

Learning in Depth

A Simple Innovation That Can Transform Schooling

KIERAN EGAN

The University of Chicago Press Chicago and London

KIERAN EGAN is a professor of education at Simon Fraser University. He is also a winner of the Grawemeyer Award in Education, a Kappa Delta Pi Laureate, an American Educational Research Association Fellow, a foreign associate member of the National Academy of Education, a Fellow of the Royal Society of Canada, Director of the Centre for Imaginative Education, and a Canada Research Chair in Cognitive Development and the Curriculum.

The University of Chicago Press, Chicago 60637
The University of Chicago Press, Ltd., London
© 2010 by Kieran Egan
All rights reserved. Published 2010
Printed in the United States of America

19 18 17 16 15 14 13 12 11 10 1 2 3 4 5

ISBN-13: 978-0-226-19043-3 (cloth)
ISBN-10: 0-226-19043-9 (cloth)
ISBN-13: 978-0-226-19045-7 (e-book)

Library of Congress Cataloging-in-Publication Data

Egan, Kieran.

Learning in Depth : a simple innovation that can transform schooling / Kieran Egan.

p. cm.

Includes bibliographical references.

ISBN-13: 978-0-226-19043-3 (cloth: alk. paper)

ISBN-10: 0-226-19043-9 (cloth: alk. paper)

1. Learning in Depth (Program) 2. Educational innovations. 3. Curriculum change. 4. Active learning. 5. Research. 6. Knowledge, Theory of. I. Title

LB1027.E4135 2010

371.2'07—dc22

2010011679

∞ The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1992.

Learning in Depth

A Simple Innovation That Can Transform Schooling

KIERAN EGAN

The University of Chicago Press
Chicago and London

Contents

Acknowledgments

Introduction

1. The Problem

2. The Proposal

3. Objections and Responses

4. The Nature of the Topics

5. Some Operating Principles and Examples

6. Building the Portfolio

7. What Do We Do Next?

Conclusion

Appendix A: Foundations for Learning in Depth

Appendix B: A Brief Outline of the Learning in Depth Program

References

Acknowledgments

I am grateful for the helpful criticism given to drafts of this book by my colleagues in the Imaginative Education Research Group at Simon Fraser University in Canada. I am particularly grateful to Gillian Judson, Kym Stewart, Tannis Calder, and Krystina Madej for reading the manuscript and making incisive criticisms and suggestions for improving it. I gained a lot of helpful suggestions from the great students in Simon Fraser University's Imaginative Education M.Ed. cohorts, with particular thanks for specific suggestions to Hannah Bernardino, Karen Faryna, Lili Ge, Laura Kenny, Kang Lee, Sean McLaughlin, Bratislav Mladenovic, Nancy Palejko, Sylvia Showler, Emily White, Sharon Widdows, Erica Zaiser, "J. O." Eriksson, David Futter, Patricia Goodson, Lezley Hiebert, Dennis Kraft, Jenifer Morrison, Sara Neall, Stacey Soffel, Todd Stewart-Rinier, Andy Sundahl, Paul Wright, Dmitri Zebroff, and Yvan Zebroff. During classes with these teachers/students I first mentioned the Learning in Depth idea, and Linda Holmes and David Futter decided to give it a go in their own classrooms, producing the first implementations of the idea. I am most grateful for their ingenuity and commitment in putting the idea into practice, for providing me with the encouragement to keep writing the book as a result of their wonderfully successful work with the first groups of LiDKids, and for providing their students with an enriching experience.

Bob Dunton, principal of the remarkable Corbett Charter School, and the impressive teachers at Corbett have raised questions, concerns, and ideas that have made this book more clear and practical than it might otherwise have been. Also their careful planning for an extensive implementation has been both encouraging and enlightening; to see superbly professional teachers taking an idea and articulating it into the complex context of their classrooms' daily life has been inspiring. Craig Worthing and the teachers of Anderson Elementary School, Richmond, B.C., were really helpful in the process of thinking through many of the potential practical and theoretical problems with the proposal. Hugh Burke, headmaster of Meadowridge School in Maple Ridge, B.C., was generous with his time and insights, as was Di Fleming, director of Accelerated Knowledge Technologies Pty Ltd in Melbourne, Australia. Laurie Anderson, acting superintendent, Vancouver School Board, gave me some helpful insights into administrators' views of the proposal, and support in locating schools interested in implementing LiD, as did Dr. Fred Renihan, ex-superintendent of the Surrey School Board. Dr. Geoff Madoc-Jones, coordinator of the Ed.D. program in the Faculty of Education, Simon Fraser University, and Dr. Jean Warburton both have contributed helpful insights into how the program might work. I am grateful also for specific help from Drs. Robin Barrow, Heesoon Bai, Allan MacKinnon, and Don McLeod of SFU's Faculty of Education; Dr. Gadi Alexander of Ben Gurion University; Isabelle Eaton, researcher with the Canadian Council on Learning; Teresa Martini, administrative coordinator of the IERG; Melanie Young and Stacey Makortoff, research assistants on the LiD project; and also from Pamela Thomas and Susanna Egan. I received many insightful suggestions on both form and content from Catherine Egan.

During the writing of this book I have been the grateful beneficiary of a grant from the Social Sciences and Humanities Research Council of Canada.

Important in improving the book in more ways than I can enumerate has been Elizabeth Brandon Dyson of the University of Chicago Press. The book appears in its current form—from a number of its structural features down to details of the content and not least as a part of Chicago's list—due to her commitment, good advice, many suggestions for improvement, good humor, and having more of the virtues of a good editor than any author has a right to expect. I am immensely grateful to her, and should the book lead to implementations of the Learning in Depth program, the expertise of children who may take part in the program will owe something to her—an odd kind of silent tribute that ma

persist for a long time.

