Table of Contents

Thinking in Stories
  Gareth Matthews, "Hildilid's Night" ........................................... 3

Ethical Inquiry
  Bertram Bandman, "The Child's Right to Inquire" ...................... 4

Looking for Meaning
  Byron G. Massialas and C. Benjamin Cox,
  "The Dialogue of Discovery" .................................................. 12

Reflections .......................................................... 17

NIE Interest in Thinking Skills
  Teaching and Learning Group, NIE,
  "Have Cognitive Skills Come of Age?" .................................. 21

Philosophy and the Educational Process
  Richard L. Edgeworth,
  "Children Taught By Reason Become Reasonable" .................... 28
  G.W.F. Hegel,
  "On Teaching Philosophy at the Gymnasium" .......................... 30
  Leonard Nelson, "The Socratic Method" .................................. 34

Reasoning in Early Childhood
  Kevin W. Saunders and Laurence W. Meyerson,
  "Logical Thinking and Multiple Classification in Kindergarten Students" .......................... 39

Classroom Report
  Nelson Pole, "Teaching Fifth Graders in Cleveland" .............. 46

News and Reviews

Review Article
  Howard Cohen, "The Child and the State,"
  by Laurence D. Houliagte .................................................... 48

A Story for First Graders
  Ronald L. Reed, "Rebecca" .................................................... 50

Cover photograph by Joseph D. Isaacson

Readers tell us that many copies of Thinking have failed to reach them. If you haven't received any of the copies due you, please notify us promptly.
Hildilid’s Night
Cheli Duran Ryan
Illustrated by Arnold Lobel
New York, Macmillan, 1971

Hildilid hates the night. She tries to chase it away, but her very best efforts bring only limited success. Whenever she looks out the window the night is still there — until, of course, the sun rises. That’s about all there is to the story; but that’s certainly not all there is to the thinking the story might set off.

Lynda Wrisley, a kindergarten teacher who took a course I taught a few years ago called “Philosophy and the Young Child,” read Hildilid’s Night to various groups of children between the ages of five and nine. She discussed the story with the children in each group and wrote down some of the conversation that resulted. Here is part of an exchange she had with a group of six- and seven-year-olds. It begins with comments the kids were making to each other, and then Mrs. Wrisley asks some questions.

“You can say it, but you can’t do it. You can’t chase the night away.”
“Yes you can — with a candle.”
“But the night is still there. If you take away a bunch of dark there is more dark there.”

(Quiet and thinking)
“What is dark?”
“Just a thing that comes.”
“Where is it in the daytime?”
“It’s on the other side of the world.”
“How does it get there?”
(Lots of ‘I don’t knows’)
“Could someone push it there?”
“No, you can’t push the night.”
“Well, then, what is night?”
“Night is just like air, only darker.”

From a group of children eight and nine years old Mrs. Wrisley got the suggestion, “If you want to get rid of night, go to sleep and when you wake up it is gone.”

These older children seem to have been less willing to worry about whether you could chase the night away with lots of light. “Look,” one said in exasperation, “the earth turns; don’t you know that Mrs. Wrisley?”

Still, they could respond imaginatively to the question, ‘What is dark?’ One said this:

Dark is just there. When you turn on a light, the light covers it all up like putting paint on the wall. Then when you turn the light off it all goes back into the bulb.

To the question, “If I go in the daytime into a closet and turn off the light, is it night in the closet?” one child replied, “No matter when night is night, it is night. Can I go out to play now?” Another sighed and said,

I like to sleep a lot. I just wouldn’t be bothered with all this, would you, Mrs. Wrisley?

Gareth B. Matthews
University of Massachusetts/Amherst

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Gareth B. Matthews
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Do not block the way of inquiry.
—C.S. Pierce

1. Introduction. What do you as a teacher or parent say to a child, if the child asks nonstop questions like “What do clouds eat?” or “Is the tree proud of being a tree?” or “Is Jesus the same size as God or slightly smaller?”? Or “Where did we come from?” and “Can God be everywhere at once?”? What will you say? Or if a child asks the sort of question Mitya asks in The Brothers Karamazov, “Why is there so much suffering?” or “Why are there so many poor people?”, how will you answer? Or if a child asks another child, “Why did your father die?” or “How can I develop products that may be harmful?” and “Why shouldn’t I think of and help only myself?”, do you tell the child not to ask such questions or find ways not to answer? If you do, are you guilty of “stifling the child’s imagination” or are you helping the child?

In this paper, I will consider whether a child has any rights at all, whether a
"One hears the argument that children have no rights to inquire, having no rights at all, that elders may have obligations to educate and care for children, but that children have no rights. This argument, however, is inconsistent with what education is largely about, namely, to encourage children to think on their own."
achieve the "full and harmonious
development of his personality."

In the progression from children hav­
ing no rights to children having absolute
rights, we move from children being
regarded as subservient to children as
capable of becoming independent, full
persons to children being accorded
unlimited freedom.

3. What Are Rights? And What is "In­
quiry"? Three conditions seem to iden­
tify a right. One condition of any right is
freedom. To have a right based on
freedom is to be accorded a sphere of in­
dividual autonomy, to exercise one’s
right or not as one chooses and to be im­
mune to the charge of wrongdoing for
exercising one’s right. It is the area of
one’s life over which as Joel Feinberg
aptly puts it, one is "the boss."17 The
right to be free importantly includes the
right not to be brainwashed, lied to, kept
ignorant, deceived, tricked, unwillingly
put to sleep or given tranquilizers,
ritalin or having one’s body touched
without permission, or more generally,
treated involuntarily or coerced without
compelling justification.

A second condition of any rights is
that they imply correlative duties against
others. A right is not only a freedom; a
right is a protected freedom to act. A
right accordingly imposes relevant
duties against others not to interfere.
If Jane has a right to a school lunch, some­
one or some group has a duty to provide
for Jane’s right. As Joel Feinberg puts
it, "rights are necessarily the grounds of
other people’s duties."18 The practice of
rights depends on others carrying out
Corresponding duties. Rights conse­
ditionally defensible basis for distributing
principles of justice, such as that every per­
son’s right is based on a fair turn rather
than a power or privilege. Whether
children can have rights depends on ap­
plying these features of rights to a con­
sideration of the four positions on the
rights of children previously cited.

We may next distinguish four senses of
"inquiry." To inquiry may be (a) to
express puzzlement, bewilderment,
bafllement, paradox or mystery; (b) to
seek clarification or explication; (c) to
look for relevant facts; and (d) to ex­
amine, analyze and evaluate presently
accepted answers in (a) through (c), ex­
pressing doubt or critical discontent or
scrutiny with received answers. Some
inquiries can only be expressed in sense
(a). For other kinds of questions, there
are confirmable or relatively well-estab­
lished answers, as with some formal or
factual inquiries. For still other ques­
tions, there are reasons to examine and
rigorously to question the answers given
in senses (b) and (c); and to inquire in
this sense is to inquire in sense (d). In­
quiry may include all four senses, and
inquiry that (inappropriately) precludes
the fourth sense of doubt and question­
ing is dogmatic; and a contradiction to
what it means, in part, to educate a per­
son. Inquiry may occur in one or more
of these four senses, and does not consist
in blocking the fourth sense from apply­
ing.

If a child has a right to ask in these
four senses, then other relevant persons,
such as teachers, parents, principals,
lunch room aides and school nurses, for
example, presumably have the cor­
responding obligation to satisfy such in­
quiries. For a child to have a right to in­
quire, if there is such a right, means the
child is not excluded from inquiring in
all four senses.

To have rights then means one is (1)
free to exercise and effectively claim
such rights; (2) one’s rights impose ap­
propriate duties against other relevant
persons; and (3) freedoms and duties are
governed by rationally defensible prin­
ciples of justice, such as that every per­
person’s right is based on a fair turn rather
than a power or privilege. Whether
children can have rights depends on ap­
plying these features of rights to a con­
sideration of the four positions on the
rights of children previously cited.

4. Arguments Against the First, Second and
Fourth Positions on Children’s Rights. (i)
Arguments Against the First View. One
hears the argument that children have
no rights to inquire, having no rights at
all, that elders may have obligations to
educate and care for children, but that
children have no rights. This argument,
however, is inconsistent with what edu­
cation is largely about, namely to en­
courage children to think on their own,
which presupposes at least one right, the
right to inquire. If a child cannot choose
which of several answers to a question is
correct, by asking for example, "Is it p
or not p?" the child might never find out
which answer is correct.21

Readers of the early pages of Book I
of Plato’s Republic may recall an an­
grous rebuttal Socrates employs against
Thrasymachus, who demands that
Socrates answer what justice is but not
answer that justice is what is obligatory,
useful, advantageous, profitable or ex­
pedient. Socrates thereupon asks how
one could answer what the factors of
three are if all the factors are ruled ut
from being used as answers.22

Analogously, if children have no right
to inquire, then they cannot answer any
question by thinking freely and uncoer­
ced beforehand. Without at least the right
to inquire, children may produce catechismal or rote or memorized
answers, but not thought-out answers.
To think, children have at least one
right, the right to inquire, to ask which
of several answers of the form p or not p
is correct. If a child does not inquire in
at least one of four senses [(a) to express
puzzlement, (b) to seek clarification, (c)
to find relevant information and (d) to
examine, analyze and evaluate answers
given in answer to (a), (b) and (c) (which
are logically consistent with what it
means to think)], how can a child ever
find out whether to choose an answer of
the form p or not p as the correct
answer? The answer, it seems, is that a
child cannot find anything out if barred
from the right to inquire in one of these
four senses of "inquiry." A child there­
fore has at least one liberty right, the
right to inquire.

"Rights" that are attributed ex-
clusively to some group of adults, "rights" that are unfairly distributed, "rights" that are not universal (in the sense that they are conferred equally to all beings with relevantly similar characteristics), are not rights at all, but powers. The injustice associated with avarice, greed, cruelty and arbitrariness eliminates (i).

(ii) Arguments Against the Second View. Essentially the same argument against (i), namely that children cannot learn to think effectively without at least the right to inquire, applies as well against the second position, but with a twist. For the second position grants children the right to be taken care of, fed, clothed, sheltered and possibly even "educated" to some extent; but not yet given liberty rights or the right to choose. A plausible reason sometimes given is that elders have to look out for the good of the child, that a young child is not yet able or ready to cross the street unaided. Analogously, a teenager is not yet ready to inquire without adult supervision out of adult concern for the teenager's own good.

However, even if one grants the case for child "readiness," which is developmentally indicated, the child cannot learn to make choices, even small or safe choices, without practice in choosing. How did we learn what our rights were — such as they are — except that we, too, had rights accorded to us in some way or other? If the rights we were accorded did not include liberty rights, rights to exercise discretion, or at least the right to inquire, it would seem that our other rights, rights to receive assistance, would be quite inadequate. Rights to receive help but never the right to make decisions are not rights that incorporate an essential feature of rights, namely freedom to choose. Ample arguments and evidence in John Dewey's educational writings, as well as before and since his works, show that the way to teach freedom and the closely related concept of respect for rights is to practice these. Rights are learned, asserted and protected by being attributed to people, by being honored and respected in practice and by public condemnation of its violations. If a child has no liberty rights, no standing with adults, how will the child learn to assert himself or herself as a person? For a child to have no rights of freedom to choose would seem to leave a child without any real rights at all and render its life as a child "morally impoverished." Position (ii) therefore reduces to (i) to which all the objections against (i) apply.

(iv) Arguments Against the Fourth View. Contra the fourth position that children have unlimited rights, if by unlimited rights, one means unrestricted freedoms to act without restraint, this would mean children can do whatever they feel like doing. A child's unrestricted right to inquire could lead to a child's invasion of the rights of privacy of others. Such "rights" could also lead to building dangerous bombs or breeding harmful viruses, or leave the child in some way free to harm itself without adequate adult guidelines. Since rights depend on other people's corresponding duties, rights that imply no restraints would soon result in the violation of other people's rights. Rights without restraints imply the elimination of rights.

The main objections to (iv) are primarily two. The first is that this position attributes unlimited rights to every being without sufficient regard to the practical problem as to how such rights, rights that imply correlative duties against others, could possibly be exercised. If rights are so impracticable that they cannot be carried out, then, as M. Cranston aptly points out, such rights impose an impossible burden of duties on others. Such rights are merely "utopian aspirations," he says.

A second objection is that freedom without control or limits leads to confusion and not much personal growth and direction, either in a child's action or in a child's inquiry. And from directionless inquiry, not much good and rather more harm may be expected. Unleashing children with "liberty rights" on each other with no constraints contributes to the termination of rights for everybody. The fourth position, having unlimited "rights," reduces to the slogan "Do your own thing." Liberty rights without restraints destroys rights.

The indefensibility of (i), (ii) and (iv) leaves us with (iii).

