Teacher Clarity or Pupil Clarity or Both? Conceptual Issues and Research Implications

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Konstruk atau gagasan kejelasan guru menjadi tumpuan pertama. Biasanya konstruk kejelasan guru dilahir dan diukur berlandaskan tingkah laku guru. Murid menilai tingkah laku tersebut sebagai jelas atau kurang jelas. Rencana ini mengutarakan satu pendekatan yang berdasarkan dua persoalan yang terjalin iaitu "jelas untuk siapa?" dan "jelas dalam isi kandungan apa?". Dua persoalan yang berkaitan membawa satu konstruk tambahan iaitu kejelasan murid. Ia merupakan kesan kejelasan guru ke atas murid. Andaian utama ialah kontruk kejelasan guru hanya menjadi lebih bernas dan bermakna jika ia di pasangkan dengan konstruk kejelasan murid. Kejelasan murid semestilah menjadi nilai tara untuk mengukur kejelasan guru.

Persoalan konsep kejelasan dikupas, dan satu kerangka konseptual diketengahkan untuk memahaminya. Ia berasaskan konsep jurang di antara kedudukan murid di peringkat kemasukan dengan objektif-objektif pelajaran yang ditujukan. Konsep kejelasan berasaskan sejauh mana jurang tersebut berjaya dirapatkan oleh perlakuan guru, atau setakat mana jurang ini dijangkau oleh murid.

Pendekatan nomothetic dalam penyelidikan lebih memberi perhatian kepada kumpulan, dan hukum-hukum dan prinsip-prinsip yang menyeluruh. Adalah diperakukan pendekatan idiographic lebih memberi perhatian kepada individu dan perbezaan individu. Ini amat penting sebab kejelasan sewajiblah lebih tersendiri dari segi sifat dan tahapnya untuk tiap-tiap murid. Faktor perbezaan individu dalam pencapaian kejelasan seharuslah ditekankan.

Introduction

The importance of the teacher being clear when teaching, is reflected in the items on this aspect in most evaluation instruments of teacher effectiveness and teacher performance (Getzels et. al., 1963; Medley et al., 1963; Trent et. al., 1973; Shavelson et al., 1986; Brophy et al., 1986; See, 1987).

The distinct and separate construct of teacher clarity, however, only received increased attention when Rosenshine and Furst (1973: 156) reviewed studies on it. They concluded that there were variations in approaches to this construct. These variations indicated that there was uncertainty concerning the exact boundaries and domain of this construct. Dunkin and Barnes (1986) in a more recent review, cited studies which suggested differences in approaches to teacher clarity as a distinct construct. Reasons for this uncertainty can be found in the overlap between this construct and other conconstructs like teacher effectiveness (Ling, 1986, b; Maznah et al., 1989). The overlap between these constructs which are akin becomes very noticeable when they are operationalized in terms of teacher behaviours. The teacher behaviours for teacher clarity (Cruickshank et al., 1979) and those for teacher effectiveness (Kyriacou, 1982; 1983; Brophy et al., 1986) are disturbingly similar, except for minor differences in wording.

The similarity becomes even more glaring as the investigators on teacher clarity cast their nets over a wide area (Bush et al., 1977) and attempt to peg it with low inference teacher behaviours. When these teacher behaviours are identified, verified and rated by rather inexperienced pupils, the overflow of these teacher behaviours of clarity into other related constructs assume serious proportions. It is quite apparent that pupils may not be the best persons to make disciplined and fine distinctions with reference to the respective conceptual boundaries of, for example, teacher clarity and teacher effectiveness. Even if we assume the fact that teacher clarity is subsumed under teacher effectiveness, the problems of their boundaries, domains, and over-extension of teacher clarity into teacher effectiveness, are still real.

Cruickshank (1989: 286) has reiterated that teacher clarity is not simple but very multidimensional. Apart from the fact that it is very complex and multidimensional, Ling (1989/1990: 33) argues that there is also the issue of perspectives. He identified two different perspectives (Ling, 1989/90: 35-36), namely teacher clarity to independent judges and the teacher himself, and teacher clarity as perceived by the pupils and also as measured by the effects on them. It is quite evident that we still need to unravel and map more fully the complexities of teacher clarity by taking into account the issue of different perspectives, and the factor of the criterion levels for clarity or different levels of clarity, especially amongst pupils.

This article seeks to clarify some of the vagueness and assumptions pertaining to the construct. It will attempt to sharpen the focus and extend the range of our understanding of teacher clarity. It will address, in particular, the issue of the viability of this construct. Can the construct of teacher clarity stand by itself? Is it fully delimited and meaningful by itself? If not, what else is needed to complement, supplement or support it? Are there finer gradations of differentiation within this construct which may make it more meaningful? Finally, what are the research implications of these conceptual issues?

Current Emphases on Teacher Clarity

Rosenshine and Furst (1971; 1973) were some of the earliest who focused on teacher clarity as a distinct construct. They attempted to delimit it as a separate and unique conceptual entity by identifying its facets. They postulated six facets mirroring teacher clarity. These were presentation; comprehensibility of points of content in a lesson; explanations; answering pupils' questions; appropriateness of the level of organization; and the coherence or confusion in a lesson.

McCaleb and White (1980) conceptualized the construct as comprising five dimensions. The first is understanding. This is a prerequisite which involves matching what the learner has with what constitutes the objectives of the lesson. Teacher clarity enables this coupling and integration of the old and new. The resultant is understanding. Structuring, sequencing, explaining and presenting are the four remaining dimensions in his model of teacher clarity.

