Theoretical Incompatibilities in Teachers' Self-Understandings of Educational Practice: An Examination Using Q Methodology

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Abstract: *This study uses Q-methodology to investigate teachers' and student teachers' theoretical perspectives concerning educational practice and their possible incompatibilities, based on work by Kieran Egan. Q methodology, as a small-sample, intensive methodology, assists in obtaining understandings concerning the subjectivity of participants that are not possible through more traditional means. It may also, as demonstrated in this paper, provide evidence in support of theoretical work. Four factors, though highly correlated, map closely to Egan's descriptions of varieties of educational practices. The findings are considered in the light of Charles Taylor's work, which provides a way to theorize the relationship between thought and action. Taylor maintains that there is always a pre-theoretical understanding concerning what is happening in a social practice, such as teaching, that requires the participants to have self-descriptions that are constitutive of their involvement. Our findings challenge teachers to reflect more deeply on their practices.*

Introduction

The nature and purpose of education have been matters of debate since antiquity. The debate has intensified since the implementation of mass schooling in Western society during the nineteenth and twentieth centuries, especially given the massive investment that modern states put into schooling the young. Varying views on the purposes of schooling underpin an abundance of theories of and about education, which incorporate ideas from psychology, politics, ethics, economics, religion, culture, epistemology, aesthetics, feminism and ethics. Thoughts on education from Plato, Aristotle, Aquinas, and Locke, as well as ideas from the more contemporary works of Pestalozi, Froebel, Piaget, Montessori, Wollstonecraft, Newman, Rousseau,

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Mann, Marx, Dewey, Vygotsky and Gardner suggest the range of influences felt in today's schools and classrooms.

The educational systems in Western society today reflect this complex and rich tradition of difference of opinion about the purpose, goals and methods of educating at all levels. These traditions penetrate educational legislation and policy, school administration, classroom organization, pedagogy, curriculum, and teaching practices. They also guide parental expectations and goals for their children's education. Despite the prevalence of competing theories, most of the public discourse takes place about "practical" matters. But underneath the public discourse that proceeds atheoretically and instrumentally, we find the irredeemable conflicts in a theory-laden foundation.

Whether or not these disagreements can or should be synthesized into a grand unified theory of education is also part of the debate. Kieran Egan is one educational thinker who consistently maintains the necessity for discussing this issue as part of any attempt at improving education. For thirty years, Egan's work as a philosopher and historian of education, as a creator of imaginative curriculum ideas, and as a teacher educator has made him a leading theorist of the complexity of contemporary ideas and practices. In a number of his works (see, for example, Egan, 1997 and Egan, 2001) he claims that these competing conceptions of education are based on incompatible positions. This is, in his view, not merely an academic matter between competing schools of educational theory. It is the cause of many of the practical difficulties found in today's educational systems. Practical difficulties, he says, are not caused by the usual suspects:

> inadequately educated teachers . . . or the absence of market incentives, or the inequities of capitalist societies, or the lack of local control over schools, or the genetic intellectual incapacity of 85% of the population to benefit from instruction in more than basic literacy and skills, or drugs, or the breakdown of the nuclear family and family values, or an irrelevant academic curriculum, or a trivial curriculum filled only with the immediately relevant, or short-sighted politicians demanding hopelessly crude achievement tests while grossly underfunding the education system, or a lack of commitment to excellence, or vacuous schools of education, or mindless TV and other mass-media, or failure to attend to some specific research results (Egan, 1997, p. 2).

Egan acknowledges the damage such items on his list can cause. But, he argues, there is a much more serious problem at the heart of the educational enterprise itself, derived from a largely unexamined theoretical confusion inherent in the dominant theories of education that are presently operative with school systems. In the Q methodology study reported in this paper, we explored Egan's contention that theoretical incompatibilities are operative, by investigating teacher's views related to Egan's assumptions.

Before turning to this study, we first summarize Egan's contributions and describe the main theories of education which he believes are incompatible in educational practice today. Following a presentation of our findings, we offer some reflections based on the thinking of Charles Taylor.

Main Ideas in Educational Theories Today

According to Egan (1997), the good news is that there are only three main ideas in mainstream Anglo-American educational discourse. However, the bad news is that "these three ideas are mutually incompatible, and the primary cause of our long-continuing educational crisis" (p. 3). He bases his claim on an analysis of the statements, both explicit and implicit, that can be found in the educational literature, ranging from philosophical discussions and textbook guidance, government policy documents, curricula used in teacher preparation, to statements by teachers themselves. The three main ideas represent a complex of traditions which can be traced back to Plato and Aristotle, but which primarily emerged from debates in the nineteenth century about the nature of the child and her appropriate socialization. One idea holds that education should focus on socializing the child; one that it should focus on the intellect of the child; and the third that education should focus on the natural child.

The First Idea: Socializing the Child

Today's dominant conception of education includes as one of its constituent ideas the socialization of the young. Socialization signifies the process of "initiating the young into the knowledge skills, values, and commitments common to the adult members of the society" (Egan, 1997, p. 10). On this theme, Egan notes:

> The process of socialization is central to the mandate of schools today. . . .While we might not feel comfortable with the term, we accept that the prominent aim of schools is the homogenization of children. . . .The public voices that associate education primarily with jobs, the economy, and the production of good citizens reflect a predominantly socializing emphasis. . . . The very structure of modern schools in the West, with its age cohorts, class groupings, team sports, and so on, encourages conformity to modern social norms. Such structures can accommodate only a very limited range of nonconformity. Students learn, more or less, to fit in for their own good (1997, p. 11).

