Objections and Responses

By Dr. Kieran Egan

Let's assume we have a group of school administrator who have just heard the LiD proposal, and have been asked to consider introducing it into their school district. Their initial impulse is to reject such an eccentric and novel idea out of hand. After all, if it were likely to have the educational benefits claimed, someone would have suggested it before and it would have been put into practice somewhere, wouldn't it? They are, like most educational administrators, open-minded about new possibilities, but wary, and knowledgeable, about the problems of implementing any new program. And, being human, they tend to look for reasons not to do something extra, especially as it looks as though it could involve a mess of problems, and possibly antagonize some teachers, administrators, or, worse, parents.

Here is a set of the objections our administrators might make to the proposal. Let's assume we are going round the table to see what problems they foresee. Some are more skeptical than others, but all of them represent some aspect of the dominant ideas that currently drive our schools. The fictional objectors will be given some sketchy background, to indicate the possible sources of the objections they make. In addition, let us assume that the responses are being delivered by a proponent of the LiD program who is in the hot seat before the committee of administrators.

Objection 1: Students will soon become bored with their topics.

[A newly appointed Superintendent of Schools. She taught in three different elementary schools for fifteen years before becoming vice-principal and then principal of a large urban school. She has an M.Ed. and wrote her special project on children's intellectual development, and also an Ed.D., specializing in curriculum leadership.]

Even if you might manage to get a typical five-year old to take on studying *leaves*, or those other topics you suggest, there just isn't the interest to keep a child pursuing the one topic like that for a dozen years. Children have a short attention span at the age you want to begin this depth study. They will not be able to focus attention onto a single topic in the way you require. There's just so much interest value in *dust* or *apples* for a child at age five or six, and it isn't much! So they will easily get bored, especially when they have so little support from the supervising teacher. After a month the average child will have forgotten what the topic is they are supposed to be studying. You would need to have much more frequent attention for the first years of such a scheme.

But even constant teacher help wouldn't stop children easily becoming bored. You might have in your mind some bright, middle-class child who could be persuaded to go for this with parents' constant support. But most kids won't have that home support—how much does the average parent know about *dust* or *leaves*? They could tell their child everything they know in half an hour at the most. And very few parents will be interested in finding out more and more about *leaves* or *dust* to be able to keep helping their child. If

they have three children, each with a different topic, the whole scenario, even in the ideal situation, becomes impossible.

So where is the child supposed to turn? They can't read very well in the early years of their participation in this scheme, and won't likely be able to tour the Internet for information. The whole thing ignores what the average child brings to learning. This project assumes little scientists eager to learn. That's not the reality of most children in most schools that I have been dealing with for more than a couple of decades. I'm afraid this is more fantasy than reality; it just ignores the way average students' minds work; it assumes there will be growing interest where, for most kids, there will just be growing boredom.

What are they supposed to be finding out about *leaves*, year in and year out? I know biologists can specialize and do research for years, but these children will not be able to run their own experiments, which these days need expensive equipment and laboratories. The students I have known over the years have their enthusiasms—and it's no secret what they are. Accumulating knowledge about *the wheel* or *apples* or even *the circus* is no part of what captures young people's minds these days. Maybe it might have worked in elite schools a hundred years ago, but today's reality is very different.

I'm sorry to be so negative. But I'm not convinced that the solution to our educational problems—and I am the first to admit we have problems—is a weird innovation like this. We have drugs, family crises, easy access to all kinds of worrying entertainment on the Internet and other media, and a ton of other problems. Kids studying *leaves* for a dozen years just doesn't make it onto my radar as worth spending any time and money on.

Response to: Students will soon become bored with their topics.

The Superintendent makes a number of good points, and I'm not sure I will be able to answer them all to her satisfaction. But let's start, as she does, with the observation that children will quickly get bored with their arbitrarily assigned topic because at the beginning stages of this scheme the average child has a very short attention span. I'll introduce my response with a brief anecdote. A number of years ago I was asked to take part in a radio talk-show with a couple of other educators, one a teacher, the other a professor of child psychology. The topic was children's attention span, and how it was being made shorter and shorter by typical TV shows and the kinds of electronic entertainments available for kids today. The interviewer set the tone by regretfully taking it for granted that children increasingly couldn't attend to anything for any length of time. Some studies were cited— the actual stimulus for the show—and then the "experts" were asked to give their views. I felt it useful to point out that the interviewer could have reported on the studies and then could have given the responses that we were being called on to give, without any need to have gone to all the trouble of bringing all of us together in the studio. Instead, we had an interviewer and three other people, and if we weren't off the air in eight minutes, for the ads, then we would get the hook or the slow fade into silence. That is, the format of the show was taking for granted in its adult listeners exactly the condition it was supposed to be regretting in children. In my experience, children's attention span, like typical adults',

is greatly stretchable depending on what engages it. If the worry is that children's attention span is very brief in classrooms, then that would seem to me to suggest what is happening in the classroom isn't very interesting. In some classrooms children show remarkable attention spans and in others hardly any attention at all.

I don't want to suggest that's all that needs to be said about it; children clearly do vary in the attention they give to any topic. But I don't think children are significantly different from adults in this. That is, whatever other objections might be made to this proposal, the fact that children are supposed to have short attention spans isn't one I can take too seriously.

More serious is the point connected with that one—that their attention-span deficit, or some other cause, will mean that they will quickly become bored with the topic allotted to them. In the end, this is an objection that won't be resolved by assertion, but by practice. But, first, we need to have good reasons even to try a pilot project. The good reason is that much experience suggests that exactly the opposite is true.

All my experience of education suggests that boredom is a symptom of inadequate knowledge or ignorance. The more you know about something the more interesting it becomes. ("Everything is wonderful" is, again, one of the overstated underlying slogans that has been attached of this proposal.) The person without the intellectual resources deep knowledge can provide is much more likely to be bored.

Well, that's a response that is maybe adequate for perhaps the third and subsequent years of this project, but initially, at least, students' knowledge, I have to agree, will not be in "depth;" they have to start learning about their topic as they would any other subject in school. In part that initial engagement can be encouraged by the ceremonial treatment given to the students' reception of their topics, and in part it can be encouraged by the principles for engaging their imaginations in topics that is the basis of the work of the Imaginative Education Research group (IERG—www.ierg.net). Quite quickly, even in the first year, the student will likely know more about their topic than they will know about anything else they have been taught. So the point about boredom being a product of ignorance is one that should give us some confidence that students will likely become less bored by their topics early on. At least, it should provide some reason to support pilot projects implementing Learning in Depth. In fact, to the surprise even of the teachers involved, reports on the first pilot projects that are as I write completing their first year, indicate children already are strongly attached to "their" topics and are eager to continue with them.

The Superintendent's point about the inadequacy of supervising teachers having only monthly meetings with students early in the process seems to me telling. Perhaps we need to plan for weekly meetings at this stage, even if they are quite short, or consider some further support system to get this off the ground. I'm sure another member of the Board will make the objection that this project won't work because it requires unacceptable time, energy, and other resources, so perhaps I can leave discussing this, and parental involvement, until I respond to such objections later.

I think that learning in depth is not something that is suitable only for bright middle-class students who will have plenty of parental support. Indeed, I think it offers much more to those students for whom current schooling offers so little. At present, low-achieving students, who may have little or no home support for learning, get hardly any nourishment of the kind that schools promise to offer to all children. Remember that "equality of opportunity" promised to all children, and all those optimistic "mission statements" plastered on a hundred thousand school walls and websites?

What this scheme offers is something from which all children can get some intellectual nourishment. It is, indeed, based on the belief, which you might reject, that learning about the world around us is intrinsically interesting to everyone. The more we know, the more interesting it becomes. It is boring only to the ignorant. That's just how our minds are. This project is an attempt to strike at the heart of ignorance.

I agree that students beginning to develop their portfolios will not be doing experiments like scientists. But I can't see why they can't do their own small experiments, and experiments of different kinds that do not require a biologist. Or perhaps they could find a biologist to help them do some experiments with *leaves* that will show something of their nature. If this innovation becomes routine in schools, we might begin to see ways in which children can be put in touch with experts for some of their tuition as time goes by. Maybe, if the student is given the topic of the solar system, a meeting can be arranged with an astronomer. All topics will have experts in the outside world, and we might begin to see procedures attracting such people to work, even if only for small amounts of time, with children who are becoming experts in particular specializations. Certainly one might see university professors counting such involvement with schools as part of their "service" expectation.

I think the assumption that there will be reluctance to learn, and boredom from learning, just one thing in increasing depth year after year is based on some of our experience with schools as they currently exist today. For all kinds of reason that many educators have discussed over the last century the early years curriculum has been systematically stripped of challenging intellectual activity. It isn't the intellectually challenging topics that bore children, it's the vacuousness of so much of the trivia of the early school curriculum that leaves them gasping for intellectual air. Under the influence of odd ideas such as that children are "concrete" thinkers, we have removed almost anything of interest and complexity. There is also the strange belief that young children's minds are tied to the local and immediate (while they are fascinated by dinosaurs, wicked witches, and star-warriors!) But the common boredom and children's lack of energy to learn is not due to the fact that they behave that way in the face of challenging topics, but rather that's what the current superficial curriculum does to them. I am prescribing a cure to the problem that this objection raises as a reason the cure won't work—if you can untangle that. I mean, this proposal is to overcome the boredom with curriculum topics that the Superintendent sees as a reason it won't work.

She is also concentrating almost entirely on the earliest phase of the scheme—which is obviously sensible as she thinks the whole thing can't get underway for the reasons she

gives. But try to imagine what it might be like after twenty or thirty years in operation in a school system, when it's taken for granted as a feature of everyone's education. Children will start school and be prepared by friends and families for the big event of finding out their topic. My expectation is that such topics will be greeted as friends, because that is what they will have become for everyone who will have learned something in genuine depth. And it will be a friend that will be reliably with them for years, and, in some profound sense, for life.

Objections 2. The arbitrariness is absurd. Student choice is important to such a scheme.

[A physical education teacher for twenty-three years before being elected to the school board, he has special responsibility as the representative to the city's Advisory Council with regard to Children and Youth. He has an M.Ed. degree in Physical Education.]

I don't think the proposal is as hopeless as my colleague suggests, but I do think that students should be given some choice. You could spend the first half-year or so working with the children to see where their interests lie. Let them take on a few topics and see which ones they get a spark from.

Just assigning students topics is unimaginative and won't do much for their imaginations.   Think of the kid in the first week of school: Joe, you will spend 12 years studying *mothballs*.   Boom.   That's it.   Why is there no choice? If you are going to push this scheme you might get some people to consider it if students were allowed to choose a topic that connects with their own interests. Also they should be given the chance to change their topic if they lose interest in it, allowing them to try a new topic that they think will be more engaging. So I'd be willing to give it a shot as long as there is much more flexibility built into it.

At least you could say that the kids will study one topic to grade eight, then they would have a choice to go on with their topic or change to something else that they can choose at this time.

I remember my own years in school. I was one of those kids who got enthusiasms about something, and I used to annoy some of my teachers asking for more information about castles, or whatever. But these enthusiasms didn't last for very long. I did have the usual enthusiasm for dinosaurs when I was a kid, and then I remember the castle thing really got me from, I'd say, about eight to twelve—I used to build castles out of Lego, I'd be drawing them all the time, and when we visited Europe I drove my parents nuts wanting to visit every castle in the place. I think this was all good, and the changing nature of what we are interested in should be accommodated by this scheme. So, I'd push for more choice, more flexibility, and an easy ability to change topics.

