has to be taken to reassure them that it is both appropriate and important to record "unacceptable" goals--such as passing the time as pleasantly as possible in warm friendly conversation--because workplaces and society need people who value such behaviour and do it well.) They are asked to describe their thoughts and feelings while they were

engaged in the activity. And they are asked to say what others did, what they did, and how others reacted.

These records can then be scored by the teacher or lecturer, or by an external agency, using a variant of Grid 1. The student's or subordinates' values and the competencies displayed when pursuing them are very apparent to anyone familiar with the conceptual framework developed above. The basic interview or record sheets remain available should those being assessed wish to challenge the overall statements that are made about their values and pattern of competence. When the interviewing and scoring are carried out jointly by student and teacher--and possibly by the students' peers--a wealth of information is available to guide future placement and development. The methodology is elegant and, provided all concerned are prepared to take personal development seriously, it has the potential progressively to initiate both staff and students into ways of thinking about human resources and their development and utilisation that are essential to the future development both of the educational system and society.

Variants of this methodology have been developed independently by Stansbury¹⁴ and by Burgess and Adams.¹⁵ Their work is important for two reasons. On the one hand, it indicates that it is feasible to envisage that such assessments might be much more widely employed in schools and colleges. On the other, it--like the experience at NELP--alerts prospective users to the amount of time that is required if students are to be offered the guidance and counselling that is required as a basis for effective competency-oriented education, which is itself a prerequisite to meaningful assessments of multiple talents.

Adams and Burgess¹⁶ went on to produce what is, in a sense, an even more important variant of their methodology. They encouraged teachers to keep records of occasions on which they felt pleased with what they had done, perhaps occasions on which they had contributed in worthwhile ways to education and the educational system. The teachers were then encouraged, but not obliged, to discuss these records with colleagues with whom they felt comfortable and, in due course, with head teachers and administrators. What then happened was remarkable. It became apparent to all that all teachers--and not just a few--wished to contribute to the effective functioning of schools. Furthermore, they had all done so--*but had done so in very different ways*. Their previously invisible concerns and talents surfaced. Morale improved dramatically. It became apparent that the schools needed a wide variety of people who were concerned to do, and were good at doing, very different things. And a wide variety of talents was available. There was no such thing as a model teacher to which all teachers needed to approximate. The process contributed in a fundamental way to the recognition and utilisation of high-level competencies. It provided virtually the only viable practical solution to the widely acknowledged--but seemingly insoluble--problem of the need to accredit workplace learning. As Wolf¹⁷ shows, most attempts to solve this problem set out to document courses taken or assess formal, low-level, general (as distinct from idiosyncratic and tacit) knowledge acquired. Adams and Burgess's scheme ends up recognising the high-level competencies members of staff have developed. Although widely ignored as "just another staff-appraisal system," their scheme is in fact a development of the greatest importance. It is my belief that its effectiveness would be further improved if the discussions which are involved were to be, at least in part, conducted with the aid of the framework for thinking about competence, its development, and its utilisation outlined here.

The Assessment of Competence Using Value-Expectancy Methods

Value-expectancy methodology is designed to get inside people's heads, assess the (reinterpreted) three dimensions in Johnson's diagram, and compute the resultant(s). The methodology enables us to assess people's values, their perceptions of relevant features of their environment, what they expect the effects of their actions to be, and how much importance they attach to each of the consequences that are anticipated. The consequences that are examined include those arising from the individual's own competence (or the lack of it) and consequences that follow from other people's reactions to that behaviour. If appropriate, people's confidence in their ability to deal with the reactions they expect from others are also documented. The methodology enables the assessor to combine these bits of information together in order to calculate the strength of the resulting disposition to undertake different kinds of tasks effectively in particular kinds of situation.