Socialization is particularly evident in the ideas of those who see the school as the place where the young should take subjects such as consumer education, or be involved in programs that seek to combat drug use or promote auto maintenance, or learn other useful knowledge and skills. School is regarded primarily as a social agency, sensitive to societies' changing needs, and flexible in changing its programs to respond to those needs. Recently, for example, we note the significant prominence given to

demands that schools ensure that students become familiar with information technologies and their range of applications. Another strong example arises in statements calling on teachers to assume a role as a social facilitator. As facilitators, teachers act as counselors working along with parents to help students adjust to the strains and challenges of modern society. Egan elaborates, "[s]ports, travel, exchanges, visits to monuments and courts and government buildings, social studies activities . . .help students understand their local environment, [and] tend all to be supported as helping to socialize the young. The teacher, from the perspective of this idea, is an important social worker, primarily valuable as a role-model who exemplifies the values, beliefs, and norms of the dominant society" (1997, p. 12).

The Second Idea: The Intellect of the Child

The second main idea focuses on the intellect of the child. This idea of education has to do with the intellectual cultivation of the young in ways which are not justified in terms of social utility. Knowledge is valued for its presumed benefit to the mind of the student. According to Egan, this idea is based on Plato's educational theories, which hold that only an initiation into such knowledge can carry the mind to rationality and a secure access to reality:

> Plato's revolutionary idea was that education should not be primarily concerned with equipping students to develop the knowledge and skills best suited to ensuring their success as citizens, sharing the norms and values of their peers. Rather, education was to be a process of learning those forms of knowledge that would give students a privileged, rational view of reality. Only by disciplined study of increasingly abstract forms of knowledge could the mind transcend the conventional beliefs, prejudices and stereotypes of the time, and finally see reality clearly. . . . He proposes that the everyday world disclosed by our perceptions and conventional beliefs can somehow be better understood by a rational grasp of some transcendent world of abstract theoretic ideas, which are accessible only after decades of refined scholarly activity guided by a kind of spiritual commitment (1997, pp. 13-14).

Egan points out that this notion of the curriculum is still very influential today. It would be difficult to propose a conception of education without it. Schools include in their curriculum a range of subject matter that is assumed to do something valuable for students' minds and give them a more realistic grasp of the world. He points out that schools concentrate on facts of the solar system, rather than "have them believe that [a planet] is a wandering star erratically orbiting the earth and influencing their daily fortune by its association with other stars." Similarly, other subjects, such as drama and ancient history, are taught even though most students will never have a practical need for such knowledge. Egan continues, "the place of such topics in the curriculum is usually justified in rather vague terms, variously argued

by those who claim that they are of 'educational value' and benefit the minds of students. In Plato's idea, the mind is what it learns, and so selecting the content of the curriculum is vital" (1997, p.14).

One important institutional implication of this intellectual-child idea is that the school curriculum should not be decided by society at large but by members of higher education institutions, particularly those at universities. School should, in Michael Oakeshott's (1989) terms, be a "place apart" where the timeless verities are studied. Schools should focus on teaching an academic program and removing or downplaying programs that do not serve its central educative purpose. Such a curriculum, Egan notes,

> would be constructed primarily on grounds of intellectual and cultural, rather than more generally social, value, and so literature and history, the sciences and mathematics will receive most curriculum time, and subjects like Latin, Greek, and art history will stake a claim to a presence in the curriculum denied them when the other ideas have been predominant. In schools dominated by this idea, the teacher will tend to occupy a more distant, authoritative and even authoritarian role because teachers properly embody the authority that comes from being an expert in the relevant subject-matter (1997, p. 15).

The Third Idea: The Natural Child

Egan's third idea is based on the notion that education should follow the natural and spontaneous development of the child's whole self. It has its roots in the work of Jean-Jacques Rousseau, but its most common expression is derived from the work of John Dewey and Jean Piaget.

Rousseau's central and continuous theme was that if you want students to understand what you teach, then you must make your methods of teaching conform to the nature of students' learning: "The internal development of our faculties and organs is the education of nature. The use we learn to make of this development is the education of men" (Rousseau, Foxley, & Jimack, 1993/1911, p. 11). So, to be able to educate, we must first understand that internal development process. The most important area of educational study, then, is the nature of students' development, learning, motivation, and so on. The more we know about these, the more efficient and humane we can make the educational process. The key is that underlying natural development: "Fix your eye on nature, follow the path traced by her" (Rousseau et al., 1993/1911, p. 14). Again, in Egan's words:

> Teachers should be involved in the. . . careful observation and study of students, recognition of the distinctive forms of learning and sense-making that characterize different ages, construction of methods of teaching that engage students' distinctive forms of learning, emphasis on individual differences among learners, observation that students learn much better when they are themselves active, and insistence that the student's own discovery is vastly more effective than the tutor's

"words, words, words," are all features of Rousseau's educational scheme (1997, p.16).

Further, in Egan's view, Rousseau's ideas have become deeply embedded in a "common-sense," taken-for-granted sort of way in education today. Few educationists would seriously argue against the propositions that students have varying learning styles that need to be recognized and accommodated, or that teachers should encourage students' active learning, or that they should accommodate differences among students at different ages.

Incompatibility of the Three Ideas

Egan asserts that the three main ideas of educational practice are explicitly evident in current practice but are mutually incompatible. Moreover, because these incompatibilities are not recognized, they cause major problems in modern educational institutions and in the way in which teachers operate.

It is clear that in describing these ideas as "incompatible," Egan does not mean that schools can't function at all. Rather his argument is that the degree to which any one of these ideas, and the educational aims associated with it, is given scope in the school, it will tend to undercut the ability to adequately achieve the other aims. This is not merely the common claim that there are inevitable tension among these somewhat distinct aims, "tensions" can be overcome by judicious management, but rather that as educators work to achieve each distinct aim they are compelled to undermine the achievement of the other aims. Schooling thus tends commonly to become what he calls a series of "flaccid compromises."