I'm interested that the topics you mentioned in your proposal were all fairly academic in orientation, mostly science-oriented, natural world items. There was nothing in physical

education, nor much in the arts, nor in a number of other areas. I think you'll need to give a much clearer account of what can serve as appropriate learning in depth topics before I'd be happy to sign on to this innovation.

Response to: The arbitrariness is absurd. Student choice is important to such a scheme.

In the 1950s there was a study, which unfortunately I can no longer locate, of the range of children's interests between countries that had multiple TV channels and those that had only one. It was found, contrary to expectations, that in countries with multiple channels children's range of interests was significantly narrower. It makes intuitive sense, of course. Given a choice we go to what is comfortable and familiar. One aim of education is to enlarge students' interests. We won't achieve that by allowing them constantly to choose what they are familiar with. Quite the opposite, as the TV study showed. There are good enough reasons to preserve the arbitrariness, though there may be rare cases where a change might be allowed.

We usually grow to find interesting whatever we learn about in depth—unless we are learning only for utilitarian reasons or against our will. (The old saying in monasteries was that his cell becomes irksome to the monk who constantly tries to go outside it, but the monk who keeps to his cell grows to love it.) The underlying principle that guides the arbitrariness is that <u>everything</u> is interesting; and the more you know, the more the imagination can play with knowledge and drive to deeper meaning and understanding. It is, for instance, a commonplace of our experience that we occasionally find fascinating books or movies we initially resisted.

The Board member makes the interesting suggestion that for the first half year, perhaps, we should let students just explore the array of topics they might study, and then they can choose the one that most appeals to them. Perhaps, many teachers might think, students themselves could develop a list of topics. They might brainstorm thirty things, or fifty, and the teacher can write them on the board. That might allow both some degree of arbitrariness, in that the students just brainstormed them, and also allow choice, as students choose the topics they prefer from the list.

I do think the earlier principle—about everything being interesting if we learn enough about it—trumps the belief that we should give the students choice. One possible problem with allowing choice is that students might then think that they should be able to choose something else if their first choice fails to satisfy them immediately or if they see that a friend is more immediately engaged with her topic. They might also be encouraged to think, if they find launching into their topic less interesting than they had hoped, that they are to blame for having made a bad choice.

Everyone knows from experience that what might be a favorite topic at age five will not likely still be a favorite at fifteen. Giving students a choice is not a reliable guide to their greater future interest in that topic. Commonly children will express a particular interest in something that they saw in a movie a week ago or that someone mentioned yesterday, and such interests are commonly quickly changeable. The topics we will have chosen for

them will have qualities that encourage continued interest and development of understanding that their favorite five-year-old choice might not have. Even giving them a choice within the set of brainstormed topics is also vulnerable to all the other objections given here.

(I do recognize that this notion of giving students no choice runs counter to an almost universally held principle. Being almost universally held doesn't make it right, of course. And I should also qualify that "everything" is interesting if learned in enough depth. It might be worth recalling that we actually give students choice in hardly anything of importance in schooling, beginning with whether they'd like to attend or not. We don't ask for a show of hands about who would like to do algebra or learn about the French Revolution, and so on. We tend to reserve choice to things of little value, as a kind of cosmetic suggestion that they have choice where in fact we allow them little. This project is not trying to disguise the lack of choice we really allow children in schooling.)

I think there are many virtues to the randomness of the topics, and introducing choice is fraught with problems. But I don't want to be too dogmatic about this. If, for some good reason, a student should find a particular topic is seriously unsatisfying or disturbing or problematic in some way, then of course they can be allowed to change to another topic. But I anticipate such occasions being rare, and requiring a compelling reason.

The Board member accurately described something that I think is common to many of us—a series of enthusiasms for topics that then shifted as something else captured his imagination. Among the basic principles that will guide teachers in helping students explore their topics is that different kinds of enthusiasms will find a place at different ages in developing students' portfolios about a single topic. That is, each topic will be explored in multiple dimensions, artistically, physically, emotionally, academically, and so on. Rather than try to give examples here, please look at the "some operating principles" booklet in this Resource pack.

So, in general, I think that this proposal can quite easily accommodate the changing nature of what students might be interested in at different ages. Accommodating to changing interests doesn't mean that a student has to flit from topic to topic. The aim is ever increasing "inside-ness" and exploring the variety within each topic is an important part of that.

No doubt many might share the suggestion that students should be given a choice to continue with their topic or change it at, say, grade eight. Again, it is important to remember when considering these possibilities that no one has been through a program of study like this, so it is unwise to base expectations too much on current norms. My suspicion is that students will be very reluctant to change topics after their eight years of investment, when they are beginning to discover how little they know about something that has become full of wonder for them. Maybe they will not commonly use the five words made famous in a very different context by Charlton Heston, but I think the great majority of children's response to moving to a different topic and leaving the one they have been building their portfolio on will be more akin to "from my cold dead fingers." Those who might expect

students to happily change to a different topic or drop the whole idea of Learning in Depth are reasonably basing their assumptions on how students today might greet an option to start something new, or stop something old. I think it is hard to imagine the mind-set that will be created by eight years of unforced but encouraged study of some specific topic. That being said, I suppose such an option might be allowed to some students. I do think it would begin to undermine the central purpose of building real expertise though.

A further point should be made about the reasonable desire that students should be able to follow and generate their own tastes and interests within the topic they are given. The portfolios are the students' after all. They are not for grading. The teacher initially will be important in helping students find sources, explore new dimensions they have not yet encountered, and so on. As time goes by, students will increasingly take control of the direction of their topics, using the teacher more as a sounding board, occasionally seeking advice, but generally letting their own interests determine the shape their portfolios take. For instance, a biology-inclined Sara might want to vigorously pursue apples and diseases; a culinary-inclined Sara, apples as food; a technically-inclined Sara, the ultimate peeler/corer; an artistically inclined Sara, a file of apples in great paintings, with her own representations of apples; and so on. That is, the arbitrariness of the topic need not be seen as a complete constraint on students; rather the opposite—it opens them to a world of knowledge they would otherwise have had no idea of and allows them to explore dimensions of that knowledge driven by their own changing interests. I suppose this reflects the paradox of the constraining frame providing the freedom that allows the picture to be painted. A belief that drives this proposal, which is well attested by experience, is that students will be intrinsically motivated to elaborate their portfolios because of the imaginative engagement that develops with depth of knowledge—think of their hobbies and collections.

I mentioned earlier the "project method," which was promoted by Kilpatrick in the early part of the Twentieth Century (e.g. Kilpatrick, 1918), and ably continued today, prominently led by Lilian G. Katz and Sylvia C. Chard. In discussing the choice of topics, Katz and Chard (1998) give four reasons for not giving in to the assumption that student choice is crucial. Their reasons overlap somewhat with those given above:

Using children's interests as a starting point in topic selection may lead to choosing appropriate topics, but this approach also presents several potential pitfalls. First, what does it mean to say that an individual or group of children is "interested" in a topic? Interests can be of relatively low educational value; [one researcher] gives the example of a young boy in his class whose main "interest" for some time was how to pull off the legs of a fly! Children's interests may actually represent passing thoughts, fleeting concerns, phobias, obsessions, or fascination with media-related characters.

Second, just because children express interest in a given topic does not mean that their interest deserves to be strengthened by the serious attention of the teacher. For example, the publicity given to movies may provoke children's interest in a certain topic . . . In other words, we suggest making a distinction between providing

opportunity for child-initiated spontaneous activity about a topic and investing in a long-range effort focused on it.

Third, one of the responsibilities of adults is to help children to develop new intellectual interests. Children's awareness of their teacher's real and deep interest in a topic worthy of their investigation, for example, can stimulate their own interest in the topic as well.

Fourth, we suggest that a topic should reflect our commitment to taking children and their intellectual powers seriously, and to treating children as serious investigators. It is easy to underestimate the satisfaction and meaning children gain from the hard work of close observation of nearby phenomena.

Objection 3. The students will drop out or revolt against it.

[A vice-principal of a city high school. She taught Social Studies in middle-schools for ten years, then did a masters degree in Counseling, and worked for another ten years in that role in the school at which she holds her current position.]

From my experience dealing with adolescents for a long time, I'd say that, even if you can keep young children engaged with a topic for six or seven years or so, once adolescence hits, this thing that has been a part of their lives so long—tied up with their school, teachers, parents—if they have been supportive of the topic—will come to represent an imposed authority's task, and they will - in droves would be my bet—revolt against it. Threats and bribery—in the mild forms we use these in school systems—may keep them at it for their early years, but for most students it will become irksome and be seen as drudgery. I think they will vote with their feet, and stop adding anything to their portfolio. The less dramatic of them will not revolt in any obvious way, but you'll see they will simply pretend to add to the portfolio, but won't actually do anything much with it.

I am skeptical that you could get them to stay with it to adolescence—though maybe adding choice and flexibility might help a bit—but I'm confident that it would not survive the disturbances of adolescence, and I'm confident it would be seen as a prime target against which revolt can be directed. The fact that they have been doing it for so many years, and that it will be seen as valuable by teachers and maybe parents, makes it even more useful as a symbol of what they want to revolt against; by revolting against it, and what is seen as its value, they will be able to provoke the kind of reaction so many adolescents crave at this age.

Well, that's my view based on the psychology of the students I have known over many years. What makes this even less likely to hold them is the fact that this isn't to be graded in any way. Now students coming to the last few years of high school are under a lot of pressure. They don't have time for all their school work demands anyway, and if something is going to be squeezed out, it won't be what they need for their coming exams. Their ungraded portfolio about *grass* or *flight* or whatever is what'll take the hit.

I agree with much that my colleagues have said. I'm particularly concerned about how this fits into the other aspects of the curriculum. In one form or another, everything done in schools is evaluated. While everyone knows it's not the best motivator, at least grading provides both a check on how well we and the student are doing in anything we teach, and it does provide a continuing motivator for students to learn. If there were no testing in schools, how much learning do you think would take place? And you expect us to implement a proposal that will run from Grade 1 to 12 without any incentive to keep the students involved in developing their portfolios except what you imagine will be the pleasure of doing it. I can only conclude that you are very very optimistic! There will never be sufficient motivation to keep students at it.

If we tried to implement this project without any sanctions against students who drop out what do you expect to happen? And if they start dropping out, what do you do then? It will only take one or two kids to give up, and the rest will begin to see that they don't need to keep this going, and you will face mass defection from the scheme.

If this were a reasonable idea that could have the impact you are suggesting, it would have been tried before somewhere. If it had worked, it would be in practice everywhere. I don't think it's worth supporting even a pilot project.

Response to: The students will drop out or revolt against it.