It is easiest to introduce the theoretical basis of value-expectancy-instrumentality methodology by reference to the work of Fishbein. In the late 1960s, Fishbein¹⁸ stimulated a paradigm shift in the then-quiet area of "attitude" measurement by emphasising, and finding an elegant way of handling, something which everyone had always known--but which had not been taken into account in the theories or practice of attitude measurement current at the time (and which is still neglected in the measurement of personality and abilities). This is that behaviour--such as buying biscuits or using contraceptives--is primarily determined by multiple beliefs and feelings that come into play in particular situations rather than by a single underlying "attitude" or by personality variables.¹⁹

Fishbein made two fundamental contributions to our ability to think about, and handle, these issues. First, he focused attention on something that has been repeatedly emphasised in this book, namely that it is the respondent's attitude toward, or value for, *the behaviour in question*--and not his value for the object of the behaviour--that it is important to assess. One should study the respondent's attitude toward *using* contraceptives, rather than his attitude toward the contraceptives. Second, he found a means of tying together three well-established, empirically based, theoretical viewpoints about behaviour determination in psychology and sociology.

The first of these traditions holds that people will be inclined to engage in an activity if they are relatively certain that the activity will lead to satisfactions which they value. The second holds that they will be more likely to do something if they feel that the behaviour is consistent with their self-images--with their view of the sort of person they want to be. The third viewpoint is that people will be more likely to engage in a behaviour the more certain they are that other people expect them to do so, and the more dependent they are on a favourable reaction from those other people.

There is considerable evidence²⁰ to support each of these viewpoints taken individually. The predictive validity of measures based on any one of them is typically of the order of .4. The beauty of Fishbein's work was that, for the first time, it enabled us to assess each set of variables more systematically and then tie the three sets of variables together. The method of combining and weighting the component parts is itself supported by a considerable body of empirical research. The effect of these developments is that predictive validities of .8 to .9 are not uncommon.

Before moving on, attention may be drawn to the way in that Fishbein's model parallels that developed above in connection with Grid 1. There, we argued that the capacity to undertake a valued activity effectively was multiply determined and that it was dependent on bringing to bear

a number of relatively independent--but substitutable--competencies, each having cognitive, affective, and conative components. It was argued that effective behaviour depends on having an appropriate self-image, on perceiving oneself as having the support of relevant reference groups, and on having an appropriate institutional framework in which to work (i.e., on *shared* beliefs about priorities, relationships, and ways of doing things).

In non-technical language, what the Fishbein version of value-expectancy-instrumentality theory does is ask people what they think the consequences would be if they were to engage in any particular behaviour and then weight those consequences with the importance attached to each. Three domains of possible consequences are systematically studied. These may loosely be called *personal* consequences, *self-image* consequences, and *the reactions of reference groups*.

The *personal* consequences that are studied include such things as “I would enjoy doing this”; “It would take up a great deal of time which I would prefer to devote to other things”; and “I would have a lot less money for other things.”

The *self-image* (or, more correctly, personal normative belief) consequences include such things as “No self-respecting person would do this”; “It is my duty to do this”; and “I would be working for the long-term good of mankind if I did this.” The *reference group* consequences include “My grandmother would object to my doing this”; “My workmates would encourage me to do this”; and “God will punish me if I do this.”

Each of these perceived consequences has to be weighted by the importance attached to (or motivation to comply with) them: What my grandmother thinks won’t have much influence on my behaviour if I don’t *care* what she thinks.

So, to apply the model fully, we first have to find out how *certain* the people we are assessing are that, if they engaged in the behaviour, each consequence would follow--and then how important each of those consequences is to them. We then multiply the certainty ratings by the probability ratings and sum the resulting products.

To use value-expectancy-instrumentality theory to index the likelihood that people will display selected competencies in the course of undertaking tasks they care about we first identify tasks that they have a “felt need” to carry out by asking them to complete a *Quality of Life* Questionnaire (see Figure 28.2a).

Figure 28.2 - The assessment of the Components of Competence

<u>Importance</u>		<u>Satisfaction</u>		<u>Consequences</u>	
How important is it to you to:		How satisfied are you with:		If you have said that it is very important to you to work in a clean environment and that you are dissatisfied with the current state of affairs; what would happen if you tried to get something done about it? How likely is it that each of the following would happen?	
	Hi	Low		Hi	Low
1. Work in a clean environment	<input type="checkbox"/>	<input type="checkbox"/>	1. The cleanliness of your work environment.	<input type="checkbox"/>	<input type="checkbox"/>
2. Be able to do new things which have not been done before.	<input type="checkbox"/>	<input type="checkbox"/>	2. Your opportunity to do new things which have not been done before.	<input type="checkbox"/>	<input type="checkbox"/>
				Very Likel	Unlikely
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

Figure 28.2 The Assessment of the Components of Competence: An illustration from *The Edinburgh Questionnaires*. Part A **The Process**. Part B (Flow Chart) will be found on the next page. Note: this is a schematic representation only and does not bear a direct relationship to the Questionnaires.

