

Education Requiring Contextualized Epistemology: Restructuring Knowledge-Based Education Into Quality-Based Education in Contexts

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That education requires epistemology is beyond doubt. The problem lies instead in what epistemology is required by education, and how and why, and in what contexts (e.g., in the Asian contexts). Exploring three epistemologies of education from the axiological perspective, this paper discusses three forms of desirability of knowledge as exemplified in three types of knowledge in educational contexts, taking university education and teacher education as two illustrative examples. Firstly, it explores liberal education on theoretical knowledge and its intrinsic desirability, showing its being overshadowed by the "Intellectualist epistemology" of the Greek legacy. Secondly, it explores vocational education on technical knowledge and its instrumental desirability, showing its being overshadowed by the "Instrumentalist epistemology" of the industrialization legacy. It then argues that, although both trends and their underlying educational epistemologies may have their own contexts, both have undermined the very importance of intellectual qualities, which serve as the constitutive base by which both are made valid. As a conclusion, the paper calls for the restructuring of education to be based more on practical knowledge and its constitutive desirability, and, in effect, for the restructuring of knowledge-based education into "quality-based education" in which intellectual qualities — basic qualities of which to be embodied in the following highly contextualized and practical sorts of knowledge: (1)

knowledge of the good (values and ends), (2) self-knowledge and (3) problem-solving knowledge — should be given more emphasis.

Education Requiring Epistemology from the Axiological Perspective: Three Forms of Desirability of Knowledge Exemplified in Three Types of Knowledge

That education requires epistemology is beyond doubt, as education is heavily based on knowledge and that education and knowledge form a mutual promotional circle. Knowledge is transmitted, so to speak, in education while education (i.e., educational practice) is enhanced by the knowledge base (partly generated from educational research). The better the knowledge base a society could develop, the better the ground on which education can be pursued; the better education can be pursued in a society, the more knowledgeable its educated public becomes; and, the better some of the most educated excel in developing knowledge, the better the knowledge base a society could have. Such circular relationship between knowledge and education is a truism, in need of no wonderment. The problem lies instead in what epistemology is required by education, and how and why, in what contexts (e.g., in the Asian contexts). This paper¹ thus begins with a brief history of the Western epistemology of education, tracing back to its genealogy in the West.

It is not uncommon to clarify epistemology in the following way: "Epistemology, or the theory of knowledge, is that branch of philosophy concerned with the nature of knowledge, its possibility, scope and general basis."² Etymologically, at least dating back to Plato, epistemology is the studies (logic, theory) of knowledge (episteme), which is supposed to be contrasted with opinion (doxa). During the high tide of epistemology around the Enlightenment era, mainly from Descartes and Locke to Kant, how the nature of knowledge could be clarified, and hence how the taxonomy of knowledge could be drawn, become the most prominent issues. Thus, the party lines are divided into Empiricism and Rationalism. Following such vein, Logical Positivists are keen to defend the neat division between two families of knowledge: (1) the formal kind of knowledge, which is analytic, a priori, and necessary, exemplified by logic and mathematics, and could be called formal sciences; and (2) the empirical kind of knowledge, which is synthetic, a posteriori and contingent, exemplified by empirical sciences, and is meant to be natural sciences.³ Recently, mostly in the tradition of analytic philosophy, the debate shifts to

the contrast, or relationship, between knowledge and belief, thereby generating a series of debate on whether knowledge could be essentially defined as justified true beliefs.⁴ Leaving aside the philosophical sophistication in such history of epistemology, those who care about education (including educators and educationists) could ask what lessons could be drawn from this history of theorizing about knowledge.

Underlying such history of epistemology is the hidden axiological concern in the quest for the most valuable knowledge, which is true knowledge, while others are in disguise. Thus, as Logical Positivists argued, metaphysical expressions are not statements — stating things about the world that could be empirically testable — and are not qualified to be called knowledge. In short, only scientific knowledge is the true knowledge. The impact on education is simple to see if education should only teach true knowledge, then education should only teach scientific knowledge. Then how about historical knowledge, moral knowledge and, the most tricky one, self-knowledge (which is the most important kind to be sought for since Socrates and Lao Tze)? Are they not desirable to be learned in education? Adapting from Spencer's questioning, what knowledge is of most worth to be learned by the educands? In educational context, the concern about knowledge is by no means neutral, at least in the axiological sense (leaving aside the political and other aspects at the moment), and thus is value-laden, at least with respect to the question that why should the educands know this or that, e.g., Chinese language instead of French language? In short, epistemology of education could be conceived as concerning with the following three problems:

- (1) What is knowledge (to be developed) in educational context?
- (2) Why is knowledge desirable (to be developed) in educational context?
- (3) How is knowledge to be developed in educational context?

From the axiological perspective and from the educational context, what knowledge is most desirable to be learned by the educands becomes the most crucial one. Thus, problem (2) becomes the basis on which the others could be adequately settled.

As there could be varieties of knowledge, there could also be varieties of forms of desirability of knowledge. This paper will classify varieties of forms of desirability of knowledge into three main forms, arguing that to each form there lies one kind of knowledge as being the most competitive candidate. Thus, if knowledge is sought for as being intrinsically desirable,

i.e., desirable for its own sake, then theoretical knowledge is the most suitable candidate. If knowledge is sought for as being instrumentally desirable, i.e., desirable for the sake of some other desirable end as its replaceable means, then technical knowledge is the most suitable candidate. If knowledge is sought for as being constitutively desirable, i.e., desirable for the sake of some other desirable whole as its irreplaceable (necessary) part, then practical knowledge is the most suitable candidate. Therefore, these three arguments form three different epistemologies of education from the axiological perspective. In exploring them, this paper discusses three forms of desirability of knowledge as exemplified in three types of knowledge in educational contexts, taking university education and teacher education as two illustrative examples led by the inquiry into what quality teachers should know.