Introduction

One of the constants in the sequence of human generations, as far back as we have records, is the older ones bemoaning the ignorance of the younger ones. Another constant is the older ones saying that they know that all previous older generations bemoaned the ignorance of their younger successors, but that *this time* it really is uniquely, cataclysmically bad. *Our* younger generation is demonstrating ignorance on a scale that dwarfs that of all previous ignorant generations; our younger generation has them a beat when it comes to minds of desertlike vacuousness. “The kids these days” know nothing, except the words of pop songs drilled into their brains through wrecked ears from jabbering iPods. *Our* younger generation, to a degree like none before it, has been the victim of years of successful dumbing-down by TV and Hollywood movies, which have served huge numbers of them in the place of family life, interactions with knowledgeable adults, and experience of the natural world.

Those who have taught many years of undergraduate students in universities, where one might expect better-educated young people to show up, claim that the ranks of recent years really do take some beating. “It’s not,” one professor recently complained to me, “that they don’t recall the provisions of the Treaty of Versailles, they don’t recall there had been a treaty, or why it occurred, or what a treaty is, or ‘Who’s Versailles anyway?’ and on and on, exposing a seemingly unbounded abyss of ignorance. And they are entirely content in the abyss, concerned in a generally friendly way that I am troubled by their ignorance of pretty well all the history they were taught in school. It isn’t, they tell me, relevant to their lives now. And in all their school years clearly no one has shown them how it might be relevant to their lives.”

Certainly all those college students had been taught about the Treaty of Versailles in their school years, and a huge number of other things they seem not to know. Dividing fractions, proving that interior opposite angles of a parallelogram are congruent, composing grammatical sentences, analyzing arguments, identifying countries on an unmarked map of the world, and on and on, have been taught to all students, but the knowledge, if it rested in their minds at all, disappeared like frost on a spring morning. Look at the curriculum guides for all those years of school: they are like a vast encyclopedia of human knowledge. But it is as though all that knowledge was taught to students in a foreign language for all the effect it has had on their minds by the time they leave school—according to the results of tests. (These depressing results have been consistent from the influential 1981 Educational Testing Service report [Barrows et al.] and the Nation at Risk report [National Commission on Excellence in Education 1983], to more recent dramatic summaries, such as Bauerlein’s charmingly titled *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future [or, Don’t Trust Anyone under 30]* [2008].) A few years of school and even the knowledge successfully learned for tests that were triumphantly passed has faded away and slid into the abyss, unattached to anything that can keep it alive in their minds. They are like incontinent amnesiacs at full throttle.

Well, I guess I don’t need to labor this—you’ll be familiar with the jeremiads. (Who’s Jerry?) Easy to moan, but what are we going to do about it? In this book I want to outline a simple proposal, relatively easy to implement, for solving a significant part of the problem. It is, as far as I’m aware, a new idea. If implemented, it just might have a transformative influence on young people’s education. The strategy isn’t some new method of teaching everything, but rather a proposal for teaching *something* in depth. I’ll describe the proposal in [chapter 2](#), after sketching in more detail than I have here the nature of the problem I think this proposal can address.

In the expectation that some hard-hearted readers might have doubts that a simple and relatively easily implemented idea might have a major impact on one of the most intractable problems

schooling, I'll use [chapter 3](#) to examine what seem like the main objections to the proposal, and I will respond to each of the objections. The chapter is designed as a kind of question and answer session, which a proponent of Learning in Depth is facing members of a school board who are considering the program. Their initial impulse is to reject such an unusual idea out of hand, and this question and answer device enables me to explore the kind of objections people might raise to this proposal. The fictional school board members are, like most educational administrators, open-minded about new possibilities, but wary, and knowledgeable, about the problems of implementing any new program. This is a long chapter, and it tries to make engaging what is inevitably a rather difficult task of looking in detail at all the things that could go wrong and giving reasons why they can go right. In [chapter 4](#), I'll describe a key feature of the proposal in more detail. In [chapter 5](#), I will offer some principles and practical suggestions for how we might guide students through this new component of the school curriculum. In [chapter 6](#), I will consider in detail another central practical component of the proposal; in [chapter 7](#), I'll suggest steps we can begin to take tomorrow to get this plan underway. This book is intended primarily to describe and propose a novel program that can be built into schools' curricula, and I will be focusing largely on the practical details of the proposal and how it can be made to work for the educational benefit of students, and teachers, and the school. Some of the readers of the draft manuscript of the book asked for some more theoretical background for the proposal, and so I have written an extensive appendix that will provide a discussion of the foundations of this proposal. Then I'll conclude, and we can all go home.

Books that begin by citing claims that students learn very little in schools may be expected to blame teachers for this failure to deliver the educational goods we expect. But I consider teachers, in general, to be heroic professionals commonly working in enormously difficult conditions, especially when their governments and educational administrators blame them for the schools' apparent inability to "produce" the skills and knowledge desired. I have elsewhere tried to show the real culprits of schools' ineffectiveness (Egan 2002, 2008), and want here to offer a partial solution that will, I hope, appeal to teachers' skills in a somewhat new way and also satisfyingly engage the motives that brought them into the profession in the first place.

Teachers mostly work hard to ensure adequate coverage for the mass of students of the basic knowledge a modern citizen might require. Learning in depth, in as far as this has been pursued in schools, has usually been a kind of educational luxury reserved for high-achieving students. So the proposal might at first seem aimed at the higher set of educational achievers. But that is not the case. This proposal may have a much more beneficial impact on lower achieving students; it may do the most to transform for them the experience of schooling.