The vice-principal begins with adolescents, assuming that would be the age at which this project would most likely come adrift, even if it manages to survive that long. And, indeed, the accommodations with the adult world that adolescents make are never entirely easy, and in many cases lead to various forms of resistance to and revolt against the norms they are expected to conform with. Will this area of rapidly deepening and enriching knowledge become something students revolt against? "I've had enough of damn apples! dust! railways! leaves!" Much more likely, I think, is that their topics will provide an area of recourse and solace to the alienated youth. People might let them down, but you can always rely on *dust/apples/ railways!* Well, that puts it in joke form, but there are better grounds to expect that students will cling to their area of growing expertise—which by teen years will be a much more formidable resource than almost any student attains in schools today—than that they will discard it.

The expectation that their portfolio and topic will serve them as a refuge from the disturbances of adolescence rather than become a target for their revolt is, of course, impossible to argue convincingly. Only experience will sort this out for us. All I can do here is suggest that the outcome the vice-principal predicts may not turn out to be the commonest result. No doubt we may see some cases of both kinds of response by different students, and it is a potential danger that we should be prepared for. I do take her objection seriously, and in the "Some operating Principles" booklet I describe some steps we can take to minimize or even eliminate its potential force.

I do want to defend the idea that the portfolios students compose should not be graded or evaluated, except in the informal way the supervising teacher will keep a watching brief on

its development. The portfolios are monitored to help the student to keep developing and deepening their knowledge, but no one will be graded on how well they are doing. Building the portfolio is something that will be done for its own sake. The current orthodoxy that everything that is done in schools must be evaluated, or else how can you know whether it is being done adequately, is bizarre if you accept that education is largely a field of values and meanings—which we can't evaluate with any precision.

We don't evaluate our children's out-of-school reading—if they read—nor do we evaluate their hobbies, yet they often engage in both with great enthusiasm and energy, and learn a lot in doing so. The notion that evaluating is important as a source of motivation cannot be ignored, except of course its proponents do tend to ignore the problems associated with using evaluation as a motivator. If we told our children they <u>had</u> to collect keys or sea shells or stones or postage stamps, the vice-principal might reasonably point out that because there will be no evaluation then we should not expect children to engage in such activities. And yet they do, even without our telling them to do it or rewarding them for doing it or punishing them for not doing it well enough. Indeed, nearly all children begin a collection or a hobby about age seven. What's going on? Why is this happening? We have an almost universal, spontaneous, intellectually engaging activity going on en masse and where are the educational studies about hobbies and collecting? The fact that it is so nearly universal a phenomenon of childhood suggests that these portfolios on single topics have immense sources of energy to draw on if we present them appropriately. The experience of teachers who have begun pilot "LiD" projects so far has been, to the surprise of many of them, that the young students were entirely unbothered by having a topic randomly ascribed, and began immediately and with some enthusiasm to associate with it, as their own. (This was less true of the implementation that began with Grade 7 students.)

If some students become fed up with their portfolios and want to stop, what should we do? Nothing; let them. This is something added to the curriculum, and if some students do not want it, there should be no compulsion to make them continue. My suspicion is that dropping out will be much rarer than people accustomed to current schooling expect. Also I suspect that after some months or a year without touching their portfolios drop-out students will perhaps by chance discover something about their topic that will stimulate them to begin again, even if only desultorily at first. The enthusiasm of other students, the developing portfolios that will be evident, and the interesting presentations will also likely put pressure on drop-outs to drop back in again. Only experience will tell.

John Dewey wrote eloquently about the energy children bring to unforced learning whereas the "formal" stuff of schooling, subject to grading and all the rest, so often remains strangely repellent to so many (Dewey, 1966, pp. 7/8). A teacher I worked with a few years ago observed: "I've noticed how some kids just let details go in one ear and out the other. Yet those same kids, if it is something they are truly interested in . . . will collect information for months and months and have every little bit of it emblazoned in their memories. I would guess that in broad topics there would be some specific area that each student would be interested in collecting details about, and especially if they could organize it as though it were a "collection'" (with thanks to Susan Zucherman).

But I haven't addressed the question of how we can know this scheme is successful if we don't have tight evaluation procedures in place to measure each child's degree of attainment of the indicators of success that will have to be established clearly before such a proposal can be accepted. It makes better sense to discuss this below in combination with the response to the next question.

There is also the objection that LiD would already have been put into practice somewhere if the proposed idea were any good. While this is a useful notion to weed out clearly eccentric ideas, it also weeds out all new ideas, good or bad. That no one has ever tried this before should properly make us pause, but it shouldn't stop us thinking about and evaluating such new ideas. I hope its novelty won't be too great a problem to its receiving a fair examination of its plausibility.

The vice-principal also makes the strong objection that later in high school, with the pressure of exams, of entertainment activities and social lives, and all the rest of what overfills typical teenagers' days and nights, something will have to give, and what will give for many of them, if not most, will be their LiD portfolios. This may prove true, but this is an objection that takes current conditions as still holding after Learning in Depth programs will have been in place for a decade or so. I think these programs will transform our schools and students more profoundly than the vice-principal imagines. He sees it as just another activity that will go by the wayside because of all the more attractive and more powerfully compelling things (like exams.) that students will have in their lives. My suspicion is, to use a phrase that will pop up again, that students response to leaving aside their portfolio development will be more like "from my cold, dead fingers" that the casual dropping out that the vice-principal expects. I think that the attraction of the LiD portfolio will be powerful for most students. And even if they have to ease off in adding to it while they face exams. there is nothing lost. Again, only trials will decide such issues.

Objection 4. It would be too complicated to organize.

[The Chair of the Planning and Facilities committee. He has an Ed.D. in educational leadership and worked in the Department of Education for five years, returning to his current senior administrative job in the school district.]

The problems of running a complex schemes like this will be enormous, especially in times when kids are constantly changing schools, moving from region to region. How will anyone keep up with the array of portfolio topics all the kids in the nation's schools are studying? And how do you propose noting this on their graduation? Can students fail their "in depth" study? By not going in depth enough? How much is enough? And if you aren't going to grade it, how do you indicate that the student who has worked passionately and imaginatively for 12 years has done any better than the kid who has sloppily created a garbage portfolio? Or are we supposed to think they'll all be wonderful?

This proposal looks innocent enough the way you described it, but it will become a nightmare to implement and keep track of. I'm imagining scenarios in which some kid at grade three, studying *bicycles*, moves to another city. In the new school a teacher has to be assigned to supervise this growing portfolio, and catch up on the topic herself so she can offer reasonable guidance. How is that to be financed? Then, two years later, the kid moves to yet another city, and we have more problems. Do the teachers in the schools the kid left get a reduction in salary? Your idea might seem easy enough when you think of a single student who stays in the same area for most of her schooling, but remember, we'll have literally hundreds of thousands of students moving from school to school across the country, and some will go abroad for a year, or two, or more. Do we cancel the portfolio if they go to a country that doesn't provide support for it? So you've got disconnects between grades, really big ones between different schools, and between primary/intermediate and secondary schools, and varying degrees of interest and connection from teachers as the kids stagger on with their topic—it's a logistical nightmare.

How many portfolios is one teacher supposed to help with? Think, for each teacher a school will have, say, thirty students. That means each teacher will have to somehow keep up with thirty portfolios, and they meet each student at least once per month—that's more than one each day to deal with. Or do you imagine hiring teachers who will be solely concerned with these portfolios? What would that cost across the country? If, as my colleague has just noted, in the early years, students will have to interact with teachers maybe once a week, that's getting in the region of five or six a day for each teacher. They'll have no time to do anything else.

Sorry. Nice idea but no one did the math. It's just not practical.

Response to: It would be too complicated to organize.

I think the first set of issues raised by the Chair of the Planning and Facilities committee – about students moving from school to school, leaving the country for some time, etc – are manageable. They will require resources and skill in making this scheme work, of course. But to suggest canceling it for reasons such as those would be a case of the administrative tail wagging the educational dog. If it is educationally desirable, then we make it possible. It really doesn't represent such a challenge. The teachers do not need to be experts in all the topics. The teachers need only be able to make suggestions, help the students reflect on their topic, and be good at finding information and suggesting directions for the student to pursue. They will need also to be sensitive to the kind of understanding students are developing at particular ages, and attuned to helping them see aspects of their topic in appropriate forms. As the years pass, the teachers will increasingly become sounding boards, and the students will have their own sense of directions—and the directions will be elaborating endlessly for them. Students moving from advisor to advisor should create no more problems that currently are caused by grade and teacher changes in schools.

For the most part, such a curriculum innovation should not be particularly costly. Indeed, for a major educational innovation, its costs will be negligible. This doesn't require a

complex bureaucracy. We don't even need any major changes to teacher education programs to accommodate this—maybe a workshop or two on how to support students' portfolio development would be sufficient, along with written guides incorporating an elaborated form of the contents of of this Resource pack.

But the suggestion that the proposal can't work because the teacher-student ratio makes it impossible does need to be considered in detail. I think we might usefully distinguish three distinct phases for the proposal. The first involves the beginning years of the scheme, when students are between ages five and eight, roughly. It is during this period that the Chair's calculations are potentially most damaging. The second is from around age eight to about fourteen or fifteen. And the third is from then to the end of high school. In the third phase, I imagine the students will be working largely independently, with brief check-ins with their supervising teacher once each month. Much the same, with the check-ins taking a little more time, will also be adequate for the second phase—though there may be calls on time and resources beyond what can be accommodated within current budgets.

The serious problem comes with the beginning of the scheme, during the first three or four years. Even if we accept that each student's portfolio can begin to be put together at a relatively leisurely pace and we don't expect them to become experts in their first three years, we are still faced with one teacher having somehow to provide adequate support to about thirty students. And if we want consultations with the teacher to take place more than once each month, and perhaps as much as once each week, how can we manage this without hiring many more teachers? What kind of time commitment are we looking at? I think we could indeed manage the one consultation a month without too much difficulty. But, if it is to be once per week, and we have thirty students, and each student is given close attention for half an hour per week, that's 15 hours of instruction time to be provided. If the teacher deals with three students at a time, giving each of them concentrated attention for around seven or eight minutes and discussing general and common problems or issues together, we still need to add 5 hours in the week. An average of seven or eight minutes each per week may be adequate, though there wouldn't be much time for extensive discussion and appreciation. Taking the last hour of each day, with three students in each half hour, would enable a single teacher to deal with thirty students, seeing each one once per week. This would cost some money, and would be too great an additional burden on already stressed teachers.

But there are other ways of addressing the problem. Say we have only a limited number of appropriate topics, such that in any school topics will recur every second, third, or fourth year. That means that a student beginning school may be given the topic *apples*. But some other student in grade three may also have been building a portfolio on *apples*, as will a student in grade five, and, in a nearby school, perhaps, there will be students in grade seven, nine, and eleven, all of whom are building portfolios on *apples*. The students from the higher grades can supply some of the guidance, relieving the time costs on teachers, and also enriching "intergenerational" contacts among students. I should emphasize this part of the proposal more. Anyone involved in education knows how much nearly all older students enjoy teaching younger ones. Even older students who are not

"high achievers" will nevertheless be able to give really significant help to young students setting out on a topic. If this project becomes quite widely implemented, one of its generally recognized benefits will be the inter-generational contacts between older and younger students, in which the older play an important role doing something that will be valued by the younger children and by the institution. This is one of a number of collateral benefits this proposal will bring to schooling.