As quality education requires quality teachers, what should quality teachers know then? And why? In Hong Kong as in worldwide, there is the twofold epistemological qualifying requirement of teachers (according to the new qualified teacher status policy in Hong Kong 1997, see Tung, 1997): teachers should learn subject knowledge at their university education programs and pedagogical knowledge at their teacher training programs. But, as it is in the history of education in the West, there has been a shift from the emphasis on theoretical knowledge to that on technical knowledge both in university education and in teacher education, while practical knowledge is always being marginalized. This is not an accident, but indicative of a shift of contexts of educational culture, a shift from the Intellectualist culture of the ancient Greek to the Instrumentalist culture of the modern age, while the importance of practical knowledge has been undermined and should be re-established. Examining such shift and its impact (from the Asian educational context), the following three sections will explore respective epistemologies of education one after one, leaving the last section as the conclusion.

Intrinsic Desirability of Theoretical Knowledge, Liberal Education for Intellectually Excellent Scholars and the Intellectualist Epistemology: Intellectualism of the Greek Legacy

Section 2 tries to show that, based heavily on theoretical knowledge and its intrinsic desirability, education for producing intellectually excellent scholars in the Western traditional trend of liberal education has been

highly overshadowed by the "Intellectualist epistemology" of the Greek legacy. Thus, university education is dominated by scholasticism with its academic inclination, while teacher education by the "theory to practice model." We may begin the argument with how the idea of liberal education conceives the desirability of knowledge in education.

Why is knowledge desirable to be developed in education? There has been an answer since the Greeks, developed in the ideal of liberal education: knowledge is desirable for its own sake, pursuit of which is conducive to the full development of the intellect. However, there are different versions or interpretations throughout the history of Western education. Among the most influential texts on such ideal, "Liberal Education and the Nature of Knowledge" by Paul Hirst (1965) is one of those recent ones. In short, the idea of liberal education can be summarized in such slogan: "central to education is an initiation into all forms of knowledge for its own sake." There may be debates over the taxonomy of forms of knowledge, Hirst (1965, p. 46) listed eight forms of knowledge: mathematics, physical sciences, human sciences, history, morality, religion, literature and fine art, and philosophy. Each of these forms distinguishes itself by having its own central concepts, logical structure and methodology (including modes of inquiry, criteria of truth and logic of validation or test). There are at least four claims on education according to such liberal ideal: (1) rational curricular planning should be based upon sound epistemology and relevant philosophical foundations; (2) the development of knowledge (and hence intellectual excellence) is central to education, lying at the center of the education system; (3) a complete or all-round education should initiate educands into all, not just some, forms of knowledge; (4) knowledge is pursued for its own sake.

Underlying the idea of liberal education lies an implicit conception of knowledge defined as justified true belief, which is prominent among the analytic philosophers (of education). For example, Israel Scheffler (1965) made an explicit application of such definition of knowledge to education. In short, for any proposition *p*, a person *X* knows that *p* if and only if (a) *X* believes that *p*, (b) *X* has justified grounds or reasons for believing that *p*, and (c) *p* is true.⁵ If understood as an essential definition of knowledge, then (a), (b) and (c) are individually logically necessary and jointly logically sufficient conditions for knowledge. According to the Greek philosophical tradition, knowledge is actualization of human reason (*ratio*, *logos*), the essential characteristic of human mind, in achieving rationality or intellectual excellence; and knowledge achieved is conceived as mastery

of truths, which are states of affairs of reality constituting the "order" of things. Thus, education in knowledge is "liberal" because of "freeing the mind to function according to its true nature, freeing reason from error and illusion and freeing man's conduct from wrong" (Hirst 1965, p. 31).

Thus, knowledge as conceived by the advocates of liberal education provides the best basis for education in a threefold way as Hirst (1965, p. 31) elucidated:

First, such an education is based on what is true and not on uncertain opinions and beliefs or temporary values. It therefore has a finality which no other form of education has. Secondly, knowledge itself being a distinctive human virtue, liberal education has a value for the person as the fulfillment of the mind, a value which has nothing to do with utilitarian or vocational considerations. Thirdly, because of the significance of knowledge in the determination of the good life as a whole, liberal education is essential to man's understanding of how he ought to live, both individually and socially.

Underlying this paragraph lies the Intellectualism, and hence the Intellectualistic epistemology, characteristic of the Greek legacy, which has permeated Western education and culture, which in turn has an impact on the systems of contemporary Asian education.

As Aristotle said in his *Metaphysics*, "all men are born with a desire to know." Knowledge is intrinsically desirable since knowledge is the satisfaction of the desire to know, i.e., not for the sake of any consequence, be they vocational or not. Knowledge is desirable since the pursuit of knowledge is the activity of the rational mind (or the intellect), which is essential to human being in two senses: (1) essential to human nature according to the Intellectualist view of human essence, and (2) essential to human life according to the Intellectualist view of the good life. For (1), it is a well-known saying, since Aristotle, that "human beings are rational beings" and, in short, rationality is the essence of humanity. Thus, knowledge is conceived as the actualization of the highest human quality, which is of the intellect or reason; and through the pursuit of knowledge, one results in the possession of the rational mind, which frees oneself from the irrational and nonrational determinants, i.e., freeing human beings from ignorance and (untamed) passions. Furthermore, knowledge, and rationality as well, is conceived as mastery of the order of things and only human beings are endowed with such a gift, freeing human beings from chaos (and disorder). For (2), the intellectually excellent life is conceived as the best life for humankind, i.e., for all human beings, which is a life

governed by rationality — internally freeing from ignorance about reality and from control by passions and externally freeing from determination originated from the others, including people, societies, cultures, traditions, etc. It is also conducive to the good society, which is a society in “order,” to be mastered by and only by the reason of some intellectually excellent members, i.e., the most liberally educated persons, so to speak.