The Problem

Whether or not our current cohort of students is setting new records in the ignorance stakes, we do have a problem concerning an inadequate return in terms of the knowledge they learn for the high-cost teaching effort expended in schools. What is the point of teaching a curriculum crammed with the wonders of human discoveries and inventions when we see most students come out of our schooling system recalling little of this knowledge and with virtually no sense of its wonder? That is to say, we surely have a problem. And here's a solution that I hope to persuade you is worth trying. As it comes at the problem from a new direction, let me elaborate the problem a little to explain why the unconventional proposal stands a fair chance of resolving it.

Breadth and Depth of Knowledge

Nearly everyone who has tried to describe an image of the educated person, from Plato to the present, includes at least two criteria: first, that educated people must be widely knowledgeable and, second, that they must know *something* in depth. The first criterion is fairly straightforward—pretty well everyone associates being well educated with knowing a fair amount about the world, about its history and geography, about politics in their own and other countries, about what is generally going on in the sciences, about the arts and literature, and so on. That is, a person who really has learned, retained, and somehow made meaningful the curriculum that has been taught in school satisfies the breadth criterion. In addition, we expect that breadth of knowledge not to be some loose assemblage of facts but also to involve some conceptual schemes that give it order and give the person some general understanding, and we also expect the educated person to have developed habits of critical reflection on what is known, along with a commitment to continuous learning. Such a person is equipped with the knowledge and skills that a modern society requires.

The depth criterion is there because most commentators on education recognize that having a relatively superficial knowledge of many things is somehow not adequate to give an understanding of how to put it a bit vaguely—as it usually is put—the way knowledge works, or the nature of knowledge, or the insecurity of knowledge. By learning something in depth we come to grasp it from the inside, as if we were, rather than the way in which we remain always somehow on the outside of that accumulated breadth of knowledge. With regard to the knowledge we learn in breadth, we rely always on the expertise of others; when learning in depth, we develop our own expertise. It is assumed that learning *something* in depth carries over to a better understanding of all our other, “breadth,” knowledge.

In everyday classrooms, teachers commonly try to achieve both breadth and depth by covering a topic in a general way and exploring some particular themes in more detail, or by allowing students to choose projects they can pursue in more depth within an overall unit of study. The main curricular provision schools make for achieving the depth criterion is to enable students in high schools to specialize in something or to develop specialized skills as part of vocational preparation. But in terms of satisfying the depth criterion, these faint moves don't begin to have an impact on the problem. They merely encourage students to learn something a little less superficially.

This proposal is not concerned with the obvious utility value that a lot of specialist knowledge serves for someone working in a technically demanding area or someone in a profession that requires considerable detailed knowledge. Accumulation of relevant “vocational” knowledge cannot achieve what we want educationally, and, anyway, it generally comes far too late in a person's education to

achieve what learning in depth can do for the school-aged student.

Breadth Important for All; Depth a Luxury for Some

It is usually assumed, as far as the school system is concerned, that the depth criterion is a bit of a luxury and available mainly to the more academic students or to those in wealthy private schools; the breadth criterion is what we mostly struggle with for the mass of students most of the time—ensuring exposure to and coverage of the general information we consider essential for an effective citizen in today's world.

Our currently dominant educational ideas require that we justify curriculum content in terms of its relevance to the kinds of lives students are likely to lead. That criterion leads us to cover a great deal of important knowledge that will have utility in their daily lives. It does not lead to prescribing consistent and deep learning of something that might have no particular relevance to their social lives—indeed it suggests any such prescription would be considered eccentric. That is, we assume that our main task is exposure to a wide breadth of relevant knowledge, and we hope that in among this there will be some topics or subjects in which students' own interests will carry them to great specialization.

I think there are a number of things wrong with these educational ideas, but here I want to address only the implications for attaining breadth and depth of knowledge. I think we have got it the wrong way round; I think that achieving the depth criterion is a key to also achieving the breadth criterion better. So I will show how we might manage successful learning in depth, and suggest how this might go some significant way toward solving the more obvious problem of graduates of our school system seeming to know little of the curriculum they have been taught for more than a decade.

Why Depth?

Encouraging students to learn something in depth is not generally seen as essential in our schools, especially when so many students seem to have difficulty mastering even the most basic levels of literacy and numeracy. So, what educational purpose does knowing something in depth serve? Since Plato's days to our own, this question has been posed in terms of what deep knowledge does for the mind. What reasons are usually given? Here are a few:

1. Expertise and Learning How Knowledge Works

The most common claim is a kind of tautology: lacking deep knowledge of *something* is to lack an adequate understanding of what knowledge *is*, and how it functions. If one's knowledge of everything remains at a general and superficial level, one never really comes to appreciate the nature of knowledge. One of the things a person learns in the process of learning in depth is how claims of knowing can be built and attacked and defended—it's all part of the slow process of discovering the insecurity of our claims to know. As noted above, knowing something in depth is like knowing it from the inside, where the student gains expertise, and comes to recognize from one area studied in depth something about how knowledge works in all areas.

People who know nothing in depth—who know everything from the outside—commonly assume that their opinions are the same kind of thing as knowledge. They do not learn adequately the difference between knowledge and their beliefs about things. This leaves them easy prey to those who take advantage of the gullible—they lack the defenses that deep knowledge can provide. It can also make them assertively confident in their opinions about things where secure knowledge is lacking. During a few years of teaching in universities I have commonly noted a strong positive correlation

between students who have difficulty stringing a grammatical sentence together or making marginally coherent argument and confidence in their opinions about how to organize societies, run the country's foreign policy, and instruct others how to live.