The realization of the FBC slogan depends on children being able to do something to enhance life in the future so that they, too, can eventually take their place as adults. The FBC slogan concedes the child's right to inquire, revealed, for example, when after we have run out of all kinds of reasons for getting a person to agree with us, we say to that person, "It's your life." What people, including children, have even more than their bodies, is their lives. His or her life is the most precious possession anyone has, even more so than one's liberty; and one's body without life is death. We also say, "It's his life" or "It's her life" to shrug away or rebut a contrary obligation that one shouldn't do X or live like X. We thereby concede a person's authority and autonomy over some vital concerns of a person's life, their area of freedom over which they are sovereign. These rights begin when they are old enough to be conscious. If children are instead treated as unfree, as slaves or obedient and docile unquestioning servants, how and when will they grow up to be free, free to think, at least? The opportunity children have for living like free persons would seem to be improved if they were treated like free persons as early as possible in their lives.

To live as free persons is to be treated with dignity, autonomy, respect and self-respect. If children learn dignity early in life by habitually being treated to dignity, by having their questions respected, for example, then they will learn the value of dignity in the way they and others are treated. A child can grow into personhood with the freedom, autonomy, respect and dignity entailed by personhood if the child has the right to inquire.

Children have to be brought up to be critical thinkers. To be critical thinkers means children are expected to be able effectively to examine the issues and problems that come before them. In order to examine the issues of the day, people, including children, are encouraged to ask questions, to inquire.

In the proverbial folk wisdom, we regard a priority of our culture to be to encourage critical thinking, and to foster associated values like curiosity, interest in learning, and freedom to inquire. The priority of freedom to inquire is given a vitally important place of honor by being designated as a "right." Our culture is heavily invested and dependent on developing effective questioners. So we confer on a child the right to inquire. To confer on a child the right to inquire involves granting the child the freedom to ask and pursue questions no matter where the way leads, as Socrates often pointed out, and which we, following his example, would encourage children to develop. The child's right to inquire then involves not only rights of assistance, but liberty rights as well. If a child has the right to inquire, a child has at least one liberty right, for one cannot inquire without the liberty to do so. If children have the liberty right to inquire, they have at least that much free choice, the option of framing a question in one way rather than another. Without some right to inquire, the child cannot be expected to develop the capacity for making choices which one needs in order to become a person.

5.2 Limitations Strengthen a Child's Right to Inquire. Unlimited freedom cannot wisely be placed in a child's hands prematurely. For the consequences of unlimited freedom may harm the child or others beyond the ordinary risk persons are willing to take with normal adults. In view of a child's immaturity, the adult provisions of freedom need not be accorded a child all at once; indeed to do so could stunt or misdirect a child's growth and also be harmful to adults. Conferring premature freedom upon a child, freedom the child cannot yet understand, may either be lost on the child or lead to a form of self-induced bondage or harm, such as smoking cigarettes. To let the child run across the street or put its hand on a flame or let it swim on its own or drive a car — or let it ask questions that lead the child to do these things — without suitable guidance, may lead the child to serious avoidable harm to itself and others.

Autonomy and the right to respect, basic to freedom, imply the right to make choices of increasing complexity in relation to the development of appropriate capacities. Children have limits to their rights to inquiry lifted as they become ready to benefit from the exercise of rights.

5.3 The Development of a Child's Rights to Inquire. A child's right to a fulfilling human life calls for a child's right to inquire as a means of achieving the child's life expectations.

Three models of a child-adult relation seem to orient the developing phases of childhood as well as to reflect the dominant values with which children are perceived. The first is the perception of a child as a dependent, and accompanying this perception are the associated values (as well as disvalues) of care, protection, subordination and subservience. According to a second model, children are perceived as independent, and with this view are such values (as well as possible disvalues) as relative mastery of personal survival skills, motor coordination, individually carrying out life plans and projects and being free to do as one wishes. According to a third model, children are perceived as growing up to become interdependent. Associated with this view are the values of living as well as possible with others, negotiating, compromising, exchanging, giving and taking.

These may be perceived as phases of a child's growth and/or as ways (or value perspectives) to orient the child-adult relationship. As phases of growth nothing more need be said since empirical psychology is better suited toward assessing such distinctions. But as value standpoints, more may be said. The first, while appropriate during infancy and early childhood, if lifelong, makes children into docile, unfree objects, bits of property, slaves, automatons, dutiful but unthinking, subservient and lacking in self-regard. The second throws dependence to the winds and asserts values of self over others. Unbridled freedom leads to one value of rights, freedom, but is blind to another, just relations with others. The third interdependence, coordinates dependence and independence together and, as a well-playing symphony, orchestrates lives together in socially worthwhile and productive enterprises and life plans. Which model sets the aims and process of development of a child's right to inquire?
Charles Dickens’ theme in *Great Expectations* shows how one may orient a child’s development of the rights to inquire. In this classic novel, Jaggers, the attorney, perceives his role as one of serving Pip, the hero fulfill his life expectations as a gentleman. On this view, Jaggers helps prepare Pip to enjoy future life prospects interdependently with others. According to Dickens, “It is the desire of the present possessor of that property that he (Pip) be immediately removed from his present sphere of life and from this place, and be brought up as a gentleman — in a word, as a young fellow of great expectations.” Jaggers explains to Pip that Pip has an anonymous benefactor who wishes Pip to grow up to be a “gentleman” of means and comfort, one who will not want for the material needs of a livelihood.

Applying Dickens’ theme to the development of a child’s right to inquire (and *wit large* to all children), hope and confidence are invested in the child’s development of future capacities. The child’s right to inquire is seen as basic to the realization of the child’s life expectations and a fundamental condition for the development and fulfillment of the child’s projects. Applying Dickens’ theme also suggests how adults may orchestrate the lifting of limits on a child’s rights to inquire.

The orientation that children have great expectations is harmonious with the slogan that “The future belongs to children;” and holds that children independently of their parents have a life of their own to lead, that parents owe their children the best upbringing and help they can provide, and that children owe nothing in return, sometimes expressed in the child’s quip, “I didn’t ask to be born.” The FBC slogan accordingly refutes the argument that children are to be treated in a lifelong plan as subservient. Since the first and second positions, denying children rights and denying them liberty rights, reduce children to permanent subservience, both are equally ruled out by the FBC slogan. For if the future belongs to children, parents do not own or control the lives and interests of their children. The FBC slogan accordingly rules against the attempt to justify the subservience of children.

The fourth position, attributing complete independence to a growing child, while valuable in part in promoting autonomy and independent life projects, does not assure that a child, as it reaches adulthood, will live well with others. The fourth position, whose linchpin is unrestrained independence gone wild, is illustrated by William Golding’s theme in *Lord of the Flies*. Here children, well schooled in Egoism, when turned loose, become veritable savages. Independence alone, will not do, except to harm oneself or others more than the total benefit such a position provides.

The moral strength of the FBC slogan is that it coincides with a widely shared moral sentiment, which seems to have the force of natural law behind it, so pervasively and strongly felt is this sentiment, namely to love, care and protect one’s offspring. The pervasive moral sentiment to love, care and protect one’s offspring provides a justification for a child’s rights to inquire. The notion that the future belongs to children accordingly provides the developing goal and target, which orients children’s rights to inquire.

On this view, dependence and independence are seen as stepping stones on the way toward the mature adulthood of interdependent life, which it is the relevant parents, teachers’ and other children’s role to facilitate, following Jaggers’ example as advocate, who sees to it that Pip grows up to be a gentleman.

5.4 The Threshold of a Child’s Right to Inquire. Interdependence implies limits on children’s rights to inquire. Several examples illustrate the limits of a child’s right to inquire. Should children, for example, dissect animals in biology classes?

If one never dissected animals, how would one learn anatomy and physiology? What experience would surgeons have? On the other hand, some people dissect animals just for the fun of it. The issue of how much good or harm to us and other animals seems to determine how much dissection of animals should occur rather than whether or not to do so; but there seems to be no warrant for dissection without limits, with a view to the good dissection brings.

Another example of the limits of children’s rights to inquire arises when the parent of a neighboring teenager dies. What questions may a child as well as neighboring adult ask? The limits to what questions may be asked seem to be posted by respect for privacy. Sensitivity to another person’s tragedy seems to place a self-imposed restraint against asking a grieving relative, “What was the cause of (his) death?” And if a parent just prior to death had lost his job, neither a neighboring child nor adult would seem to ask, “Why did he get fired? Was he incompetent?” A teenager’s friends seem to sense that some questions are not appropriate, that a child has rights to respect, to privacy and rights to confidentiality at any time, but especially at a tragic time of life. A teenager’s friends seem to know not to ask insensitive questions, perhaps on Golden Rule grounds and also of doing more harm than good, especially in a time of tragedy. The tacit restraints children recognize mark the limits of a child’s rights to inquire.

A child’s right to privacy and confidentiality (as with adults) calls for obligations of forbearance by adults; and one may attempt to prevent violations by exposing and confronting violations that occur. Abuses of children’s rights to privacy and confidentiality include school officials revealing private details of students’ records, such as children’s I.Q.’s (except to the children themselves), revealing their parents’ income, marital status and the state of their parents’ emotional conditions.

There seems to be a reasonable presumption in favor of placing few limits, if any, to a child’s right to inquire about matters affecting its private self, including its state of health or illness, its weight, height, I.Q., its looks, its behavior and how it is perceived by one’s peers and adults. After all, how does one live up to the Socratic adage, “Know thyself” without being trusted to have one’s innermost questions aired and tentatively answered.

High school students may also be limited from asking how to conduct a biological experiment to produce and release lethal viruses. A child may similarly be limited from asking how to
manufacture LSD in a chemistry lab.

A child's questions may have no limits imposed by others; the only limits may be those imposed on the answers to a child's questions. And yet, a child is sometimes reminded not to ask "embarrassing questions," such as asking a neighboring child about its parent's death. If there is a liberty right to ask, guidelines as to what a child may learn.

To the question, "Where did we come from?" there are limits involving primarily a fourth sense of inquiry, limits prescribed by a rational examination of received "answers," rather than outright acceptance. For good rather than harm results if received answers are examined.

"...a child's right to inquire is a vital link to the child's development as a person in the world, one in whom a future is invested...."

there is not necessarily a corresponding duty to give a serious, rationally defensible answer, if it is not prudent to give an answer or if no answer is known. So a child has an odd kind of right to inquire if to some questions a child asks, an adult, such as a "professional" physician, for example, either "turns a deaf ear" or otherwise evades the question, and does not take it as a question to be seriously answered.

A child may have a right to ask in the sense of its freedom to express itself, but not a right to inquire in the sense that its right imposes an obligation on others to give a serious answer to the question. An example of such a child's right to ask but not to have an answer is if high school students ask their physics teacher how to build an atomic bomb in their backyards, ruled out on the grounds that harm could result. To almost every question except one that caused personal embarrassment, such as interference with privacy, a child may have the right to ask, but no one else would seem to have a corresponding duty to give a reasoned answer — when a limit is indicated.

A principle is suggested by these examples, good and harm orient and limit a child's right to inquire, and provide

In these examples involving the issue of dissection, privacy, especially in tragedy, high school students building atomic bombs, developing lethal viruses, manufacturing LSD or asking where we came from, the limits of their rights to inquire fully — in the sense that other relevant persons have a duty to point the way to rationally defensible answers — are determined by what good or harm results. Minimizing harm and maximizing good govern the development of a child's rights to inquire.

What counts as good or harmful is heavily but not exclusively influenced by "The Future Belongs To Children" (FBC), "Hand the Torch Down" and "Make Life Better For Your Offspring." For these express intergenerational sentiments. They reflect feelings people widely, deeply and positively share about children and give a justification for the child's limited rights to inquire. To adopt FBC and its companion sayings or that life should be at least as good as or better for our offspring than it is for us, implies that children are the worthy sorts of beings who have rights to inquire, limited by their capacity to exercise them, resulting in the probability of their doing good rather than harm to themselves and others. The assumption is that children will develop beneficially by having rights and that they indeed need rights to develop so as to inherit a worthwhile future. Within these limits designed to bring about good rather than harm then, a child's right to inquire rules out any attempt to "bar the way of inquiry."

A child's limited right to inquire and the learning of that important right by the child, in relation to the rights and responsibilities of others, shows how a child's right to inquire is a vital link to the child's development as a person in the world, one in whom a future is invested and whose turn it is to fulfill the previous generations hopes and expectations. Without an appropriately limited right to inquire a child is consequently not worth very much to itself or others.

6. Conclusion. For a child to learn to have and cherish rights worth having calls for a child's growing awareness of the significance and limits of rights as linked to its development as a person. The nurturing of persons from infancy to old age within a tradition that values rights and whose members participate in the deliberate education of rights and its values, freedom, duties and justice, will also value a child's right to inquire within defensible limits, rights whose implied principles and policies are designed to contribute to good rather than harm.

The motivation to secure rights in the recent history of the human race consists in the drive toward human emancipation from humanly induced harm and fatality. Since rights are not found in nature, like gold or oil, for children to have rights calls on them to learn the meaning, value and importance of their rights. The child's learning of the right to inquire within limits rests on some old platitudes like "The future belongs to children" and "Make life better for your offspring." For a child to learn to have rights worth having includes the right to inquire. The child's learning of the right to inquire, limited by available adult wisdom as to what causes good or harm, may result not only in children learning to inquire about what is relevant, significant and morally worthwhile, but may result also in the improvement of life in this and succeeding generations.
I wish to thank Matthew Lipman for his encouragement and for suggesting the title of this paper.