Cruickshank (1989 : 286) reported 12 types of teacher behaviours leading to clarity. Teacher clarity is characterized by these behaviours. They are:

> "....orient and prepare students for what is to be taught; communicate content so that students understand; provide illustrations and examples; demonstrate; use a variety of teaching materials; teach things in a related step-by-step manner; repeat and stress directions and difficult points; adjust teaching to the learner and topic; cause students to organize learnings in meaningful ways; provide practice; provide standards and rules for satisfactory performance; and provide students with feedback or knowledge of how well they are doing."
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> Source: Cruickshank, 1989 ;286.

They factor analyzed all the statements of teacher behaviours which were identified and rated as clear by pupils. Four factors emerged (Cruickshank, 1989: 289), namely Factor I - Assesses student learning; Factor II - Provides opportunity to learn; Factor III - Uses examples; Factor IV - Reviews and organizes. They explained that these four factors contribute to teacher clarity.

The research efforts of Cruickshank and other scholars generally adopted a more empirical and a posteriori research strategy. This type of approach to teacher clarity first began in Ohio State University. The research workers there (Bush, et al., 1977; Kennedy et al., 1978; Smith et al., 1980; Cruickshank, 1989) emphasized teacher clarity as perceived and assessed by pupils. They also stressed objectivity through the identification and rating of low inference teacher behaviours by pupils. They also stressed objectivity through the identification and rating of low inference teacher behaviours by pupils. Teacher clarity is anchored to what the teacher must do, and the corresponding perception and evaluation of these teacher behaviours by pupils. They collected statements of teacher behaviours associated with teacher clarity. These statements of teacher behaviours were rated by pupils and then analyzed using correlational methods and factor analysis.

Kennedy, Cruickshank, Bush and Myers (1978) produced empirical evidence from studies in Ohio, Tennessee and Australia to substantiate the claim that the construct teacher clarity is stable. The dimensions and characteristics of teacher behaviours underlying teacher clarity are stable, regardless of variations in situations and circumstances. These findings and the way they are reported exemplify very succinctly the nomothetic approach. The research scholars assert a very high degree of generality over students of different ages, diverse classroom situations, different time, variations in content and teaching-learning circumstances. It is very tempting to think of their findings in terms of trait theory with

teacher traits associated with teacher clarity. The possibility that these teacher traits can be nurtured and developed effectively through appropriate training programmes, is a very appealing assumption. This is the type of assumption that teacher education and teacher training programmes have been based on.

Problem of Just Focusing on Teacher Clarity

The focus on teacher behaviours which are judged as clear by pupils has several advantages. It is much easier to achieve a higher standard of objectivity through measures which are tied to observable, verifiable, replicable and measurable teacher behaviours. There is greater simplicity in the research methodology that is involved in the nomothetic approach currently used to investigate teacher clarity. However, this emphasis on objectivity and generalizability of teacher behaviours considered clear by pupils, may cause us to lose sight of important questions, issues and perspectives of what should be additional considerations and, more importantly, the ultimate concern of teacher clarity.

In figure 1, we are reminded of the importance of the characteristics of the target audience. This could lead us to a sharper and more meaningful understanding of teacher clarity. We should, for example, ask the question, "Teacher clarity for whom?". In the case of Group 1 in Figure 1, where the audience is characterized by a very large range of individual differences, the teacher has difficult choices to make when faced with limited time. In such a situation of heterogeneity in the group, there are significant issues of trade-offs and their consequences. Groups 2, 3 and 4 are more homogeneous but significantly different. The issue of whether the teacher can be similarly clear to Groups 1, 2, 3 and 4, is a moot point because the groups are patently very different. Recorded in Figure 1 are additional considerations such as the nature of the lesson objectives; time factor; range of teacher behaviours and their appropriateness; levels of clarity aimed for and actually achieved; the teacher's implicit and explicit targets; and the possibilities of different degrees of clarity achieved by different pupils.

Another thorny consideration is related to the factor of treatment, method, teaching style or teaching strategy used by the teacher. Is teacher clarity generalizable over these different teaching approaches and teaching styles of the teacher (Ling, 1986,) with uniform effects on the pupils? Aptitude-Treatment Interaction research (Cronbach et. al., 1977), and research with different teaching styles and learning styles (Ling, 1986 ; Joyce et. al., 1986) suggest that the effects on the pupils may not be uniform. Pupil characteristics may interact with treatment which includes different teaching styles and different teacher behaviours. This interaction is likely to produce varying effects at different levels amongst the pupils. Teacher clarity, in particular teacher behaviours associated with it, and their effects are included in this argument. We cannot assume uniform or similar effects in all situations, circumstances and for all types of audience characteristics. This would run counter to research findings with reference to the variables cited (Snow, 1987; Gage, 1988).