Figure 28.2 (Continued) The Assessment of the Components of Competence:

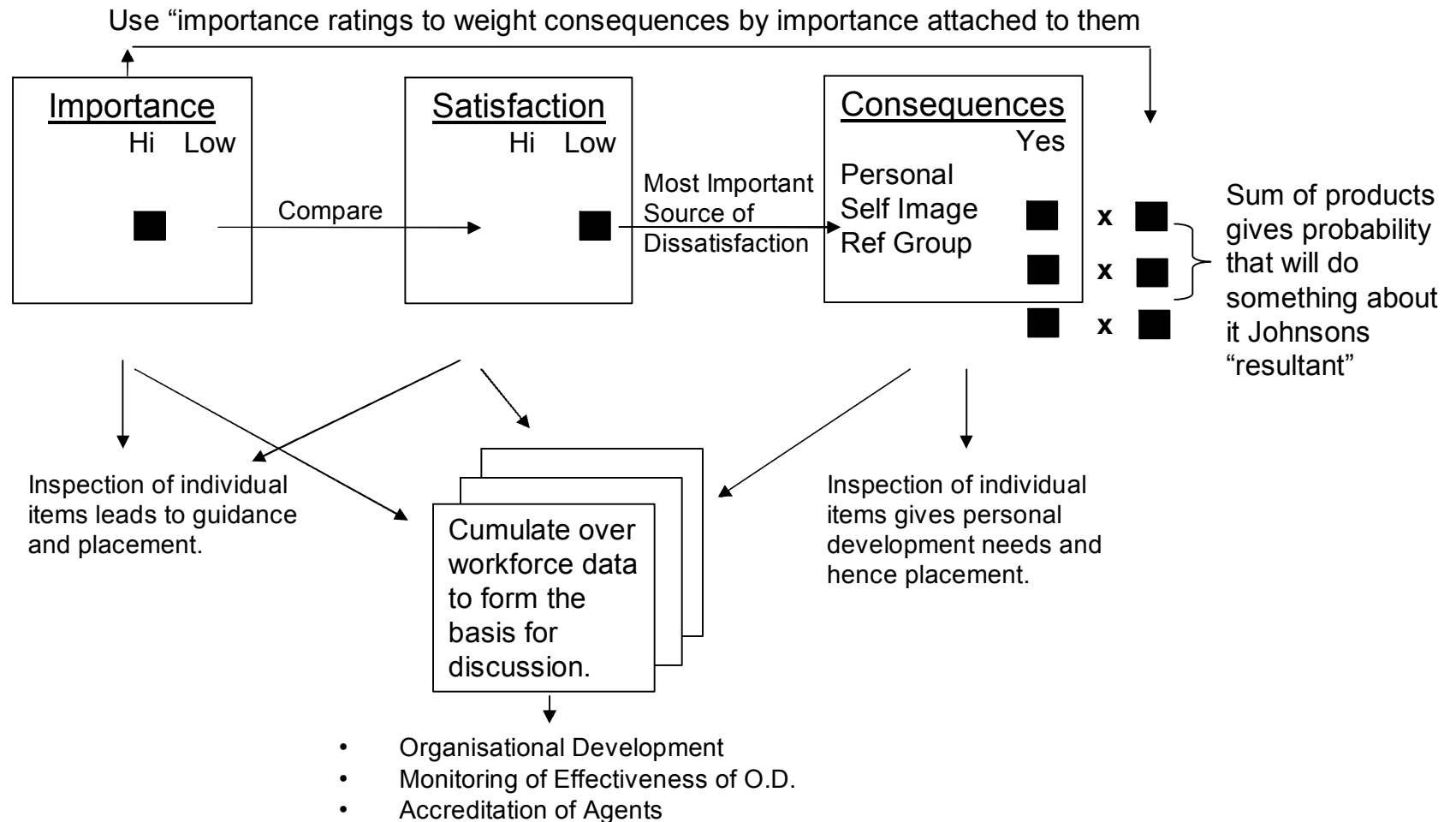


Figure 28.2 (Continued) The Assessment of the Components of Competence: An illustration from *The Edinburgh Questionnaires*. Part B **Flow Chart**. Note: The Figure has been prepared for illustrative purposes. The flows are over simplified and schematic.