It's not that people who lack deep knowledge come to believe nothing, but rather that they will believe anything. (Alien abductions; monsters of all kinds—especially the unhygienic undead vampires and supernatural events—without which many movies would not get off the ground; fantastic conspiracy theories; possession by exotic spirits; access to memories from a previous life; a stunning array of crazy “urban myths”; and so, bizarrely, on.) Learning about something in depth can provide some inoculation against confusing opinion or wild claim with knowledge, and one of the products of learning in depth is gaining greater delight from learning about the wonders of the natural world than from tacky, clichéd, superficial falsehoods.

Incorporating some of the ideas supporting learning in depth, Howard Gardner gives a more focused, precise, and compelling set of arguments for why learning in depth is crucial to producing an adequately educated person and an adequate understanding of any topic. He shows, taking particular examples, that only by disciplined work can one get below the parochial level of knowledge that is too common. Furthermore, he shows that in-depth knowledge can bring about a state of mind such that students “will have a sense of what it means—of how it feels—to understand consequential topics” (1999, p. 245). He notes, too, that such understanding gained from the study of one topic or issue gives one a sense of the nature of knowledge and what it means to properly understand something that serves as a “litmus test” to apply to other topics and issues. He argues that currently our schools are less effective than they need be because they try to teach too much too superficially; they would be much more successful by focusing on a smaller number of consequential topics and ensuring students learn them in depth.

2. The Pleasure of Learning

Educational philosophers have consistently argued that the educated person needs to combine both breadth of knowledge about the world and depth of knowledge about something in particular. Plato, in the *Republic*, most conspicuously argued for the importance of learning in depth. His curriculum for the best educated was to take fifty years of study. More recently, Peters and Hirst (1970) have also emphasized that only by learning something in depth can a person escape from the confusions that commonly accompany a superficial knowledge base, and that this achievement yields something we consider worthwhile for its own sake, and so call pleasurable.

There is a related aesthetic benefit connected with knowing something in depth. Without that pleasure, the idea of learning for its own sake can never really take hold. The alternatives are always utilitarian learning—justified by some specific use to which it will be put—and entertainment. That would seem to describe the norm for most people; we learn what we need to know for some purpose and then we turn to entertainment to fill our time. The related problem is that nearly all learning in schools is coerced in some way—no teaching without evaluation or assessment of some kind. It's not that though we assume students will learn only if they know “it will be on the test later.” The very structure of schooling today seems to militate against students developing the accumulating pleasure of learning for its own sake.

Knowing nothing much in significant depth also means that the victim's understanding never becomes clear. The problem here is not that a person well equipped with a wide range of knowledge can't lead a perfectly contented life, but rather that a very peculiar human pleasure is denied them. That pleasure comes from the particular wisdom available only after one recognizes the nature of the knowledge one holds. Once one knows something in depth, the resulting understanding spreads to everything; without some deep knowledge, it spreads to nothing much.

3. Stimulating the Imagination

A less obvious benefit of learning in depth concerns its importance in the stimulation and development of students' imaginations. Being able to find particular knowledge in the mountains or information in libraries or on the Internet can be educationally valuable, of course. The downside of the emphasis on such procedural skills, however, is a disastrous underestimation of the importance of actually *knowing* things and having access to knowledge in memory—because the imagination works only with what we know. That is, the more we know about something, the more imaginative we can be about it (Egan 1997). Knowing a lot doesn't mean we *will* be imaginative, of course, but we *cannot* be imaginative about what we don't know. At the end of their schooling, students who have been through a Learning in Depth program will have immensely stimulating material that can engage and enrich their imaginations when it comes to thinking about their topics and things related to them. The imagination is not some idle spinning of airy nothings, as it has sometimes been represented, but one of the great workhorses of learning (Egan 2008). Without serious and significant knowledge, the imagination cannot do its best work. Ignorance impoverishes the imagination because ignorance leaves one with little to work with. Also the more we know about something, the more imaginative we can solve problems related to it. Richness of knowledge is what gets imaginations up in the morning.

4. Projects and Their Focus

The persistence of Kilpatrick's "Project Method" in Western education systems also speaks to the recognition by many that greater depth in learning has obvious benefits. Kilpatrick believed that properly organized projects involved students not simply in learning a topic in greater depth but also as a part of purposeful social activity, such that learning enriched the students' experience and the understanding of moral and democratic life. Recognition of the values of more engaged and systematic learning that a well-organized project allows has ensured the continuation of this form of teaching today. Among its most energetic promoters are Lilian Katz and Sylvia Chard (1989). They suggest that projects offer a complementary form of teaching to regular forms of systematic instruction, especially in the early school years. It is a form of teaching they, and many others, believe has some clear and potent advantages over regular modes of instruction.

The Learning in Depth program shares with the Project Method a recognition of the values students derive from learning something in greater detail and developing a fuller understanding than is common with much of the curriculum. But LiD is also different in a number of important ways, particular in its assumptions about how much individual work the student has to do before gaining really significant insights into any topic.

5. Deep Learning and the Sense of Self

Another educational benefit that is sometimes identified comes to fruition when the understanding that can result from learning in depth interacts with our sense of self. I don't want to make this into a kind of spiritual discussion, but many do use that kind of language to describe how deep knowledge can give us insights into ourselves, into our human condition. It is as a result of learning something in depth that we can connect with the layer of human understanding that leads to what we often vaguely call wisdom. Not just any kind of depth learning will produce these benefits of course, so it will be necessary in designing our LiD programs that we put in place criteria for the kinds of topics that can stimulate this deeper kind of understanding.

6. Learning in Depth and Humility

One of the great paradoxes of education is that only when one knows something deeply can one recognize how little one actually knows, that the more one learns the more one realizes there is to learn about any topic. Superficial knowledge is a curse of education—the target of Pope’s “a little learning is a dangerous thing.”