Further organizational problems are, of course, created if school administrators are responsible for arranging times and places for students of different ages from different schools to work together. But, again, this is not impossible, and no doubt will be easier in some places than others. These students will also become efficient users of the Internet, and may well be able to organize themselves somewhat. Indeed, it is hard to imagine this scheme existing for many years before there will be large networks of *apple* or *dust* enthusiasts with their won websites attracting people from any countries in which this project might become common. There will no doubt be the equivalents of FaceBook nets formed, with hub pages around which students can communicate.

For the first three years in which students are beginning to build their portfolios we may find school librarians—where these are available – can also play a most useful role. They, and parent volunteers—where these are available—can also relieve the pressure on teachers' time. In addition, at some cost, it might become a common job for college students, and especially pre-service teachers, to give some time to helping out early grade students in building their portfolios. These college students would also bring further benefits not unlike those we might expect from older school students helping out. And, of course, meeting with someone other than their regular teacher about their portfolios would add to students' sense of their "special-ness."

These reliefs to the pressure on teachers' time to make this scheme work hardly dissolve our problems of resources and time, but they do suggest that there are some resources we can use and redeploy without significant additional costs, and so we can make some headway against the stark impossibility conclusion that the Chair suggests. It will call for some reallocating of resources, in terms of teachers' activities, supervising the students not being dealt with by the teacher, and shifting some curriculum time from other subjects to the 'learning in depth' program.

When I was discussing this problem of time with a primary school staff recently, the principal interrupted to say that they have to spend a lot of time with mandated literacy activities, and are using many programs and drill that she finds bore the students and teachers and yield marginal results. She said that she would prefer to stop some of those activities in favor of LiD, with the expectation that the degree of interest LiD would stimulate in the students would likely lead to greater increases in their literacy scores than the exercises and drill that it would replace. I didn't argue with her.

(The expectation of student enthusiasm for working on their topics is proving well-founded, even if only in the first pilot projects. One teacher in Victoria, British Columbia, summarizes his report of the first year's experience of LiD as: "The kids love it!")

In a worst case scenario, if the above kinds of attempts to respond to the stark mathematics of the Chair's objection still can't quite make the scheme administratively manageable, then perhaps we should accept that an increase in the number of teachers for the first three years of the scheme might be necessary. This would be a significant cost, but the promised return suggests that this might be an excellent educational investment. One half time teacher could make the scheme workable. Alternatively, if school time and teachers' time are "full," then LiD will have to be considered in competition with other activities in the school, in terms of educational value. If LiD is considered to be potentially of considerable value, something else will have to give way for it. These kinds of decisions are up to teachers and administrators in particular places and circumstances to make. But they can be made and they can enable LiD to be implemented at the cost of some other program or activity that currently takes teachers' and school time. This kind of choice faces teachers and administrators constantly, so, again, considering how to accommodate a new and potentially valuable program needn't be the impossibility suggested.

I should perhaps add that my response so far assumes that the Chair's claim that this must be an add-on to the current demands made on teachers is not proving to be the case with a number of the schools that have so far expressed interest in mounting pilot projects. In some of the first schools to express an interest in LiD the problem of finding time and support for it has actually proved to be no problem at all. These are schools that had already built into their timetables a section for alternate activities. Many schools have slots for something like "Challenge Time." In the schools attracted to LiD, the administrators and teachers have decided to dedicate some of that time to the pilot project for its initial three years. In one school, it was decided to take a chunk of the twice-weekly "Library" time block for work with portfolios, in another it was seen appropriate to take time allotted for "Enrichment Activities." That is, in all these cases the LiD project was able to run with no additional time demands placed on teachers. In most cases, the teachers were delighted to devote these times already committed to some form of enrichment activities. The LiD project seemed to strike most teachers as a more attractive activity for them than previous uses of those time slots in the curriculum.

I don't want to underestimate the difficulties that might be involved in implementing this proposal, but none of them that I can foresee makes excessive calls on finances, management, teachers' time, and so on. There may be some calls on all of these but the potential pay-off is out of proportion to any likely costs, and very small in the context of school system budgets. Rather than elaborate further on this here, I will return to it later when showing how we can implement the program in schools today.

One final point, in an overly long answer to a challenging question, is to note that much of the LiD work on topics will be done out of school. School time is required largely for relatively brief teacher discussions with the students about how the portfolio is developing, looking at recent additions, making suggestions for further directions the student might explore, or elaborate on something already in the portfolio, etc. Work on portfolios, that is, will not make a call on class time, except perhaps in those cases where some students finish a piece of class work early and can be invited to get on with doing something for their

portfolio while the other students finish their class work. School libraries, too, of course, can provide a school space for portfolio work.

Objection 5. There's no adequate research basis for the proposal.

[A university professor in educational psychology. He has taken a two-year secondment from his position after he won election to the school board.]

This reminds me of curriculum-making a hundred or two hundred years ago. It comes as someone's bright idea, saying, "Hey! This might work. It'll transform everything. Implement it tomorrow!" It's pure speculation, armchair theorizing, with not a shred of evidence to support it. There's not even a pilot project, and here you are recommending we put this into the schools for every student.

We are in an era when we have got beyond taking on board any madcap idea. We require sound evidence that any new practices introduced into schools are based on studies demonstrating that they can achieve sound educational objectives. This idea comes out of the blue, and seems to be based on nothing other than your claims about deep knowledge spreading some vague understanding to everything else one knows. It sounds to me like an optimistic fantasy. I want evidence that it will work before I'm willing to introduce it to my school system.

To make matters worse you don't even suggest that we should build in some evaluative procedures, to see if it does achieve its objectives. And to make things even worse than that, it doesn't have in it any objectives that we could evaluate. What's the point of introducing a distinct and elaborate new practice when we have no way of telling whether it works, or even know what "working" would amount to?

I mean, what counts as success for this scheme? Just the fact that it is running? We need something more than that before we impose it on children. You need to take this back to your study or armchair and come up with something that enters the era of scientific research in education. We need a much more precise proposal, a series of clearly articulated objectives each of which is amenable to rigorous testing, a description of the assessment procedures that will be used, evidence that it can deliver on these objectives, and so on. You should take a few introductory ed. psych. courses to see how to design a study and do basic research in education, then come back with something that uses a scientific approach to the problem you are supposedly addressing.

Response to: There's no adequate research basis for the proposal.

Making decisions about what should constitute the curriculum is very largely a matter of values and meanings. Faced with a proposal like this we have to assess whether and how much we value the likely results of such a component of an educational program. We have to consider whether a person who has been through such a program better

represents what we mean when we use the term "educated" than is common for today's typical graduates. These are not empirical questions we can work out some scientific test to determine for us. These are questions of meanings and values.

Consider what is the evidence that justifies the inclusion of Social Studies in the curriculum? Decisions to include such curriculum components do not turn on empirical questions. Whether to include the Social Studies in the curriculum, or the "Learning in Depth" project, turns not on some empirical evidence that might be brought to bear, but on whether one's conception of education is better realized by such components. There may be empirical questions about how best to implement them but the main questions we have to deal with here are questions of meaning: is education improved by this addition in your analysis? – and questions of value: is this a better instantiation of your conception of education?

This demand for evidence of a specific kind is a little like the old attempts to research whether discovery methods of teaching or straightforward didactic methods were more efficient. More efficient at what? The trouble was that progressivists did not favor discovery-learning methods because they were the most efficient at ensuring memorization and retention of knowledge. Even if one could show empirically that they were less effective than didactic methods or, say, some new subliminal drill technique, that finding would be beside the educational point. Progressivists favor such methods because they embody the qualities that are a part of the progressivist conception of education. Similarly, Learning in Depth is a proposal to be evaluated in terms of its adequacy as a constituent of a particular educational ideal. That is to be decided not by some technical method but by, well, thinking. Armchairs are quite good places to do that. That's a little too glib, perhaps, so I will return to this issue at greater length in Chapter Nine.

What counts as success for such a scheme? Consider again a comparison with the Social Studies curriculum. How do you evaluate the success which justifies its place in the curriculum? Where is the evidence that the Social Studies are successful in creating the kind of responsible citizen they are supposed to generate? And how do we compare adequacy of citizenship among countries that have the Social Studies as a prominent element in their curricula and those that don't? Similarly, "Learning in Depth" aims to produce in a distinctive way a more knowledgeable person, but we have to decide whether or not to include this new element in the curriculum on the basis of whether this kind of person is in harmony with what we mean by education, and on the basis of the reasons given for believing that it is likely to attain the end described—as a kind of person, not some product.

The Learning in Depth proposal is not speculation. It isn't some kind of guess about educating that is uninformed by relevant empirical findings. The value of an educational theory comes from the adequacy of the image it generates of the educated person and the analysis of the logical entailments of such an image for the curriculum. The proposal to introduce "Learning in Depth" is not some claim to be more efficient at reaching some agreed aim in education, but it is rather a proposal for changing the meaning of

"education" a little. It is an attempt to generate an image of how we might achieve a more adequate form of education.

But how are we to tell whether it is successful? Well, there are a number of fairly gross measures that we can apply initially. Do the students get bored and drop out in significant numbers? Do students typically begin to build adequate portfolios and increasingly become interested in their topics? How difficult is it to get the students underway? How much time is required to support each student? Are most portfolios adequate in the sense of gathering significant amounts of information; do students classify the information well enough for clear understanding, and re-classifying the information as it grows in volume? Are the students sufficiently enthusiastic that they spend more time building their portfolios than is required to make minimal responses to teachers' suggestions? Are the students making discoveries of information by their own efforts and recording them in ways that their supervising teachers and others can understand? To what degree are their year-end presentations clear, interesting, and well organized? Do the students give evidence of imaginative engagement with their topic? How adequately can other school resources—teacher/librarians, parent volunteers, older students—provide assistance? Is it better to begin the project in Grade 1 or Grade 3? Is such un-assessed study adequately motivating?

One way to begin researching this project would be to run a three-year implementation in two or three classes in each of half a dozen or ten schools in widely different socio-economic neighborhoods and conduct a series of assessments throughout the program and at the conclusion of the three years. Such implementations might be run simultaneously in a number of school districts. One would want to test whether students had indeed learned a lot about their topics, whether they were interested in continuing with them, and one would also look for insights from their teachers and from parents about how well the program was conforming with some of the claims made about the program.

So, despite my claim that mostly one would try to implement a program like this on the basis of thinking about how well or otherwise it furthers one's educational values, some fairly simple and gross assessments could also be put into place to get measures of its success or otherwise at meeting some of the objectives set out for the program here. It would not be a matter of announcing success simply because the program is running, and it isn't as though the program has no objectives beyond its existence in a school.

Objection 6. This proposal violates nearly everything we know about young children as learners.

[An elementary school teacher. She taught for nine years, took a Ph.D. in early childhood education, and served on the Research Committee of the school board for five years.]

Often there are good reasons why some educational idea has never been tried before! One is that it's in conflict with what we know about children's intellectual development.

Young children are concrete thinkers and they need to begin with topics that are part of their everyday experience. We make sure that any new topics we introduce are tied in with what the children already know. If you just give them some random topic, like *railroads* or the *circus* or *spices*, they will have no concrete experience to connect them with the topic, and so it won't mean anything to them.