On this questionnaire they are first asked to indicate how *important* various features of the environment are to them and how important they think it is to be able to do various things at work. Thereafter, they are asked to say how *satisfied* they are with each of these same features of the environment and with their opportunity to do each of the things they have said they would like to do. Their responses are then examined in order to identify an item they have rated both important and unsatisfactory.

The *Consequences* Questionnaire is then used to explore their perceptions of the consequences of trying to do something about this unsatisfactory state of affairs. What do they think would happen if they tried to persuade other people to do something about it? What would happen if they tried to do something about it themselves? The consequences that are studied cover the domains identified in Fishbein's model. They include such things as conflict with other values, whether doing it would enable them to be the sort of person they want to be, and their perceptions of how their reference groups would react.

The process may be illustrated by taking an example: supposing we are interested in exploring the consequences that students expect to follow from trying to persuade their fellows to behave more responsibly. The students would first be asked what they thought the *personal* consequences would be. They often think that trying to do this would make them uncomfortable and unhappy, leave less time for other activities they value, and demand abilities that they feel they do not possess. In the absence of these abilities, any attempt on their part to persuade other people to behave responsibly would demand a great deal of effort and would lead others to think that they were getting above themselves, and the whole thing would be a disaster. They would look, in their own eyes and in the eyes of others, very foolish indeed.

After they have been asked what they think the general consequences would be, they are asked what sort of person would do these things and whether they would like to be that kind of person. They sometimes feel that the sort of person who would try to persuade his fellows to behave more responsibly would be a rather pious, priggish, killjoy and that, to be successful, they would have to be devious and manipulative. They may not themselves wish to be any of these things.

Finally, they are asked how others would react: Would their friends support or reject them? Would their teachers condemn them because they would have exposed their behaviour as self-interested, rather than concerned with the good of all? Would they, like Socrates, be deprived of career opportunities because they had identified themselves as the sort of person who takes moral issues seriously?

If one cumulated these results one would have a clear assessment of the strength of the student's disinclination to engage in the activity (see Figure 28.2b).

But, by going through the process we have described, one obtains a great deal more useful information than this single index. In the case just described, one would have learned a great deal that would be of value in helping one to devise an individualised, generic-competency-oriented, developmental programme to help the student concerned, if he or she so wished, to resolve value conflicts and thus release energy into chosen tasks and to practise and develop competencies required to reach valued goals. The student could, for example, be brought to pay more attention to the probable long-term social consequences of not behaving in a socially responsible way. He or she might be encouraged to meet other people who *had* behaved in a responsible way and had not been punished or forced to behave in ways that were incompatible with being the sort of person they want to be. As a result of getting to know them, the student might learn how to

persuade other people more effectively without having to be obnoxious. He or she could be helped to practise the skills required to obtain the co-operation of others.

Classroom Climate Measures

Not only would the information obtained by using the above procedure be of value in making it possible to design an *individual* programme of development for this particular student. The data collected from all students in a group would be of value in enabling the lecturer (or an external accrediting agency) to assess the quality of the lecturer's overall programme of placement and development and his or her ability to release the know-how, goodwill, and enthusiasm of all students--and thereafter to improve his or her performance in both these respects.

Accreditation of Institutions Combined with Observer Judgements

This is the basis for the final suggestion to be made in this chapter. I have already indicated that this methodology can be used to document the effects of educational programmes and to highlight deficiencies in them. I have argued that such assessments would enable us to place the validation of courses on a sound basis. Let us now back up one step. It is a relatively straightforward matter to determine the presence or absence of classroom processes that are likely to lead to the identification and development of the talents of each student.²¹ Having demonstrated that some lecturers had created developmental environments for their students, one could infer that they must have had opportunities to *observe* their students exercising high-level competencies in the course of undertaking tasks they cared about. Under these circumstances, any statements they made about students' values and areas of competence would have a good chance of being meaningful.²²

The Question of Validity

The validity of value-expectancy-instrumentality measures such as those described has been established in a number of studies. However, this has not been done by computing conventional correlation coefficients but rather, as Messik²³ and House²⁴ have advocated, by establishing a network of connections between the "measures" and their causes and consequences.