Egan posits that one of the results of this incompatibility is that the debate among "stakeholder" groups—parents, governments, press, professional educators, the corporate world, "the public," as well as teachers—tends to become incoherent because their promotion of ideas that are incompatible is not realized. The debaters, therefore, tend to assume that there is a set of common ideas which undergird the school system and that all that is necessary is the power and the techniques necessary to implement the right kind of change. Egan suggests that this is incorrect. Without an understanding of the inherent conflicts that are constitutive of the schooling system, much work and effort will be in vain.

As is well-known, it is often difficult for practical people to see the importance of resolving theoretical differences. But, some resolution is called for. Without an increased perspicacity on the part of stakeholder groups, there is the likelihood that the school will remain a place of inherent conflict. One possible avenue toward resolution is provided in Egan's own work. While he talks about three old ideas that are in conflict, he claims that there is one new approach that may present a way out of the perplexing difficulties facing the modern school. This "new idea," based on the development of cognitive tools, emerges from Egan's synthesis of his own theories of development with those of the educational theorist, Lev Vygotsky.

Vygotsky, Egan claims, holds that "we make sense of the world by use of mediating intellectual tools that in turn profoundly influence the kind of sense that we make. Our intellectual development, then, cannot adequately be understood in terms of the knowledge we accumulate or in terms of psychological stages like Piaget's but requires an understanding of the role played by the intellectual tools available in the society in which a person grows" (1997, p. 29).

A Note on "Self-defining Theories"

The previous sections set out Egan's three ideas of education and his claim that they are fundamentally incompatible. However, in order to proceed with an investigation of these ideas, it is necessary to discuss their *form*. We wish to argue that these theories differ from theories that are common in the physical sciences. This does not mean to say that such theories, which can assist us in exploring the mechanisms and properties of nature and which provide causal explanations of such phenomena, do not have their place in the study of certain aspects of the educational enterprise. However, Egan's theories, which convey the core focus that teachers use to describe and justify their practices, are of a self-definitional form. Self-definitional theories reflect the shared goods that are implied in the theories and help define a set of common understandings which the socially and historically formed practice instantiates. Put differently, these theories lack the notion of predefined causality.

In interpreting the results of our Q methodology study, we used aspects of Charles Taylor's work. In particular, Taylor provides the grounds for theorizing the relationship between thought and action. In his 1985 essay "Social theory as practice," Taylor argues that people "hold" social theories of practice differently from the way they hold scientific theories, because of differences in the respective theories' forms. It is necessary to appreciate the nature of the theories in an inquiry such as ours into the beliefs about practice that are held by practitioners. As noted above, practitioners often hold their core beliefs implicitly or pre-theoretically. Such core beliefs are often not recognized as theories, and if they are, they are not held to be general descriptions of causal relations in the real world. Instead, when elements of theory do emerge, they are entangled in self-descriptions that are constitutive of participants' involvement (Taylor, 1985, p. 93). The theories are embedded within the practitioners' view of themselves and represent not merely theories about social phenomena, but also express the identities that enable teachers to describe what is going on when they are carrying out their work. Taylor calls these the "constitutive self-understandings of practice" which not only enable participants to describe the situation but also to define and shape their work in a fundamentally normative manner (1985, pp. 92-94). The formation and maintenance of appropriate constitutive self-understandings play a crucial part in the way in which teachers act. We believe that the continued development of such self-understandings

throughout a professional life should require that the theories which underlie them be made explicit at some point so that they can be seen as theories and thus subjected to critical analysis.

The Q Methodology Study

Taylor gives a theoretical reason to support Egan's contention that practitioners are unaware of incompatibilities between an idea, or ideas, they consider should be the central focus of educators, and others' ideas. Q methodology is well-suited to discovering whether or not some of Egan's "incompatibilities" are in fact present in the educational understandings of a particular group of educators. In pursuit of that goal we designed a study to explore teachers' and student teachers' theoretical perspectives and their possible incompatibilities.

The power of Q methodology lies in its ability to gain insight into the self-understandings of the participants in the study. This is particularly useful when dealing with theoretical views which are held in a manner that conflates the normative, expressive and discursive functions. This methodology can assist in obtaining understandings concerning the interpretative subjectivity of participants that is not possible through traditional positivistic research methodology (Brown, 1993; Brown, 1980). Traditional positivist research methodologies remain prominent in educational research. Our study, like many Q studies, was designed to lead to new insights.

We chose Q methodology, as it is a way to study the "subjective" part of behavior. Q methodology makes possible the analysis of discourses that teachers engage in. Q sorting discloses the implicit structures of their discourses, and these may then be interpreted with the aid of quantitative techniques (correlation and factor analysis).

Q methodology makes it possible to correlate persons instead of tests or responses (Stephenson, 1953), thereby allowing the participants' perceptions to form the basis of the resultant factors. Rather than trying to define "independent variables" and to test them on a population of stakeholders, we can "analyze them instead from the point of view of the person who did the rating, because theirs are the actual operations at issue" (Stephenson, 1953, p. 40).

One of the major requirements for creating a good Q-methodology study lies in identifying a concourse. For our study, the relevant concourse is the array of ideas, attitudes, feelings, values and perceptions that different individuals may associate with the core idea of education's purpose. Because Egan established his idea of "incompatibility" on the bases of a theoretical analysis of historical and political discussions about education, we took his work as a good approximation of the concourse of interest. Our study thus employs Q methodology's empirical approach to investigate teachers' discourses as an exploratory exercise to complement or refute Egan's theoretical analysis. We were also interested in investigating the perspectives

of the particular group of people in our study. Unlike some Q studies, which sample the views expressed by people in the study, we wished to see if Egan's views corresponded to real teachers' views.