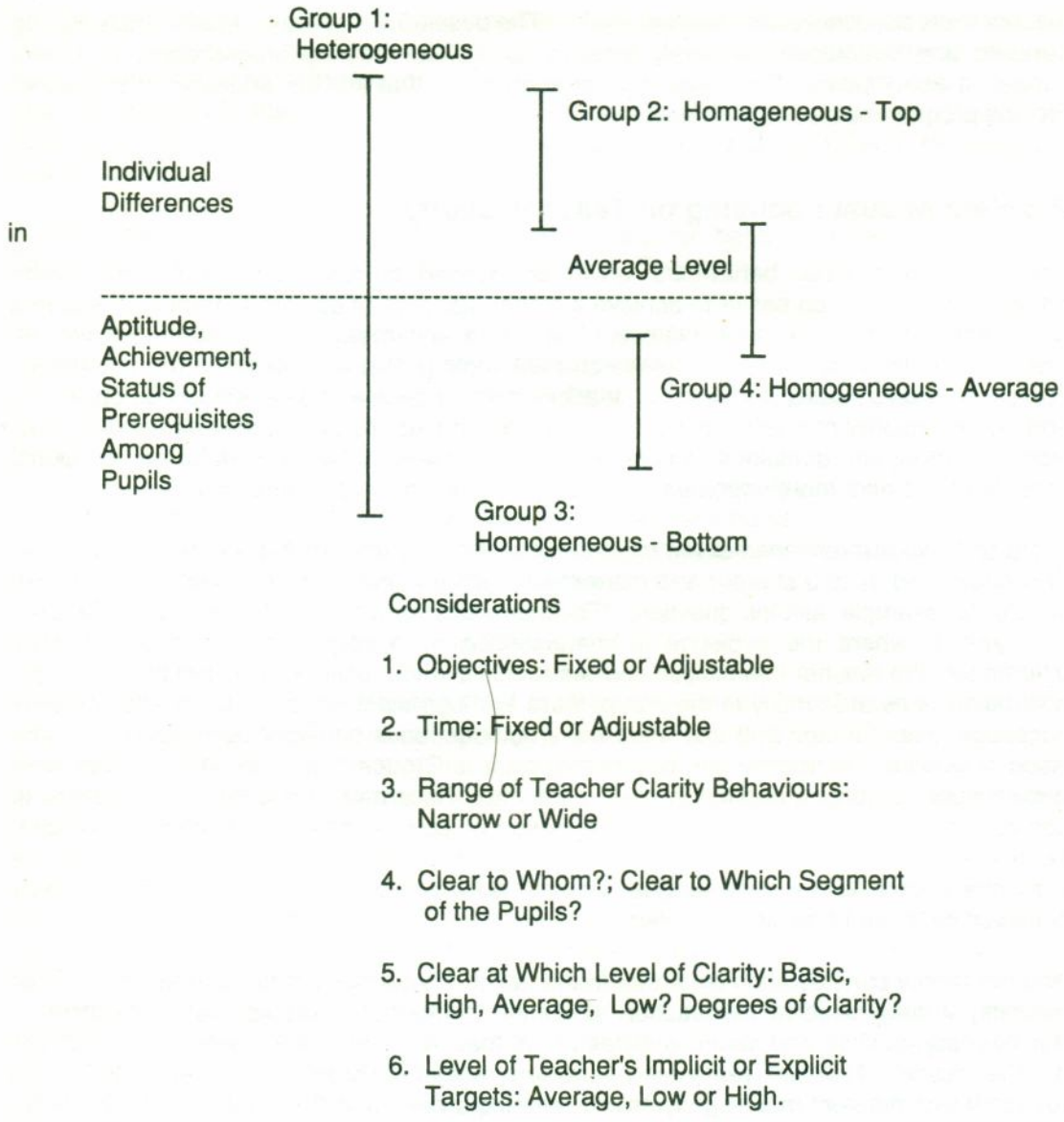

Figure 1 : Trade-offs and Consequences in Teacher Clarity and Pupil Clarity for Homogeneous or Heterogeneous Groups

Need to Focus on Pupil Clarity

Cruickshank and his associates (Cruickshank et. al., 1979) located the pupil at the nexus in the identification and evaluation of teacher behaviours for teacher clarity. The issue addressed in their research exercise is the role of teacher behaviours, their perception and evaluation by pupils. The issue that is still not squarely addressed pertains to the final

target of clarity. The questions that should be asked are, "Clarity in what?", in addition to the question of, "Clarity for whom?". These two questions must be interrelated.

The first question concerning the "What" of clarity, plays a decisive role in efforts to determine whether clarity has been achieved. This role is related to issues of the ultimacy of the criterion (Gage, 1963; Biddle et al., 1989). If we push this matter to a higher level, then it must be the pupils and their clarity. This clarity must be founded on clarity of the knowledge, skills and values targeted in the lesson objectives (Biddle et al., 1989; Good, 1989: 312) for the intended audience. Teacher behaviours would be further down with reference to the continum of the ultimacy of the criterion. This is because teacher behaviours are actually facilitative factors in the achievement of pupil clarity of the substance of the lesson. Thus, whilst clarity of teacher behaviours amongst pupils is an important concern, the more central and ultimate concern should be pupil clarity of the substance in the lesson objectives. All other concerns are less central or ultimate, as they are considered only important contributory factors. We have to dig deeper into the effects of teacher behaviours until we reach the level of pupil clarity in terms of what the pupils are supposed to understand in the lesson (Buchmann, 1984). This constitutes the essence of pupil clarity. It is the final target of teacher clarity.

Concern with clarity of teacher behaviours, even if judged by pupils, is necessary but not enough. This problem is driven home in Figure 2 where teacher clarity is crossed with pupil clarity. In Cell B, the teacher may be clear but the pupils, in terms of the substance in the objectives, may still not be clear because of receptional, attentional and motivational problems. Independent judges and most pupils may rate the teacher behaviours as clear. However, when measured in terms of the understanding of the substance in the objectives, a significant number of pupils may still not be clear, or at most low in terms of degrees of clarity. Cell C illustrates the point of the effects of clear teacher behaviours in bringing about pupil clarity. However, the exception is when the pupils were already clear. In such a case, teacher clarity is not very meaningful (Lyons, 1986) because the pupils already possess understanding of the targets. In Cell D, the teacher was not clear but the pupil was clear. In this instance, the pupil achieved the target clarity inspite of the teacher (i.e. through his own efforts or through peer help). This case would suggest caution in our research design to establish a direct link between pupil clarity (i.e. the effects, achievement, or understanding) and teacher clarity behaviours.