The first study in which the theoretical model outlined here was fully operationalised was in an evaluation of an educational home visiting scheme.²⁵ The scheme sought to "underline the unique and irreplaceable role of the mother in promoting the educational development of her children." Home visitors, who were all trained teachers, visited the homes of two- to three-year-old children for an hour a week for about nine months. By working with the children in their mother's presence, they sought to portray effective mothering behaviour in such a way as to lead the mothers to do likewise. The evaluation showed that the home visitors had a dramatic effect on the mothers' beliefs and expectations, but very little effect on their behaviour. The only behaviour that changed significantly was that the mothers became more likely to hand their children over to professional carers. This was, of course, exactly the opposite of what was intended. We were able to show that this occurred because, although the mothers now believed that it was both important and effective to do such things as talk to their children and had come to believe that intelligence was more readily influenced than they had previously thought, neither the

environmental constraints on their behaviour nor their basic values had changed. As far as environmental constraints were concerned, for example, they still lacked the time needed to do the things they had always believed they should do and now recognised to be even more important than they had imagined. As far as their values were concerned, they would still have preferred their children to be dependent on, rather than independent of, them. Thus, despite the fact that they now believed even more strongly than before that the behaviours that the home visitors modelled were both important and efficacious, they were still prevented from doing them by environmental constraints and value conflicts. They resolved this dilemma by handing their children over to professionals--for whose competence they had developed a great respect. They ended up feeling even more guilty than before about not doing things they already knew they should be doing.

It emerged that, if the programme was to be effective, the home visitors would, among other things, have had to set out to *influence* the mothers' values. They would also have had to help them, as a central objective of the project, to develop the competencies they needed to get more control over their own lives--and especially to influence public provision. This, naturally, posed serious dilemmas for the home visitors. Our interest here is, of course, methodological rather than substantive. The point is that the value-expectancy measures we developed proved to be sensitive to the effects of the educational programme, enabled us to identify what worked and what did not and the reasons why, helped us to understand counterintuitive effects of the intervention, and enabled us to identify the (often unexpected) remedial actions that were necessary.

In another project²⁶ we used the methodology to study the effects of different types of educational programme on primary school pupils. We found that, contrary to common assertion, different teachers had dramatically different effects on pupils' concerns, on their priorities in education, life, behaviour, and patterns of competence. Thus, some teachers led their pupils to feel that it was important to select tasks that were socially important and to obtain the cooperation of others to carry out those tasks effectively. The pupils learned how to tackle such tasks and how to win others' cooperation. That they had learned to do these things could be demonstrated by examining the consequences they anticipated: One did not need to observe their behaviour. They understood how the local democracy and bureaucracy worked, how to identify leverage points within it, and how to influence it. They knew the strengths of their fellow students. Pupils in other classes did not think it was important to do these things or important to learn how to do them, and (rightly) anticipated disastrous consequences should they try to do them. One of the most striking results of the project was the discovery that, contrary to common assertion, what teachers did reflected (even if it did not match) their priorities,²⁷ and the patterns of educational activity they created were in turn reflected in their students' values and patterns of competence. Once again, therefore, the methodology enabled us to document teachers' concerns and patterns of competence--and it also enabled us to develop measures of programme outcomes that were sensitive to the effects of the educational programmes pupils were offered. These measures in turn enabled us to pinpoint strengths and deficiencies in the programmes.