1. In this paper I use “child” to refer to any legal minor, generally under eighteen years of age.


3. Saul Kripke, is said to have asked his mother when three years of age, “If God is truly everywhere. Dorothy Kripke said yes, whereupon the child asked if this meant he had squeezed part of God out of the kitchen by coming in and taking up some of His space.” According to Mrs. Kripke, her son “seemed to have an intuitive grasp of the notion that two objects cannot occupy the same space at the same time...” The New York Times Magazine, August 14, 1977, p. 12.


5. I will adopt Martin Golding’s terms. He refers to option rights as rights to freely make decisions. Welfare rights are rights to receive assistance or benefits, such as food, clothing, maternity benefits, health care and education. See his “Rights: A Historical Sketch” in E. and B. Bandman (eds) Bioethics and Human Rights: A Reader For Health Professionals (Boston, Mass: Little, Brown, 1978), pp. 44-50.


10. J. Locke, Two Treatises of Government, p. 147, par. 55.


embodies the emphasis on both option and welfare rights, otherwise known as faith in the freedom of the child and in assistance to the child.


21. A similarly decisive argument was used by Noam Chomsky against B. F. Skinner to prove that there was some free will. For a somewhat dubious critique but helpful to the point at issue, see T. Machan, The Pseudo-Science of B. F. Skinner (New Rochelle, N.Y. Arlington House Publishers), 1974.


26. An expression of this sentiment is found in the United Nations Declaration of the Rights of the Child, which states that “mankind owes to the child the best it has to give.” See O. O’Neill and W. Ruddick (eds) Having Children, p. 112.

27. Contra M. Friquegnon in “The Rights and Responsibilities of Young People,” we do not rehearse a child for freedom. As we live in the classroom (as John Dewey reminded us) not rehearse or prepare for life, we do not prepare or rehearse for freedom. We learn freedom from childhood or by practicing freedom.


33. One has no rights against earthquakes, racoons in the jungle, rabie-infected dogs and ice capped mountains; only against people.
The development and refinement of the process of discovery is still under exploration. Consequently, the number of discovery episodes is very limited and what is available is only experimental in nature.

A study conducted in a Chicago public high school over a period of one academic year attempted to explore further the dimensions and the implications of teaching a course in world history through discovery, or what Bruner calls, the process of "figuring out." While the general nature of the study was exploratory, some questions provided the focus of the investigation. Some of these questions were: (1) What is the direction, flow and sequence of the process of discovery? (2) How can historical materials be presented in such a way that while some clues will be offered, the explanation will not be given away, and the student will be prompted to study independently and to acquire the heuristics of learning? (3) To what extent do the style and method of discovery operate as a potent motivational device in learning? (4) To what extent are high school sophomores with slightly above average ability capable of participating in discovery and in inquiry? Before dealing with these questions and presenting relevant classroom discussion, let us briefly identify some instructional procedures and classroom mechanics which will help the reader reconstruct the teaching experience.

The class was composed of 35 students, most of them about fifteen years old, enrolled in a required modern world history course. The course began with the Reformation, and it generally

followed the sequence of historical topics; selected social events were chosen to be investigated in some depth. All the aesthetic products of culture, including art, music, literature, and architecture, were drawn upon for classroom material; however, the study emphasized the use of historical documents in developing the student’s ability to discover and explain his political and social environment. Secondary sources — e.g., textbooks, excerpts from monographs, magazine articles — were used only insofar as they related to the problem under attack. These were introduced after the initial encounter with the discovery episode. A new discovery episode was introduced every two weeks, and, in the main, it consisted of a historical document, the origin, referent, and recovery episode. A new discovery episode was not necessary for the student to have had special training or familiarity with the material; however, the study emphasized the student’s ability to discover and use of historical documents in developing an explanatory theory. Although each discovery episode presupposed some general knowledge, it was not necessary for the student to have been trained or familiar with the problem under consideration. In a situation such as this, the instructor performs a non-directive role in that he explicitly refuses to answer any of the students’ questions. His task in the classroom is twofold: (1) to challenge the students and instigate further investigation and (2) to moderate the discussion.

In order to illustrate the flow of classroom discussion during a discovery session, parts of the student dialogue are reproduced here. The students were given 10 brief poems and were asked to read them carefully. The selection of material was based primarily on two criteria: (1) availability of data pertaining to a central or common theme, e.g., the feudal system in Japan, and (2) careful avoidance of clues which would “give away” the puzzle. The participants were encouraged to follow their curiosity in discovering a plausible choice for the cultural origin of the following poems:

"Long life and peace during your reign
O, Emperor.

1. The beginning of all art
A song when planting a rice field
in the country’s inmost part.

2. Is there, I wonder
A man without a pen in hand—
The moon tonight!

3. On the temple bell
Resting, sleeping,
a firefly.

4. A Great Lord—And Who
makes Him get off his horse?
—cherry blossoms do!

5. Snow yet remaining
The mountain slopes are hazy—
It is evening.

6. A crossroad sermon! True,
It’s rigamarole—but then
It’s tranquil too!

7. So brilliant a moonshine
When I am born again—
A hilltop pine!

8. To the Great Lord’s hall
Five or six horsemen hurry hard—
A storm wind of fall.

9. As he snoozes, the mountain stream he uses
To wash his rice,
No simple peasant, this!

The discussion that ensued was tape recorded and transcribed. Selected parts of the transcription are given below.

**FIRST DAY**

**TEACHER:** Please read this. (five minutes of silence) Well now, everyone finished? What do you think of reading? What are these?

**GWEN:** I don’t think so. Some of the poems are very interesting, maybe difficult to interpret, but interesting.

**SYLVIA:** Yes, I think we can find clues if we try.

**GEORGE:** Clues for what? All this is still vague.

**BILL S.:** Yes, what are we supposed to find out? What do these mean? Where are they from? Who wrote them? When were they written?

**TEACHER:** All of you should be able to supply your own answers to these questions. Would like to make the first attempt? (a moment of silence)

**CAROLYN:** Well, they’re all poems, so they must have been written by a poet.

**BILL S.:** That’s some help! How do you know they’re not written by one and the same poet? They all look the same to me, same three lines, same style, all short and vague.

**CAROLYN:** But they’re on different subjects and they give different feelings. Each one gives me a different feeling.

**BILL S.:** Does that mean they can’t be by one poet expressing himself on different subjects?

**CAROLYN:** I have a different idea. Maybe these poems are all by different poets, but may seem to be the same because of the style. What I mean is that maybe these are the usual kind of poem for this country.

**BILL S.:** Or, it could just be the style of a particular poet.

**JOHN:** I think this is getting nowhere. Let’s forget about the poet and try to find out where it’s from.

**BILL S.:** But these poems are too vague.

**SYLVIA:** We’re back to that again.

**TEACHER:** Well, does everyone agree with this, or can someone offer advice or evidence to


1. *My Thoughts turn to the Ancient Capital*
help us out? Where are these from?

SHARON: They are from Europe because an Emperor is mentioned, and lords are also mentioned a couple of times. This means there must have been an autocracy in this country. Many countries of Europe had monarchs and lords.

BERNARD: At one time almost every European country had this kind of government. Maybe these poems are from Russia. Russia had an Emperor and nobles running it for a long, long time.

DIANE: I think that this is from France or Germany, or Austria during the Middle Ages, because the lords seem to be very powerful; they are able to command cavalry men and to own large halls. Maybe the Emperor referred to is Charlemagne.

GWEN: I think you’re getting on the wrong track. This is no European set of poems, certainly not American!

TEACHER: Why?

GWEN: Well, you're missing a lot of important parts of the poems that seem not to be European at all. What about the mention of a temple? Since when are medieval churches called temples? And what about the reference to rice in one of the poems? Rice wasn’t one of the European’s main dishes, at least as far as I know.

EDDIE: Rice is from the Orient, from China. The Chinese eat lots of rice. The poems must be translated from Chinese.

STEVE: They could also be from Japan or India. I’ve read somewhere that these two countries produce and eat rice as their main dish.

MARY: I read recently that Southeast Asia produces a lot of rice. Vietnam exports rice, and eats some of it.

HELEN: I have a suggestion, but not of another country. I think we should try to get the meaning and message of each poem and then find out where they’re from. Let’s start with poem 1 and work our way down.

It is apparent that the first day is spent on orientation and organization of the materials at hand. During the introductory phases of the discovery episode, the students are encouraged to come to grips with the responsibility of exercising independent judgment in pursuing a course of action. The teacher and the material which includes only limited clues, create a sense of puzzlement. The students are reluctant at first to order their own learning; but then they begin to suggest modes of attack and try to capitalize on the available springboards. For example, John proposes that the focal point of investigation should change from a quest to identify the poet to an inquiry into the national origin of the poems. This suggestion is taken up by several members of the class — e.g., by Sharon, Bernard, and Diane, who infer that the poems are European or Russian. However, Gwen disagrees with them because some evidential clues do not support the inference, and she proceeds to offer a new hypothesis that more clearly harmonizes the several bits of problematic data and contradicts previous conjectures. At this point other students attempt to validate and to narrow down the proposition that the poems are of a non-Western source.

HELEN: This poem [number 8] is written by a Buddhist or a Hindu because it contains a belief in rebirth. As far as I know, only these two religions teach this belief.

GEORGE: I think it’s called reincarnation. That means that you are born over and over again into new bodies or forms, although your soul remains the same.

HELEN: Well, I think this poet is a Buddhist or Hindu because he believes this idea. He wants to be born again as a pine tree on a hilltop so he can enjoy beautiful moonlit nights. Does anyone disagree?

MARY: I don’t. Now we have a better idea of where these poems are from. They have to be from the Orient, and they have to be from a country with Buddhists or Hindus living in it. They can’t be from anywhere else.

GWEN: Yes, and according to the ninth poem, these would have to be from a country in which great lords are important people. The ninth poem repeats the fifth poem, and the great lord is said to own a hall. This must be like a castle.

STEVE: The lord seems to have soldiers or cavalry working for him. Then the poem changes subject and tells of a storm wind of the fall.

GWEN: Maybe the poet is trying to tell us in a roundabout way that a war or fight is brewing. That’s why the cavalry is reporting to the great lord. I don’t think his poem is peaceful like the others at all. It’s a poem that tells us of troubles in the country. People were fighting each other and each great lord probably had soldiers working for him.

SHARON: That’s called a feudalistic system. These poems have to be from a feudalistic country. We have to find out which Oriental countries were feudalistic — or still are.

SECOND DAY

HELEN: This poem [number 8] is written by a Buddhist or a Hindu because it contains a belief in rebirth. As far as I
GEORGE: That might be a help. Find out which Oriental countries had feuding societies and feudal lords.

SHARON: I agree about the wars, but I don’t think your suggestion will help because all those feuding societies used to have little wars.

STEVE: Like England during the War of the Roses and France during the tenth and eleventh centuries?

TIM: I think you are right. You have also missed something important. If there are great lords in this country, there are most likely other lords, lesser ones in the setup as well. This sounds very close to feudalism. Usually, however, feudalism is a system of many powerful nobles and a weak king.

SHARON: Well, that fits pretty well. We definitely know that the lords of this country are powerful, armed, and have castles of some kind, while the Emperor is spoken of as being in his ancient capital. It seems to me that he’s out of the picture.

BILL S.: But we really can’t tell for sure.

SHARON: Well, at least we know that the nobility is powerful, and if that’s true, then the Emperor must have much less power or say-so on everything.

TEACHER: Good point. Now what about a volunteer for the last poem?

BERNARD: The last one is about a lazy peasant. I guess it’s a kind of joke because the peasant is taking a nap while the water washes his rice, which I guess is in some sort of sack hanging in the water. Say! That’s pretty clever.

DIANE: Some people, including the poet, must have thought peasants were simple-minded, and the poet is showing us that this isn’t so, because here’s a peasant who can get his work done and sleep at the same time.

BERNARD: By the way, I think this poem and the second one about rice prove that rice is very important in the life of the people of this country, and it also shows that these two poems are by different people.

MARY: Why do you say that? We decided before that we couldn’t be sure of that.

BERNARD: Well, in the second poem those who plant the rice are praised and in the last poem peasants are made fund of. That could still be that same poet in a different place or mood.

KAREN: Some people, including the poet, must have thought peasants were simple-minded, and the poet is showing us that this isn’t so, because here’s a peasant who can get his work done and sleep at the same time.

In the above discussion the students are subjecting the poems to a detailed examination. All shades of meaning and locational clues are explored. In part, they seem to be working in sequential steps or plateaus; once they have determined that the poems are of Buddhist or Hindu origin then they strike out to reach a new plateau which would incorporate more data and eliminate fruitless speculations. In their attempt to explain the existence of great lords they begin to draw certain logical inferences, e.g., if powerful lords are in control, the monarch must be correspondingly weak. It should also be noted that in the process of figuring out the puzzle, the participants draw from personal, accumulated knowledge which, on several occasions, provides the missing parts and clarifies certain ambiguities and vagueness in the material. For example, they are trying to interpret the poems in terms of a theory of feudalism. The discussion pertaining to the last poem is a clear illustration of an attempt to reconcile contradictory information and place it in the framework of a more inclusive and warranted hypothesis, a hypothesis which explains the interrelationships among social, economic, and geographic factors.