Which knowledge is the most suitable candidate for liberal education then? Firstly, such knowledge should be propositional as indicated by the explicit definition of knowledge as justified true belief. In logical terms, knowledge must be in the form of propositions, which and only which could constitute objects of beliefs (as the contents of cognitive propositional attitudes), and justified or reasoned in terms of evidence and qualified to be predicated true or false. However, though factual knowledge is propositional, liberal education would not be satisfied just with knowing mere facts. As Peters (1965, pp. 25–45) argued for the three criteria of the concept of education in that “educational processes are voluntarily pursued and cognitively involved desirable changes,”⁶ as one among the three criteria, the cognitive perspective is constituted by having “some kind of a conceptual scheme to raise this above the level of a collection of disjointed facts” and some understanding of the “reason why” of things. Thus, Peters (1965, pp. 30–31) continued to make the distinction, “(w)e would not call a man who was merely well informed an educated man” and “(w)e might describe such a man as ‘knowledgeable’ but we would not desire him as ‘educated’; for ‘education’ implies that a man’s outlook is transformed by what he knows.” We may conclude this section by asking: “If pursuit of knowledge is for the sake of the desire to know, which of knowing facts or knowing “reasons why,” is more satisfying?” In conclusion, it is theoretical knowledge, knowledge of “reasons why,” which can satisfy the desire to know, as a quest for understanding, that is in mind of liberal education.

In practical terms, underlying the system of education according to liberal education is the primacy of the intellectually excellent life actualizing intellectual qualities. In short, it is as if every educand is being paved to lead the life of scholars by being initiated into all forms of knowledge, of the theoretical kind, from pre-school to higher education. Thus, just as the faculty structure of the university resembles the taxonomy of theoretical knowledge (in that the Faculty of Sciences includes mathematics and physical sciences, the Faculty of Social Sciences include many of the human sciences and the Faculty of Arts or Humanities include Morality,

Religion, History, Literature and Fine Art, and Philosophy), the curricular structure of university education is basically constituted by specialization into the forms of knowledge, thereby offering academic programs of preparation for scholars. In such scholastic system of education, there is no need further for teacher preparation since only the liberally educated persons can be qualified as teachers helping with the initiation of younger generations into all forms of knowledge, in some of which the teachers has special expertise. Since liberally educated persons have voluntarily pursued knowledge in their learning, there is no significant need for an extra training in pedagogical knowledge, which should have already been possessed in their liberal education, or could be acquired on their jobs of teaching. If university graduates really need further education for their teaching vocation, mostly a “theory to practice model” will be endorsed: scholastic teachers should be first of all equipped with theoretical knowledge and then know how to apply, including theoretical knowledge about education provided by foundational disciplines of education, i.e., at least, philosophy of education, psychology of education, sociology of education, etc. According to liberal education, these foundational disciplines are not something extra but are part of all forms of knowledge a liberally educated teacher should have already acquainted with. Thus, it seems that once the mind is satisfied with theoretical knowledge, there is no problem for its application to daily life or the teaching job since the mind of theoretical knowledge will take care of itself. Is this really so? Is there a gap between theory and practice, a certain conception of the latter being the utmost concern of vocational education?

**Instrumental Desirability of Technical Knowledge,
Vocational Education for Technically Excellent Specialists
(Professionals) and the Instrumentalist Epistemology:
Vocationalism of the Industrialization Legacy**

Just as any ideal having defenders and critics, liberal education has its own fans but has also met a lot of criticisms from inside as well as from outside. In the coming sections, two critics from inside, Richard Pring and John White, both being students of Hirst, will be discussed. As a follower of liberal education, Pring (1993, p. 50) asserts the importance of the Hirstian contribution in that:

First, it reasserted an important philosophical point at a time when too often it

was in danger of being forgotten, namely, that education, especially in its most liberally conceived form, is centrally concerned with the development of the mind and that such development must be characterized by a well-founded epistemology. Second, it set out an agenda for curriculum planning based on this philosophical point, namely, that one should first identify the central concepts, modes of enquiry and distinctive truth-tests of the different forms of knowledge as the basis for establishing curriculum aims, for in failing to grasp these the potential learner would be excluded from the world of learning.

However, Pring is ready to defend the liberal ideal in face of criticisms from outside, especially from Vocationalism, in that education should serve the purpose of vocational preparation.

Before we can appreciate how Pring summarizes the criticism, it is important to highlight the metaphor of “voices of conversation of humankind” by the end of Hirst’s paper (1965, pp. 52–53) quoted from Michael Oakeshott in demonstrating the outcome of liberal education:

As civilized human beings, we are the inheritors, neither of an inquiry about ourselves and the world, nor of an accumulating body of information, but of a conversation, begun in the primeval forests and extended and made more articulate in the course of centuries. It is a conversation which goes on both in public and within each of ourselves Conversation is not an enterprise designed to yield an extrinsic profit, a contest where a winner gets a prize, nor is it an activity of exegesis; it is an unrehearsed intellectual adventure Education, properly speaking, is an initiation into the skill and partnership of this conversation in which we learn to recognize the voices, to distinguish the proper occasion of utterance, and in which we acquire the intellectual and moral habits appropriate to conversation. And it is this conversation which, in the end, gives place and character to every human activity and utterance.⁷

This is a very powerful, suggestive picture of education. Accordingly, every human being should be liberally educated in the sense of being initiated into this conversation of humankind by means of being initiated into all voices so that he or she can become a competent listener to all sorts of voices, thereby absorbing the sources provided and hence being enriched; and that he or she can be developed into a conversationist, a competent participant in this historically evolving conversation of humankind. Those who are denied of such liberal education is unfree in the sense of being bounded by the cage of voicelessness; and policy of denying any of such opportunity is illiberal, with the effect of enslaving people.