When people learn something superficially they often easily assume they know everything about the topic. One hears people with only the most marginal information confidently claiming certain things about things of which they know very little. As one acquires more and more knowledge about something, and as one begins to amass genuine expertise, one learns something about how insecure our knowledge really is and also how little we truly understand about almost anything. This is a sobering experience, and sobriety of this kind is one of the gifts of learning in depth. Realizing how little one knows is not disabling and is unlikely to cause depression and result in lack of interest in the topic; instead, it is properly exhilarating, giving a thrilling sense of bringing knowledge into our minds in ways that recognize both what we know and what remains to be known, and perhaps also gives a sense of the mystery of knowledge too—adding a dimension to the engagement of the imagination. This sense of how little we know even about what we know best generates an important sense of humility before the world of knowledge, and adds to our sense of who we are and what we can hope to achieve.

7. Oral and Literate Cultures’ Knowledge

Some of the above claims about why it is important to learn something in depth are maybe not entirely compelling, if only because the language in which they tend to be couched is a little vague. It is vague in part because understanding the meaning of some of the claims requires us to have achieved the experience described. If we haven’t, then there remains a sense of discomfort and imprecision about the meaning of some of the claims, and we can only extrapolate from experiences we have had in the direction of more in-depth learning than any of us has likely achieved. We tend to be willing to give some of these claims *some* credence because they do describe experiences we at least partly recognize. And we are inclined to accept some claims because they have been made by people whose great expertise we admire. Pope’s “a little learning is a dangerous thing” resonates because we have all seen some buffoon making overconfident assertions based on superficial knowledge. And we might recognize the way in which something we have studied in depth opens up new dimensions of understanding for us, and this stimulates a curious kind of exhilaration and also humility in the face of what remains to be learned. And maybe we can recognize from our own experience that we can be more imaginative about what we know most than we can be about things with which we are less familiar.

But still, these claims are all somewhat impressionistic, even though one or more of them might ring true for us. What I want to discuss now is something that is more profound and complex. For the past couple of hundred years, during which anthropologists have made contact with oral cultures with the intention of studying what used to be called “primitive” people, some puzzles have arisen. The reason we no longer talk about “primitive” people is due to the slow and somewhat painful discovery that people in oral cultures, who initially seemed to anthropologists and people in Western societies generally to be incapable of reasoning, were in fact no less sophisticated in their thinking than the anthropologists studying them. Some of the insights that have led to our better understanding of the thinking of people in oral cultures are due to a number of anthropologists, among whom it seems appropriate to mention Claude Lévi-Strauss, who died in the week I am writing this and whose book *The Savage Mind* (1966) played an important role in exposing something about the logic of oral

cultural thinking. Also influential in this regard was Harold Conklin's (1955) Yale Ph.D. thesis, which studied a tribe of forest-dwelling people in the Philippines. Conklin showed that the knowledge of plants of the average person in those forest environments was vastly superior to that of almost anyone in Europe or the United States, and also that their classificatory systems had much in common with the most sophisticated taxonomies in modern biology.

The relevance of this for the Learning in Depth project becomes clearer when we discover, with relatively recent anthropologists, that almost anyone in these oral cultures, when asked to name as many trees as they can, will list literally hundreds of trees. Not only can they name what seems to be an almost impossible number of trees, but they have a huge amount of knowledge about the conditions of growth, the possible uses of their various woods, their ecological relationships with other plants and animals, and so on. This seems to us astonishing in part because we can't manage anything like this, yet such knowledge is commonplace in oral cultures. When modern university students in the United States are asked to name all the trees they know, they may on average give five or six names: "Oak, pine, spruce, . . . cherry . . . (giggle) evergreen, . . . Christmas tree, is that kind of tree? . . . So what do kids say, big tree, small tree?" (Atran and Medin 2009, p. 2). This leads to the paradox reported by many anthropologists "that with greater formal education comes less knowledge" (Atran and Medin 2009, p. 2).

Well, yes, we might respond uncomfortably and defensively about our relative ignorance, but people in oral cultures don't know anything about the details of computer technology and the endless uses to which one can put the applications of an iPhone. Their extensive knowledge of trees is just a function of what occupies their attention. Such a response does acknowledge the intricacy and complexity of thinking in oral cultures, at least, but is it really satisfactory? Might we still consider our almost total lack of knowledge about the natural world around us, relative to that of members of oral cultures, a problem for us? Have we lost something important with our gain of literacy and modern technologies? Maybe our real problem is less that we lack this knowledge than that we think we don't need it?

Atran and Medin argue extensively that our modern loss of knowledge about the natural world affects the way we behave toward it. Their concern is the cognitive consequences of this lack of natural world knowledge, and they clearly think that even the intense knowledge of some aspects of technology that a few people master is no substitute for the cognitive losses that result from our near-total ignorance of nature. People who know so little, when faced with thinking about the natural world, have hardly any reliable resources to think *with* and can thus use only the blandest reasoning strategies at their disposal, which are utterly inadequate to the task at hand. And, drawing on one of the early points above, such people—we/us!—find imaginative engagement almost impossible, except again in the most bland, and largely sentimental, way. Nothing is an adequate substitute for deep knowledge.

Elsewhere I have discussed both what we gain and what we have lost with literacy and its accompanying forms of thought (Egan 1988, 1990). The cognitive strategies that have to be deployed in oral cultures to remember things involve a set of techniques that include framing information in story structures (myths), using rhyme and rhythm, evoking vivid images in the mind, deploying rich metaphors, and elaborating logical structures from binary oppositions—in short using a set of techniques that tie emotions and imaginations vividly in with the material to be learned. Much of modern educational work with young children and their teachers has been based on trying to show how we can deploy these techniques in planning and teaching so that children's emotions and imaginations can be caught up in the material of the curriculum, enabling them to learn more effectively. But none of these techniques can come into play if children are not accumulating the knowledge that adequate deployment of these basic techniques of meaning-making requires.