THIRD DAY

TEACHER: Now that you’ve analyzed all of the poems, where do you think they’re from?

GEORGE: We’ve ruled out the West, and this has to be from countries under the influence of Buddhism or Hinduism, the only religions preaching reincarnation.

Eddie: That limits our choices to India, China, or Japan.

Or Southeast Asia. The question is which one.

STEVE: It seems as though each of these places fills the bill. All are countries that are literate, religious, feudalistic at one time or another, and dependent on rice for a main part of their diet.

Bill V.: But wasn’t there an earlier period in Chinese history in which feudalism was the form of government?

Mary: Well, at least we can eliminate most of Chinese history.

Bill S.: Oh, please tell us where it’s from. I can’t wait any longer.

TEACHER: But why should I when you can find out for yourself? Doesn’t someone have any helpful suggestions?

DIANE: I think it’s from India, too.

The mention of rice, temples, peasants, and the religious tone to several of the poems make me think of India.

Gwen: But what you’ve said could apply to almost all of Asia,
India, and the East.

I think we can rule out China altogether because I remember reading that Buddhism and the idea of rebirth were introduced into China after China already had a system of absolute Emperors who ruled through a civil service, and I think there were no powerful nobles.

If all of that is correct, then China is ruled out, but that still leaves us with Japan, India, and Southeast Asia.

These poems must be from a mountainous country because of the mention of mountains in several of them.

Northern India is very mountainous, so are parts of Southeast Asia, and all of Japan is that way.

Maybe it's Japan. Up until very recently Japan was a feudal country with lords, barons, and soldiers called Samurai, including a very shy, weak Emperor. It is also a Buddhist country filled with ancient temples and preachers of religion. Japan sounds like a good choice.

It could still be Northern India or Southeast Asia some time long ago.

I believe there were Emperors in India rather recently, called Moguls, or something like that.

What about the style of these poems? They seem pretty unusual. Maybe we can check into this by looking at sample poems from all over Asia until we hit on the same type. Maybe that will help us find a definite answer.

(Bell rings.)

During the third day of class deliberations, the students begin to limit the range of alternative choices or hypotheses. Based on the previous analysis, they assert that the country in question will have to be Oriental, and that it will have to be under the cultural influence of Buddhism and/or Hinduism. Once this has been determined, a search for specific countries within the given cultural region takes place. Here they attempt to match alternative countries with the criteria that they have established. They further delimit the field of choice by rejecting those Oriental nations which deviate from the image they have constructed, based on their interpretation of the poems. Throughout this process, they draw inferences which aid them in the defensible elimination of unwarranted hypotheses, e.g., the rejection of China as a possible choice by Tim and Bob, which takes the form of an “if-then” deduction. The primary goal of the group is the discovery of an answer that harmonizes all the evidence and integrates the 10 poems. However, they soon realize that the data at their command are not sufficient to support conclusively any of the proposed solutions. The realization of this difficulty motivates them to seek additional sources, especially those which would include authoritative information about the particular poetic style.

FOURTH DAY

BILL W., STEVE, TIM, AND KAREN: We have final proof. We found it.

KAREN: We checked these poems against Indian, Chinese, Japanese, and any other Oriental types of poems we could find, and we found that this type of poem is Japanese only, and is called a haiku.

During the last phase of the discussion, the students offer concluding suggestions which are based on newly obtained evidence. For the most part, the additional proof was the result of the collation of the poems under investigation with all other relevant material which was accessible in the library. This line of inquiry was in part promoted by Karen’s suggestion at the conclusion of the third day which directed attention to the form and style in addition to the content of the poems.

From the dialogue reproduced here it is evident that the students were able to participate directly in the process of discovery and inquiry. This process entailed a number of related tasks — identifying and defining the problems at hand, devising alternative plans of attack, formulating working hypotheses from the given data and their previous learning experiences, testing the hypotheses by drawing logical inferences and by gathering relevant information, and arriving at a theory or “grand generalization” which draws together all bits of data and supporting hypotheses. The conclusion that Japan is the nation described in the poems appears to be subsumed under a theory of feudalism, at one level and, at another, under the grand generalization that a particular culture exhibits unique characteristics and interrelationships among the various elements of the society. It is interesting to note that the process of discovery moves from a stage of hunch and intuition to a stage of in-depth analysis and, finally, to the point where knowledge claims are based on concrete, documentary evidence. While this is the general direction followed in the discovery episode, speculative or intuitive thinking may be found, to a great or lesser degree, in all of the phases; when there is a gap in knowledge the student reaches out into unchartered and largely unknown realms of interpretation and thinking. From this observation the complementary nature of intuitive and analytic thinking may be seen. Also, given the creative encounter the student moves toward more abstract thinking in order to discover or formulate a subsuming theory or principle which explains the event or phenomenon.
A Rebellion Nipped in the Bud

All the more singular it seemed afterwards to him that his first serious contact with the President should have been a struggle of will, in which the old man almost necessarily defeated the boy, but instead of leaving, as usual in such defeats, a lifelong sting, left rather an impression of as fair treatment as could be expected from a natural enemy. The boy met seldom with such restraint. He could not have been much more than six years old at the time—seven at the utmost—and his mother had taken him to Quincy for a long stay with the President during the summer. What became of the rest of the family he quite forgot; but he distinctly remembered standing at the house door one summer morning in a passionate outburst of rebellion against going to school. Naturally his mother was the immediate victim of his rage; that is what mothers are for, and boys also; but in this case the boy had his mother at unfair disadvantage, for she was a guest, and had no means of enforcing obedience. Henry showed a certain tactical ability by refusing to start, and he met all efforts at compulsion by successful, though too vehement protest. He was in fair way to win, and was holding his own, with sufficient energy, at the bottom of the long staircase which led up to the door of the President's library, when the door opened, and the old man slowly came down.

Putting on his hat, he took the boy's hand without a word, and walked with him, paralyzed by awe, up the road to the town. After the first moments of consternation at this interference in a domestic dispute, the boy reflected that an old gentleman close on eighty would never trouble himself to walk near a mile on a hot summer morning over a shadeless road to take a boy to school, and that it would be strange if a lad imbued with the passion of freedom could not find a corner to dodge around, somewhere before reaching the school door. Then and always, the boy insisted that this reasoning justified his apparent submission; but the old man did not stop, and the boy saw all his strategical points turned, one after another, until he found himself seated inside the school, and obviously the centre of curious if not morbid criticism. Not till then did the President release his hand and depart.

The point was that this act, contrary to the inalienable rights of boys, and nullifying the social compact, ought to have made him dislike his grandfather for life. He could not recall that it had this effect even for a moment. With a certain maturity of mind, the child must have recognized that the President, though a tool of tyranny, had done his disreputable work with a certain intelligence. He had shown no temper, no irritation, no personal feeling, and had made no display of force. Above all, he had held his tongue. During their long walk he had said nothing; he had uttered no syllable of revolting cant about the duty of obedience and the wickedness of resistance to law; he had shown no concern in the matter; hardly even a consciousness of the boy's existence. Probably his mind at that moment was actually troubling itself little about his grandson's iniquities, and much about the iniquities of President Polk, but the boy could scarcely at that age feel the whole satisfaction of thinking that President Polk was to be the vicarious victim of his own sins, and he gave his grandfather credit for intelligent silence. For this forbearance he felt instinctive respect. He admitted force as a form of right; he admitted even temper, under protest; but the seeds of a moral education would at that moment have fallen on the stoniest soil in Quincy, which is, as every one knows, the stoniest glacial and tidal drift known in any Puritan land.

—From Henry Adams, The Education of Henry Adams

Observation and Education

The observer is not he who merely sees the thing which is before his eyes, but he who sees what parts that thing is composed of. To do this well is a rare talent. One person, from inattention, or attending only in the wrong place, overlooks half of what he sees; another sets down much more than he sees, confounding it with what he imagines, or with what he infers; another takes note of the kind of all the circumstances, but being inexpert in estimating their degree, leaves the quantity of each vague and uncertain; another sees indeed the whole, but makes such an awkward division of it into parts, throwing things into one mass which require to be separated, and separating others which might more conveniently be considered as one, that the result is much the same, sometimes even worse, than if no analysis had been attempted at all. It would be possible to point out what qualities of mind, and modes of mental culture, fit a person for being a good observer: that, however, is a question not of Logic, but of the Theory of Education, in the most enlarged sense of the term. There is not properly an Art of Observing. There may be rules for observing. But these, like rules for inventing, are properly instructions for the preparation of one's own mind; for putting it into the state in which it will be most fitted to observe, or most likely to invent. They are, therefore, essentially rules of self-education, which is a different thing from Logic. They do not teach how to do the thing, but how to make ourselves capable of doing it. They are an art of strengthening the limbs, not an art of using them.

—John Stuart Mill, A System of Logic, Book III, Ch. 7, par. 1.
Thinking as Filling in the Gaps

The use of any contributory sources of evidence that are available to reach a terminal point which is treated as if it had not been achieved before seems as if it must be regarded as particularly characteristic of thinking. It is important to consider the phrase "treated as if it had not been achieved before." Probably in the vast majority of cases it has been achieved before by somebody else, and in a great many it has been already reached by the very person who now reaches it again. The point is that the terminal point is treated as if it were inherent in, necessitated by, the evidence; it is never merely recalled as having been achieved before. Thinking, that is to say, in my use of the word, not simply the description, either by perception or by recall, of something which is there, it is the use of information about something present, to get somewhere else.

If this is accepted, there is always in thinking a possibility of a succession, or a series, of interconnected steps. As we have already found, in many instances, these steps are not articulated, or formulated in any way. But if a jump is made from information given, accepted, and describable to an alleged terminal point, it is invariably assumed that intermediate interconnected steps can be found, even in those cases where so far they have not been found. It is this which confers upon all thinking a character of necessity, or compulsion.

The important characteristics of thinking process, as I am proposing to treat it, can now be stated:

The process begins when evidence or information is available which is treated as possessing gaps, or as being incomplete. The gaps are then filled up, or that part of the information which is incomplete is completed.


The Laws We Bring With Us

"All that can be said is that everything in our life happens as though we entered upon it with a load of obligations contracted in a previous existence. There is no reason arising from the conditions of our life on this earth for us to consider ourselves obliged to do good, to be tactful, even to be polite, nor for the cultured artist to consider himself obliged to begin again twenty times; the admiration his work will arouse cannot matter much to his body eaten by worms, as for instance the space of yellow wall painted with so much knowledge and taste by an artist for ever unknown and scarcely identified under the name of Ver Meer. All these obligations whose sanction is not of this present life, seem to belong to a different world, founded on kindness, scruples, sacrifice, a world entirely different from this one, a world whence we emerge to be born on this earth, before returning thither, perhaps, to live under the empire of those unknown laws we have obeyed because we bore their teaching within us without knowing who had taught us, those laws which all deep work of our intelligence brings closer to us, and which are only visible (and scarcely even then) to fools.

—Marcel Proust, The Prisoner.

The Prisoner.

On the Exemplary Role of the Teacher

But learning to think is not merely learning how to judge, to interpret and to use information, it is learning to recognize and enjoy the intellectual virtues. How does a pupil learn disinterested curiosity, patience, intellectual honesty, exactness, industry, concentration and doubt? How does he acquire a sensitivity to small differences and the ability to recognize intellectual elegance? How does he come to inherit the disposition to feel and to think, and the pupil will never acquire these abilities unless he has learned to listen for them and to recognize them in the conduct and utterances of others.... For 'teaching by example', which is sometimes dismissed as an inferior sort of teaching, generating inflexible knowledge because the rules of what is known remain concealed, is emancipating the pupil from the half-utterances of rules by making him aware of a concrete situation. And in imitating the example he acquires, not merely a model for the particular occasion, but the disposition to recognize everything as an occasion. It is a habit of listening for an individual intelligence at work in every utterance that may be acquired by imitating a teacher who has this habit.

And the intellectual virtues may be imparted only by a teacher who really cares about them for their own sake and never stoops to the priggishness of mentioning them. Not the cry, but the rising of the wild duck impels the flock to follow him in flight.


Lisping Metaphysics

Of Miss Welchman's Kindergarten in Chestnut Street, my first school in Boston, I remember only that we had cards with holes pricked in them, and colored worsted that we were invited to pass through the holes, making designs to suit our own fancy. I suppose this was calculated to develop artistic originality, not to convince us how trivial that originality is, and how helpless without traditional models. I remember also that I used to walk home with another boy, not so old as I, but also much older than the other children; that there were banks of snow on both sides of the path; and that one day — this must have been in spring for there was a bush with red flowers in his grass plot — he said something very strange as he left me, and ran up the steps into his house. I reported what he had said to Susana, who pronounced it pantheism: perhaps it was that those red flowers were opening because God was awakening in them. This shows how far my English had got in that Kindergarten and how we lisped metaphysics there.