Though the ideal of liberal education may be sufficiently clarified above, Pring has done a good job of spelling out many features characteristic of liberal education. To cut the argument short, it is worthwhile to quote directly from Pring's own wordings at this point. According to Pring (1993, p. 55), liberal education prevailed in our universities and our schools could be characterized as follows:

1. What should be learnt is rooted firmly within intellectual disciplines.
2. To be educated is to be initiated into these disciplines — that is, to have grasped the basic concepts, acquired the essential skills, mastered the techniques of enquiry, developed the moral habits of these fundamental ways of knowing the world and of shaping experience (the historical, philosophical, scientific, aesthetic and poetic voices that Oakeshott speaks of).
3. The point or the value of the apprenticeship into the intellectual traditions, through which we come to understand and to shape our experiences, requires no further justification than reference to their own intrinsic value. The cultivation of the intellect (to use Newman's words) or the participation in the conversation between generations (to use Oakeshott's) is intrinsically worthwhile. Indeed, to answer the question, "Why is it worthwhile?," would, if seriously addressed, require participation in that very conversation.
4. That initiation is hard and a laborious task. It requires a time and a place set apart. It needs, in other words, schools and universities separated from the world of business and usefulness.
5. The control and the direction of that conversation, and thus of the initiation into it, must lie in the hands of those who are authorities within it — certainly not government or industry or the community at large.

Following Oakeshott's metaphor of education as conversation, Pring (1993, pp. 57–60) then makes a very lucid and precise summary of four criticisms on liberal education: (1) too many are excluded from the conversation; (2) the conversation is irrelevant to economic needs; (3) the conversation is irrelevant to social needs; and (4) the conversation is directed entirely from within. In face of such criticisms, detail of which would not be gone into here, Pring is prepared to restructure knowledge-based education under the liberal ideal for vocational preparation, to which this section turns.

Though there are many critics, Vocationalism is perhaps the main opponent, at least in the contemporary world of education. This is also the key opponent in Hirst's own eyes when he introduces liberal education negatively by saying that: "Whatever else a liberal education is, it is not a vocational education, not an exclusively scientific education, or not a specialist education in any sense" (Hirst, 1965, p. 30). What is not liberal education here is exactly what is demanded by Vocationalism, which, based heavily on technical knowledge and its instrumental desirability, is education for producing technically excellent specialists in the contemporary global trend of professionalism. Such vocational education can be demonstrated to have been highly overshadowed by the "Instrumentalist epistemology" of the industrialization legacy. This could be explicated in three levels. At the first level, it is its instrumental desirability that knowledge is put at the center of education. Thus, knowledge is desirable for the sake of its use, its utility, as a replaceable means to some further ends, be they personal or socioeconomic. At the second level, there is no need to know everything since one need to equip oneself as a means sufficient for the ends. As a legacy of industrialization and the Enlightenment, manpower of an economy is constituted by laborers, divided in specialized sectors, each of which should be trained with scientifically based skills and technical knowledge, and should perform efficiently the tasks assigned according to the most cost-effective manner of the division of labor in promoting the well-being of the economy. In short, manpower of the best economy should be constituted by a large amount of skilled laborers, technicians with high-order skills and decision-making managers with training in technical rationality. All of them should be equipped with technical knowledge, knowing how to pursue means to achieving pre-set ends, though technical knowledge for different strata of manpower should have different levels of sophistication. While the Asian economies are catching up with the Western ones in being more competitive, Asian systems of education have also been transformed accordingly. Thus, university education is dominated by vocationalism with its professional inclination, while teacher education by the "competence-based model." It is not difficult to observe the proliferation of professional programs and the tendency to claim professionalism. Is teaching a profession in the sense of medicine and law?

At the third level, it is technical knowledge constitutive of technical rationality, which is the most suitable candidate for instrumentalism in education. As Donald Schon (1983, p. 23) remarks:

The prototypes of professional expertise in this sense are the “learned professions” of medicine and law and, close behind these, business and engineering. These are, in Nathan Glazer’s terms, the “major” or “near-major” professions. They are distinct from such “minor” professions as social work, librarianship, education, divinity and town planning But what is of greatest interest from our point of view, Glazer’s distinction between major and minor professions rests on a particularly well-articulated version of the model of Technical Rationality.

There are at least five important remarks worth highlighting. Firstly, there is a hidden model of technical rationality at work, which is constituted by the technique of knowing the most efficient and effective means to achieving pre-established ends and which defines the idea of a profession. Secondly, the more a vocational pursuit is governed by “technical rationality” and hence technical knowledge, the more it resembles a profession — thereby the pursuer deserving the name of a professional. Thirdly, there is a price to pay or a pride to praise as Schon further characterizes: “The systematic knowledge base of a profession is thought to have four essential properties. It is specialized, firmly bounded, scientific, and standardized.” Fourthly, technical knowledge lies at the center of professional education, if vocationalism is to be truly served. Lastly, there lies the primacy of the technically excellent specialists (professionals) in education, both as the educators (teachers and professors) and the educated (products of education). Such vocational quest could be easily confirmed by the proliferation of professional programs in the higher education institutions, including universities whose structure has to be further extended to establishing the Faculties of Medicine, Law, Engineering, Business, Applied Social Sciences, etc. — the most welcome “Professional Faculties” by the public (at least in terms of admission rate) as against the lesser welcome “Academic Faculties.” What is the place of the Faculty of Education and hence teacher education in this quest? The demand for professional relevance on the teacher education providers has been indicative of demanding the centrality of technical knowledge in the preparation for teaching vocation, in that pedagogical knowledge is conceived as equipment with educational technology while foundation or theory courses should be undermined. This can be confirmed by the trend of endorsing the competence-based model in teacher education programs worldwide. According to such competence-based model, especially for initial teacher training, teachers should be first of all equipped with technical knowledge for survival’s sake, for how to

survive in the classroom teaching, and then know how to improve on with theories (if it is really relevant).