Implementing the Q Study

First, we identified the topic we wished to explore as the theoretical perspectives of educational stakeholders on education. We were particularly interested in that area of contemporary educational discourse that concerns competing theoretical ideas about education and the appearance of the new idea of "cognitive tools." Second, in order to obtain a series of statements that represented the discourse on the topic, we borrowed heavily from Egan's analysis of the main competing ideas in contemporary educational thought. Our main concern during the statement generation phase was to insure that the resultant set of statements represented the issues that, according to Egan, educational stakeholders hold. Third, the participants in the Q study were asked to rank 36 statements on a scale ranging from +4 ("agree with most strongly") to -4 ("disagree with most strongly").

We administered Q sorts to a total of forty-nine educators. Because this research project sought to uncover existing replicas or models of individual perspectives on education, the "person" sample included respondents from different levels of the educational system in British Columbia. Among them were seven working at the university or college level, who were mainly Ph.D. candidates; thirteen high school teachers or student teachers; seven teachers or student-teachers from middle school, eight teachers or student teachers working in elementary schools; eleven students currently pursuing Master's of Education degrees and three student teachers with no teaching experience.

Fourth, the Q sorts were the subjected to factor analysis of the rankings that allowed for the extraction of a few "typical" Q sorts (factors) that captured the common essence of several individual Q sorts. These "typical" Q sorts were then interpreted by investigators to give a verbal explanation to the discourses uncovered by the statistical procedure.

Selection of Statements from the Concourse

The main ideas in the concourse emerged from Egan's (1997, 2001) work as discussed above. The central tenets of the "three old ideas and the one new" were summarized and representative statements were selected. For the purpose of the research we have named these as follows: Dewey (Socialization), Plato (Intellect), Rousseau (Natural Child) and Vygotsky/Egan (Intellectual or Cognitive Tools). In the selection process, care was taken to make sure that these statements clearly represented the claims that Egan was making about the state of educational theorizing and modern schooling in Western societies. On the basis of this lengthy procedure of discussion and consultation, a set of statements were chosen. The chosen statements fall into four sets that represent the role of the teacher, ideal education, curriculum choices and incompatibility with other ideas (see

Table 1 for statement numbers, and the Appendix, for a full list of statements). Incompatible statements show clear points of difference with one or another of the other views. Some were taken verbatim, and others appropriately modified. The researchers piloted the statements, and discussed the overall set thoroughly.

Table 1: The Concourse Matrix

	Role of teacher	*Ideal education*	*Curriculum choices*	*Incompatibilities with other ideas*
Dewey	1, 2	3, 4	5, 6	7, 8, 33
Plato	9, 10	11, 12	13, 14	15, 16, 34
Rousseau	17, 18	19, 20	21, 22	23, 24, 35
Vygotsky/Egan	25, 26	27, 28	29, 30	31, 32, 36

Interpretation

We used PQ Method software with varimax rotation to analyze the Q sorts. A four-factor solution shows the best correspondence of participants' and Egan's views. While all four factors have eigenvalues greater than 1, factor 4 requires care. It consists of three positive and two negative significant loadings. Moreover, the negative loaders also load positively on Factor 1. The factor-loading matrix is shown in A. The factor loadings for each Q sort indicate its correlation with the factor. For example, Q-sort 18 has a significant loading of 0.82, with all scores above 0.43 significant at $p<0.01$.

Using the z scores and the weighted average placement for each statement by each factor, we determined educators' perspectives of the four factors. In doing so, we focused on the statements placed in the +4/+3 and -4 /-3 categories in the different factors. We also focused on distinguishing statements for each factor, that is, those that are statistically different from the placements of the other factors. The Appendix shows the weighted average placement (rank) of each statement by each factor. These average weighted placements are constructed through z scores that calculate the average placement of each statement by the educators who loaded significantly on the factor.

Our analysis of the factors that emerged and their weighted averages yielded the following description of the four perspectives of educators in our study.

Factor 1. Nature's Guidance and Real Life (Rousseau): Education Should Focus on the Natural Child

This factor is Egan's third incompatible idea. This idea is based on the notion that education should follow the natural and spontaneous development of the child's whole self and has its roots in the work of Jean-Jacques Rousseau. Teachers must first understand the internal development processes that lead to the child's moral and intellectual growth. The more educators know about these, the more efficient and humane can the educational process be. The key to learning is that it follows underlying natural development.

Table 2: Perspectives of Educators on the Main Theoretical Ideas in Education

Q sort	*Sorter*	*F1*	*F2*	*F3*	*F4*
1	PhD	39	**67**	17	-18
2	PhD	07	**48**	**66**	-01
3	PhD	40	**58**	-03	-13
4	PhD	37	**43**	24	24
5	PhD	33	**75**	-13	08
6	PhD	30	**47**	21	00
7	student MA	35	**63**	33	11
8	student MA	**68**	16	03	17
9	student MA	27	**72**	13	11
10	student MA	**57**	11	-02	-11
11	student MA	22	**59**	20	-11
12	student MA	**50**	28	**45**	-13
13	student MA	24	**55**	29	31
14	student MA	**46**	**46**	03	-01
15	student MA	02	**85**	18	-09
16	student MA	**59**	26	-02	19
17	elementary	**55**	22	-13	-13
18	high school	24	**82**	00	09
19	elementary	**49**	32	05	-18
20	high school	**48**	-31	14	-15
21	high school	**45**	18	-05	10
22	middle school	**54**	28	24	-01
23	college	**58**	22	30	18
24	not teaching	15	**64**	05	39
25	elementary	**53**	02	23	07
26	middle school	**51**	22	18	-13
27	middle school	**73**	11	26	-16
28	high school	**71**	10	10	-12
29	elementary	13	10	**63**	12
30	not teaching	**54**	10	32	**-01**
31	elementary	**65**	06	01	-10
32	high school	14	**50**	-28	24
33	middle school	27	10	**49**	10
34	not teaching	**66**	24	-07	-06
35	elementary	**66**	07	13	-08
36	high school	**00**	35	18	28
37	middle school	**74**	31	-05	-19