This is also a very traditionalist proposal: content is everything and the children are nowhere—education as knowledge accumulation. If we learned anything in the twentieth century it was that children's early education needs to first attend to the child. We have learned to ask, first, what are the needs of the child? Do the child's needs include beginning to learn a massive amount of information about *leaves* or *apples*? Of course not. This introduces a new curriculum item that treats children's minds as knowledge repositories.

One of the strong and proven principles we have worked with for some time is that you should involve children in planning their learning. This proposal violates that principle by imposing a topic on children and doesn't even invite them to choose what might interest them. We also give great emphasis to recognizing the different needs of different students, and also being attuned to their particular intelligences. This proposal violates that principle by treating all children the same and simply dropping a random topic on each one.

You wouldn't be able to get the average five-year-old interested in *leaves*, or *dust*, or even *apples* sufficiently to get the process going successfully. Another central principle for early learning is that children need hands-on experience with whatever they are learning. I'm not sure how you plan for this with the *circus*, or many of your other topics. No accommodation seems to be made to the principles that we now know determine successful learning in young children.

In young children learning is also a cooperative matter, and this proposal allows for only occasional cooperation. Mostly the student works alone, building a portfolio that is uniquely his or hers and no one else is involved with it, except the various advising teachers and perhaps parents and sometimes others who might have the same topic. Also we think of knowledge as something that is drawn out of students rather than as information that is imposed on them. In fact, there is hardly a principle of early learning I can think of that this proposal doesn't violate.

When I say that it is largely hopeless because it is consistently developmentally inappropriate I should elaborate what I mean. The concept of developmental appropriateness has three dimensions: age appropriateness, individual appropriateness, and cultural appropriateness. Age appropriateness is based on research – much of it on Piaget's well-known theories of children's development – which indicates that there are universal, predictable sequences of growth and change that occur in children during the first nine years of life. Your proposal is made as though all the findings of this research don't exist. Individual appropriateness recognizes that each child is a unique person with an individual pattern and timing of growth, as well as an individual personality, learning style, and family background. No recognition of this is made in the proposal. Cultural

appropriateness recognizes the importance of the knowledge of the social and cultural contexts in which children live to ensure that learning experiences are meaningful, relevant, and respectful for the children and their families. This proposal is simply concerned with knowledge-accumulation, and some belief that it will magically solve our problems, and it ignores all the features of being culturally appropriate to students.

It seems pointless to go on, but I should add that a lot of my work of late has been devoted to developing more meaningful integrated curricula for our students. This proposal goes in the opposite direction.

Response to: This proposal violates nearly everything we know about young children as learners.

A number of the theories and principles that dominate thinking about education during the early years of schooling are quite odd. We do see the world, and children, through the theories we adopt or unconsciously inherit, and if one adopts or inherits a theory that claims children are concrete thinkers able to learn only about everyday experience and local environments, then that's what one will see when one looks at children. I am sure that in a decade or so people will look back and wonder at how anyone could have believed such extraordinary things about children; in much the way that educational researchers today look back a few decades and wonder how anyone could have believed the tenets of behaviorism. How can one talk with a child for more than ten minutes and conclude that they are "concrete thinkers"? How can one look at what they become intellectually most excited by and conclude that their minds are somehow constrained by local experience and environments? Nearly all the young children I know are fascinated with dinosaurs, wicked witches, spies, star warriors, and seriously weird pop stars.

The stories that most engage the children I know involve Grimm fairy tales and "Where the Wild Things are." These are all stories built on battles between fear/security, courage/cowardice, good/evil, etc. Children use such concepts all the time in their thinking and speaking. Human beings never learn more abstract concepts in their lives.

So I am unworried by the Board member's conviction that my proposal runs in the face of such current orthodoxies of childhood education. (Though I am not convinced the project needs to be conceptualized in such a manner; one could imagine accepting all those ideas and still implementing this project quite straightforwardly.) Nor am I concerned that she characterizes the program as stuffing knowledge into children's minds, making them merely repositories of meaningless data. I am, after all, addressing a problem of ignorance, and it must always be a bit hard for someone proposing principles of education to find themselves, as this Board member seems to be, defending ignorance. Well, that's maybe a bit unfair (I hear you howl), and that what she is concerned to prevent is simply having students accumulate masses of meaningless knowledge. My argument is that no knowledge is meaningless if we introduce it to students as a product of human hopes, fears, and passions. That is, building portfolios is not merely a matter of stuffing in one chunk of knowledge after another.

The Board member seems convinced that there is no way to get children interested in such topics as *leaves*, *the solar system*, or *dust*. But such convictions flow from theories of what is "developmentally appropriate" that seem to me fundamentally flawed.

Having got that off my chest, I will try to allay her fears that this proposal is developmentally inappropriate, in the "Some Operational Procedures" booklet, and that there are good reasons to expect children will become increasingly committed to their portfolio topics as time goes on. I will try to show how students will be intimately involved in planning their own learning, can work cooperatively if they want, and can do all the things whose neglect she has inferred from her theoretical commitments. Another underlying principle of this project has been best stated by Jerome Bruner as "any subject can be taught effectively in some intellectually honest form to a child at any stage of development" (1960, p. xx).

Objection 7. This proposal won't deliver what it claims.

[The longest serving member on the school board. He taught in Asia for a decade or so, and then in Europe. He completed an M.Ed. degree in educational leadership six years ago. He is recognized as a sound, common sense realist, wary of theories and innovations.]

My neighbor collects all kinds of stuff about 1950s cars. He has a garage full of the stuff. He knows every model ever built, all the varieties that were introduced during the decade, and he has these really neat files of service books, advertising materials, and even a huge collection of old car keys, each labeled with the kind of car it fitted. He's also really nerdy, and thick as all get out about everything else. He's a poster boy for your scheme, but is a walking disaster zone as a human being. His hobby acts as an escape for him, and doesn't provide all these wonderful benefits you suggest. In fact, if it wasn't for an allowance he's been drawing from his father's estate, I don't know how he'd survive. He hasn't held a job for years now.

Look, I can see that you are concerned about how our kids don't have a lot of academic knowledge when they leave school, but they know all kinds of other stuff. All these tests and people waving their arms about how the schools are failing and the kids as ignorant as all get out just leaves me cold. The kids today really impress me. The schools are turning out people with the skills this society needs right now. All this going to hell in a handcart stuff is usually touted by people wanting to turn the system back a hundred years. And that's how I see this proposal.

When kids don't know the treaty of Versailles—hey, I don't know hardly anything about it!—academic types go crazy. But those same kids can do video stuff, and zip through the Internet, and deal with all kinds of technology easily. Leaves me breathless what they can do. I saw a video one class put together the other day, about global warming, and it was technically great and had all the information lined up. It was terrific. They put it on YouTube, in neat segments. And knowing about the treaty of Versailles wouldn't add anything to it! And what's more relevant to them today? They are smart and skilled in the ways the world of tomorrow calls for, not in ways that suit how the world was a hundred years ago—

and that's what this proposal is really about, preserving an old fashioned education for an outdated world.

You say we've made a mistake in making the achievement of broad relevant knowledge our first priority for all students, and that most students do not gain an adequate sense of what knowledge is all about. You claim that some part of the solution is to give greater priority to learning in depth. You claim that the sense of the nature of knowledge learned in depth will "spread" to all the other knowledge students are exposed to. I see no reason to expect this. Your case for the value of this innovation turns on being able to show us, or persuade us, that this transfer will take place. If it doesn't, all we will have is the current situation about breadth of knowledge, made worse because of the time taken away from it for your proposal, and students knowing a great deal about something that is irrelevant to anything they will use in their everyday lives. Having huge knowledge about *apples* or *dust* guarantees nothing about that person's educational attainments in general. It really is like what students would call a nerdy or geeky hobby. What evidence can you give us that the transfer you claim will occur will occur?

Response to: This proposal won't deliver what it claims.

It is clear that just accumulating knowledge isn't sufficient; it has to be certain kinds of knowledge. The Board member is right that those who collect something endlessly or become immersed in football statistics don't have the right tool for the job. So maybe we need to revise that "anything"; not anything will do. So it makes matters a bit more difficult that not any kind of knowledge in depth can deliver these intellectual values. Knowing a massive amount about baseball or even cricket scores, or the lives of pop stars, or the contents of the Guinness Book of Records is unlikely to do the job for us. Certain kinds of knowledge are required in order to deliver the benefits of learning in depth.

Most people who have learned something in significant depth—unless it is something quite trivial—find that they don't simply accumulate knowledge but also accumulate some understanding about knowledge in general. Even in the limited learning in depth that is common later in our current system, especially in universities, students begin to recognize that their sense of how to establish knowledge claims changes, and their new deeper learning impacts their previous knowledge. The simple confidence they had in the surface meaning of what they had earlier learned is challenged.

Now that is hardly an adequate refutation of the Board member's objection to the proposal. Such questions will be definitively answered by practice, and now we can only look for the kind of evidence that would help us decide whether it is worthwhile implementing the proposal as a pilot project. The issue of "transfer" is complex, of course, particularly with regard to the kind of depth learning I am proposing. I think that most of the—admittedly imprecise—evidence we can see favors the expectation that there will be significant impacts from students' depth learning to everything else they know. I can hardly deny that some of the evidence suggests some people can learn in depth and gain no wider intellectual benefits from it. They can remain, in Montaigne's lovely phrase, "Asses loaded with books." But I think those are people who have not learned in depth

in the way this program will be set up to achieve, and, more importantly, the topics they have learned about in depth do not have the amplitude that the topics of this program will have. Further reasons for a little more optimism will be given in the other booklets in this Resource pack, in the descriptions of how the project will be organized.

It is likely that learning something in depth will also lead students to transfer a whole range of learning strategies to other material they learn in school. That is, as students gather increasingly sophisticated knowledge and understanding about their topics they also learn strategies that can be applied to any other topic; the procedures they have used in their depth study will be available to use on anything else they need to learn. For example, if you have learned how it is possible to classify apples in a number of different ways – by size, color, nutritional value, shelf–life, times of ripening, etc. – you will carry this understanding to help you organize other topics you will study, and if you have come to grasp the importance of preserving varieties of apples to protect against devastating disease, then you will be able to use that cognitive skill in looking at other food sources and other aspects of human behavior. So I think there are good reasons to expect students who undertake "learning in depth" to increasingly approach all learning in a different way.

A difficult part of arguing for this proposal is that we live in an educational world in which nothing quite like it has been done before. So it isn't easy to argue convincingly that it will work as advertised, especially when some of its features may seem to conflict with some currently dominant principles of educational thinking. We do have people around who have learned something in depth—the kind of specialist that fill our universities. But they are not examples of what I am arguing for. They have become specialists in an area of study, for professional reasons, and usually only began to become specialists about the time this project reaches its conclusion, in Grade 12. I am looking to make each child deeply knowledgeable about some very specific topic, and each child will be learning about a topic from age five or six until the end of their schooling. Because of the way I will recommend they can explore their topics I think it is quite reasonable to expect the result of implementing this proposal will be minds somewhat unlike anything we commonly see today. Of course, there are some people who have serendipitously done something like this, and there is something important to admire about the results. But here is a proposal that this be made available to everyone, and the proposal is made with some confidence that the new mental development entailed by this proposal will indeed transfer or spread to the rest of the mental furniture each person carries in her or his mind.