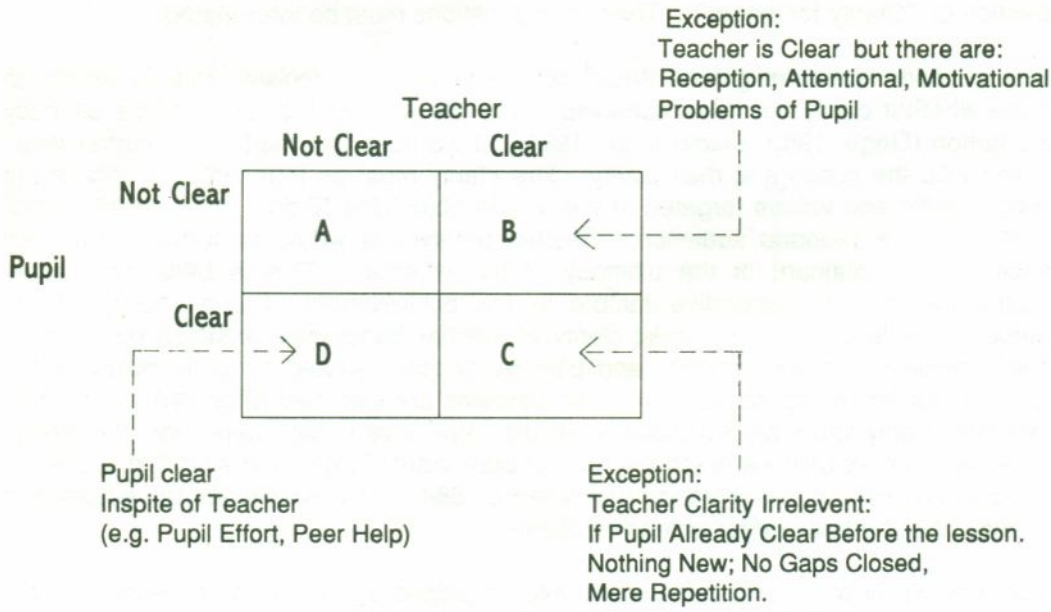

Figure 2: Teacher Clarity in Relation to Pupil Clarity

Extraneous factors must be controlled for the establishment of such a connection between teacher clarity and pupil clarity. This issue is related to the internal validity of the research design.

This call for an increased focus on pupil clarity entails a sharper understanding of the nature of pupil clarity, especially at the criterion level. There is also the need to obtain valid measures of pupil clarity which truly reflect the effects of teacher clarity. This is crucial because pupil clarity is the ultimate target and criterion. Since it occupies such an important position, it is essential that pupil clarity is taken into account when we are evaluating teacher clarity and its consequences. This can only be successfully accomplished if we give sufficient attention and weight to the factor of individual differences in pupil clarity in a lesson. This factor of variations in pupil clarity can then be used to help us understand teacher clarity and its effects on the pupils.

Examples of this variability in pupil clarity are seen when some pupils claim to be clear on grounds of clarity in the basics, whilst others are clear for different reasons. The clarity of the latter may be the result of elaborations and extensions into the higher realms of insight or understanding. Figure 3 suggest different aspects of pupil clarity of the substance of the lesson. Some may be more clear of the procedures in solving a problem, whilst others became clear because key words and their meanings were clearer after the teacher's explanations.

Even in the understanding of the same concept, pupil clarity may be found at different levels. The flexible, creative and challenging teacher may be able to help some of the pupils achieve insights of relationships at the highest levels. Others in the same class and for the same concept may achieve only the minimal level of clarity. There are, therefore, different degrees of clarity for different pupils.

Figure 3: Important Aspects of Pupil Clarity of the Substance in a Lesson

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Statements by a Pupil in the Context of a Particular Lesson: I was not clear before but I am now clearer because .....;

OR

I understand better now because.....

I. Teacher's Initiative: Resulting in Pupil Clarity

(a) I am clear about the teacher's instructions concerning what he wants or expects from me. e.g. Identify; Refer to ; List the following;

Do this

(b) I am clearer about the meanings of these key words and terms. e.g. Evaporation; Condensation.

(c) I am clearer about these facts or propositions. e.g. The earth is a spheroid; The earth rotates.

(d) I am clearer about these concepts. e.g. The Water vapour; Precipitation.

(e) I am clearer about the differences between confusible facts, propositions and concepts. e.g. Rotation and revolution; Irrigation and drainage.

(f) I am clearer about these principles. e.g. Boyle's Law; Supply and Demand.

(g) I am clearer about the interconnections within a cluster of important pieces of information in the lesson. e.g. Rotation of the earth, day and night; Time, longitude and earth's rotation.

(h) I am clearer about the steps or procedures for solving this problem. e.g. Simultaneous equations; Bearing of a location from a reference point.

(i) I am clear about the network of relationships extending from what I already know to new pieces of information presented in the lesson (i.e. extension). e.g. Known: evaporation, saturation condensation and rain;

AND

Extension to: different types of cooling leading to different types of rain.

(j) I am clearer and I see a pattern with its web of interrelationships. e.g. Patterns of settlements and physical factors; Contour patterns and land forms; Hydrological cycle.

(k) I am clearer about the objectives of the lesson.

II. Pupil Questions or Information Seeking Behaviours, and Teacher's or Peer's Responses, or Interactions: Resulting in Pupil Clarity

Categories are the same as in I i.e. (a) to (k)

III. Spontaneous, Inadvertent or Planned Correction of the Pupil's Misconceptions and Doubts : Resulting in Pupil Clarity

Categories are the same as in I i.e. (a) to (k)

IV. Pupil Effort and Initiative Stimulated by Observing, Manipulating, Structuring, Reading a Book, Thinking or Reflecting : Resulting in Pupil Clarity.

Categories are the same as in I i.e. (a) to (k).

Averaging pupil clarity is sometimes necessary and called for. However, such an averaging exercise conceals important and very significant variations in pupil clarity. This will then most certainly restrict and adversely affect our understanding of teacher clarity.