Q sort	Sorter	F1	F2	F3	F4
38	middle school	**74**	-02	29	08
39	elementary	**71**	08	10	-30
40	elementary	**62**	23	-06	15
41	high school	14	41	-06	**47**
42	middle school	**51**	07	14	12
43	student MA	**58**	**57**	03	-01
44	high school	-12	09	10	**78**
45	high school	**58**	14	11	**-51**
46	high school	09	-06	**43**	-01
47	high school	02	36	14	**43**
48	high school	38	-24	19	09
49	high school	**51**	01	-01	**-47**

Table 2 Notes: PhD indicates educators who work at university level; "student MA" indicates students who are currently pursuing their Master's degree; "elementary", "middle school", and "high school" refer to educators who work in elementary, middle, and high schools respectively. Statistically significant factor loadings ($p < 0.01$) are shown in bold. Decimals omitted.

This factor shows the strongest agreement (+4) with Statement 19, *An ideal education emphasizes individual differences among learners and takes into account their natural learning abilities. We have to recognize the importance of students' varying learning styles.* The educators who comprise Factor 1 echo their preference for emphasis on individual differences among learners with the same strong agreement (+3) with the Statement 17, *Teachers must make methods of teaching conform to the nature of student's learning.* This is the only Factor group that would prefer to see more stress on individual student needs and learning styles being brought into the school curriculum. They agreed strongly (+2) with Statement 22, *Schools need to provide more differentiation in the curriculum in order to develop the different natural talents of children - one educational plan cannot fit all. If a child has developed an interest in music but failed math, we should focus less on the area of failure and provide richer resources to develop areas of strength.* They also tend to agree (+1) with Statement 20 that, *Teachers' pre-service programs need to pay more attention to the careful observation of students, recognition of the distinctive forms of learning and sense-making that characterize different ages, and construction of methods of teaching that engage student's distinctive forms of learning.*

This preference for nature's guidance in learning and teaching is matched by a "close-to-real-life" orientation. Factor 1 respondents also agreed (+1) with Statement 21, *We need to make the curriculum in direct relevance and utility to the lives that our students will actually lead.* They also strongly agree (+2) with Statement 8, *Schools should be much closer to real-life*

situations and teach children useful knowledge for life, not abstractions that they may never use.

This interest in "real-life" and keeping education close to it may account for Factor 1 respondents' opposition to the "excellence in education" component inherent in the Platonic ideal, thus they disagreed (–2) with Statement 34, *A priority for our educational system should be excellence in those most able to attain it.* They also strongly disagreed (-4) with the Statement 14, *Literature and history, the science and mathematics should receive most curriculum time. Subjects like Latin, Greek, and art history have to be present in the curriculum if we are to produce educated people.*

Factor 1 respondents even view the socialization process of schools through an "anti-Platonic" lens as they disagreed strongly with Statement 7, *Schools should aim to produce good citizens not just future experts in particular fields.* Also, these respondents were the only ones to sort positively (+1) on Statement 18, *I believe that the teacher should merely facilitate the child's own active discovery. Teaching is not "teaching" at all. It is an act of guiding and appreciating.* They also gave positive support to Statement 31, *Children's own developing needs should be central to the curriculum, not knowledge in the textbook or that authorized by the teacher.*

Factor 2. Cognitive Tools Approach to Education (Vygotsky/Egan): Education Should Focus on Interiorization of Cultural Tools.

This factor is based on Egan's attempt to escape the incompatibility of the three older ideas and emerges from a synthesis of his own theories of child development with the educational theories of Lev Vygotsky. Education is primarily the organized activity of assisting the young to make sense of the world by use of mediating intellectual tools that in turn profoundly influence the kind of sense that we make. Our educational development, then, cannot adequately be understood in terms of becoming appropriately socialized, or merely through the knowledge we accumulate, or in terms of psychological stages but requires an understanding of the role played by cognitive/cultural tools available in the socio-cultural realm in which the child lives.

The educators who comprise Factor 2 favor the idea of cognitive tools in education and they value the wide range of cultural tools that, in their view, should be a part of schooling. They have very different views on development, but unlike other groups they don't consider development to be a gradual evolutionary type of process moving from simple to more complex. This is the only group who sorted positively (+2) Statement 27, *The more we learn about the complexity of infant's cognitive abilities, irregularities, peculiarities and differentiation of the mind, the more traditional views about development as a gradual, evolutionary process that proceed from the simple to the complex seem false.*

In teaching and curriculum planning this group of educators agreed strongly (+3) with Statement 36, *Contrary to common belief that education ought to start from to start from concrete and end in the abstract, I believe*

that even younger children are capable of understanding abstract ideas that effective instruction can facilitate. However, they disagree with the idea that teaching should be merely facilitating, and they sorted negatively (-2) Statement 18, I believe that the teacher should merely facilitate the child's own active discovery. Teaching is not "teaching" at all. It is an act of guiding and appreciating. They also consider the introduction of cognitive tools by a teacher to be the major source of development of a child's mind and therefore they most strongly agreed (+4) with the Statement 30, The complex nature of the cognitive tools of literacy, if introduced properly in teaching, encourages not only the development of logical operations but also the development of imagination, self-reflection, emotions and an awareness of the child's own thinking.