It's not that these techniques are simply utilitarian and appropriate in oral cultures while other

techniques are appropriate for our literate culture, so we can happily ignore this apparent loss that has come with the immense gains of literacy and its reasoning strategies. The cognitive strategy we see—the flexible deployment of metaphors, for example, is not merely of use only in the oral cultures that brought it to a high pitch of refinement; it is of value to anyone today who wants flexibility and creativity in their thinking.

These sets of strategies, both oral cultural and literate, serve us like cognitive tool kits that enrich our ability to make sense of the world and of our experience. The richer our set of strategies, the richer the sense we make of the world and our own experience within it. So we would be wise to try to preserve as many of the techniques developed in our cultural history as possible—especially as it is clear that some of those later developed literacy induced techniques rely on some of the earlier oral cultural techniques to work adequately. The story structuring of oral cultures is a foundation for our endless modern uses of narrative—when you turn on the TV evening news you see one story after another, and listen to reporters who have honed the skill to describe actual events in a manner that brings out as vividly as possible their emotional meaning. Also it is hard to argue for ignorance when discussing education, as is the position of those who might be inclined to think that we need not worry about what we have patently lost in the massive decline of knowledge about the natural world.

How these techniques of enriching the meaning of what is to be learned can come into play when children begin learning in depth will be dealt with later in this book. For now I just want to add this observation about our catastrophic ignorance of the natural world, and its cognitive consequences, as another reason to consider the educational value of LiD. Especially if we choose our topics from the natural world, we can enable every student to build up both a quantity and a richly meaningful intensity of knowledge, which might go some way toward saving us from our current inability to think well about the natural world and our place within it.

Depth of Knowledge for All

Lacking depth of knowledge, then, contributes to superficiality and inadequate understanding of the meaning even of the knowledge one has, makes one gullible and credulous, deprives one of the pleasures of learning for its own sake, impoverishes the imagination, and leaves us incompetent to think sensibly about the natural world of which we are a part. Quite a rap sheet!

While it isn't as easy to pinpoint the value of learning in depth as it is to point to the value of learning purely utilitarian knowledge, there are reasons to accept that learning in depth is educationally important for all students. And the reasons for learning in depth do go to the heart of a crucial aspect of education. The paradoxical element in all this—which should make it attractive to the educational system's paymasters—is that learning in depth in a nonutilitarian way is what really can make utilitarian learning effective. Our current focus on superficial “breadth” knowledge, after all, is hardly delivering the educational goods. A close look at a proposal for ensuring depth for all makes sense.

I should also mention the intuitive appeal of learning something in depth. Whenever I have spoken with teachers about this idea during the past year or so nearly always someone says that they recall with the most pleasure something they had to study in detail. As one teacher a few weeks ago said: “In grade 8 I did a year long special study on pyramids. I ate, drank, and slept with pyramids in my mind. It was my happiest memory of school, and I remember so much of it vividly today.”

In this chapter I have looked at a number of arguments given to support the general idea of learning in depth. The programs associated with some of these arguments are quite different from one another and they are all unlike the proposal I will make. My aim here has not been to indicate agreement with all these ideas so much as to indicate that many educators over many years have recognized important

educational values that result from knowing something in depth. Despite this long recognition, we have not been obviously successful in achieving what these arguments and programs have described their aim.

The Proposal

How might students gain such depth of knowledge? Well, this proposal can be stated very simply: The basic idea is that children will be randomly assigned, during the first week of schooling, a particular topic to learn about through their whole school career, in addition to the usual curriculum. Topics might include such things as *apples, the wheel, mollusks, railways, leaves, ships, cats, spices*, etc. Students will meet regularly with their supervising teachers, who will give guidance, suggestions, and help as students build personal portfolios on their topics. The aim is that students, by the end of the schooling, will have built genuine expertise. The expectation is that this process will transform the relationship to and understanding of the nature of knowledge. It should also transform for each child the experience of schooling. It should also be emotionally satisfying, in the way that unforced learning commonly is.

By the time they graduate from school the students will be immensely knowledgeable about *something*. Indeed, each student will know close to as much about some specific topic as most experts. They will also recognize that the topic about which they have such expertise is something that has expanded so vastly in their understanding that they realize they know little compared to what there is to know about it.

The fruits of this curriculum innovation will be students who know something in great depth, and also who know something about the nature of knowledge, and who will have developed some humility and expertise in the face of casual knowledge claims by the inadequately educated. You might skeptically think that it might rather lead to students revolting against their topic, which becomes increasingly distasteful to them, or that it will lead them to intense boredom, or that they should, at least, be given choice in the topic, and the freedom to change their focus whenever they get fed up with a particular topic. And you may think, anyway, it would be impossible to implement. Mind your own image the above proposal might bring to mind is of little Nathan howling in misery because he has just been told he has to study *dust* for the next twelve years, whereas his friend Jane has got to study *circus*. Later I will discuss how one can make the reception of their topics into an important ceremony, in which there will be considerable anticipation and excitement about discovering what each student's topic is to be, and how we can mitigate problems such as Nathan's potential misery on discovering his topic. The students, and the rest of us, need to recognize that an underlying principle of this proposal is that everything is wonderful, if only we learn enough about it. Well, maybe not everything is wonderful, but it is ignorance that leads to boredom and failure to engage with topics. Bear with me on this one, and we'll come back to such problems.

Sara, let us imagine, was assigned the topic of apples in her first week of school. She began her portfolio by drawing red and green apples, and indicated that one was a McIntosh and the other was a Granny Smith. Then there was a list of apple varieties. The first part of the list was composed from the varieties Sara had found in shops, and then she had added some extra ones that grew locally that she had found at a farmer's market her parents took her to. Then there was a more elaborate list, clearly pulled from the Internet, but she had made some additional notes next to those she had eaten—notes about size and color and taste. She had a five-star system to indicate which she thought best.