Although it has been argued that pupil clarity in terms of the substance of the lesson (i.e. subject matter in the objectives), has been neglected and needs to be given a pivotal place in teacher and pupil clarity studies, we have not denied the importance of pupil clarity of teacher behaviours. This is another aspect of pupil clarity. Pupil clarity of teacher behaviours becomes especially important when the integration between teacher behaviours and the substance of the lesson is close, tight and inseparable.

Shulman (1986) sees this type of desirable integration of substance in the lesson and suitable pedagogical competencies, in the concept of pedagogic content knowledge. This pedagogic content knowledge and their corresponding teacher behaviours in actual teacher performance during a specific lesson, must be given attention. Pupil clarity of such teacher behaviours in these cases, deserves the concern it has been accorded.

Pedagogic content knowledge and their corresponding teacher behaviours, are best seen when the teacher is applying and integrating his pedagogical skills to his understanding of the subject matter, in attempting to attain the objectives of the lesson. As he applies pedagogical techniques in, for example, the representation of subject matter, the boundaries between pedagogical teacher behaviours and subject matter knowledge become less distinct (McNamara, 1991 : 119). The evaluation of teacher behaviours ensuing from this pedagogic content knowledge, by pupils would reflect closely pupil clarity of the substance in the lesson. Pupil clarity of the substance and pupil clarity of teacher behaviours overlap in such instances.

An example is when the teacher is representing the structure of and relationships within an organization, schematically, by using diagrams and flow charts. In this example, pupil clarity of pedagogic teacher behaviours in the use of diagrams and charts and pupil clarity of the substance, merge and integrate. The link between pupil clarity of teacher behaviours and pupil clarity of the substance in the lesson, is strong in such cases. Another example of this type of link is between teacher behaviours involved in explaining the concepts of

rotation and revolution of the earth with the use of models and charts. These cases of tighter links and integration between teacher behaviours and the substance in the lesson are characterised by specificity of subject matter and the appropriate application of particular pedagogic competencies and teaching aids. Pupil clarity of the substance of content in the lesson and pupil clarity of the pedagogic teacher behaviours, cannot be easily separated in such specific cases.

In cases where the integration between pedagogic teacher behaviours and the substance of the lesson is weak, then the use of measures of pupil clarity based on teacher behaviours to reflect pupil clarity of the substance in the lesson, is less defensible. An example is when the teacher writes and draws beautifully on the blackboard. His notes and drawings on the blackboard are, however, inconsequential or are of marginal value for the mastery of the essential concepts. The pupils may rate him highly for neatness, the copious notes and the attractive drawings on the blackboard. Pupil clarity of teacher behaviours pertaining to blackboard work, receives high scores. The danger here is when many pupils have still not understood the essential and core concepts. Pupil clarity of the substance is less than satisfactory in such cases. In Figure 2, Cell B illustrates this point. The teacher behaviours are rated as clear by the pupils, whilst the pupils are still not clear with regard to important concepts. In these instances, the high ratings of the teacher's pedagogic behaviours do not explain much of the degrees of and variations in pupil clarity of the substance in the lesson. Hence, measures of pupil clarity of teacher behaviours must be used with caution.

Relationship Between Teacher Clarity and Pupil Clarity

We need to extend our current conceptual framework for teacher clarity. This is in order to enable us to understand in greater detail and depth, teacher clarity and its main effects, namely pupil clarity. We have to understand more clearly the nature of pupil clarity and how it is affected by teacher clarity. It is also necessary for us to address difficult issues of the various based and reasons for clarity amongst pupils. More importantly too, is the difficult fact that some pupils are clearer than others for the same substance and with the same teacher. The clarity of some may only be at the basic levels whilst the clarity of others may soar to much higher levels. To ignore these variations in pupil clarity, with teacher and substance controlled, would only inhibit our understanding of the relationship between teacher clarity and pupil clarity.

Figure 4 attempts to elucidate these variations in out-comes as seen in differences in degrees of pupil clarity attained.