—George Santayana, Persons and Places
Guiding Children's Reasoning

The teacher’s work in guiding rational thought bears much the same relation to his work in habit formation that teaching a child to himself find the way to go from his house to one a mile away would bear to teaching him to follow the road there. In the latter case you have only to put certain acts with certain situations, — going to the right by the mill, taking the path at the top of the ridge and the like. But in the former, you must make sure that the youngster knows what place he is to try to reach and keeps it in mind. He must also at least know that to get to a place you must keep going and not lie down to sleep; he must have some knowledge of the direction in which the house lies and of the roads and woods and valley in the neighborhood. He starts off correctly and at a cross-road turns to the left. 'What did you do that for, John?' 'I don't know.' 'Where are you going?' 'To grandpa's.' 'Where does that road go?' 'To the school-house.' 'Is that on the way to grandpa's?' 'I don't know.' 'What comes after the school-house if you go down this road?' 'The church.' 'How long does it take to go from grandpa's to the church?' 'Oh! a long time.' 'Is grandpa's near the church?' 'No. It is a long way.' 'This road goes to the church. Is it a good way to go to grandpa's?'

If your boy is bright enough, he now turns to the right, but soon comes to the end of the road. 'Where do I go now?' says he. 'Where do you think?' 'I think we go through that field.' 'Well, try it and see!' You rapidly approach a pond and the boy sits down and cries. 'I can't find the way to grandpa's.' 'What's the trouble?' 'You can't get around this pond, it's all swampy.' 'Do you have to go around it?' 'Yes. Grandpa's is up there and you have to go around the pond.' 'Go and look at the pond and see if you can find anything about it that will help you to get to grandpa's.' And so on with constant stimulation to the examination of each situation confronted and with the selection and rejection of ways in the light of knowledge of their consequences, until grandpa's house is reached, or until the problem in arithmetic is solved.

Edward L. Thorndike, *The Principles of Teaching*

Thinking and Dialogue

It is a well-documented fact of learning psychology that in order for a skill to improve there must be adequate feedback; this feedback has also been referred to, by various psychologists, as immediate knowledge of results and reinforcement of appropriate responses. Training intelligence presents a special problem because the constituent mental activities are generally carried out covertly — inside the person's head. In order to train intelligence, it is necessary to bring these mental activities to the surface. The methods used to accomplish this include unison response, model's introspective protocol, thinking aloud during practice, and one-to-one Socratic dialogue. Furthermore, individual or small group instruction seems to be a requirement — at least until some other feedback technologies are developed. All these procedures externalize the thinking activities of problem solving so that they can be demonstrated and practiced in full view. It is a point of interest that these methods resemble — and replicate in the classroom — the type of parent-child verbal dialogue in problem solving that researchers believe constitutes the academic advantage middle-class children have over lower-class children.


On Encouraging Questioning in the Social Studies

It is particularly important for teachers of the social studies to develop effective questioning techniques, for the social studies carry the special responsibility of promoting the democratic classroom. If students are to become constructive citizens who respond intelligently to the perennial and emerging issues of our society, they will need the kind of classroom experiences that teach them how to ask and answer the significant questions in the social studies. Needless to say, when students are grappling with real questions, when they are refining the skills of reflective thinking, and when they are reacting to one another's ideas and points-of-view, they are indeed preparing themselves for effective participation in the democratic processes of society. Good questioning techniques by the teacher are essential in democratic classrooms.

On Teaching and Meaning

Wittgenstein argued that the child should learn the principle of a thing through an interesting, though possibly difficult, specific case; even if other standard examples were easier to learn, there was no point in cluttering up the mind of the child with them unless he understood and could apply the principle behind them. Thus one went from the unusual to the ordinary rather than — as many teachers had hitherto supposed — from the ordinary to the unusual. When Robert Dotterns, of the Institut Jean-Jacques Rousseau in Geneva, wrote of the school-reform program: "Like the instruction in the native tongue and in writing, the teaching of arithmetic is completely changed... The meaning of the operations is discovered while their technique is being acquired" (p.58, my italics), he touched on the nerve of Wittgenstein's later comment in *Zettel* (412) that he was "making a connection between the concept of teaching and the concept of meaning."

In putting together his workbook, Wittgenstein implemented not only the school-reform principle of "self-activity" but also the reform aim that had been dubbed "integrated instruction." The second slogan designates two closely connected goals: the teacher is encouraged to relate the teaching process to the student’s local environment and customs; and he is given the latitude to determine how and when the students will turn from one subject to another during the school day, and how they will integrate or connect one to another — no reading or spelling period as such, for example, is set aside. Although general goals were indicated, the interest of the children was supposed to determine how the day would be divided. Here, as in the presentation of the idea of self-activity, one finds a rather explicit criticism of pre-war associationist educational psychologies, in which it had been taken for granted that everything could, and should, be broken down into "unit ideas," which meant in practice that the teaching of different subjects was rigidly compartmentalized. In the case of Wittgenstein's *Worterbuch*, the self-activity of the students in compiling their own dictionaries, which alerted them to an awareness of the ambiguities of their own usage, was integrated with the local environment through the use of dialect.

Have Cognitive Skills Come of Age?

An indication of heightened interest in the teaching of thinking skills surfaced in Washington on April 21st of this year. It was a Request For Proposal from the National Institute of Education, and it anticipates a research project of considerable magnitude on the training of higher cognitive learning and thinking skills. The letter introducing the proposal outlines the rationale of the project in these terms:

"These general cognitive skills include knowledge acquisition skills, problem solving strategies, logical reasoning and the self-control of learning and thinking processes. Because these cognitive skills are not usually taught explicitly in the schools, programs which team them may offer the possibility of substantial improvement in educational practice and of substantial reductions in the inequity of educational results in different population groups. The project is intended to: 1) provide expert advice on the quality and reasonableness of existing programs, 2) initiate exemplary research on some of the basic research questions which must be answered before meaningful empirical evaluation could be done, and 3) assist NIE in relating research — the project's own and that of other researchers — to educational practice in cognitive skills training. Specific project tasks include: 1) collecting and describing cognitive skills training programs, 2) developing a conceptual framework to relate cognitive skills training practices to basic research on cognitive function, 3) producing special purpose literature syntheses, 4) conducting research on study activities, 5) conducting research on other cognitive skills topics, and 6) producing reports for both researcher and practitioner audiences."

There follows a lengthy introduction in which readers of Thinking may well be interested for the insight it gives into the changed atmosphere at NIE with regard to the role of cognitive skills in education. Particularly worthy of note is the planning conference referred to in the Introduction to the Work Statement. The conference, which took place in early October, brought together approximately 55 cognitive psychologists, developmental psychologists, and curriculum designers. (The proposed project, it will be noted, envisages "on-site observation of five selected programs" over the course of its three-year operation.) Philosophy for Children was represented at the planning conference. The summing up of the conference's conclusions for learning theory was given by Dr. Robert Glaser, Director of Learning Research and Developmental Center at the University of Pittsburgh, while Dr. Jerome Bruner summed up the implications for developmental psychology. What follows is the major part of the Introduction to the Request for Proposal:
Introduction

The Teaching and Learning Program of the National Institute of Education is soliciting proposals to analyze and conduct research on programs that teach higher cognitive learning and thinking skills. These general cognitive skills include knowledge acquisition skills, problem solving strategies, logical reasoning and the self-control of learning and thinking processes.

In a rapidly changing technological environment, it is difficult to predict what knowledge students will need or what problems they will have to solve twenty years from now. What they really need to know is how to learn the new information and skills, at least as much as reading and elementary mathematics, are prominent among the things employers say they would like to see in the youth they hire. Clearly, much of the value of education for the student's later life comes from whatever general learning and thinking skills are acquired along with the specific knowledge the schools impart. Yet, skill in learning and reasoning itself is almost entirely neglected by the schools. Even in the earliest grades, teachers direct students to a lesson or reading assignment with instructions to learn the information, concepts, or skills contained. Nothing is said to the child about how to go about learning. Similarly, it is assumed, or hoped, that repeated attempts to solve problems will automatically result in improvement of general ability to solve problems; little is taught about ways of going about solving problems.

Because instruction in these general cognitive skills is generally absent from the curriculum, this is an area in which there is an opportunity to make a substantial improvement in educational practice. Since the central research problem in this area is to understand and describe these skills with the precision that would make it possible to measure them, one cannot cite dire NAEP statistics about the numbers of students who are deficient in learning, comprehension, or problem solving skills. However, Jencks (1978) has recently argued that it is the complex skills, not the basic skills that are deteriorating. Instructors at the college level, especially in community and open admissions colleges, complain that students have great difficulty managing and evaluating their own learning efforts. Current emphasis on measuring competency and training for the competencies measured may be creating a still more unfavorable environment for the development of these basic complex competencies that we are not now measuring.

Recent research (Dansereau, Long, McDonald and Actkinson, 1975) does indicate that even good students know very little about techniques they might use to better remember material they are studying. Nonetheless, one way successful students and more educated persons differ from the less successful and less educated is that they are likely to know and use techniques more sophisticated than rote repetition (Weinstein, 1978). While it would be difficult to set minimum competency standards for learning skills, it is clear that there is room for improvement.

Furthermore, there is reason to believe that the neglect of explicit instruction in thinking and reasoning skills in the schools might be a major reason for the inequitable distribution of educational achievement among the various ethnic and cultural groups in our population. Educational practice has evolved in relation to the surrounding culture, particularly those subcultures from which both educators themselves and those participating most fully in schooling have traditionally come. Therefore, educational practice makes unconscious assumptions both about the skills and knowledge students will bring to school and about the supplementary assistance and training that will be provided by the home environment. There is some evidence from cross cultural psychological research (DeAvila, 1979; Scribner and Cole, 1976) that techniques for learning school-like material are culturally influenced. Further, parents cannot transmit skills which they themselves have never had occasion to acquire. This may help explain why social class and cultural background are now so strongly predictive of school success.

This is not the first suggestion that there might be a need for systematic training to improve learning and thinking skills. Even though such instruction has never become a standard part of the school curriculum, many instructional programs designed to develop such skills have been produced. Although it appears that there is currently an upsurge of practitioner interest in such training, little can now be said about the effectiveness of such training.

At this time, therefore, the National Institute of Education is calling for proposals for a project which will bring together the wisdom and creative resources represented by existing training programs. In part, the project is intended to provide school and college instructors and administrators who are interested in cognitive skills training with the equivalent of expert consultant advice on the quality and reasonableness of existing programs. This will be done by comparing the goals and content of the programs with current research understanding of cognitive functions. Because existing research cannot answer many questions about cognitive skills and cognitive skills training, the project is also intended to identify issues and questions for research and to conduct research exemplifying the way in which these questions can be effectively answered.

A brief survey of both the programs and the research developments that provide the background for this project follows.

Background

Learning and Thinking Skills Curricula

A large number of experimental and commercially available programs focus on improving children's and adolescents' thinking and learning strategies. These programs may usefully be grouped under three headings:

- acquiring complex substantive knowledge;
- improving problem solving skills;
- strengthening metacognitive skills.

The following summaries of training programs are intended to provide examples of the kind of programs to be examined in this project. They should not restrict the selection of programs to be analyzed.

Acquiring Complex Substantive Knowledge

Many programs try to improve strategies for studying, learning and review-
grams rely on the SQ3R method which focuses on strategies for acquiring information from prose (Robinson, 1941). Few students report using such a strategy (Anderson, 1977), possibly because it may be more time-consuming than productive, or because people select different strategies to suit study purposes, goals, and the nature of the materials being studied. Recent research, on the other hand, (c.f., Dansereau, Long, McDonald, and Actkinson, 1975) indicates that even good students know very little about techniques they might use to better remember material to discover connections between concepts, objects, ideas and actions that will lead to a deeper understanding of the material and greater retention (Weinstein, 1979). Such techniques (O’Neil, 1978) include:

- clustering
- translating statements into images, diagrams, or sensorimotor sequences.
- developing verbal paraphrases.
- representing conceptual interrelationships with network maps.

Hard evidence for positive effects of these techniques tends to be restricted to less compelling aspects of the programs, like memory for word lists. Thus their practical significance requires further investigation (Anderson, 1977).

Improving Problem Solving Skills

Programs concerned with improving problem solving skills vary with the age and circumstances of students. Training for younger students tends to employ simple, systematic models while training for older students, particularly at the college level, tends to involve more complex strategies tied more directly to the subject matter of the curriculum. Both provide training to improve logical thinking, an important component of many programs. For example, the Productive Thinking Program (Covington and Crutchfield, 1972) helps ten to twelve year olds ask relevant questions, become sensitive to crucial clues, make effective use of information, and achieve solutions to problems, using a variety of games and puzzles. At the college level, instructors in science and mathematics may ask students to think aloud as they work and to reflect upon their own problem solving activities, or to model their thinking process after an expert problem solver who thinks aloud, displaying all the false starts and reconceptualizations that are hidden by the apparently smooth performances of most instructors in these subjects (Lochhead and Clement, 1979). Other science and social studies curricula may emphasize a more general degree of training in inquiry skills such as developing hypotheses, inferences, and judgments (Fenton, 1967; Gross and Muessig, 1971), or may raise problems taken from real life and with the hope that the skills will generalize more widely.