How can liberal education and vocational preparation be reconciled? Pring (1993, pp. 66–76) tries to put forward a philosophical agenda in reconciling the differences between liberal education and vocational preparation focussing on four dimensions: (1) aims and values in education; (2) structure and content of knowledge; (3) virtues and dispositions to be promoted; and (4) authorities to be obeyed. But what would vocational education look like? Pring (1993, p. 62) has also made a good summary of the more vocationally oriented curriculum:

1. The value of the educational encounter between teacher and student lies partly in the external purposes which it serves — in particular the economic well-being either of the individual or of society generally.
2. Therefore, the curriculum must be planned in terms of specific objectives which arise, not from within the intellectual disciplines themselves, but from an analysis of what the economy needs or what skills certain occupations demand — hence the growing insistence upon clearly defined and easily measured competencies.
3. The content of the curriculum, aimed at achieving these objectives, must be relevant to industry and commerce.
4. The context of learning must be, as far as possible, in a realistic economic setting.
5. The educational experience as a whole should foster attitudes and dispositions such as entrepreneurship and enterprise not normally associated with the more detached frame of mind of the liberally educated person.
6. People from outside the academic and educational communities must be partners in the establishment of these objectives and in assessing whether or not they have been reached.

In short, voices from two communities, the voice from within the intellectual community and the voice from the community, in which education is taking place, are to be heard in cultivating vocationally prepared and liberally educated persons. But how could the primacy of theoretical knowledge and the primacy of technical knowledge be actually reconciled in the educational practice?

Constitutive Desirability of Practical Knowledge, Education for Intellectual Qualities and the Contextualized Epistemology: Nurturing the Reflective Practitioners in the Information Age

It is an interesting fact that Hirst (1993) himself has denied his earlier position, shifting to a latter one with the emphasis on the idea of practices. In short, his “education as initiation into all forms of knowledge” thesis has been replaced by “education as initiation into the best available social practices.” As Hirst confesses, this shift is in line with the general philosophical trend of relocating the importance of human practices onto the philosophical agenda, drawing sources especially from Aristotle.⁸ In a similar vein, Donald Schon (1983) explicitly advocated that he wants to develop the so-called epistemology of practice. Applied to education, then what Hirst has changed is a shift towards a new epistemology of educational practice, to which this section turns.

The idea of reflective practitioners has all of a sudden been well-received and achieved a wide currency, partly due to Schon (1983), in which he has made a case for education for intelligent practitioners from a critical development of technical rationality. Thus, in the education for reflective practitioners, theoretical knowledge and technical knowledge meet in a healthy balance and must meet in the form of reflection-in-action in order to become well-educated reflective practitioners. The platform for their meeting point can be captured in the idea of practical knowledge, a know-how that cannot be reduced to skill-like technical knowledge since it is informed by reflection drawing on relevant theories and that cannot be reduced to proposition-like theoretical knowledge since it can only be embodied in action, thereby having “intelligent performance” as its criterion. This line of thinking can only partly explain what practical knowledge is and why it is desirable. And a further, but still partial, elucidation will be provided as follows.

Contrary to many who have believed that vocationally oriented education for manpower resulting in better human capital input to the economy should be a major factor for the success of Hong Kong economy (and likewise for other NIEs, newly industrialized economies), Henry Levin (1997) has shown otherwise in “Accelerated Education for an Accelerated Economy,” in his Wei Lun Lecture at the Chinese University of Hong Kong. Levin (1997, pp. 4–10) cited relevant studies to show that, in the case of Hong Kong:

The economic growth has been high, but heavily dependent upon high savings and inflows of capital that might not be sustained in the long run. At the same time, the high returns to tangible capital are unlikely to be sustained as the economy moves to higher levels of development. Yet, Hong Kong's economic growth does not seem to be benefiting from its investment in human capital, except to the degree that human capital is complementary to tangible capital and its return might be subsumed statistically by growth in that input. (p. 7)

In other words, even vocationalism has prevailed and vocationally oriented education has been provided in Hong Kong for the last two or three decades, the expected improvement in the production of "intelligent practitioners" in upgrading the human capital with respect to the economic needs, the factor to its economic growth is insignificant. From this, Levin (1997, p. 7) poses a highly significant question: "how can education be more integral to economic growth, particularly in the long run as it becomes difficult to sustain the marginal returns to and high rates of investment in tangible capital?"

In response, Levin (1997, pp. 10–14) also provides a suggestive resolution in identifying "a number of competencies that we saw as central to such workplaces, competencies that we believed were not being developed in schools" as follows:

1. *Initiative*. The drive and creative ability to think and perform independently
2. *Cooperation*. Constructive, goal-directed interaction with others, the ability to engage in collaborative work
3. *Working in Groups*. Interaction in work-groups directed towards both short-term goals of efficient task or activity accomplishment and the long-term goal of group maintenance
4. *Peer Training*. Informal and formal coaching, advising and training peers
5. *Evaluation*. Appraisal, assessment and certification of the quality of a product or service
6. *Reasoning*. Evaluation and generation of logical arguments including both inductive and deductive approaches
7. *Problem-Solving*. Identification of problems, hypothesis testing on causes, generation of alternative solutions and their consequences, selection of an alternative, and implementation of a solution.