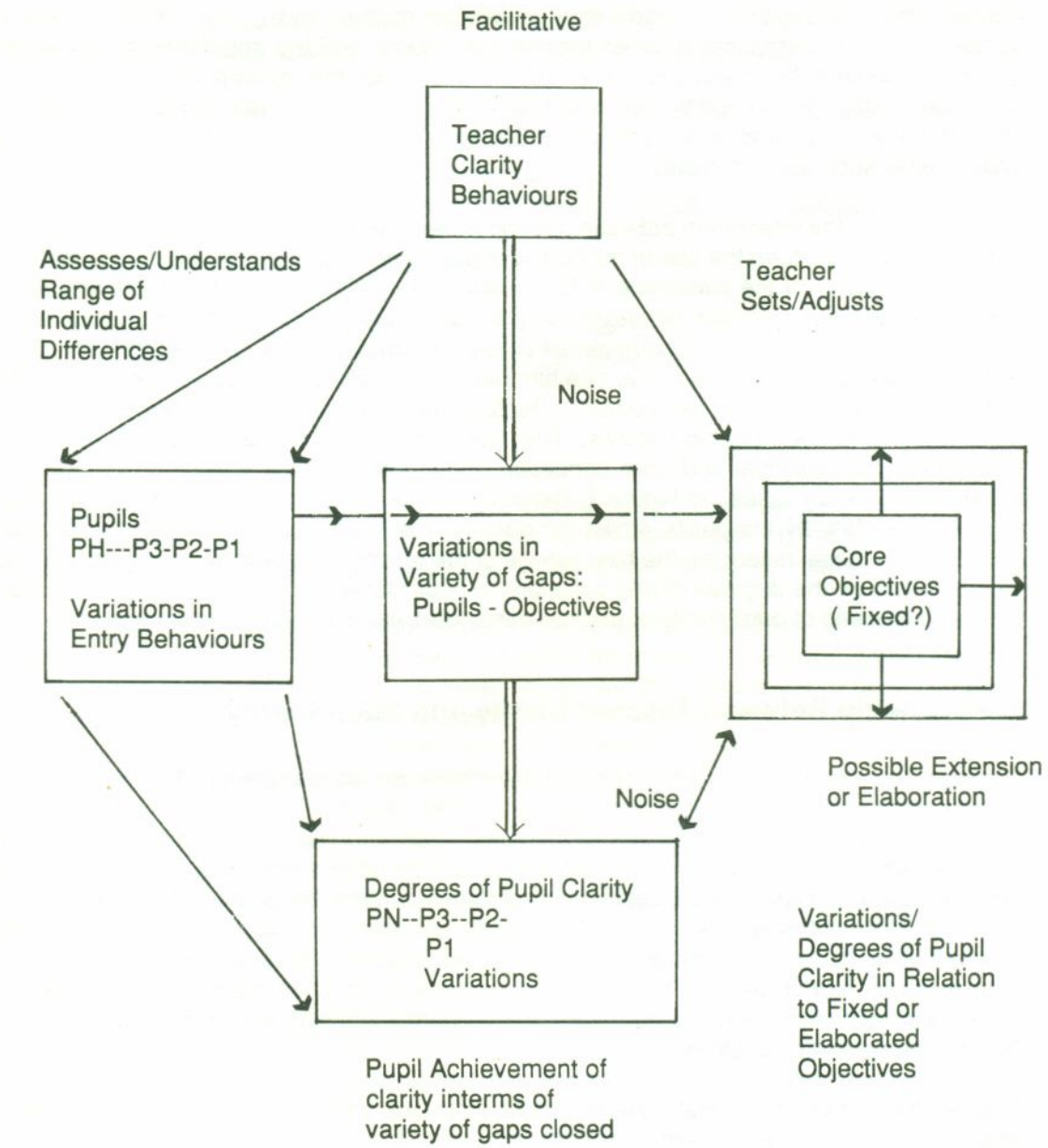

Figure 4: Objectives, Pupil Entry Behaviours, Teacher Clarity Behaviours and Degrees of Pupil Clarity

We are faced with the focal problem of explaining the relationship between the top box with teacher clarity behaviours and the bottom box with degrees of pupil clarity as the outcome. We have already seen in Figure 2 that the relationship between teacher clarity and pupil clarity is not such a simple and direct one. In Figure 4, we see that the arrow connecting teacher clarity and pupil clarity is beset with noise. We know that there are variations in pupils' tolerance and resistance to this noise factor. In addition, there may be other problems and differences in pupil motivation, attention and reception. These together mar, and may even suppress the relationship between teacher clarity and pupil clarity.

In Figure 4, the vertical relationship between teacher clarity and pupil clarity becomes more meaningful and sharper when the left box with variations in entry behaviours of pupils is related to the right box with objectives (core or extensions). Teacher clarity behaviours do not lead directly to the criterion of pupil clarity. It must take into account or work through variations in entry behaviours of pupils. Bloom (1976) has found that this factor alone accounts for 50% of the variance in the criterion. Additionally, in a particular lesson, this becomes even more relevant when it is related to the objectives. The horizontal arrow in Figure 4 connecting the left box and right box depicts this relationship between pupil entry behaviours and objectives. This horizontal arrow and the central box signify the gaps between entry behaviours and objectives. In reality, there are variations in this horizontal arrow or central box. The variations can be in terms of the shere size of the gaps or in the variety of gaps, depending on what the pupil know or do not know at the entry stage.

The central box including the horizontal arrow and the gaps that they stand for, become more complex as the objectives are less fixed. This situation where the objectives are adjusted downwards, upwards or are extended and elaborated, is fairly common in actual classroom settings. Teachers are encouraged to be creative, flexible, adaptive and adventurous. These desirable teacher attributes result in palpable or subtle adjustments in the objectives. It is also fairly apparent that often, time constraints, unforeseen circumstances and development in the lesson implementation may necessitate such adjustments. Any adjustment made to the objectives will, in turn, produce variations in the variety and size of the gaps that exist among the different pupils.

For teacher behaviours to result in pupil clarity, they must be pertinently and effectively directed at these gaps in the central box. Each pupil becomes clear when the teacher behaviours bridge or address his gaps relevantly and effectively. Merely stating that the teacher behaviours are clear to pupils, is necessary but not sufficient. Teacher clarity and the resulting pupil clarity must find its meaning through this central box with variations in gaps in Figure 4. This is a more pointed and powerful way of understanding the relationship between teacher clarity and pupil clarity. Clarity is explained in terms of the spanning of these individualized gaps of each pupil.

We could, of course, peg degrees of pupil clarity (bottom box in Figure 4) to performance on a criterion achievement test. The advantages are obvious as we would have an objective and baseline measure of pupil clarity. This emphasis on an objectives and baseline measure of pupil achievement may, however, cloud the picture of degrees of pupil clarity. This is largely because the left box with variations in pupil entry behaviours, has not been sufficiently taken into account. When the left box is ignored, we have doubts whether the scores of this criterion test can be explained fully by teacher clarity behaviours. Pupils may score on items they were already clear about, even before the lesson. The scores in the

criterion test anchoring pupil clarity, then captures previous knowledge, and attributes it to teacher clarity behaviours. Many other entraneous factors too may be included and affect variations in these scores from the criterion achievement test. We may be tempted to explain them by simply attributing them to the teacher clarity factor.

The above objections argue that we use an idiographic approach to complement the more nomothetic approach. The crux of the problem and the target for this idiographic approach is located in the central box (Figure 4) of variations in pupil objective gaps. Only then would we understand more fully the fact that some pupils may achieve clarity for similar reasons whilst others may be clear for different reasons. Some are only clear pertaining to certain basic gaps whilst others may have achieved clarity at much higher levels with other gaps. The relationship between teacher clarity and pupil clarity though complex becomes clearer as we interpret it in terms of the gaps in the central box in Figure 4. Teacher clarity must, therefore, be rooted in pupil clarity through the bridging and closure of these gaps.