The objective of the work reported in *Competence in Modern Society* was to develop a set of tools (*The Edinburgh Questionnaires*) that would be useful in staff guidance placement and development and in organisational development.²⁸ The work showed, somewhat unexpectedly, that the "British disease" stemmed from a lack of interest in doing such things as finding better ways of doing things, finding new things to do, finding better ways of thinking about things,

working at a task that would in the long run benefit the whole organisation or society, or getting people to work together effectively. Surprisingly, the negative consequences that were anticipated should they decide to do any of these things were not a significant deterrent to undertaking these activities. They simply did not think it was important to do them. The methodology worked: The problem was other than what it was assumed to have been. *The Edinburgh Questionnaires* have since been used in Samoa, Tonga, Japan, China, Hong Kong, Singapore, the Philippines, Canada, and the United States.²⁹ Whereas some people had reacted to the Scottish data by saying “Of course, could it be otherwise?,” the cross-cultural data make it transparently obvious that things not only *could* be otherwise but *are* dramatically otherwise (in Japan and Singapore) and have the consequences with which we are all too familiar.

Taking these results together with those obtained with the Taylor-Nelson Monitor³⁰ one obtains an acutely disturbing picture: The British (with the Dutch) are most likely to support the “new” values--conservation, recycling, quality of life defined in other than materialistic or “economic” terms, community support networks, humanitarian values--but they are unwilling to do the things they would need to do to translate those values into effect. Given the predictable paralysis, it is not surprising that those who espouse the “old” values are able to impose their will on the majority, creating a deeply divided society in the process. Once again, then, use of the methodology we have described has enabled us both to understand how the societies concerned got into the economic situation in which they find themselves and to document what would need to be done if they are to create the new kind of society they want. The methodology has also enabled us to generate data that enable people, as individuals or as groups, to take a look at their beliefs, attitudes, priorities, and expectations in a kind of a mirror and ask themselves whether they like the look of what they see and, in particular, what they think the probable consequences of those beliefs, understandings, and perceptions will be. (If they do not like what they see, they can go on to ask what they could do about it.)

Taken together, these studies suggest that the methodology does have considerable validity in that it enables us to understand, predict, and influence behaviour. It has enabled people to get more control over their lives and own organisations. Additional, convincing, evidence of the validity of value-expectancy methodology, interpreted and applied more narrowly, will be found in Feather.³¹

Addendum: Research in Progress

Although we have not been able to attract the necessary funding, we have, over the past decade, been working on some computerised tools designed to surface people’s motives and talents and help them to explore their developmental needs. These tools are also designed to be used by managers in their discussions with their subordinates to help them to think about their talents, how to develop and utilise them, and how to re-deploy their diverse workforce in order to harness their creativity, initiative, and know-how in order to create innovative organisations. These tools would also be of value in helping to manage, and document the consequences of, individualised competency-oriented educational programmes in higher education.

We have also been working on a school improvement kit. This will include:

- A *Grid* designed to familiarise teachers with the competency framework briefly discussed above and help them to identify pupils’ motives and competencies both as an aid to thinking about how to harness those motives to create individualised developmental

- programmes and as a basis for recording the high-level talents pupils have developed.
- A *Classroom Climate Questionnaire* designed to familiarise teachers with the outcomes of our research into the nature of developmental environments and help them to take stock of the extent to which they themselves have been able to create such environments, decide how to improve them, and assess the effects of changes made.
 - A *School Climate Questionnaire* designed to familiarise all concerned with what we have learned about climates of innovation and take stock of the extent to which a local authority has been able to create a climate of enthusiasm and innovation which effectively harnesses, recognises, and rewards the motives and talents of all members of staff.
 - A *School Context Questionnaire* designed to focus attention on key facets of the interfaces between schools and society. These include relationships with other schools and the public service; the interface with employers and higher education; and the interface with parents and others with an interest in education.

Both *The Computerised Edinburgh Questionnaires* and the components of the *School Improvement Kit* are clearly adaptable for use in higher education, and I would welcome contact with anyone interested in doing so.