Later Sara had noted that her list included only a very few of the 7,500 varieties that currently are cultivated around the world. She began a file on apple history, which included pieces about the earliest sweet and flavorful apples, such as those we eat today, being first identified in Kazakhstan four thousand years ago. She had a map identifying the area, and also a world map with small notes

indicating places where there were very old records that mention apples.

Then she had a file on stories about apples: the Bible story of the Garden of Eden—though it mentions only “fruit,” it is usually assumed to indicate an apple; the Swiss story of William Tell shooting the apple off his son’s head; John Chapman, better known as “Johnny Appleseed”; the story of Newton’s falling apple; and so on. Then she had a file made up of games and verses and sayings about apples, and it included a section in which she had written definitions of such phrases as “the apple of my eye,” or “one rotten apple spoils the whole barrel,” and why people say, “An apple a day keeps the doctor away.” She has a picture of an old pirate ship under sail, with a brimming barrel of red apples on board, which she knows are there because they will save the sailors from scurvy, and they will do the same for us.

As you flick through her portfolio as she enters secondary school you will see segments on the fact that apple trees are part of the rose family and that the biggest apple was approximately four pounds. She has a small file explaining why apples float. There is a note that the current Lady apple was first cultivated by an Etruscan woman called Api, and in France it is still called “pomme d’Api”—a good way to be remembered, Sara noted. The Greeks and Romans prized apples, and had cultivated about twenty varieties: Sara has a complex “family tree” showing the development from those early apples to our current abundance of varieties.

She also has a few pages of description of the Trojan War, with pictures of Helen and Achilles and all their storied crew. This excursion into the mists of myth becoming history grew out of her discovery of stories about apples, and one in particular about Eris, who, excluded from a wedding, tossed a golden apple that was to be awarded to the most beautiful woman present. Paris of Troy was appointed judge, and he, fatefully, chose the goddess Aphrodite after she tempted him with the most beautiful woman in the world, Helen of Sparta. His taking Helen with him back to Troy launched the Trojan War, with a thousand ships and brought down the topless towers, and caused the death of noble Hector, tamer of horses, and the great Achilles, and the wandering and final return to Ithaca of wily Ulysses. All these adventures spun out of an apple.

In Sara’s portfolio is a beautiful large sheet on which she had written, almost like a medieval manuscript, a copy of W. B. Yeats’s poem “The Song of Wandering Aengus,” with illustrations of the “glimmering girl / With apple blossom in her hair” and of Wandering Aengus who had looked for the glimmering girl for so long, and thinking when he had found her that they would pluck “till time and times were done / the silver apples of the moon, the golden apples of the sun.”

She had a page attached, in which she noted that she first didn’t understand it well, but was attracted by its magic, and now she knows it so well, it goes everywhere with her, as do many other songs and poems and texts about apples, each able to generate rich images at appropriate times, and each making her life that little bit more interesting. Yeats’s poem added a dimension to her sense of apples. It set up resonances that will stay with her for the rest of her life.

Well, perhaps “Yeah, right!” is the appropriate response to this scenario. It is rather idealistic, of course. My aim here has not been to try to describe how the program might look year by year or what its practical problems might be—that’s something for the rest of the book—but to give a quick sense of where it can take a student, idealistic or not. It is intended to introduce students not just to a mass of detailed information about a topic, but also to enable them to discover ramifying knowledge and understanding about human experience, and to engage their imaginations and emotions. Not even a topic can do that, so we will have to spend some time working out what range of specific topics will serve this project adequately, as well as looking at some new forms of teaching that such a project might call on. We will also have to examine in more practical detail what these portfolios might look like, where they might be stored, what students’ presentations might be like and what purposes they will perform, and a number of other matters that will bring the ideal into the realm of the everyday school.

and its routines.

That's it—a simple concept with wide-ranging ramifications: a new element of schooling that need not take very much time from the regular curriculum, but which will likely have a profound impact on the students, their knowledge, and their approach to the rest of the curriculum as the years go by. When implemented, students would all begin a new educational process of *really* learning something in depth. They would slowly work on accumulating their portfolios, and learning more and more. The quality of their learning would change with time, and their own interests would influence the direction of their portfolios. All the school system would require is that the portfolio keeps growing and that the students keep learning more about their special topic.

Initially students will likely need significant help from the teacher charged to guide development of their portfolios. But as time goes by, students' knowledge of their topic will exceed that of the teacher and they will become increasingly autonomous in the way they continue their studies—some students might obviously be expected to become more independent earlier in their studies than others. Teachers will continue to monitor the portfolio's development, and can counsel students and respond to their questions about new dimensions of their topic that they might explore.

As I suggested earlier, we should differentiate this new feature of the curriculum from the regular work students do in their classes. The introduction of the topics to students, though arbitrarily assigned, should be marked as important, as the beginning of what will be an unusual lifelong relationship. I think it important that the assignment of topics be made in some ceremonial context.

It could be something as simple as a kind of graduation ceremony, in which the students would be given an initial portfolio folder. It would seem desirable also that in some part of the ceremony, perhaps early on, the student performs an act, a taking on of the topic, and that there should be some symbolic expression whereby the student publicly claims ownership of the topic. Perhaps, the student should be the first one to voice the topic in public, with help if necessary. This need not be stressful for the students, and they may be supported in all parts of the ceremony, but they themselves will be the ones to announce in public what their topic is. The initial portfolio container they are given might have in it, for example, a tile that the student might then place on a special wall in the school on which multicolored tiles create an attractive mosaic.