We have already indicated that the pupil - objective gaps in the central box in Figure 4, express the differences between the entry levels and the objectives of a lesson, for each pupil. These gaps which must be addressed and spanned in a lesson, may be common amongst many pupils. However, some of these gaps are idiosyncratic largely because of all the possible variations in the pupils' entry behaviours. It should be pointed out that not all the pupils have identical objectives. Some are more concerned with the core objectives, whilst others have acquired during the lesson, extended or elaborated objectives. The teacher too has an influence on whether the objectives are strictly circumscribed or extended and elaborated. This is the consequence of encouraging and exhorting teachers to be challenging and make needed adjustments in a lesson. It is evident that such interactions between pupils and teacher, can affect the nature, sizes and variations of the gaps that need to be answered.

We can think of these gaps as being made-up of nodes with linkages interconnecting them. These nodes represent propositions, facts and concepts. The nodes are interrelated weblike through all types of linkages to other nodes. These linkages symbolize relationships. The nodes and their linkages may be arranged hierarchically or associatively or both (Greeno et al., 1978; Solso, 1988). This hypothesis is consistent with research findings about long term memory (Bourne et al., 1986; Houston, 1986; Solso, 1988). It is also consistent with research findings in the field of psycholinguistics (Clark et al., 1977; Foss et al., 1978), especially in the area of semantic memory. In the field of semantics, we meet with similar ideas such as referential or denotative meaning, sense, sense relationships, intensional and extensional meanings (Ullman, 1962; Lyons, 1968; Chafe, 1970; Clark et al., 1977; Bolinger et al., 1981). Some of these ideas like semantic components and their interconnections, support the concepts of nodes and linkages (Clark et al., 1977).

More specifically, we can think of these gaps in terms of:

(a) missing nodes; and

(b) missing linkages.

Teacher clarity involves the construction of nodes and linkages to bridge the gaps between pupil entry behaviours and the lesson objectives. This is seen in two ways, namely:

(a) the construction of new nodes and new linkages which are then assimilated into the existing cognitive schemes of the pupil (Flavell, 1963);

(b) the modification of old nodes and old linkages through processes of accommodation. This happens when the teacher gives new information and corrects misconceptions.The pupil then accommodates through modifying the existing cognitive schemes (Flavell, 1963).

Pupil clarity is the outcome of such construction and modification efforts. It is based on and achieved through filling-in and extending with these nodes and linkages. The actual achievement of pupil clarity is also dependent on the interaction and integration of the old and the new through processes of progressive reconciliation (Ausubel, 1968). A higher degree of pupil clarity may also be achieved through processes of differentiation. This usually takes place when new nodes, sub-nodes and their linkages are introduced. In such cases, a more fine-grained, sharply focused and detailed clarity is achieved through progressive differentiation (Ausubel, 1986). The adding of more details can also be accomplished through processes of elaboration (Houston, 1986; Bourne et al., 1986; Solso, 1988). These elaborative processes also contribute to a higher degree of pupil clarity.

Pupil clarity is founded on meeting the specific and common needs of the various pupils in terms of the gaps between entry behaviours and lesson objectives. As these variety of gaps, both common and specific, are met through different ways, various degrees of clarity result among the pupils. Some understand more whilst others understand less. It is unlikely that the levels of clarity achieved by all the pupils are identical. As the pupils attain different degrees of clarity concerning a variety of aspects of the lesson, the teacher is then judged to be clear, correspondingly. Similarly, it is unlikely that the teacher is identically clear to all the pupils on identical grounds.

In attempting to clarify and trace the relationship between teacher clarity and pupil clarity, we have to locate and explain the factor of pupil effort in the lesson. In Figure 2, in particular Cell D, where the teacher is not clear but the pupil is clear, the causal connection is not there, or is at best very tenuous. In some other cases, the teacher provided relevant but minimal help and stimulation. Some pupils on their own would capitalize on these minimal help and cues. They would then go on to achieve the highest levels of clarity, largely through their own efforts. Such cases would caution us against attributing, completely and hastily, clarity or the lack of it amongst pupils to the factor of teacher clarity behaviours.

Special attention and emphasis must be attached to the importance of the factor of pupil effort in the attainment of the different degrees of their own clarity. In this context, it is necessary to recognize the fact that it is the effective teacher who can stimulate and guide pupil efforts to maximal levels. When pupil clarity results, in such examples, then the teacher should be given credit. However, was pupil clarity the result of the fact that teacher was clear, or was it because of his effectiveness? This is a question that is related to the issues of the construct of teacher clarity and the construct of teacher effectiveness (Gage, 1984; Cruickshank, 1989).

It is fairly evident that in analyzing the relationship between teacher clarity and pupil clarity, we have an over lapping component when it was the teacher who stimulated and generated pupil efforts in the direction of the achievement of clarity. There is also a non-overlapping component when the pupil, independent and inspite of the teacher, generated his own efforts to work towards the achievement of his clarity. It is also possible that there is a significant interaction component in these teacher and pupil factors in producing pupil efforts for the attainment of, especially, pupil clarity. The challenge is to use this interaction factor as an additional explanatory factor in the relationship between teacher clarity and pupil clarity.

Research Implications

Cruickshank (1989) and his research associates using the nomothetic approach have revealed and verified much about the multidimensional nature of teacher clarity. Although there have been significant advances in our understanding of teacher clarity through this type of research approach, some have drawn attention to its shortcomings (Ling, 1986; 1989/90). Cruickshank and his associates in focusing on teacher clarity through teacher behaviours evaluated by pupils as clear, have left us with thorny unanswered questions. Their research approach has created the necessity for one more essential inferential step with thier findings. There is still the need to infer that the teacher behaviours which are perceived and evaluated as clear, have indeed caused the pupils to be clear in terms of the substance in the lesson objectives.