8. *Decision-Making*. Employing the elements of problem-solving on an on-going basis in the workplace
9. *Obtaining and Using Information*. Deciding which information is relevant, knowing where to find it, obtaining it, and putting it to use
10. *Planning*. Establishing goals as well as scheduling and prioritizing work activities
11. *Learning Skills*. Developing cognitive and affective skills that facilitate the acquisition of new knowledge as needed
12. *Multicultural Skills*. Understanding how to work with persons from other cultures in terms of language, communication styles, and different values

As Levin (1997, p. 14) declares, this list is by no means exhaustive. But instead, “(w)hat it does suggest is that there exist competencies that the schools need to address to create a workforce qualified for high-value-added workplaces, and that are not addressed by a traditional classroom that is examination-driven and where students are expected to memorize large amounts of facts and subject-matter to the exclusion of other activities.” As the last part of his lecture, Levin (1997, pp. 14–21) introduces the Accelerated Schools Project (ASP) launched in the United States “as a way of increasing competencies of all children by redirecting schools from concentration on memorization and drill to treating all children as gifted and talented students capable of generating ideas and acquiring new knowledge and skills from enrichment activities and projects” (pp. 14–15). Implicit to his affirmative attitude towards the ASP and its needs, there lies the negative judgment passed on the present schooling in the U.S. as well as in Hong Kong, which, however vocationally oriented and academically structured, could hardly do the job of cultivating the above list of human qualities that intelligent practitioners should have, not mentioning highly vocationally oriented curriculum like those offered in the pre-vocational schools in Hong Kong and by the Vocational Training Council.

This leads us to the third argument for knowledge in education. Knowledge is desirable for the sake of something valuable, constitutively desirable as a necessary, irreplaceable part of some further desirable wholes. Thus, for example, competencies in Levin’s list of competencies are neither desirable for their own sake, nor instrumentally desirable for economic growth in the sense that the end could have other means. Instead, these competencies are constitutive part of a good intelligent practitioner

(as a desirable whole), which is a constitutive part of a quality manpower (as a further desirable whole). Levin's argument could be reformulated as that future economic growth of Hong Kong relies on the qualities of manpower or human capital, for which education should cultivate the constitutive qualities in the intelligent practitioners as their constitutive part, qualities including competencies listed above. Thus, the above line of argument shows that although both trends and their underlying educational epistemologies, i.e., the liberal education with the Intellectualist epistemology and the vocational education with the Instrumentalist epistemology, may have their own contexts, both have undermined the very importance of intellectual qualities, which serve as the constitutive base by which both are made valid. Thus, there is a need and a call for the restructuring of education to be based more on practical knowledge and its constitutive desirability. In practical terms, university education (especially its general education) should also produce citizens and intellectuals of good intellectual qualities while teacher education should be restructured according to the "reflective practitioner model," in that teachers should be first of all equipped with practical knowledge. The burden lies in explicating what kinds of practical knowledge should be acquired in their initial training and what other kinds in their refresher stage.

In other words, epistemology of education is highly contextualized in two senses. In a macroscopic sense, the contexts of education partly define the epistemology of education in emphasizing what knowledge is central to education. In the ancient context like the Greek's, there generated the Intellectualist epistemology of education, which has empowered the ideal of liberal education, thereby putting theoretical knowledge at the center of education. In the modern context like the Industrialized era, there generated the Instrumentalist epistemology of education, which empowered the demand for vocational education, thereby putting technical knowledge at the center of education. However, contexts change and there emerges plurality of contexts, like the Asian ones. In a microscopic sense, practical knowledge is highly contextualized. Not only that the idea of practical knowledge is dependent on the communities that are going to conceive it, but also that the substantive list of practical knowledge in need is partly dependent on the economic, political and cultural contexts. For instance, most of those listed in Levin's list of competencies could be reconceived as practical knowledge of "intelligent practitioners," and can be re-interpreted as qualities desirable to be possessed by them, the cultivation of which requires the cultivation of the intellect, like that in liberal

education, but geared towards vocational context as suggested by Pring (1993).

Restructuring Knowledge-Based Education into Quality-Based Education in Contexts: Knowledge of the Good, Self-Knowledge and Problem-Solving Knowledge

The idea of quality is difficult to explicate but, all of a sudden, becomes a widely employed term in education. Among such trend, quality education has become a common concern in Hong Kong community, partly due to the publication of *Quality School Education: Education Commission Report No. 7 (ECR7)*. The publication of *ECR7* has been indicative of the importance of qualities by comparing its two versions: quality teachers as one category of human factors in achieving quality school education have been neglected in the Consultative Document of *ECR7* (1996) while its importance has been reasserted in the final version of *ECR7* (1997), in congruence with the Teacher Education Policy introduced by the Chief Executive in his Policy Address of 1997 (Tung, 1997). In a near future, qualified teacher status can only be granted to professionally trained degree holders. In other words, quality teachers are teachers with qualities, which should be cultivated in their teacher education, comprising of academically respectable undergraduate education as well as professionally relevant teacher education program. The list of qualities that are conceived as constitutively desirable for the making of quality teachers, which are in turn desirable as a constitutive part of quality school education as a whole is yet to be nominated. Thus conceived, it is indicative of the shift from knowledge-based education to quality-based education in contexts. At least, this line of thinking leads to the idea of quality-based education for which the idea of educational practice becomes prominent. Education is an initiation of educands into the best available social practices; and education is thus one social practice among others; and teacher education is an initiation into educational practice;⁹ in all of these lies the importance of human qualities to be cultivated especially through the development of practical knowledge.

Many have attended to the coming of the Information Age as the new context, the problem lies ahead is not too little knowledge to be learned in education but too much. Hence, intellectual qualities become far more important than a particular list of knowledge, be they factual, theoretical or technical. As argued from above, there are three types of practical

knowledge standing out as the most important ones: (1) knowledge of the good (values and ends), (2) self-knowledge (self-understanding of reflective practitioners), (3) problem-solving knowledge (problem-solving agency). A full explication of these would demand another paper (see note 1). But it would suffice to see how emphasis on these three could be emerged from the critical development of the reconciliation of the liberal education and vocational education.