We can make guesses, elaborate intuitions, spell out arguments, interpret what evidence bears on the issue, as I am doing here. My hopeful suspicion is that the results in general might exceed even the optimistic predictions made in this booklet.

Objection 8. It isn't going anywhere without teacher buy–in, and it's not going to get it.

[A senior official in the school board office. He has worked at the board office for twenty years. He first became a junior member of the school financing department, and has since become an expert in this area. He is currently in charge of marketing school district program to other jurisdictions, especially internationally.]

We've already drawn attention to the fact that this will be an added burden on teachers. It may have some features that some teachers like—non-graded, learning-intensive, exploratory with no set boundaries and ministry guidelines, inviting students to become experts and technologically savvy with a purpose, possibly providing a strong incentive for individual learning. Mind you, a number of my colleagues have expressed skepticism about some of these expectations. But this proposal is going nowhere in the schools; even if we were all in favor of it, it would still hit the wall of teachers' hostility.

First you'll get the "one more thing to do" objection from overworked, educational-reform fatigued teachers. You'll also find principals will be reluctant to promote it in the face of teachers' reluctance to try something new—and this is new with a vengeance. It's untried and teachers won't be able to wrap their heads around it. Also the old "professional autonomy" card will be played, because teachers lose control of what and how students are learning in this scheme.

Response to: It isn't going anywhere without teacher buy-in, and it's not going to get it.

What is slightly funny about this objection is that, when I have described the idea of Learning in Depth to groups of teachers in schools or at teacher conventions, they are mostly (but far from invariably) enthusiastic but assure me it will be really difficult to get educational administrators behind it. The administrators tell me they are enthusiastic, but that teachers will never go for it. Indeed, most groups I have spoken to become in favor of it but assures me that it will hit the wall of some other group's hostility.

I think there are two reasons why we will only get a minimum of the "one more thing to do" objection from "overworked, educational-reform fatigued teachers," as the official nicely puts it. First is that we will put in place support for teachers from parent volunteers, teacher-librarians, older students, college students, and some additional teachers if necessary. That is, implementing this program can't be simply on the backs of teachers. Other resources will have to be found, except in places where the whole staff agrees LiD is of sufficient priority to take up some "challenge time" already committed or to replace some other activity currently taking curriculum time. Second, the kind of non-graded, exploratory learning that students will be engaged with should be very attractive to most teachers. It is, as many have said to me, just what they got into teaching for, and currently have too little opportunity to do. A second-and-a-half reason a number of teachers have suggested is that this project will provide a convenient way of dealing with those classes in which the faster students are shouting "I'm done!" when most of the class is only part way into the task. The teacher can simply recommend that the faster students put in some time on their portfolio development.

Principals have been among the most enthusiastic groups. LiD would be an additional and significant program they can offer to parents as value-added to their current curriculum. Nearly all principles I have spoken with have expressed concern only about resources to help their teachers take on another responsibility.

No one so far has played "the old 'professional autonomy' card." Indeed, it has not occurred to any of the teachers I have so far spoken to about this project, and I think there are enough attractive features of it for teachers that any concern about "professional autonomy" seems irrelevant.

Objection 9: The internet will undermine this project.

[A high school English teacher. He taught for fifteen years in an inner-city neighborhood, and then spent four years working as an associate instructor in a college teacher education program, mainly supervising pre-service teachers. He is the school board's liaison officer concerned with credentialing teachers.)

You've mentioned that you think students can start building both a physical portfolio of drawings, notes, pictures, articles, whatever, and also an on-line portfolio, for which they will be allotted space on a school or school district server. I think the Internet would undermine this idea in a number of ways. You'll get kids who go home with their topic, and a couple of days later a parent has downloaded 50 gigabytes of material on *apples* or *dust* and loaded it onto the student's server space. The student will have learned nothing, but they will have a huge portfolio. This will be true at the beginning of any students' project, and also throughout. The ease of access to knowledge now will mean your students are simply amassing material on topics but they aren't gaining knowledge in depth about them.

You might want to have the teachers or supervisors of the portfolios play the role of gatekeepers, preventing students adding items to the portfolio unless they have "learned" them. But then you are back to assessment and testing, which you said you were excluding from this project. If a student studying *apples* has found an interesting account by an expedition to Kyrgyzstan that is studying parasites on the leaves of the original apple trees—to take one of your examples--and wants to include the 68 page pdf file in her on-line portfolio, what is the teacher supposed to do? Make sure the student has actually read it, and understands it? Allow her just to add it as a separate file among the hundreds she now has accumulated? Or does the teacher require her to re-organize her on-line portfolio every now and then, and show that she has an increasingly sophisticated understanding of the topic by how she structures the information she has gathered, such that the teacher accepts the new file only if the students shows she has a good sense of where it fits in her portfolio?

On the other hand, you'll have families and schools with hardly any internet connections, so how are those students supposed to keep up with accumulating information?

My problem is that I can see this idea sounding really nice if you keep it pretty vague and general, but when you get down to the nitty-gritty of how it will actually work, there are just too many holes in it. And I think this Internet hole is just another big reason why the project won't work as you imagine and won't deliver the benefits you propose.

Response to: The internet will undermine this project.

As some of the Board member's examples suggest, the easy access to knowledge provided by the Internet can certainly enable students to build massive portfolios while completely evading the intent of this program. As in most cases where the letter of the law can be followed while the spirit is avoided, it is not easy to police the divide. If this program is seen in an uncompetitive way, in which the teachers' main role is to help students build their portfolios and the portfolios are un-graded and made up of what the students have learned, then it shouldn't be hard to make clear that amassing a huge amount of material in one's on-line space is simply irrelevant to what students are supposed to be doing. The built-in competitiveness of much modern schooling—at least from many parents' points of view—drives this objection in large degree. Remove the competitiveness and there is no incentive to amass data in the way suggested.

Parents or other caregivers will be important to helping, or hindering, the success of the project. It will be important to ensure that they understand what it is about, and how best they can support their child's exploration of their personal topic. An initial opportunity to explain the purposes of the program will come with the small ceremony at which the students are given their topics. Parents, caregivers, and other family members should be invited to the ceremony. They should also be given a brief handout, or booklet, to take home that will outline the ways in which they can be most helpful in supporting their child's learning in depth of a specific topic.

A few people have suggested that the on-line component should, indeed, be dropped. That is, students should be allowed to use the Internet for their researches, but their portfolios would only be physical, rather than virtual, or analog rather than digital. This would make it easier to avoid the problems the Board member points to, but it would also cut off a potentially valuable support to the project just to prevent an abuse. Such a constraint would also be unrealistic. We are currently living with so many constraints on our individual liberties brought about by attempts to constrain the actions of abusers of those liberties that I'd be reluctant to add yet another one. Better to work harder at making the positive part of the program work as intended. Some teachers, on the other hand, have argued for an on-line portfolio from the beginning. They suggested that it is now so easy to make digital pictures or copies of children's work and then store them on-line that they would do this routinely and would be able to help the children organize their files as time goes on. In discussion with teachers about this, there have been quite sharp divisions about the possibilities of the Internet and on-line storage of portfolio materials.

There might be a case for a modified form of the exclusionary policy some have suggested with regard to the Internet. Maybe for the first five or six years one might require the student's portfolio to take an exclusively physical form, and then provide the server space for on-line development in Grade 5 or 6. The problem with this is that I think it would work less well for some topics than for others. Information about the ubiquitous *dust* or about *the circus* might be harder to accumulate in a physical portfolio than, say, *leaves* or *railways*. I'm not at all sure about this, but the Board member has clearly raised an

important objection, overcoming which will require some subtlety. I will try to find some subtlety in the "Building the Portfolio" booklet, where I'll discuss the form portfolios might take.

The other potential problem created by the Internet that must be acknowledged is that, if the program works as suggested and in a few years we have Facebook, or equivalent, sites where students with the same topic can gather, how can we avoid the study of *dust* to be smothered, so to speak, in information? Someone will have a wonderful completed project detailing dust under water or a history of *apple* species development, and students who come later can simply take what is already done for them, leaving them with little to discover for themselves. Well, in part, of course, this is the situation we are all in when we want to discover something new—we go to the Internet and find out what someone more expert has put there for us. While there is a danger of everything soon being too ready-prepared for students, there are a number of possible defenses. First, one can simply enlarge the number of topics—though this would undermine the potential value of the program in encouraging across age-range cooperation. Second, one can encourage students to see the materials already available as one set among many potential sources of knowledge they can use in building their personal portfolios. Third, one can expect past portfolios to support new ones pushing further and further with topics, so that over time we may expect many students to develop even greater expertise. Fourth, for some of the less able students these prior portfolios on their topic can help bootstrap their learning and help them discover what aspects of the topic they most want to pursue; seeing knowledge organized by a number of other students may prove much less intimidating than exploring the kinds of professional layouts and finished forms we see in textbooks and on-line today. But there are problems remaining, perhaps balanced by opportunities—so while a finished portfolio might be intimidating to some younger students, for others it might serve as an inspiration and stimulus.

Objection 10. You cite in favor of your proposal Thomas H. Kilpatrick's Project Method, and R.S. Peters's and Paul Hirst's justification for learning in depth, and Howard Gardner's ideas in The Disciplined Mind, *but they all argue for quite different ideas of learning in depth.*

[The vice-principle at a Multiple Intelligences school for a number of years. He gives regular workshops on MI theory and practice, is completing an Ed.D. degree, and writing a thesis on implementing MI in regular school settings.]

The opening justification for this scheme mentions prominent scholars who have long argued that being educated meant knowing something in breadth and depth. But none of them even remotely suggested that learning in depth meant what you have proposed. You mention R.S. Peters and Paul Hirst, who applied modern philosophical analysis to educational concepts. They didn't lay out a program for satisfying the depth criterion, because they thought that specifying what "depth" meant in any area of knowledge was something that had to be worked out by disciplinary specialists. I'm sure they wouldn't accept your proposal as satisfying their sense of the depth criterion. They had in mind a (breadth) curriculum made up of a set of forms of knowledge, or fields derived from them.

There was some, but not really significant, differences among them about what those forms of knowledge were—most included things like mathematics/logic, physical sciences, moral/religious thinking, interpersonal sensitivities, literature/fine arts, historical understanding. Their notion of the breadth criterion was that students should gain some significant knowledge in each of the forms of knowledge, but their notion of the depth criterion was that students would learn one or more of these basic forms of knowledge in more detail. What constituted "depth," then, was not something for them to decide. Rather disciplinary experts would specify what degree of understanding of chemistry, say, or geography constituted understanding the subject in depth.

So, in the minds of the philosophers who have argued for learning in depth as a necessary criterion for any sensible notion of education, your proposal is rather eccentric. They meant that students should become well versed in history or chemistry, not that they should learn as much as anyone on earth about *apples* or *dust*.

Gardner's support for learning in depth leads to quite different programs from the idea you are suggesting. He details three powerful topics—Darwin's theory of evolution, Mozart's The marriage of Figaro, and the Nazi Holocaust—and shows how a disciplined understanding of these, or rich and complex topics like them, can have a transforming effect on people's minds, and how that transforming effect is properly what we mean by education. In contrast, your proposal is just an attenuated, serendipitous focus on topics with no resonance. Learning about *dust* in depth, in the sense you are suggesting, only gives you someone full of knowledge about dust: it does nothing to guarantee an educated person who understands important features of the human condition, with an appreciation of the importance of the old trinity of the good, the true, and the beautiful. Gardner's book looks in detail at how one can develop a disciplined mind, rather than let haphazard chance take the student where he or she wills in exploring a topic.