Training techniques in non-school settings often capitalize on the extensive knowledge base of their participants, emphasize group activity and encourage the use of metaphors, analogies, and similarities (Gordon and Poze, 1978). Their aim is to develop insight into problems through free association and divergent thought, techniques based on the early research of Gestalt psychologists (Wertheimer, 1941; Polya, 1943).

Strengthening Metacognitive Skills

Metacognitive training increases self-awareness of abilities and limitations, of one’s own cognitive activities, and of the effectiveness of chosen strategies in particular situations. Programs that emphasize metacognitive skills training have grown out of the work of developmental and cognitive psychologists. As examples, the programs developed by Furth and Wachs (1974) focused on training various aspects of Piagetian concrete operations. Others (e.g., Ennis, 1969; Peel, 1971; Scriven, 1976) were directed at improving logical thinking at later stages of development. Feuerstein’s (1977) Instrumental Enrichment Program emphasizes training in twenty-two basic cognitive operations important to analogical and other types of reasoning. Research on the effectiveness of the activities in Feuerstein’s program has indicated the presence of some improvement in general thinking behavior, and the presence of complex aptitude-treatment interactions that give hope for special effectiveness with low SES adolescents.

Summary Perspective on Training Programs

It is notable that many of these training programs are based primarily upon psychological research and theory. In most instances, the theory and research tend to be rather old, and not the focus of much current research activity. In
part, this is because what was once a theoretical breakthrough is viewed as commonsense knowledge. In part, it is because there is a real lag in the transfer of current knowledge to those who could use it most effectively. It may be possible at this time to shorten the gap with a major integrative effort of the kind requested in this RFP.

Current Psychological Research

The following summary is offered only to indicate the nature of the sources that will need to be examined in any effective response to this Request for Proposals. It is organized in three major parts to correspond to the structure of the previous training program summary for convenience of presentation only, and must not restrict the contractor from developing other organizations of research information for the purposes of the contract work.

Research on Knowledge Acquisition

Recent dramatic advances in understanding how people learn abstract systems of knowledge include research on prototypes and schemas, semantic networks, and text comprehension. Many years ago, Bartlett (1932) demonstrated that what was remembered seemed to depend upon one’s previous general knowledge, or “schemata”, as much as it did on the material to be remembered. He argued that new concepts are often learned from a small set of special instances of a concept. Subsequent research has verified this natural structure of concepts (Rosch, 1973), and provided descriptions of the information of abstract ideas (Posner and Keele, 1970; Bransford and Franks, 1971). The findings of this concept formation research have not been applied to an instructional setting, although they seem to offer clear precepts about the choice and presentation order of instances.

At a more general level, Schank and Abelson (1977) believe that “frames” or “scripts” guide the interpretation and comprehension of a large range of materials. The utility of these basic notions about concepts, prototypes, and scripts has been most clearly shown in their use to represent and describe the organized structure of knowledge as a network. Currently most investigators have adopted this form of representation for knowledge (e.g., Anderson, 1976; Kintsch, 1974; Norman, Gentner, and Stevens, 1976). It seems within the technical capability of current cognitive science to use these descriptive systems for analyzing students’ state of knowledge, diagnosing problems, directing instruction, and evaluating the effects of instruction. A remaining theoretical problem for these new theories is the formulation of an inductive algorithm by which new scripts can be formed (Anderson, 1976).

Academic knowledge is acquired predominantly through text. How do readers make use of existing knowledge in comprehending a new text? We understand a story because its actions fit plans that we ourselves might be able to generate. Olson, Duffy, and Mack (1979) observed the way skilled readers use their knowledge of the way stories are planned as they read and comprehend a story. Reder (1979) has shown that people draw upon this general knowledge to make many inferences and elaborations about textual material as they are reading. Efforts to describe the nature of that general knowledge have begun. Bower, Black and Turner (1979) have analysed schemas or scripts that many people have in common as a basis for understanding short stories. The use of this information for instructional purposes remains to be explored.

Relatively less is known about the process of acquiring complex knowledge like that presented in school and college textbooks. A general notion of the kinds of information that ought to be present in the presentation of the subject — coordinating what you are reading with a plan of what you are reading could be a helpful hint in approaching all kinds of new and complex subject matters. Brown, Collins, and Harris (1978) found the process of comprehending circuit diagrams very similar to the process of understanding a simple story, where understanding involves divining the plan and purpose behind the actions in the story. Norman (1978) has given intuitively appealing descriptions of the changes in complex knowledge as learning occurs: accretion, restructuring, and tuning. It will not be easy to explain how these changes occur. One might speculate that the restructuring of knowledge involves an attempt to achieve an organization which conforms to some inarticulated ideal.

Given the tremendous importance of present knowledge for both present comprehension and the acquisition of new knowledge, possible individual or cultural differences in existing knowledge cannot be ignored in the design of instruction, even if it is instruction in general study strategies. Bartlett’s (1932) demonstration of the impact of culture-specific story organization is famous. More recently, Orasanu, Lee, and Scribner (1979) have demonstrated individual differences in preferred ways of organizing concepts that could alter the effectiveness of particular learning strategies for particular individuals.

Research on Problem Solving

The scientific study of problem solving behavior began early in this century with the work of several Gestalt psychologists (Duncker, 1945; Maier, 1931; Wertheimer, 1945). According to their theory, problem information makes up a perceptual field that suddenly restructures, leading to a solution, when the problem solver considers new relations or new interpretations. This rather vague theory nevertheless emphasized the internal mechanisms of thought, and produced findings that could be turned into advice for problem solvers: telling them to break down problems into manageable components, to seek analogous problems, and to avoid the assumption that elements in the problem have only one fixed function. Indeed, this research is the basis of most current attempts to teach problem solving even though the vagueness of the theory hindered further progress in research.

Research in problem solving revived with the pioneering work of Newell, Shaw, and Simon (1957), who work with computer simulations of problem solving processes. When one can write a computer program that explores a problem, analyzes the relation between the goal and the present state, evaluates means of solution, and forms a plan; then the theory is no longer so vague. Computer simulations of problem solving have also provided a class of models known as production systems (Simon and Newell, 1971) which hint at the way
experience might be designed to produce "general" problem solving behavior through the buildup of elaborate strategic behaviors.

Research on Metacognition

Once knowledge is effectively acquired and structured, problem solving strategies can make use of that knowledge to extend a person's competence into novel areas. In order to make use of both knowledge and problem solving skills, yet a third type of cognitive skill is necessary: metacognitive skills.

The explicit study of people's awareness of their own thinking processes and of their knowledge about the workings of their own and others' minds has been undertaken primarily by developmental psychologists (Brown, 1977; Flavell, 1977). The growth of self-control and self-monitoring skills are important additional areas of research. Children, and other people, may not be able to articulate knowledge that they can readily put into action at appropriate times (Brainerd, 1973). It is equally true that they may verbally display knowledge of effective learning techniques that they do not apply when confronted with a learning task (Brown, Barclay, and Jones, 1977). Meichenbaum (1978) has demonstrated that some central cognitive strategies that should be studied more carefully in older children and adults. The overarching question is to what degree planfulness or metacognition is present in using strategies and in choosing appropriate strategies. These central strategies might include setting realistic limits on the size of the task, imposing appropriate subjective organization on information, and using multiple solutions to check results.

Although the difference between young children and adults is striking, it is paradoxical that even adults have only vague knowledge about the operations of their own minds. Those who articulate insights about the way they go about solving problems or inventing mathematical proofs (Polya, 1945) are exceptional individuals or consummate experts as problem solvers and readers. In order to understand their descriptions, it is undoubtedly necessary to share at least some of their explicit knowledge. One of the purposes of this project will be to help specify strategies in terms that will make fundamental cognitive skills communicable to those who need them.

...there is reason to believe that the neglect of explicit instruction in thinking and reasoning skills in the schools might be a major reason for the inequitable distribution of educational achievement among the various ethnic and cultural groups in our population.

Work Statement

Introduction

The present project has four main purposes. One purpose is to provide school and college instructors and administrators who are interested in cognitive skills training with the equivalent of expert consultant advice on the quality and reasonableness of existing programs. A second purpose is to assist the NIE in relating research to educational practice in cognitive skills training. A third purpose is to initiate research, setting an example and a standard of quality for what is expected to become a large program of research involving many independent investigators. A fourth purpose is to identify both researchers and educational practitioners interested in cognitive skills training in order to assist the NIE in the effective administration of its research program, especially in ensuring effective dissemination and utilization of research results. The activities required to achieve these purposes are to be interrelated so that their combination in a single project will enhance the effectiveness with which each of these programs can be fulfilled.

For clarity of exposition, the activities of the project will be described in two main strands: the program analysis strand and the research strand. However, it is expected that the program analysis activities will provide direction for the later stages of the research activities. Similarly, it is expected that the research activities will enhance the quality of the program analysis activity by maintaining the project's awareness of the reality and complexity of the learning and thinking phenomena with which the project is concerned. The two main strands of activity are considered to be of approximately equal importance and should require approximately equal shares of the project resources.

The identification of interested practitioners and researchers should occur largely as an inherent by-product of other project activities, not as a major independent activity. However, the project will be required to establish both researcher and practitioner advisory boards to help ensure that its products are comprehensible and useful to the intended audiences and representative of informed research opinion. Separately from the present contract, NIE will conduct a planning conference for the Basic Cognitive Skills research area in Pittsburgh, PA, October 8-12, 1980. Proposals for the present project should provide for key project personnel to participate in that conference.

In the final year of the project a substantial proportion of project resources
should be allocated to the production of reports and other products that will fulfill the purpose of providing expert advice to educational practitioners.

Duration and Level of Effort

The project is planned for a performance period of 36 months. The level of effort estimated by the government as necessary for completion of this project is fourteen (14) person-years. (A person-year is defined as the services of a mid-level professional for one year of effort, including all staff, services, supplies, and facilities necessary to support that professional.) The level of effort distribution over the project’s duration is estimated as follows:

- Year 1 = Three (3) person-years
- Year 2 = Four (4) person-years
- Year 3 = Seven (7) person-years

The estimated level of effort for the third year allows for the production of high quality products of the project as well as continuation of research efforts.

Program Analysis

The essence of the program analysis work is to relate existing cognitive skills training programs to relevant research. Relevant research should be broadly construed to include research on learning, thinking, problem solving and cognitive development as well as research dealing directly with training programs.

The background section of this RFP provides a sample of the research that would be considered relevant. Two outcomes are expected to result from this comparison of training programs with research. It is expected that accumulated research evidence will enable project staff to make informed judgments about the reasonableness and plausibility of training activities and goals. It is expected that the comparison will reveal issues and questions that are not adequately covered in the research literature. In particular, the practical goals of training programs may have led to attempts to train complex human skills that have not been investigated thoroughly in previous research. Thus, the program analysis will serve two of the major purposes of this project: providing advice to practitioners and helping to set a research agenda.

It should be evident that there is no easy or mechanical way to recognize the research relevant to this program analysis task. Therefore, it will be absolutely essential that the project staff responsible for this work come to the project with an extremely broad, multidisciplinary knowledge of relevant research, especially research in cognitive psychology.

The program analysis strand of work can be broken down into four major tasks:

1. Collect and describe cognitive skills training programs.
2. Develop a conceptual framework relating training practices to basic research on cognition.
3. Produce specialized literature syntheses.
4. Produce final products of the program analysis effort.

Task 1: Collect and Describe Cognitive Skills Training Programs.

In order to be useful to educational practitioners, the project should attempt to make a totally comprehensive identification of cognitive skills training programs. This would include serious efforts to integrate cognitive skills training with substantive curricula as well as separate cognitive skills training courses. The degree of descriptive or analytic effort devoted to each may vary considerably. In particular, the project should budget to permit on-site observation of five selected programs. Criteria such as ready availability for populations of special interest may be used to select the programs to be observed. Observations should occur where there is considered to be a good or approved implementation.

Experience with cognitive skills training programs suggests that they have many goals, training techniques, and exercises that are basically similar. Therefore, it should be possible to develop a description scheme which will permit the efficient description of large numbers of programs. Such a descriptive scheme would form one part of the conceptual framework required in Task 2 and would serve an indexing function to relate the content of particular programs to the project’s literature syntheses and judgmental conclusions.


It would seem essential that some unifying conceptual framework be developed to guide the work of this project, to relate program contents to research, and to identify the subjects or issues for research syntheses. Taken together, cognitive skills training programs present something like an implicit definition of the scope and variety of human intellectual functioning. In the same way, the cumulation of all the separate cognitive functions that have been the subject of research study is a sort of implicit definition of the domain of cognitive function. Researchers believe that the topics they study are important elements of a whole that probably has never been described.

A successful framework might be developed very pragmatically from the examination of training programs. Alternatively, it might incorporate a strong theoretical position identifying common mental operations or process underlying apparently diverse cognitive skills. The essential criterion is that the framework must be useful in relating the content of cognitive skills training to a diverse body of research literature. In order to be useful, the conceptual framework must be comprehensible to a broad range of people and must help them to organize and think about this entire body of research and practice. Therefore, the framework should be reviewed by the researcher and practitioner advisory boards as it is developed.

It is important that the conceptual framework should incorporate ways of understanding how factors like gender, age, ethnicity, language background and differential experiences could affect learning and thinking skills. Indeed, all aspects of the project’s analyses and research should be conducted so that the conclusions will be relevant to all racial, ethnic, gender, and cultural groups.