Notes

1. The term "value" is not quite right--because the behaviours in question often seem to be rather compulsive. People engage in them "despite themselves." This is difficult to reconcile with the term "valued activity," which conjures up an image of a "freely chosen" activity. Yet people do usually agree that these activities are important to them, and it is in this sense that they can truly be said to value them. McClelland has tried to avoid the difficulty by using the term "need." Unfortunately, this has led him to claim that his measures are not measures of values. This is not only untrue, it has also, as I have shown (Raven, 1988), caused endless confusion and unnecessary argument.
2. While it may be thought that the viewpoint developed here might be reconciled with traditional factor-analytic theory by focusing on qualities like "the ability to make one's own observations," a little reflection shows that this is not the case. Our argument is precisely that such qualities cannot be assessed independently of valued goals. They have no *generalised* meaning. Therefore, they cannot be assessed by factorially-pure scales.
3. Raven, Molloy, & Corcoran (1972); Raven (1977).
4. These components of competence are spelt out in more detail in Raven (1977, 1984/1997).
5. It is not, in fact, difficult to reconcile some such model with the facts to that factor-analysts point as a justification for their model. They point out that most human traits are correlated with each other. They go on to argue that it is unnecessary to retain a large number of independent dimensions, or categories. However, many of the correlations are of the order of .2 and most are of the order of .3 to .5. Even the latter leave some 75% of the variance on one trait "unexplained" by the variance on the other. There is, therefore, a *good* chance that someone who is not good at one thing will be good at another. Even factor-analysts point out that this is because the second ability has probably caught the interests of the person concerned and, therefore, been practised and developed. While the factor-analyst's model does, in fact, provide for such possibilities (by including provision for specific factors) these are generally neglected in practice. If we were forced to state our case in factor-analytic terms, we would therefore find ourselves arguing that the important things to record about an individual are his specifics, not his generalities.
6. Raven (1980); McCail (1981).
7. Raven, Johnstone, & Varley (1985).
8. Raven (1984/1997); Graham & Raven (1987).
9. Raven (1984/1997).
10. Raven (1980).
11. Klemp, Munger, & Spencer (1977).
12. Smith & Kendall (1963); for a summary of the procedure as we have used it, see Raven (1977).
13. McClelland (1978); Spencer (1983).
14. Stansbury (1976, 1980).
15. Burgess & Adams (1986).
16. Adams & Burgess (1989).
17. Wolf (1995).
18. Fishbein (1967); Fishbein & Ajzen (1975). However, see also Vroom (1964); Porter & Lawler (1968); Feather (1982); Mitchell (1982).
19. This is the explanation of the still widely-encountered statement that "there is little relationship between attitudes and behaviour." It is true that there is little relationship between behaviour in a particular situation and scores on a single, factorially-pure, attitude or personality scale. But there is a very close relationship between behaviour and "attitudes" (or behaviour tendencies) indexed by identifying and summing the perceptions, beliefs and feelings which come into play in the particular situation using the techniques under discussion here.
20. Reviewed in Raven & Dolphin (1978).
21. Raven (1977); Walberg (1979, 1984, 1985); Howard (1982).
22. This would place the procedure advocated by the Scottish Examination Board (1985) for Social and Vocational Education on a firm basis. For this syllabus, the SEB does not require teachers to assess individual pupils' social and vocational competence. It insists only that they certify that the *course* was likely to lead to these outcomes. This is something we are in a position to validate. From there it would be but a short step to trust the teachers' judgement about individuals.

23. Messick (1989, 1995).
24. House (1991).
25. McCail (1981); Raven (1980). For earlier applications of the partially-developed model see Raven, Molloy, & Corcoran (1972).
26. Raven & Varley (1984).
27. I am talking here at a fairly gross level. Teachers varied a great deal from one to another in their educational objectives. In relation to this variation between teachers, the slippage between one teacher's objectives, and what he or she did, looks less stark than it does when researchers focus on such things as the discrepancy between teachers' reporting that they have conducted an "open-ended" discussion lesson, and external observers' ratings of the "openness" of that discussion. What was striking in our study was how few teachers thought it was important to have open-ended discussions. Those teachers who did so got on with it, albeit imperfectly. Not surprisingly, the rest conducted no such discussions.
28. Raven (1983, 1984/1997); Raven & Sime (1994).
29. Graham & Raven (1987); Graham, Raven, & Smith (1987).
30. See Nelson (1986); Large (1986).
31. Feather (1982). It is, perhaps, useful to mention that, although the evidence of validity cited here has not been expressed in the form of correlation coefficients, it provides exactly the information that those coefficients seek to provide: namely, evidence that scores based on verbal behaviour relate to other aspects of behaviour and vary with experimental manipulation (cf. Messick, 1989).

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