As another critic of Hirst but from inside, John White (1990) argues that only those who have chosen to lead the intellectually excellent life would find knowledge intrinsically desirable. Thus, there is no reason to compel educands to spend all of their educational time in learning theoretical knowledge. Underlying the Hirstian version of liberal education, there is an egalitarian favor regarding all forms of knowledge. White criticized that obviously some forms of knowledge, e.g., moral knowledge, are more important than other forms. Neither should education be just learning job-specific techniques or skill-like technical knowledge since, if these forms of knowledge are useful in the most instrumental sense, it is hard for them to be transferable to other career paths. Therefore, these sorts of vocationally oriented knowledge should be learned only after one has made a career choice, determination of which requires some sort of knowledge that is practical in nature, especially self-knowledge. Thus, White concludes that education should aim at equipping the necessary qualities in the educands for their leading personally autonomous and morally altruistic lives (including their self-determination of their career paths). Individuals and societies are faced by many problems, most of which can only be defined contextually and solved contextually. What is in need is problem-solving knowledge and education should therefore cultivate necessary qualities constitutive of knowing how to solve problems. In short, the cultivation of practical knowledge, at least including knowledge of values, self-knowledge and problem-solving knowledge, should lie at the center of education for the sake of cultivating relevant intellectual qualities in need.¹⁰ In other papers¹¹ on the idea of quality-based education as education for quality persons (persons of qualities) as repertoire of human resources (manpower), taking the cultivation of human qualities as the base of education, the writer has provided an analysis of human qualities desirable for educated persons, arguing that these human qualities are highly contextualized. Thus, details would not be repeated here.

As a summary, exploring three epistemologies of education from the axiological perspective, this paper discusses three forms of desirability of

knowledge as exemplified in three types of knowledge in educational contexts, taking university education and teacher education as two illustrative examples led by the inquiry into what quality teachers should know. Firstly, it is argued in Section 2 that, based heavily on theoretical knowledge and its intrinsic desirability, education for producing intellectually excellent scholars in the Western traditional trend of liberal education has been highly overshadowed by the “Intellectualist epistemology” of the Greek legacy. Thus, university education is dominated by scholasticism with its academic inclination, while teacher education by the “theory to practice model.” Secondly, it is argued in Section 3 that, based heavily on technical knowledge and its instrumental desirability, education for producing technically excellent specialists in the contemporary global trend of vocational education has been highly overshadowed by the “Instrumentalist epistemology” of the industrialization legacy. Thus, university education is dominated by vocationalism with its professional inclination, while teacher education by the “competence-based model.” Thirdly, it is argued in Section 4 that, although both trends and their underlying educational epistemologies may have their own contexts, both have undermined the very importance of intellectual qualities, which serve as the constitutive base by which both are made valid. Thus, restructuring education to be based more on practical knowledge and its constitutive desirability, university education (especially its general education) should also produce citizens and intellectuals of good intellectual qualities while teacher education should be restructured according to the “reflective practitioner model.” Section 5 tries to provide a suggestive conclusion. Such reflective quest, in effect, calls for the restructuring of knowledge-based education into “quality-based education” in which intellectual qualities — basic qualities of which to be embodied in the following highly contextualized and practical sorts of knowledge: (1) knowledge of the good (values and ends), (2) self-knowledge and (3) problem-solving knowledge — should be given more emphasis as required by education in the new contexts. In short, education requires epistemology to be contextualized, thereby necessarily to be restructured in ways that could incorporate the cultures in contexts (e.g., the Asian ones).

Notes

1. This article is a minor revision of the paper presented on February 13, 1998 to the International Conference on Restructuring the Knowledge Base of

Education in Asia, February 12–14, 1998 at The Chinese University of Hong Kong, organized by the university's Hong Kong Institute of Educational Research and the Faculty of Education. It is the first paper by the writer, in a planned series of works, within the domain of the epistemology of education. Neither all issues in the epistemology of education would be tackled in this paper, nor could they be. As his first attempt, the writer intends to focus on the axiological perspective, on the desirability of knowledge in educational context. Thus, with respect to the concern on knowledge base in education, for instance, other problems concerning the status of educational knowledge (or knowledge generated from educational studies), the relationship between educational theory (theoretical knowledge) and educational practice (practical knowledge), or knowledge of educational practitioners (and the integration of kinds of knowledge in educational context) are all important, thereby legitimately expected of having contributions from the epistemology of education. Hopefully, in the future, the writer will also touch upon these. A sequel, tentatively titled "The Threefold Practical Knowledge of Teachers as Educational Practitioners: Knowledge of the Goods (Ends), Self-knowledge and Problem-solving Knowledge," is forthcoming.

2. This is how David W. Hamlyn, an established epistemologist, introduces the topic in his entry on "history of epistemology" (1995). For details on epistemology and its history please see the entry.
3. For details please see Grayling (1982), especially Ch. 3 on "Necessity, Analyticity and the A Priori," pp. 43–95.
4. For instance, it is interesting to see that in the same companion J. Dancy clarifies epistemology in a way quite different from that of Hamlyn as follows: "Epistemology is the study of our right to the beliefs we have," in his entry on "problems of epistemology" (1995). For details on such view of epistemology in relation to our beliefs, please see the entry. It has been a well-known attempt that Israel Scheffler, one of the most important analytic philosopher of education, applied the view of "knowledge as justified true belief" to educational context in his book (1965).
5. There are actually many formulations, among which is the writer's own version. Apart from the belief condition and the truth condition, Scheffler (1965, p. 21) preferred the evidence condition to reasonableness (or justification) in his own version of knowledge: "X knows that Q if and only if (i) X believes that Q, (ii) X has adequate evidence that Q and (iii) Q." Variations among different formulations would be significant to answering in full the first problem of clarifying the nature of knowledge, i.e., (1) "What is knowledge (to be developed) in educational context?". Here is sufficed to show the implicit presuppositions and their implications.
6. According to Petersian conceptual analysis of education (Peters, 1965, pp. 23–45), there are three criteria, namely value criterion, cognitive criterion and

voluntary criterion, by which one can identify educational processes in differentiating them from, e.g., learning, training, and indoctrination. This has been criticized and Peters actually acknowledged that such analysis has only made explicit the understanding of liberal education on education. Thus, the most suitable candidate for educational processes would be pursuit of knowledge for its own sake. Here the writer tries to summarize his conception in a more fruitful manner as: “educational processes are voluntarily pursued and cognitively involved desirable changes,” leaving open how desirability is to be conceived.