It is quite evident that we have to extend our thinking and analysis, one step further. The research question should not be merely focused on the clarity of teacher behaviours, but must also be directed at the issue of whether the pupils are actually clear about the substance of the lesson. This then leads us to the crux of the whole problem and exercise, that is the necessity to conceptualize research questions aimed at the central relationship between teacher clarity and pupil clarity (Figure 4), and their varied effects.

The new focus is on the connection or bond between teacher clarity and pupil clarity. The former being the independent variable, and the latter as the dependent variable. We have to also focus on; additionally, the processes intervening the input and the output phases. The main example is the processes occurring between teacher clarity behaviours and the resultant pupil clarity. There is also the necessity to examine the varied consequences of this relationship.

As in other research studies concerned with important relationships, we should also be interested in a host of relevant variables which could affect this teacher clarity and pupil clarity relationship. Among the more important concerns are, namely:

(a) the variations in and variety of the gaps between pupils and the lesson objectives (Figure 4). These gaps are the main concerns of the teacher clarity and pupil clarity relationship;

(b) the language factor in both teacher clarity and pupil clarity; and receptional problems;

(c) aspects pertaining to teacher clarity behaviours like decision-making, creativity, adaptation, flexibility; personality and other factors;

(d) individual differences amongst pupils and teachers (e.g. prerequisites, intelligence, motivation etc.); trade-offs in more heterogeneous groups;

(e) objective or goal setting by teachers and some pupils, and their effects on other pupils;

(f) the nature and degrees of pupil clarity, and the different types of criterion measures to reflect pupil clarity;

(g) the substance factor in the lesson objective, and the teacher's command; degrees of pupils' clarity of different components of the subject matter; the relationship between substance and pedagogy;

(h) constraints in the school and classroom which are relevant (e.g. time, extra help from peers or tutors, etc.).

A significant number of the problematic areas identified in the relationship between teacher clarity and pupil clarity, are not easily investigated using the nomothetic research approaches. Some of these are the idiosyncratic gaps among different pupils (Figure 4); processes relating and intervening teacher clarity and pupil clarity; and variations in degrees of clarity achieved amongst different pupils in different aspects of the lesson. These issues and their research questions are best investigated with more idiographic research approaches. A main example of this is the clinical approach used by Piaget (Flavell, 1963; 1977) in investigating cognitive development. The indepth probes in individual interviews associated with the Piagetian techniques are more revealing of individual variations and processes. The impact and effects of the teacher on each pupil (or the one probed in the interview) are better understood in greater depth and detail. The picture obtained is more idiographic and individualized pertaining to the consequences of teacher clarity or the lack of it, as constrasted with a generalized and averaged picture of teacher clarity. It also addresses in a more pointed manner why the teacher is clear to each pupil with reference to specific understanding of the different subject matter in the lesson. In addition, it is also possible to investigate and probe the variations in degrees of clarity actually achieved amongst pupils as the result of certain teacher behaviours with particular components of the substance in the lesson. The actual connections between teacher clarity and pupil clarity are clearer and more real as they are more personalized, as against being more generalized. This will enable us to understand more sharply how each pupil meets his own needs with the teacher's help, and how he clears his misconceptions, doubts and ignorance, and achieves a particular level of clarity or varying degrees of clarity at other times. This picture may also include why a pupil fails to attain clarity even at the basic level. For others, we may obtain glimpses of their clarity as they are stretched and extended to much higher levels of clarity beyond the basic level. This investigation of the relationship between teacher clarity and pupil clarity takes on more concrete and realistic terms and meanings as we understand and approximate more accurately how each member of the class is helped to find his way to his levels of clarity or lack of clarity.

This idiographic approach has received far less attention than the more generalized and nomothetic approach focusing on the group. We need both these approaches to arrive at a more complete and balanced picture of the actual relationship between teacher clarity and pupil clarity.

Conclusion

In this exercise, we have sought to push the boundaries of our understanding, one step further. We strove for a deeper and more meaningful understanding of teacher clarity by extending the current framework of thinking. We believe that this deeper understanding can only be arrived at when we effectively construct the relationship between teacher clarity and pupil clarity. This is the critical nexus that has to be clarified and understood better. It must not be merely with clarity of teacher behaviours alone, but it must also be with pupil clarity of the substance of the lesson. Our efforts to stretch and extend our understanding further begins from this point when we realize that the construct of teacher clarity should not and cannot stand by itself. It is best understood in terms of pupil clarity. Pupil clarity gives meaning to teacher clarity.

The issues involved with this extended conceptual framework become even more multidimensional and complex. There are no simple and easy answers to such complex issues, which are satisfying. Unless we are able to formulate the right questions, analyze and investigate the problems accurately in a balanced fashion, it is unlikely our understanding of teacher clarity or pupil clarity can be complete and more fruitful. It must not be dictated exclusively by concerns of the easy availability of objective measures alone. This might force us to take a more restrictive view of teacher clarity, that is through clarity of teacher behaviours. If we are limited in this way, then we pay the price of a restricted, oversimplified and distorted understanding of a set of very complex issues. This, in turn, will leave too many less than satisfied with our explanations and answers to the difficult issues in regard to clarity and its essence.

The idiographic approach demands time and efforts beyond our normal research investments. We need this additional approach together with the more usual nomothetic approach, to unravel more fully and clearly the difficult issues raised in this article concerning the central relationship between teacher clarity and pupil clarity, and the nature of clarity. Only then are we able to push further the boundaries of our understanding of clarity in a teaching and learning situation to higher, finer and more meaningful levels.

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