Gardner's book deals with learning in depth in a way that raises the most fundamental questions about our lives and civilization; it addresses both issues that are timelessly important to all people and also urgent political issues. Your proposal is trivial in comparison.

You also referred earlier to the Project Method of Kilpatrick and the current developments of that work by Katz and Chard. It should be pointed out that for Kilpatrick the Project was an instrument of engaging students in important social learning and what he called "wholehearted purposeful activity." He saw it as a key teaching methodology supporting progressivism, and supporting John Dewey's calls for students to be actively involved in their own learning, breaking away from the dull knowledge–accumulating style of traditional education that imposed passivity on students. Both Kilpatrick and more recent Project Method proponents try to get students to work together on projects and involve them in important social learning. Your proposal seems almost to be going backwards, leaving students mainly working by themselves and having no social aims. Yours seems to focus only on individuals' minds, with little attention to the rich social and cultural environments that provide minds with their nurturance and enable moral democratic social activity to enrich our lives.

Response to: You cite in favor of your proposal Thomas H. Kilpatrick's Project Method, and R.S. Peters's and Paul Hirst's justification for learning in depth, and Howard Gardner's ideas in <u>The Disciplined Mind,</u> *but they all argue for quite different ideas of learning in depth.*

True, and, of course, it's not as though my proposal is being made in some kind of competition with those other proposals. I'm not sure what R.S. Peters or Paul Hirst would make of LiD. I read and re-read much of their work looking for their proposals for achieving the kind of depth study they proposed as necessary for adequate education, but couldn't find anything. As the vice-principal noted, they left the job of filling out what would be required to content area specialists. Their sense of "depth" also seemed to be the kind of specialized study that used to be common in British grammar schools or "public" schools, decades ago and that occurs in some high schools or at least in colleges and universities today. That is, Peters and Hirst were not making some innovative proposal for how to achieve learning in depth so much as indicating the importance of achieving some form of depth learning as a criterion for education. That my proposal is not what they had in mind, then, doesn't disturb me. The reason I mentioned them was because they do argue for the educational necessity of "depth" and while they did not point to what I am proposing, the richness and elaborateness of exploration that will likely occur in the Learning in Depth project is very much in the spirit of their criterion. I suspect they would approve of this project at least as a kind of supplement to what they meant by their depth criterion.

I have cited Howard Gardner's arguments in favor of learning in depth because I think they are good ones, and because I think they add important support to an educational aim we generally share, even though his book deals with much larger issues than this one. This proposal, indeed, suggests a much more attenuated program than does his, and this one touches on virtually none of the important themes that he explores. But, even so, I think it is worth considering whether this relatively attenuated and trivial proposal might not also contribute something significant, be more practicable, and perhaps even be more likely to achieve the kind of understanding we all aim for in education.

What this proposal offers most importantly is a simple and practical program that can be relatively easily implemented. This proposal doesn't rely on some substantial change in teachers' professional training, nor in the structure of schooling, nor does it require changes to the curriculum beyond this addition, nor virtuoso teaching, nor any of the other conditions that most educational proposals for significant changes require. That is, this proposal could be implemented alongside today's typical curriculum and also alongside a curriculum that has been changed in the ways Gardner recommends.

And the vice-principal is right about the Project Method too. While it aims for rich learning with clear social and moral purposes, it is worth considering whether my more attenuated proposal might not lead to similar ends. Certainly there are obvious differences between Project work and what I am proposing, many of the differences being along the lines he has pointed out. (Here is a description of the Project method: "... an educational enterprise in which children solve a practical problem over a period of several days or

weeks. It may involve building a rocket, designing a playground, or publishing a class newspaper. The projects may be suggested by the teacher, but they are planned and executed as far as possible by the students themselves, individually or in groups. Project work focuses on applying, not imparting, specific knowledge or skills, and on improving student involvement and motivation in order to foster independent thinking, self-confidence, and social responsibility." Taken gratefully from the Education Encyclopedia – at http://education.stateuniversity.com/pages/2337/Project-Method.html. What this description plays down is Kirkpatrick's focus on purposeful activity by students working in common to a common purpose: a consciously aimed at training for democratic citizenship.) None of the proposals for Projects that I have seen even considers Projects focusing on a single topic for all the years of schooling. What Projects have in common with my proposal is the recognition that focused learning in greater depth has educational values beyond simply accumulating inert knowledge. Besides that there are probably more differences than similarities.

I'm not sure, by the way, that the Learning in Depth project will involve students in quite the lonely and unsociable activity the vice-principal suggest. Certainly some democratic social life with its requisite virtues is not part of the explicit aim of this project. But the students will be in constant contact with their teachers, they will be encouraged to have contact with others pursuing the same topic or other topics with which connections might be made. They will also be encouraged to talk to parents, relations, family friends, the guy across the hall, experts, and others, in the process of filling out their portfolios. Also I expect that all kinds of networks will develop quite quickly around particular topics. I imagine websites devoted to each topic that would attract students from around the area or country or world who might share a topic. Imagine the *apple* sites, and how the students themselves might elaborate them, organize joint projects across cultures, etc. One teacher said that she saw the project offering fantastic possibilities for "distributed learning." This isn't, then, quite the solitary enterprise envisioned by setting it in contrast to the sociability aimed for in the Project Method. In the "reflections" booklet in this Resource pack, Linda Holmes describes her unexpected discovery of the students noting material that would help their fellow students— "Here's something on cats you might find useful," etc.

I am in danger of making virtues of my deficiencies perhaps, making this Learning in Depth project's rather stark simplicity – compared to those projects the vice-principal cites to denigrate mine – seem as though what it lacks might be in its favor. But I confess I do think that there is a virtue in the starkness and apparent simplicity of this proposal. To adequately defend this claim would have to take us into philosophical depths beyond this booklet, and beyond me, but let me sketch the argument I think is relevant here. The proposals for Project work or for depth-learning that are tied in with progressivist theories of education tend to see the problem of failures to learn adequately in school as psychological issues to be resolved by improved forms of pedagogy. Now clearly there is something in this. But I think the nature of knowledge and the nature of the mind are such that accumulating knowledge in depth about even so apparently insignificant a topic as *dust* can yield some of the benefits that Peters and Hirst want, and Gardner's book so well describes, and the Project Method aims for.

An iconic feature of progressivism is a deep suspicion of learning a lot of content because this can so easily look like "rote learning" or "accumulating inert knowledge." This was the "traditionalist" sin that progressivism was going to save us from by making all learning relevant to students' experience and meaningful in their real lives. What has tended to get lost in all this is recognition that, mostly, minds just don't leave knowledge "inert." The belief that underlies this project for Learning in Depth is that knowledge itself, as it is accumulated in unforced conditions, will grow and develop and enrich experience in ways we would all agree are of educational value. The "unforced conditions" of the LiD project are in contrast to the kind of "formal learning" that Dewey (1966, p. 9) derided as a cause of so much of students' alienation from the content of the school curriculum. Accumulating increasingly complex knowledge will usually generate its own toolkits for making increasingly sophisticated sense of that knowledge.

Now that may all seem rather arcane, and it is certainly too condensed. What I want to do here is acknowledge that some of the oddities of this proposed project, in the context of current educational orthodoxies, don't mean that there are not alternative and sensible ideas supporting it.

Even though the topics I am proposing may seem trivial compared with evolution, Mozart, and the Holocaust, each topic can lead to some profound understanding, which can also transfer widely to other topics. One criterion for the choice of topics is that the topics can lead to important features of cultural life and also can engage the emotions and imaginations of students. I tend to think that this criterion excludes little, though, for various pragmatic reasons, we will find that certain topics might prove clearly better and some will be clearly problematic and should be excluded.

What is in danger of becoming a mantra for this project—everything is interesting, if only one learns enough about it—points at the way in which these seemingly trivial topics all unfold into the depths of our history, culture, and experience. So, again, this is indeed a limited idea, and the topics may appear on the face of it simple, but I think the result for most students will be transformative.

11. The reality of schooling is increasing pressure for greater success at meeting state mandated standards. To this urgent requirement on schools, this proposal contributes nothing. It offers only a whimsical and inefficient form of teaching, and will not be taken seriously by anyone in authority in education, especially as it is lacking data to show that the scheme actually works or could work in schools.

[A professor of education serving as research advisor to the school board. She has a Ph.D. in Curriculum and Instruction, and conducts research into methods of assessment. She has published three widely used books on student assessment and many articles comparing the effectiveness of different methods of instruction.]

We are in a world where the reality of schooling is state mandated standards and exams, and this proposal is just way off in the clouds as far as any administrator is concerned, or any teacher whose daily worry is preparing kids to meet those standards and pass those exams. Any innovation will be looked at in terms of whether it will contribute to this demand on schools or not. This will clearly not contribute. Three related reasons why it will fail come to mind.

First, this project looks like the rightly criticized "topic" approach to teaching early reading, in which quite different stories are brought together under topics like "horses" or "other countries." The stories are unified only by a name, not by an underlying domain of reality or genre, and so the whole exercise loses any real meaning. I see this depth scheme would go the same way—it might be that kids would look at all kinds of disciplines and approaches focused on "apples," but that's an arbitrary and spurious pulling together of subject matter that can be more efficiently studied in the subject areas that are used already. So this project will quickly come to resemble ordinary schooling, and not necessarily the best kind of ordinary schooling.

Second, I worry most about the simple inefficiency of this as an instructional method. There have been many studies of project-based teaching and they have shown it to use school time far less productively than straightforward teaching of subject matter. I'm thinking of Jeanne Chall's book *The Academic Achievement Challenge: What really works in the classroom?* (2002). What doesn't work is unproductive use of classroom time, and such project-focused class activities work even less well with disadvantaged students. So introducing such a program would doubly disadvantage such students when our greatest challenge is to narrow the achievement gap between them and better performing kids.

And third, I don't see at all how we can follow this depth plan and still meet our mandated state standards. To get over that hump, this project will need to persuade state legislatures that are currently moving towards more not less grade-by-grade content specificity, and I can't see them being persuaded. And, most simply, there just isn't any data that it will work or can work, as my colleague already pointed out.

Response to: The reality of schooling is increasing pressure for greater success at meeting state mandated standards. To this urgent requirement on schools, this proposal contributes nothing. It offers only a whimsical and inefficient form of teaching, and will not be taken seriously by anyone in authority in education, especially as it is lacking data to show that the scheme actually works or could work in schools.

I think some part of the professor's objection is caused by a misunderstanding about how the program is intended to work. In her comment about this being an inefficient form of teaching, she seems to imagine the students doing their work in a LiD class. But this project is designed to happen largely outside regular class time. For the first three years the students will likely need the most teacher support, and teachers will meet with students

individually or in small groups to discuss their projects and make suggestions for further study, and so on, as I've described above. The teachers will not be instructing students about *apples* or *leaves* or *the circus* in a class setting, or indeed at all. There may be some time during the day in those early years when students might work at their desks on their projects or in the library, but LiD is not competing for class time with other subjects. It is an add-on. But it is an add-on that is intended to be worked on increasingly outside the school, much as students might spend time with a hobby or a collection. Students will be allotted some brief occasions at school for consultation with the teacher about the project, for suggestions about what they might do next, for appreciation and encouragement, and so on. They may also work on their topics sometimes if they have finished some other work early and the teacher lets them pursue their topic, and they might use the school library at various times to develop their portfolios. But they will not be "inefficiently" taught about their topics.