7. This paragraph originally appeared in Oakeshott, 1962, in “The Voice of Poetry in the Conversation of Humankind.” Further elaboration and related discussion in educational context please see Fuller, 1989.
8. Many including the writer of this paper, who relocate the idea of practice in education, have been heavily influenced by Aristotle, especially by his threefold distinction of human pursuit: theoretical pursuit aiming at understanding well, practical pursuit aiming at doing well, and productive pursuit aiming at making well. Details will not be discussed here at this moment and readers can see Carr, 1995; Frankena, 1965; Hirst, 1993; McInyre, 1985; Taylor, 1989; and, of course, *Nicomachean Ethics* of Aristotle.
9. For a fruitful discussion on the idea of an educational practice, please see Carr, 1995, especially pp. 60–73.
10. It is interesting to observe that language, as not a proper form of knowledge though instrumental to learning all forms of knowledge, is not included in the proper curriculum of liberal education and is regarded as a skill, a technique according to the vocational education. However, it could be argued otherwise that language has a role of more than that of a skill, a technique and more than instrumental to learning other kinds of knowledge. Language is a ground for other qualities, especially those of higher orders. Recapturing the metaphor of conversation of humankind, an educated person is empowered with a voice to speak for oneself as well as for the cared ones. More importantly, mastery of language is a precondition for many dimensions of cultural literacy, and for cultivating cultural qualities if they are desirable for educated persons to possess. This partly explains why language proficiency, for instance, Cantonese-English-Mandarin trilingualism and Chinese-English biliteracy in the case of Hong Kong, has always received the most attention in education. This would lead to the discussion generated from Hirsch, 1987, left aside here.
11. These include an English paper by the writer of the title “Hong Kong Education Under the View of Quality-Based Education: Cultivation of Hearts (Attitudes-Virtues) and Powers (Abilities-Excellences) in Educated Persons in Becoming Quality Persons for Personal and Social Well-Being,” which was presented to the Conference on the Vision of Hong Kong, organized by the Theology Division, Chung Chi College, CUHK et al., October 9–10, 1996.

References

- Aristotle. *Nicomachean ethics*.
- Carr, W. (1995). *For education: Towards critical educational inquiry*. Buckingham: Open University Press.
- Dancy, J. (1995). Entry on "problems of epistemology." In T. Honderich (Ed.), *The Oxford companion to philosophy* (pp. 245–248). Oxford: Oxford University Press.
- Education Commission. (1997). *Quality school education: Education Commission report no. 7*. Hong Kong: Education Commission, Hong Kong Government.
- Frankena, W. K. (1965). *Three historical philosophies of education: Aristotle, Kant and Dewey* (pp. 15–78). Glenview, IL: Scott, Foresman and Company.
- Fuller, T. (Ed.). (1989). *The voice of liberal learning: Michael Oakeshott on education*. New Haven: Harvard University Press.
- Grayling, A. C. (1982). *An introduction to philosophical logic*. Brighton: The Harvester Press.
- Hamlyn, D. W. (1982). Entry on "history of epistemology." In T. Honderich (Ed.), *The Oxford companion to philosophy* (pp. 242–245). Oxford: Oxford University Press.
- Hirsch, E. D. (1987). *Cultural literacy: What every American needs to know*. Boston: Houghton Mifflin Co.
- Hirst, P. H. (1965). *Knowledge and the curriculum: A collection of philosophical papers* (pp. 30–53). London: Routledge and Kegan Paul.
- Hirst, P. H. (1993). Education, knowledge and practices. In R. Barrow & P. White (Eds.), *Beyond liberal education: Essays in honour of Paul H. Hirst* (pp. 184–199). London: Routledge.
- Levin, H. M. (1997). *Accelerated education for an accelerated economy* (Occasional Paper No. 9, Educational Policy Studies Series). Hong Kong: Hong Kong Institute of Educational Research, CUHK.
- McIntyre, A. (1985). *After virtue: A study in moral theory* (2nd ed.). London: Duckworth.
- Oakeshott, M. (1962). *Rationalism in politics and other essays* (pp. 198–199). London: Methuen.
- Peters, R. S. (1965). *Ethics and education*. London: George Allen & Unwin Ltd.
- Pring, R. (1993). Liberal education and vocational preparation. In R. Barrow & P. White (Eds.), *Beyond liberal education: Essays in honour of Paul H. Hirst* (pp. 49–78). London: Routledge.
- Scheffler, I. (1965). *Conditions of knowledge: An introduction to epistemology and education*. Glenview, IL: Scott, Foresman and Company.
- Schon, D. A. (1983). *The effective practitioner: How professionals think in action*. New York: Basic Books
- Taylor, C. (1989). *The sources of the self: The making of modern identity*.

Cambridge: Cambridge University Press.

- Tung, C. H. (1997). *Building Hong Kong for a new era: The 1997 policy address*. [Address by the Chief Executive the Honourable Tung Chee Hwa at the Provisional Legislative Council meeting on 8 October 1997]. Hong Kong: Hong Kong Special Administrative Region of the People's Republic of China.
- White, J. (1990). *Education and the good life*. London: Kogan Page.