Unlike respondents that comprised Factor 1, this group does not espouse a "real-life" approach to education, and disagrees most strongly (-4) with Statement 8, *Schools should be much closer to real-life situations and teach children useful knowledge for life, not abstractions that they may never use.* In fact, they disagree with this statement more strongly than any other factor. They also sorted negatively (-2) the Statement 2, *We need to make the curriculum in direct relevance and utility to the lives that our students will actually lead.*

Factor 3. Socialization (Dewey): Education Should Focus on Socializing the Child

This Factor emerges from Egan's first idea concerning education as socializing the child. This idea of education is based on the idea that the central mandate of schools is the socialization of the young to a set of dominant attitudes. School is seen primarily as a social agency and the curriculum is mostly made up of such constructs as life skills and work preparation courses. This idea is related to the now popular idea that schools are the places where the young are prepared for life in the economy.

This group of educators, unlike any the other groups, strongly believes that teachers are important socializers in our society. They are the only group that sorted positively (+2) the Statement 1, *I believe that the teacher is an important social worker in our society.* As with the Factor 1 group factor 3 respondents sorted positively (+3) Statement 2, *I think that teachers should be, first of all, role models who exemplify the values, beliefs, and norms of our society.* However, they differ from the Factor 1 group in the apparent motive for this "role-modeling," perhaps, because they view school as primarily a social agency, which should be more sensitive to society's changing needs, and thus place less emphasis on the "needs of the child." For example, in contrast to Factor 1 they disagree strongly (-4) with the Statement 31, *Children's own developing needs should be central to the curriculum, not knowledge in the textbook or that authorized by teacher.* Accordingly, the Factor 3 respondents, again unlike Factor 1, are less inclined to view teaching as primarily a facilitative process, and therefore

they strongly disagree (-3) with the Statement 18, I believe that the teacher should merely facilitate the child's own active discovery. Teaching is not "teaching" at all. It is an act of guiding and appreciating. Because of this view of teaching the Factor 3 group shows strong preference for the idea of socialization, and it is not surprising that there is a further area of a strong disagreement between them and the Factor 1 group. The two groups disagree most strongly on the issue of differentiation in the curriculum. While Factor 1 educators agreed (+2) with the Statement 22, Factor 3 strongly disagrees (-4) with it: Schools need to provide more differentiation in the curriculum in order to develop the different natural talents of children - one educational plan cannot fit all. If a child has developed an interest in music but failed math, we should focus less on the area of failure and provide richer resources to develop areas of strength. This preference for the homogenizing aim of socialization in schools is perhaps the reason they disagree strongly with the idea of "excellence" in education. They sorted Statement 34 negatively (-3): The purpose of our educational system should be excellence in those most able to attain it. It shows that the Factor 3 respondents are concerned to further the egalitarian purpose of schooling by opposing the development of an intellectual or artistic elite.

Factor 4. Academic Initiator (Plato): Education Should Focus on "Excellence"

This Factor is related to Egan's second idea concerning the intrinsic value of educating the intellect of the child. This notion of education places the formation of the intellect and the development of reason for its own sake, at the heart of the enterprise. Knowledge is valued for its presumed benefit to the mind of the student and needs no further justification. Following Plato's educational theories, educators in this group claim that only an initiation into such knowledge can carry the mind to rationality and a secure access to reality.

Unlike any other group, Factor 4 educators shows strong preferences (+4) for the idea of "excellence in education" as a priority for the educational system as epitomized in Statement 34, *A priority for our educational system should be excellence in those most able to attain it.* More than the other groups Factor 4 shows the highest support (+4) for Statement 15, *The curriculum should be constructed primarily on the grounds of intellectual and cultural, rather than more generally social, values.* The curriculum preferences of this group are very different from any other Factor group, for example, they are the only respondents, who strongly agreed (+3) with the Statement 13, *"Excellence" in education should be the most desired aim of our schools. We need to refocus schooling on teaching academic programs and remove programs that do not serve central purpose of the school.*

Furthermore, they are also the only group who agreed (+2) with Statement 14, *Literature and history, the sciences and mathematics should receive most curriculum time. Subjects like Latin, Greek, and art history*

have to be present in the curriculum if we are to produce educated people. Also, Factor 4 comprise the only group that agreed with Statement 9, *I see nothing wrong in the teacher occupying a more distant, authoritative role because teachers properly embody the authority that comes from being an expert in the relevant subject matter.*

Discsusion

Egan (1997) argues that the modern school has developed as a result of an historic compromise among his three incompatibilities. While he does not believe that the practical difficulties that result from such attempted compromises can be overcome, he does recognize that "exposing their source is an important step to overcoming them" (p. 26). What we have done in this research can be seen as part of that "exposure" project.

From the analysis of the Q sorts, four factors emerged. Our analysis of the factors showed them to map onto one or another of the "ideas" central to Egan's discussions. The factors thus provide some evidence supporting the conclusion that the four perspectives hypothesized by Egan actually exist. However, the evidence presented by the fourth factor reveals that the idea of the "academic initiator" is not a stand-alone view. Some respondents who loaded significantly (and negatively) on this factor also loaded on factor 1. Two others have (positive) loadings significant at $p< 0.05$ on another factor. Only one respondent uniquely defines this factor.

Our study shows how the situation in practice today represents an amalgam of often divergent views concerning learning, teaching, the curriculum and the child. The finding of these four perspectives in this relatively small group of educators should not be considered as necessarily generalizable to the entire population of educators in our society. Yet, we do show some evidence that bears out Egan's hypothesis, that there exist within the educational community three commonly held but incompatible conceptions of education. We also found a conception, cognitive tools, based on his and Vygotsky's work. But this only appeared within a group of respondents who had been exposed to these ideas while attending doctoral classes at university.