It should be evident that the development of a conceptual framework incorporating such cognitive skills as problem solving, knowledge acquisition, and thinking is an extremely broad undertaking. Therefore, other related problems like motivation or creativity must be omitted from the central concerns of this project. This is not to deny the im-
important interactions between motivation and cognitive functioning. Where appropriate, as in describing programs or evaluating program activities, motivational issues should be taken into account.

**Task 3: Production of Specialized Literature Syntheses**

These literature syntheses will be on a wide variety of topics identified during the course of the project. For the most part, they will probably be structured by the conceptual framework of Task 2. Sample topics might include summaries of work relevant to particular training activities: What do we know about ways of organizing information to make it more memorable? How does the use of elaboration affect the durability and accuracy of memory for text? What do we know about the transfer of problem solving skills to new types of problems?

This research synthesis activity should be a particularly effective way of identifying needs for further research. In addition, it will provide the intellectual basis for giving informed advice to educational practitioners interested in cognitive skills training.

**Task 4: Product Development**

The purpose of this task is to produce a useful set of documents reporting the findings of the program analysis activity. Some of the research activities of the project may also contribute to these products. The exact form of these products should be subject to review by the advisory boards of practitioners and researchers.

The following products must be developed. After a final draft is approved by the Project Officer, these products must be submitted to NIE in camera-ready form and in conformity with GPO requirements.

1. A consumer guide to training materials, incorporating the evaluative advice derived from both the earlier tasks and any additional research. This should emphasize ways in which such training might be integrated into the regular curriculum.

2. An index of useful bibliography, institutions and individuals.

3. Outline of a curriculum for cognitive skills training, drawing upon and refining existing materials as far as possible. This should be aimed at a high school, junior college, or beginning college population.

4. A paper discussing the possible use of new technology in training cognitive skills.

The contractor may propose additional materials that are a natural outgrowth of the tasks described in this RFP.

**Research Activities**

At this time, it is not possible to specify the research activities of the project in detail. For the first year, prospective offerors will be required to propose a research investigation of the process of studying for a substantive course like history or biology. Additional research topics may be derived from the program analysis tasks, from the conceptual framework, or from efforts to evaluate program activities. At the ends of Year 1 and Year 2, a research plan for the activities of the following year will be due. Work will proceed with the approval of the NIE project officer.

Part of the purpose of this research activity is to set a standard for the kind of research questions which must be raised and answered in order to evaluate the claims of cognitive skills training. For example, if a particular program purports to train general problem solving skills, there are a number of questions which must be resolved. How does one characterize the problems used in training? To what kinds of problems does one find what kind of transfer or skill? How do we measure level of problem solving skill?

Another interesting class of research questions concerns the suitability of training techniques for different populations: How are the techniques affected by developmental status, existing skill levels, cultural background, motivation, etc.? Offerors should indicate the capability to conduct research with student populations of the sort this project is intended to benefit, such as open-admissions college students.

**Task 5: Conduct Research on Study Activities**

This should be a research investigation of the activities in which students engage while studying a substantive course like history or biology. The research design should be intended to determine how students organize material in order to remember it, how and when they relate it to previous knowledge, etc. This research should employ methodology which can reveal internal cognitive processes. Survey research, simple observation and interviews may be used, but would not be considered sufficient to achieve the goals of this research.

**Task 6: Additional Research on Topics in Cognitive Skills Training**

The actual topics of this research may be modified during the course of the contract. To the extent that their current knowledge of cognitive skills training permits, offerors may propose programmatic research on one or more aspects of cognitive skills training. This research might address questions in the training of problem solving such as those outlined above, or might address questions having to do with the organization of material for better understanding and better learning or might be directed at a number of other such major areas of training. The choice of problems for this programmatic research should be defended in relation to problems known to exist in developing, teaching or evaluating training programs. Major research questions that would be addressed should be identified. General research approaches to these questions should also be indicated.
Elementary schools are in all countries of the first and most immediate consequence: unless they are good, pupils cannot be well prepared for the higher class of schools. Our initiatory seminaries, our country schools, require improvement; and these will best be made in consequence of the conviction of parents, that they are necessary. The increased demand for good instruction and good masters will produce both without the interference of government, or the patronage of the great. As soon as the publick is convinced, that certain alterations would be useful, and are feasible, parents will wish that these were put in practice; and as soon as that wish is generally, or even partially expressed, it will become the interest of many to establish new seminaries, or to reform the old. The first impulse therefore must be given to the minds of parents; and they must, in the first place, be convinced of the folly of treating children as mere playthings, as mere creatures to be fondled, humoured, and spoiled till they are eight or nine years old, and then to be hurried away to schools, when the bad habits, moral and intellectual, which they have by that time acquired, begin to be too troublesome at home; when friends or acquaintance begin to be alarmed by the growth and the ignorance of the boys, by the vicious pronunciation and vulgar language, which they have learned from servants, by the bursts of passion, the fits of obstinacy, habits of idleness, or love of mischief, which break out in consequence of parental neglect, or cruel indulgence. The careful mother says, "Upon my word it is shameful, to let these children grow up in this way; it is quite time to think of sending them to school, and to give them some education."

Time to think of giving them some education!—That should have been thought of long before; but everything is to be repaired by dispatching the children directly to some school or other; the parents are terrified by the idea of the immediate necessity of doing something." They have not time or patience to inquire or deliberate; they listen to the first plausible recommendation which they hear of a country school, in haste to rid themselves of the trouble and responsibility of keeping such great boys at home. What these darlings, what these victims suffer, when they go to school....

The first objects should not be to teach them reading, or grammar, or Latin, or arithmetic, in any given quantities, or in any stated time; but gradually to give them the desire to learn, and the power to attend; their lessons should be made agreeable and short, their attention should be required and fixed for a short time; and then they should have intervals of recreation, air, and exercise. Most of what they learn should be first taught by conversation; and even their walks and hours of amusement may be usefully employed. Their masters should take them out into the fields; should let them run, and leap, and exercise their limbs, and make observations on the various objects they meet; from these objects, that strike their senses, he should lead to such knowledge, as will lay the foundation of a love of instruction in their minds. Masters should proceed, in short, exactly as judicious parents would do with pupils of the same age in private education; and it is needless here to repeat what has been said elsewhere of the early modes of instruction by conversation. But all these technical methods must be accompanied with rational explanations of the lessons, and of the principles of the rules, in which the pupils are practised: otherwise this apparent expedition and facility will
not really improve the pupils: they will only be arithmetical and reading machines; they must be taught to think, or they will not afterwards be able to make any further progress without the aid of their masters, their keys, and their rules. Instead of pressing forward the pupils to astonish parents by the rapidity of their progress, masters should patiently and courageously conquer by delay. They should make the children understand, as much as possible, the reason of all they do; in arithmetic they should give the rationale of the rules; and be content to go slowly, that they may proceed surely; in reading, they should not suffer a sentence or an idea to pass that is not understood: in grammar they should in the first schools explain merely the nature of verbs, nouns, substantives and the different parts of speech. In the secondary schools for boys of nine or ten years old, the principles of general grammar should be explained; and masters should avail themselves of the profound discoveries of Tooke, and of the practical experience of the ingenious Sicard. It may be objected—it will and must be objected by hundreds of old schoolmasters, who have grown dull and positive in their own routine, that this explanation of the principles of grammar would not forward the pupils, and that it is much better, or at least safer, to go on regularly through old Lilly's Quæ genus, Propria quæ maribus, and As in praesenti, instead of plaguing them with metaphysical explanations.

There is something in the words metaphysics and metaphysical, which puts to flight the understanding, and rouses the fears and prejudices of whole tribes of ushers and pedagogues, and of some parents, who have been subjugated to the belief, that nothing can be well or expeditiously taught, but what is learnt technically, that is, in most cases, without understanding in the least what is lodged in the safe custody of the memory. Frederick the Great was once inoculated by a certain ignorant General Buddenbrock with this diseased aversion to metaphysics. The general was superintending governor of Frederick's military school, and having quarrelled with one father, the professor avenged himself by complaining that the boys were taught grammar metaphysically, and that metaphysics would puzzle their understandings, and ruin the institution. The literary monarch sent for the professor, and in a most able and sarcastic declamation brought forth all the arguments, that ancient or modern times could produce against metaphysics. The professor's answer, if we make due allowance for the formal division of the subject into the first place, and the second place, and third place, is far superior in ability to the monarch's eloquent attack. The distinctions between useful and useless metaphysics, the necessity for having recourse to what are called refined explanations in teaching children general and rational grammar, were stated with so much perspicuity, that the impetuous, the enlightened Frederick sat in motionless attention for half an hour, and then exclaimed, "I have listened to you, and I believe that I understand you perfectly, Sir, and am happy to have given you an opportunity of convincing me by your reasons." General Buddenbrock was ordered to interfere no more with the explanation of grammar. Hoping that what convinced the understanding of Frederick may have some power over the attention of those who will be too modest to claim an equality with him in talents, the professor's defence is inserted in the appendix to this volume: and after having read it, parents and preceptors will probably no longer be alarmed by the species of metaphysical lessons, which are here recommended for initiatory schools.

It is sufficient here briefly to observe, that metaphysics are of two sorts: those which treat of subjects beyond the reach of mortal faculties, such as the nature of the soul when separate from the body; free-will and necessity, and such subjects as Milton makes the fallen angels discuss:

"Fixed fate, free-will, fore-knowledge absolute. And found no end in wand'ring mazes lost. 
Vain wisdom all and false philosophy."

The other class of metaphysics is popular: it unfolds the general principles upon which arts and sciences are founded; it leads the understanding to deduce, by a regular chain of reasoning, those formulas by which technical knowledge may commodiously be taught to num-

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On Teaching Philosophy at the Gymnasium

Georg Wilhelm Friedrich Hegel

Translated by Sigrit Schutz, Department of German, Mt. Holyoke College

Translator's Introduction: Georg Wilhelm Friedrich Hegel spent many years (1808-1816) as a teacher of philosophy and as an administrator at the Agidiengymnasium in Nurnberg. From 1810-1822 he was a member of the Royal Prussian Examinations Commission which judged members of the last class at the Gymnasium level as to their abilities as prospective university students.

The German text of this translation of Hegel's expert opinion can be found in Georg Wilhelm Friedrich Hegel, Samtliche Werke, Neue Kritische Ausgabe, Berliner Schriften XI, Johannes Hoffmeister, ed. (Hamburg: Felix Meiner, 1956). All annotations are by Hoffmeister. The "old edition" which he refers to in his short introductory remarks to Hegel's correspondence is Samtliche Werke, Vol. III, Hermann Glockner, ed. (Stuttgart, 1927).

To the Royal Department of Religious, Educational, and Medical Affairs: Berlin, April 16, 1822

The Royal Department ordered in a gracious official ordinance of November 1st of the past year that I report on Dr. v. Henning's tutorials. At the same time the Department has seen fit to take into consideration my respectfully submitted observations regarding the complaints which have been lodged from several sides, namely, that students tend to come to the university without the necessary preparations for...

"...I would like to exclude explicitly, first of all, the History of Philosophy.... I would consider [the rudiments of logic] the main subject, excluding speculative meaning and treatment."
the study of philosophy, and it charged me with giving an expert opinion on how a purposeful preparation could be arranged at the Gymnasium.

I should be excused from explaining why the teaching of philosophy itself is still excluded from the Gymnasium and saved for the university because of the Royal Department's high ordinance, which presupposes this exclusion.

The intermediate stage alone remains to be taught at the Gymnasium, which has to be considered as the transition from the introduction and the principle of the substantial substance to philosophical thinking. It would have to occupy itself with general concepts and more directly with the forms of thinking, as they are common to reflective and philosophical thought. Such an occupation would have a more direct relation to speculative thinking in that it presupposes in part an exercise in dealing with abstract thought in itself without any material substance, as is contained in mathematical subject matter, but it also presupposes that the concepts — the acquaintance with which would be obtained through the classes — will be used later on both by philosophy itself as well as being a main part of the material assimilated by philosophy. It is exactly this familiarity with and practice in handling formal thoughts which would have to be regarded as the direct preparation for the study of philosophy at the university.

As far as the more direct range of knowledge is concerned, to which the classes at the Gymnasium would have to be limited, I would like to exclude explicitly first of all the History of Philosophy, although it often would seem to be suitable. But without prior training in speculative thought, it would be nothing but an account of coincidental, idle ideas, and the effect would be — and at times one would be tempted to view such an effect as its purpose and recommendation — the creation of a detrimental, disdainful opinion of philosophy and especially of the notion that this scholarly exercise had been nothing but a futile endeavor and that it would be even more of a futile endeavor for future students to deal with.

Instead of this I would mention among the subjects to be considered for the preparatory classes under discussion:

1) the so-called empirical psychology. It is true, a presentation which would limit itself to the widely familiar perceptions of the external senses, imagination, memory, and all further faculties of the soul would be trivial and pedantic. On the one hand, these topics could be removed from the university curriculum, if they had already been dealt with at the Gymnasium. On the other hand, one could limit oneself to an introduction to logic, where one would have to mention in any case the various intellectual faculties other than thinking itself. Many interesting things could be said in regard to the external senses, for example concerning images and imagination, the connection between the two, the so-called associations, furthermore concerning the nature of language, especially the difference between imagination, thought, and concepts. Many useful remarks could be made about the last item, since it can lead to a direct introduction to logic if one stresses the part thinking has in the process of perception.