She thinks that current realities unambiguously doom the LiD project. I have two responses to this objection; the first is to argue that there are good reasons to believe that students engaged in LiD will be more likely to do well on such mandated tests than students who do not experience the stimulation of the program, and the second concerns "reality."

A central aim of the LiD program is to transform students' relationship to, and understanding of the nature of, knowledge. In the process it will also involve each student in intensive and extensive exploration, classification, analysis, and experiments over the years of its operation. That is, each year students will have to reassess their portfolios, culling, adding, reorganizing, reclassifying, and learning a range of cognitive skills that will be available for other tasks and study of other curriculum areas, and these skills predict greater not less success for these students. It seems to me far the likelier outcome will be that these students will be much better equipped to make sense of the material on which mandated tests will be based, and will be able to perform better.

But still there is "reality." First I dispute the view that current realities of a test-driven regime will disadvantage LiD students, and second I want to make the trite observation that realities change. We have been living for a few years with an agenda of constraining and shaping teachers' activities by means of standards and testing. These have been imposed by governments in response to the belief that these instruments will bring about improvements in the educational attainments of our schools. What will be "the reality" if it becomes clear that the current testing procedures fail to produce the results they have been designed to bring about – – if it becomes clear that this is an inadequate solution because its designers failed to recognize the true cause of the problem of students' inadequate achievements? What if our new reality in five years is improved student test-scores and students' increasing lack of interest in and engagement by the subjects in which they are scoring better, with a precipitous decline in students choosing to pursue math and the sciences? Either way, if "reality" includes a continuance of the current testing regime or whether it gives way to quite different principles, I see no reason to think LiD will not be a significant addition to students' education.

I'm not sure how one is to respond at this point to the dismissive assertion that there is no data to suggest the program does or can work. It is, after all, a twelve-year program: because there is no data about its results, we can't implement it, and if we can't implement it, there will be no data. This seems a bit Catch-22-ish. Well, that's too cute a response, of course. There are currently some small pilot projects underway, but we need many more in many different school conditions. And, reasonably, people need reasons to consider setting up a pilot program, even if initially only for a year or so. But that is what this Resource pack is trying to provide‑‑reasons to persuade people that the LiD program is worth implementing. In the future, after many implementation programs, then we may be able to provide the "data" the professor requires now. Earlier I addressed the claim that unless there is "data" to support the program then it is improper to implement it. This view would, of course, have prevented every educational innovation in history from getting off the ground.

Conclusion

I've provided a response to each of the objections in order to preserve the proposal in its original form. Some of the objections, however, do carry force. I can't equally easily reject them all. A number of strong objections seem to gather around the earliest years. How does one get a five year old who cannot read or write to begin a portfolio on *apples* or *dust* or *the circus*? I do think that, with imaginative teaching, this is quite possible. But it's not simply imaginative teaching that may be in short supply when teachers have so many other pressures on their days. I have tried to suggest ways we can get around the problems of time constraints, but, for those first years, there are limits to how well we can manage this without making an investment in increasing staffing or shifting priorities that some will think unjustified, even if they acknowledge the likely benefits.

The biggest time requirement posed by the proposal so far is for Grades 1 and 2, for the time before students are able to read and write easily or work with some degree of independence. One compromise with the original proposal would be to begin the learning in depth project in Grade 3.

If we start when students are seven or eight years old, the more problematic objections lose some of their force. The time constraints are relieved significantly if we do not need to have extra support in place for the first two years, though, of course, they don't disappear. By grade three, though, it is easier to imagine that teachers might be able to manage the supervision required, if they are supported by older students, librarians, volunteer parents, priorities changed to reduce time spent on some other program(s), and/or a small increase in teacher time paid for.

I'm not convinced that we couldn't get the project underway at Kindergarten or Grade 1, but I acknowledge that it will be a lot easier for many concerned if the official start is the first week of Grade 3. This would have the further advantage that in the first two grades some deliberate preparation for the beginning of the portfolios can be taught. Certainly students

can learn some of the basic skills they will need to successfully launch their portfolios. While these are skills—like reading and writing, classifying, etc.—that students in the first two grades would learn anyway, it should be easy to include a specific focus on the ways these skills would best enable them to make a successful beginning to their portfolios.

But yet, having said all that, I still think it would be better to start with the Grade 1, and some educators I have spoken with think it could quite successfully be begun in Kindergarten. In the first week of the year in which it is begun the student will be allotted a random topic. The beginnings of their exploration might simply involve talking with others about their own special topic, with which they are going to become very familiar. They can ask parents, older students, and other people they meet what they can tell them about it. They can look at books, draw pictures, learn to write the word D U S T / A P P L E / T R A I N if they can't already write. Something of Sylvia Ashton-Warner's idea of "keywords" (1972) can leverage the topic as a motivator to reading and writing. (Ashton-Warner worked with Maori children in her native New Zealand, distressed that they seemed unable to learn to read and write with any efficiency by the methods commonly used in the British colonial school system. She talked with each child, locating what they felt most strongly about, and generated from each child's passions and hopes and fears a "key vocabulary," which she then used in literacy instruction. She had remarkable success, and her "keywords" method became widely, but not widely enough, used.) While the randomly assigned topics are not keywords in her sense, they can gather exactly that aura of a special area of knowledge that the students own, and will come to own in a unique way, during many years, and, indeed, to the end of their lives.

So the first two years of beginning to explore their topics and make the first moves towards developing their portfolios may not need to impinge in a problematic way on administrative ingenuity or teachers' time or make other unsustainable demands on schools. If we treat the first two years as more informal, ensuring only that the students are constantly reminded of their topics and provided with perhaps a special physical portfolio to begin collecting whatever materials they can find about their topics, and in which they can keep their drawings and beginning attempts to write and classify what they are learning about it, that may be sufficient.

Clearly more expertise needs to be brought to bear on these first two years, and, again, I will put aside a part of the Learning in Depth Project website for collecting ideas from teachers and others about how we might best manage this introduction to students' depth topic. This problem might also serve as an initial focus of research on the project as it goes into pilot trials.

The other problem that will appear compellingly negative to many is the financial one. I have suggested ways we might reduce the need for significant additional funding. Even so, this program will cost something to mount. Though, I must say, compared to the vast amount of money spent on programs and projects today that yield little benefit, the potential benefits of this project makes the likely additional costs seem small indeed.

*   *
                                              *

Looking at a set of objections and trying to make responses to these maybe leaves us at this point with a sense of the project as a series of battles and struggles, fighting objections that may loom large in reader's minds. This has not been the frame of mind in which the project has developed so far, and so it may be worthwhile at this point to try to re-assert quite briefly what the program is likely to contribute when conditions are even moderately favorable to it.

We have largely been looking at the problems of implementing this idea into a system in which nothing much like it has existed, and that has focused us on the difficulties and particularly on what seem the problems of getting the whole process started with young children who have no models of what the program leads to. So let me try to give a quick description of its possible benefits once in regular practice.

The LiD program is something new and additional that the school can offer to students' education. The program is relatively simple and straightforward and requires little in the way of additional resources. It provides a new way in which students can build knowledge, understanding, skills, and practices fundamental to effective learning, and this expanded capacity is available for all other schooling beyond immediate work in the program.

Students will firstly learn about something in depth, accumulating expertise on some topic to the point where they will know as much about it as almost anyone on Earth. This deep acquaintance with one topic will also inevitably provide students with a growing understanding of the nature of knowledge in general; clarifying for them increasingly the difference between degrees of security of knowledge claims and of opinions. A possibly unexpected benefit of the program, but one that is an important aim, is that knowledge in depth will provide a stimulus for students' imaginations—our imaginations can work only with what we know; ignorance is the great enemy of imagination. Growing expertise in some area of knowledge will increase students' confidence as learners, and this benefit should also spread to their other learning in school. As portfolios grow, the students will have to reorganize a number of times the knowledge they have accumulated, and this will stimulate development of increasingly complex classifying and organizing skills, along with the associated skills to manage such reorganization on the Internet.

Mostly this booklet is about the benefit of this program to students, which is appropriate, but it also offers a number of benefits to teachers. Unlike most teaching/learning relationships, in this case after quite a short time the students will know more about their specific topic than do the teachers who will be helping them construct their portfolios. The teachers' skills will be deployed in guiding the students' further inquiries but the teachers will also be exploring and discovering a wide range of knowledge along with their students. This constant exploration and discovery of new knowledge should be a frequent and pleasant intellectual stimulus to teachers. Teachers will also have the experience of constant interaction with enthusiastic learners and the results of their explorations are not to be subjected to assessment and grading. These knowledgeable students will not keep

their new skills confined to the LiD topic, but will bring them to all the regular classes of the daily curriculum. It is likely that this new and different form of student engagement with knowledge and the associated skills it will stimulate will enrich all teaching.

The program will have other effects that will also influence the whole school, especially after a few years if all the students are pursuing topics of their own. It will transform the school from a place in which students are the novices who are gaining a general and rather superficial understanding of the range of human knowledge to a place which becomes additionally a center of expertise in a wide range of topics. If the program develops over a number of years, then it seems quite likely that it will transform the school in a number of both clear and subtle ways. Schools can display students' expertise in a variety of forms. Schools can schedule frequent presentations on topics to the whole school as students reach particular stages in their portfolio development, and students will become more expert in presenting their knowledge to others, with teachers' help. "Ask the expert" sessions may be scheduled, for other students, for parents, and via phone-in radio shows for the public at large. It is reasonable to expect that with expertise will come greater imagination, greater seriousness about learning, and greater enthusiasm for learning, and that these changes of attitude will influence the culture of schools. Wall displays of students' topics should provide an attractive central focus in the school.

Students of different ages in an area, in a region, and across the country, and even from around the world, can begin to make contact on the basis of their shared topic to create new forms of interaction centered on learning. The grade 10, grade 7, and grade 2 students who are building portfolios on *apples* can to meet and work together, perhaps facilitated by a college student; they may build their own web site, which can be linked with perhaps dozens of other students' web sites about *apples*; there can be on-line discussions and presentations on the topic, and students of all ages can be engaged at their own level. That is, if this program begins to be implemented quite widely, we may see new structures and networks whereby schools encourage and promote learning.

Of course, this may seem like a somewhat optimistic fantasy that ignores the problems we have been wrestling with in this booklet. And I don't imagine those problems simply vanishing if we only put LiD into practice. But it is useful, I think, to dwell briefly on the intended benefits of the program after dealing so long with potential difficulties. No doubt implementing it will require some new challenges and some adjustments to the current routines of schooling. It does no good to try to suggest, as I may occasionally be in danger of suggesting, that this program can be slipped into current school systems without any effects other than those of students building more than usual knowledge about something. If the program works as I think it might, it will likely have some significant and perhaps unexpected ramifications throughout the school system, but I think they will be very largely beneficial ramifications.