If these four concepts of education can be characterized as what Taylor (1985) calls "social theories," then the importance of these findings can be seen. Taylor argues that social theory can affect practice "because it can alter our self-descriptions, and our self-descriptions can be constitutive of our practices. One of the things that social theory does . . . is make explicit the self-understandings which constitute our social life" (Taylor, 1985, pp. 104-105). However, the formulation of such a theoretical position can do more than merely describe the present state of affairs. Taylor sees such theorizing as a key factor in the ongoing process of maintaining the health of a practice. "We may be led to formulate some self-understanding in order to rescue a practice, to make it possible to continue it, to put it on a securer basis, or perhaps to reform it, to purify it. The point, one might say, of the formulation

here is just to provide the constitutive understanding necessary for the continuing, or reformed, or purified practice" (p. 105).

Thus the existence among contemporary educators of what Egan calls the "incompatibilities" means that it is necessary for them to be very aware concerning the theoretical basis of their self-understandings of practice. Is it possible to be both a full-blown Rousseauian/Piagetian and a Platonist at the same time? Is it possible to run a school system that attempts to maximize the implications of each theory?

What is clear, however, is that these incompatible views are held by teachers who are working side by side in the same institutions. However, the school system is not a monolith and what we found was that the practical difficulties potentially posed by incompatibility are probably lessened because of the distribution of conflicting theoretical positions. Put plainly, Rousseauian/Piagetian views were held mostly by respondents who worked with the elementary grades, while the Platonic group tended to come from the upper secondary grades. The Deweyan/Socializers make up the middle section and probably play a meliorating role between the two extremes. Vygotskian/Egan educators were few in the field and these views were mostly espoused by individuals presently studying at a university where they had encountered such theories.

This study seems to indicate that there is not just one school system but two, perhaps three. The fact that they have been lumped together is an accident of history. Any attempt to bring about a unified theoretical orthodoxy throughout the system is bound to run into difficulties as long as the camps continue to exist. The problem for governments who wish to implement system wide programs for reform is that unless they take into account such differences they will likely run into real difficulties.

The use of Q methodology to examine Egan's claim that there are incompatibilities in the fundamental beliefs which teachers hold about education enabled us to reveal the complex manner in which these views are held by both individuals and groups of teachers. In our study we were able to tease out the complexity of teachers' self-referential theorizing about their practice that showed its binary form. On the one side of the coin were claims about theory while on the other were ascriptions of personal worth and value. These two elements are deeply implicated in each other and no conventional research approach would have been able to parse this complexity in this manner. This kind of theorizing, as Taylor (1985) argues, "serves more than descriptive and explanatory purposes" (p. 116). It also serves to both define how teachers ascribe meaning and identity to their lives as practitioners as well as shaping the practice itself. There emerged in our findings a complex intertwining of a number of statement modalities in the teacher discourses. These included propositional and non-propositional claims, locutionary and illocutionary intentions and cognitive and affective commitments. There is

more work to be done here in order to analyze the various rhetorical forms that are used in such self-definitional theorizing.

However, by using Q we were able to identify and compare the relationship of teachers' self-referential statements to ones that rejected opposing theories. This positive/negative binary was shown to be highly consistent across the three major incompatibilities. (The Vygotskian view did not figure in any significant manner due to the lack of knowledge that participants had of such theories.)

Teachers' define their practice and membership in it not merely by recognizing their own theoretical commitments but also by rejecting what they see as opposing and incompatible theories. The results of our Q study made this phenomena very evident and indicates that there exist within the teaching profession what could be called a series of paradigms akin to those Kuhn elaborated in his analysis of the structure of scientific thought (1970).

The results that were obtained may not be surprising, but confirmed what Egan (1997) had claimed to be the case, that there are serious differences concerning fundamental theories of education among practicing teachers. The real importance of this research however may lie elsewhere. First, it could assist individual teachers to come to a more insightful appreciation of the theoretical components of their self-understandings of practice. Second, it could provide insights for teacher education programs concerning the way in which theories about education become deeply held beliefs by their students. While it is important for teachers to hold certain views deeply, if the theoretical basis of these views is even more deeply embedded in self-definitional ascriptions of agency, then it may be difficult for those individuals to become critical concerning their own practice (Taylor, 1985 p. 93). Furthermore, while it may not be possible to fully overcome Egan's incompatibilities within a common institutional setting it is imperative that individuals with differing views are able to keep up a conversation with those with whom they differ. This requires the recognition that our practice of teaching is both irredeemably theoretical and deeply personal at the same time. Thus the discursive as well as the expressive elements in teachers' theories must be developed.

Taylor sees social theorizing arising "when we try to formulate explicitly what we are doing, describe the activity which is central to a practice, and articulate the norms that are essential to it" (1985, p.93). However, he makes an important point about the role of such theories, that they, "do not just make our constitutive self-understandings explicit, but extend, or criticize or even challenge them. It is in this sense that theory makes a claim to tell us what is really going on, to show us the real, hitherto unidentified course of events" (p.94). Thus if a situation arises such as theorized by Egan where there are competing, incompatible theories of education concurrently in existence, then any attempt to make the deeply held beliefs of teachers explicit, so as to subject them to review, will be difficult unless the

subjective nature of constituent self-understandings are taken into account Taylor's ideas about social theorizing were very helpful in this study in that they indicate that the highly personal way in which theories about education may be held by teachers could be further reason why Egan's incompatibilities continue to exist.