The purpose of the ceremony is to emphasize the importance of what the students are taking on and also to engage the students' commitment to their special topic. It might be good to hold the ceremony on a weekend morning, or at some time at which as many parents as possible can attend. I think also that the ceremony should be serious, and, crucially, lack any element of patronization. Children are not less intelligent than adults; they simply have had less experience and know less. This ceremony marks an initiation into the great human adventure of coming to know the world in symbolic terms.

A further distinctive feature of this project is that students will work alone for much of the time. They will meet with their supervising teacher, with older students who may have been working on the same topic, with parent volunteers, with college student volunteers, with school teacher-librarians, and with their friends. But the topic is theirs; it will be pursued in directions they wish; it is not to be graded or become in any way a part of credentialing or competition for awards or college or university places; it is an exploration of some area of knowledge that may initially seem uncomplicated but will gradually come to be seen as infinite.

I should emphasize a couple of features of the LiD program, even though it seems that mentioning them has little impact on some people's assumptions about how it will work. First, the student's topic is not intended to replace the rest of the curriculum! That is, the LiD program is a simple add-on to the current curriculum. Students continue with their regular schooling exactly as they do today, but LiD is an added program. We will have to explore the practical problems this raises later, but here I just want to emphasize that students are not supposed to learn everything "through" their topic. (The confusion

may be due to some past proposals recommending precisely this replacement of the usual curriculum. Some radical theorists have suggested that students should begin with some self-chosen focus questions. The curriculum would then be composed from the inquiries students use in trying to answer these important questions. Supporters of such a proposal expect, or hope, that as students follow up their interests they will gradually discover the whole world of knowledge driven by their own interests [e.g., Postman and Weingartner 1971]. LiD takes a quite different approach.)

Second, LiD is not to be another class. I don't envision anything like a teaching slot given over to everyone working in a classroom on their LiD projects. Again, we will explore what organizational problems such an innovation might create, but LiD is not some alternative pedagogy that is supposed to replace current forms.

Objections and Responses

Let's assume we have a group of school administrators 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 if it looks like, though it could involve a mess of problems, and might 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 aspects 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. (The illusion of interacting with the committee will be interrupted occasionally by my indicating points later in the book where some issues will be developed further—rather than trying to include the whole book in the “discussion.” I'll also use this as an opportunity to fill out some details about how the program might work in more detail.)

One of the peculiarities of this exercise, given that I am advocating implementation of the LiD program, is that it is much easier, and more fun, writing the critical attacks on the program than defending it. Perhaps if my advocacy is successful here and there, it will be possible in the future to show examples of what currently has to rely on projections of possibilities based on argument, reasons, and surmises.

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., in which she wrote a 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 only so much interest value in *trees* 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.

Even constant teacher help wouldn't stop children from easily becoming bored. You might have in your mind some bright, middle-class child who could be persuaded to go for this with parental constant support. But most kids won't have that home support—how much does the average parent know about *trees* or *apples*? 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 *birds* 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 the participation in this scheme, and won't 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. And worse it ignores the large number of children who suffer from learning disabilities of one kind or another. Our district has a high number of special needs students, and can't see this being of any use to them at all. They wouldn't be able to get started.

What are even the average students supposed to be finding out about *trees*, 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 the 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 *apples* 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 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. We would be able to talk only for a very few minutes in total, and the interviewer was energetically trying to focus on areas where we might disagree. 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 the solution 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 there is 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

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 seriously.

More serious is the point the superintendent connects with it—that their attention-span deficit, or some other cause, will mean that they will quickly become bored with the topic given to them. In the end, this is an objection that won't be resolved by assertion, but by experience. 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 have been attached to this Li 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 the 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 the topics, which I'll discuss in [chapter 6](#), and in part it can be encouraged by the principles for engaging their imaginations in topics that I'll discuss in [chapter 5](#). 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. In fact, to the surprise even of the teachers involved, reports on the first pilot projects that are, as I write, into their second 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. We need to plan for weekly meetings or perhaps even more, at this stage, even if they are quite short, or consider some further support system to get this off the ground. I'm sure some member of the board will make the objection that the project won't work because it requires unacceptable time, energy, money, 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 more to those students for whom current schooling offers so little. At present, low-achieving students, who may have 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 Web sites?

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 topics. 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 or something in increasing depth year after year is based on some of our experience with schools as they currently exist today. For all kinds of reasons 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 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 (which they are fascinated by dinosaurs, wicked witches, and star warriors!). Well, we'll come back to this issue soon.

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 intends 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. Through all the changes of grades and teachers and schools, they will have one constant and growing topic that will provide a stable intellectual anchor for their whole school career.

Objection 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 twelve 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 8, but then they would have the 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. B

- [*click A Woman in Arabia: The Writings of the Queen of the Desert \(Penguin Classics\)*](#)
- [click C++ Concurrency in Action: Practical Multithreading pdf](#)
- [**download online The Tree of Knowledge: The Bright and the Dark Sides of Science book**](#)
- [download Prince of Secrets \(By His Royal Decree, Book 2\)](#)
- [**read online An Anthology of Belgian Symbolist Poets \(Belgian Francophone Library\)**](#)
- [click Beginning Objective-C](#)

- <http://sidenoter.com/?ebooks/An-Introduction-to-Music-Studies--CUP-.pdf>
- <http://crackingscience.org/?library/All-Dressed-Up.pdf>
- <http://serazard.com/lib/The-Tree-of-Knowledge--The-Bright-and-the-Dark-Sides-of-Science.pdf>
- <http://test1.batsinbelfries.com/ebooks/Alexander-the-Great-at-War--His-Army---His-Battles---His-Enemies.pdf>
- <http://crackingscience.org/?library/Zeitgeist.pdf>
- <http://www.khoi.dk/?books/Beginning-Objective-C.pdf>