This combination of Q-methodology and Taylor's hermeneutic theory has been very fruitful in interpreting a very complex socio-cultural situation. The two approaches have a common goal, to understand the deeply embedded ideas, concepts and values of the work of social action and theory. The challenge for faculties of education, given that it is most likely that these incompatible views about educational practice are acquired by teachers in their pre-service training programs is to investigate their own teachings with a view to encouraging discourse between the putative paradigms.

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Appendix: Factor Scores

No.	*Statement*	*1*	*2*	*3*	*4*
1	I believe that the teacher is an important social worker in our society	-1	0	2	-2
2	I think that teachers should be, first of all, role models who exemplify the values, beliefs, and norms of our society	2	-1	3	-1
3	The main goal of education is to equip students with the knowledge and skills best suited to ensuring their success as citizens by sharing the norms and values of their peers.	-1	-3	0	-1
4	The process of socialization is central to the mandate of schools today. While we might not feel comfortable with the term, we accept that the predominant aim of schools is the homogenization of children.	-3	-3	-1	0
5	I strongly support the need for more school counseling programs that help children adjust to the strains and challenges of modern society. We don't do nearly enough in schools today to combat drug-use, alcoholism, teen pregnancy, et cetera	0	-1	-1	-1
6	Schools need to ensure that students become familiar with computers and their range of applications. In our computerized age schools should help students become a part of a productive workforce in our society	0	-4	0	2
7	Schools should aim to produce good citizens not just future experts in particular fields	3	2	1	0
8	Schools should be much closer to real-life situations and teach children useful knowledge for life, not abstractions that they may never use.	0	-4	0	-1
9	I see nothing wrong in the teacher occupying a more distant, authoritative role because teachers properly embody the authority that comes from being an expert in the relevant subject matter.	-4	0	0	1

No.	Statement	1	2	3	4
10	Teachers possess an informed and rational view of reality and therefore are better equipped to fight conventional prejudices and stereotypes and to teach their students to do the same.	-3	0	-1	0
11	Education has to be a process of learning those forms of knowledge that give students a rational view of reality	0	0	1	1
12	Only by disciplined study of increasingly abstract forms of knowledge can the mind transcend the conventional beliefs, prejudices and stereotypes and the time.	-2	0	-2	0
13	"Excellence" in education should be the more desired aim of our schools. We need to refocus schooling on teaching academic programs and remove programs that do not serve this central purpose of the school.	-3	-1	-2	2
14	Literature and history, the sciences and mathematics should receive most curriculum time. Subjects like Latin, Greek, and art history have to be present in the curriculum if we are to produce educated people.	-2	0	-1	2
15	The curriculum should be constructed primarily on the grounds of intellectual and cultural, rather than more generally social, values	-2	1	0	4
16	A greater proportion of educational programs and services should be provided for academically advanced students	-2	-2	-3	3
17	Teachers must make methods of teaching conform to the nature of student's learning	3	1	-2	1
18	I believe that the teacher should merely facilitate the child's own active discovery. Teaching is not "teaching" at all. It is an act of guiding and appreciating.	1	-2	-3	-3

No.	Statement	1	2	3	4
19	An ideal education emphasizes individual differences among learners and takes into account their natural learning abilities. We have to recognize the importance of students' varying learning styles.	4	1	1	0
20	Teachers' pre-service programs need to pay more attention to the careful observation of students, recognition of the distinctive forms of learning and sense-making that characterize different ages, and construction of methods of teaching that engage student's distinctive forms of learning.	2	2	0	0
21	We need to make the curriculum in direct relevance and utility to the lives that our students will actually lead.	1	-2	-2	-3
22	Schools need to provide more differentiation in the curriculum in order to develop the different natural talents of children - one educational plan cannot fit all. If a child has developed an interest in music but failed math, we should focus less on the area of failure and provide richer resources to develop areas of strength.	2	0	-4	-2
23	My central pedagogical principle could be described as follows: children's understanding can expand only from things of which they have direct experience.	-1	-3	3	-4
24	Each child's individual potential should guide the teacher's activities.	0	1	1	-1
25	A central role of the teacher is to engage the student's imagination in learning.	4	4	2	0
26	Sensitivity to what the student can just begin to grasp is an important quality of the good teacher.	1	3	3	1
27	The more we learn about the complexity of infant's cognitive abilities, irregularities, peculiarities and differentiation of the mind, the more traditional views about development as a gradual, evolutionary process that proceed from the simple to the complex seem false.	-1	2	-1	-2

No.	*Statement*	*1*	*2*	*3*	*4*
28	Ideally teaching should lead and cause development, not follow it.	1	3	2	0
29	Curriculum content should be chosen to maximize the acquisition of cognitive tools.	1	1	2	3
30	The complex nature of the cognitive tools of literacy, if introduced properly in teaching, encourages not only the development of logical operations but also the development of imagination, self-reflection, emotions and an awareness of the child's own thinking.	3	4	4	3
31	Children' own developing needs should be central to the curriculum, not knowledge in the textbook or that authorized by the teacher.	0	0	-4	-4
32	Central to the curriculum should be the large array of intellectual tools, which have been created during our cultural history. The teacher, the adult, and textbook have leading roles in introducing such tools.	0	2	4	2
33	The needs of tomorrow's society should determine today's curriculum.	-1	-1	0	1
34	A priority for our educational system should be excellence in those most able to attain it.	-4	-2	-3	4
35	Education should be less concerned with distant aims and more concerned with students' present experience.	1	-1	0	-2
36	Contrary to common-belief that education ought to start from to start from concrete and end in the abstract, I believe that even younger children are capable of understanding abstract ideas that effective instruction can facilitate.	2	3	1	-3