2) the rudiments of logic. I would consider this the main subject, excluding speculative meaning and treatment. The lessons could extend to the theory of concepts, premise, and conclusion, and their types, and then to definition, classification, argumentation, and scientific method — just as it is used to be. Definitions, which belong rather to the broader field of ontology, will normally be included in the theory of concepts, as they tend to be cited partly in the form of concepts of thought. It would be advantageous to follow with an introduction to the Kantian categories as the so-called common concepts of the mind. Any further Kantian metaphysics would have to be postponed, but by mentioning the antinomies one could open at least a negative and formal prospect of comprehension and ideas.

No subject is less suited than logic is for being judged by young people with regard to its importance or utility. This fact alone is a recommendation that this kind of instruction be included in the Gymnasium curriculum. The main reason for the gradual demise of such instruction, which used to be given in former times, lies in the foundering of this insight. Besides a subject such as logic is not attractive enough to induce young people to its study while they are matriculated at the university, where it is left to them which subjects other than their professional studies they want to take. It also might be a poor example that teachers of the positive sciences dissuade students from studying philosophy, by which they also might understand the study of logic. If, however, instruction in logic were to be introduced into the Gymnasium curriculum, the students would at least once have had the experience of getting formal thoughts into their heads and would have retained them there. A highly important subjunctive result would be that young people would acquire the insight that there is a realm of thought in itself. They would recognize that formal thinking is itself a subject worthy of consideration and, a subject on which public authority places an emphasis just in the way it structures the curriculum.

"In my fourteenth year I knew all the figures and rules of syllogisms, and I know them still."

Earlier experience suggests that this subject will not exceed the pupils' power of comprehension. Permit me to cite my own experience in this connection. As a longtime professor of philosophical education and headmaster of a Gymnasium, I was daily witness to the ability and receptivity of such students. I also remember my twelfth year, when I was chosen for the theological seminary of my home state and therefore had to learn the Wolffian definitions of the so-called Ideas clara. In my fourteenth year I knew all the figures and rules of syllogisms, and I know them still. If it would not mean defying too much the present predilection with thinking for oneself and with productive activities, etc., I would feel inclined to suggest this kind of curriculum for classes at the Gymnasium, because one must have any kind of knowledge, whatever it might be, ev-
en the highest, in one's memory in order to possess it. One may start or end with that. By starting with it one has more freedom and cause to think about it for oneself. Moreover, that which the Royal Department so justly wants to avoid, i.e. "that the philosophical classes at the Gymnasium would get lost in an empty formalism or exceed the limits of teaching on this level," could be prevented.

3) The abovementioned point of discussion joins the higher reasons for excluding actual metaphysics from the Gymnasium. One could, however, consider one part of the former Wolffian philosophy, namely that which has been expounded in Theologia Naturalis under the heading "Proof of the Existence of God." Instruction at the Gymnasium will not be able to avoid the connection between the theory of God with the idea of finiteness and transitoriness of worldly things and their purposefulness, etc. This connection will be forever obvious to the unprejudiced intellect, whatever a critical philosophy might say about it. These so-called proofs, however, contain nothing but a formal interpretation of the subject matter which comes up all by itself in instruction at the Gymnasium. They need, to be sure, further improvement by means of speculative philosophy in order to correspond to that which the unprejudiced human intellect maintains in its development. The preliminary acquaintance with that formal development would be of particular interest for later speculative contemplation.

4) Concerning morals one could in a similar way introduce at the Gymnasium level correct and definite concepts about the nature of will, freedom, rights, and duty. This would be even more appropriate in the upper classes, since those topics would be connected with the religious instruction which is given continuously through all levels for eight to ten years. Also there would appear to be a greater need in our times to work against shallow thinking. The fruits of such thinking, born of instruction at the Gymnasium, together with correct concepts about the nature of an individual's and a citizen's duty have become publicly known.

This then is my humble opinion on the expansion of the contents of philosophical education at the Gymnasium, which I respectfully submit to the Royal Department. As far as this expansion is concerned with regard to both time and gradation, nothing more need be suggested than what has been said already with regard to religion and morals. With regard to the introduction of psychological and logical ideas one could specify that if two hours per week of a year's course were spent on it, the psychology would have to be treated primarily as an introduction and would form the basis for the logic. If about three or four or semiannual courses with the same amount of weekly hours were to be instituted (which could be considered sufficient), one could instruct in detail concerning the nature of the mind, its activities, and its conditions, in which case it might be more advantageous to start with the simple, abstract, and therefore easily comprehensible instruction in logic. This instruction would fall in an early period when young people are more obedient and docile towards authority and are less contaminated by the presumption that any subject be adapted to their ideas and feelings in order to win their attention.

The possible difficulty of increasing the curriculum by two more hours could be eliminated in a most unobjectionable manner by cutting down the so-called studies in German or German literature by one or two hours, or maybe even more fittingly by cancelling the lectures on the juristic encyclopedia wherever they take place at the Gymnasium, and by replacing them with courses in logic.

could not give preference to any of those I know. The subject matter is presumably contained in all those books and, to be sure, more comprehensively, definitively, and free from heterogeneous ingredients in the older ones. A high ordinance from the Royal Department could give instructions as to which topics ought to be stressed most.

I remain with due respect to the Royal Department your most obedient servant,

Hegel
Prof. p.o. at the Royal University.

In addition to the main manuscript, from which several quotes were given in footnotes to the above final copy of April 16, 1822 (not, as it says in the old edition, of February 2, 1823), there is another draft in the Hegel papers at the Prussian State Library, Vol. III, p. 27-28, which also contains several important variant passages which must therefore be added here:

"... in regard to the question of which textbooks ought to be used.... it is presumably only the greater formalism, the greater so-called popularity, or the shallowness of the contents which make them different from one another."

— the more so as the Gymnasium should be dedicated to the general cultivation of the mind and should not be the beginning of training in professional studies.

Finally, as far as textbooks are concerned which could be recommended to teachers for the preparatory classes, I aim, partly because they have an entirely external basis and partly because perception, feelings, and imagination are their elements if the subject matter is of a genuinely intellectual nature.

This kind of learning at the Gymnasium would have the purpose of focusing the imagination and memory on the
On Teaching Philosophy at the Gymnasium: Hegel

Examples could serve to connect them closer to the imagination. Understanding, however, should not come from those so-called interpretations by means of examples. Those definitions are in themselves very easy and clear and have to be taken mainly in the sense that they have meaning and validity in themselves. If the illustrations by means of examples do not have a grand manner about them, i.e., in that the general validity of the way of thinking comes before the mind at least to some degree, flimsy examples result in the categories themselves being considered meaningless; their value is held in low esteem according to the insignificance of such applications, and one begins to believe that the application itself makes up their worth. The predilection with so-called individualistic thinking would have to be banned above all from such classes, and here is the place to speak out against it. It arises, on the one hand, from the misunderstanding that thoughts were not being thought, and that all thinking were not an occupation with thoughts, and that that which one thinks were not thought by oneself — but by whom instead? I would not be able to say. On the other hand individualistic thinking seduces one to a superficial, meaningless way of talking, void of all responsibility. It needs to be stressed in those courses that the students should know the rules just as definitely, exactly, and without hesitation as they have to know grammatical rules or mathematical definitions and theorems, if they want to understand philology or mathematics. Maybe we would defy prejudice too much if we demanded that students memorize the main definitions, categories, types, and rules, but that would make even more sense, as logical definitions in particular are directly familiar to the mind, and the purpose of the classes being discussed here can be seen in the fact that those logical definitions in themselves can be made into a subject in the mind, and therefore the comprehension of them demands nothing more than to fix them and to remember them — which is exactly what the memory is for. Only in this manner can the basis which was discussed previously be prepared — the basis inasmuch as it is filled with the material only on the basis of which speculative thinking can exist and be dealt with. The argument for memorization can be contrasted to a much stronger degree with all those shallow ideas promoting individualistic thinking, vivacity, and the installment of convictions, especially since in modern times the memorization of Biblical verses and religious songs has been reintroduced as being necessary and expedient.

One would have to see it at least during public examinations that the teachers know the prescribed sequence of logical and psychological definitions and that the students know those definitions readily. It should be impressed on them that this kind of knowledge is being stressed. As a member of the Scholarly Examinations Commission I find very often — almost as a rule — that the candidates do not deem it worthwhile to show accomplishments in those subjects and that, for example, they do not know the difference between reason and mind, intelligence and will, the parts of a syllogism, a definition, etc., whereas it seems to them a sign of thorough learning and valuable knowledge if they can specify various shades of a Greek particle as opposed to another related one. The reason for this is doubtlessly that this kind of knowledge has been impressed on them as an important matter, since such knowledge is not very interesting in itself.

Finally, I have to note in regard to the question of which textbooks ought to be used and recommended to the teachers that the contents of the logical abstracts, of which one or several are published at each book fair, will always be one and the same. I did not have the opportunity to take an extensive look at the products of the industry, and it is presumably only the greater formalism, the greater so-called popularity, or the shallowness of the contents which make them different from one another. By giving preference to one above the others, one would do injustice both to the one chosen and to the ones rejected. Besides, Gymnasium teachers instructing in those subjects would insist on writing their own textbooks, as is the case with all other subjects at the Gymnasium, so that each Gymnasium has its own Latin grammars, readers, arithmetic textbooks, etc.

Often a Gymnasium will have different books again in the various sections. So it would be difficult if an exception were made here to this liberalism in other subjects, where everyone is permitted to do as he pleases.

Hoffmeister’s Epilogue.

According to Paulsen, History of Scholarly Teaching (Geschichte des gelehrtener Unterrichts), 1885, the recommendation was not entirely effective. A Departmental Ordinance of May 26, 1825 did not order but merely recommended the teaching of classes in philosophical propaedeutics at the Gymnasium level as Hegel had envisioned, after having in the previous year made it a requirement for the consistories, examination commissions, and universities to pay as much attention to the study of philosophy as to the study of philology (see Paulsen, op. cit., p. 604 ff.). Paulsen’s presentation shows, by the way, the typical anti-Hegelian liberalistic traits.

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1. Addition from the main manuscript: The knowledge of logical forms would not only be relevant to the intentions discussed earlier, since an occupation with them would create an exercise in the handling of abstract thought, but those logical forms themselves then also form the basis as the material which will be treated by speculative thinking in its own way. The double task of speculative philosophy, on the one hand to make conscious its material, the general concepts of thought, and to elevate it to the level of familiarity with these forms. Whoever is prepared in this manner and turns to philosophy itself will find himself already on familiar territory.

2. The main manuscript says instead: As far as the former Natural Theology is concerned, it could be enforced completely in religious instruction, where the subject will come up by itself and only the formal side needs to be added. This aspect, however, should be given entirely from a historical point of view so that no modern contempt would be cast on time-honored older concepts which originated with Anselmus [crossed out] from Catholic theology.

3. Addition to the main manuscript: It is not as if I did not consider any of the existing textbooks worthwhile, but it is for the reason that every book fair offers abstracts and I do not tend to follow this literature, since experience has taught me that those which I have seen are nothing but a more or less meager or broader repetition of the old ideas augmented by some useless novelties. In my opinion, for the entire purpose and method of this kind of course in religious instruction one should be directed to the old textbooks which belong entirely to the Wolffian School, and only the Kantian Table of Categories would have to be substituted for the Aristotelian at the proper places.


5. A.R.: Thoughts in one's head are mainly in the memory, — the contempt of the memory — the strength of the prejudice which has its origin in laziness, —.
Leonard Nelson (1882-1927) was a German professor of philosophy at the University of Göttingen. While he had strong interests in philosophy of mathematics and the theory of knowledge, he also wrote extensively on ethics, and conceived of philosophical pedagogics as the development of that theory by which men could be educated to the ethical good. Insisting that ethics must be practised as well as taught, he founded several youth and political organizations in the 1920s, although these were prohibited within a few years for their anti-Nazi activities.


What Nelson prizes most in the Socratic method is its effectiveness in getting students to think for themselves. So long as the teacher professes knowledge, students will concentrate upon trying to figure out what he believes with regard to the question under discussion, rather than confront the issue directly. There is also a process of unlearning that must take place, for students must be brought to discover their own ignorance. But this is only a first step. As the dialogue in the classroom continues, Nelson makes clear, students will begin to find the presuppositions and principles underlying their convictions. Philosophy, then, is the instrument by which the students who have only recently discovered their own ignorance can be brought "to realize that they actually know what they did not know they knew."

The Socratic Method

You know the Socratic method as a method of teaching philosophy. But philosophy is different from other subjects of instruction; in Plato's own words: "It does not at all admit of verbal expression like other studies, but as a result of continued application to the subject itself and communion therewith, it is brought to birth in the soul on a sudden, as light that is kindled by a leaping spark, and thereafter it nourishes itself."

I therefore find myself in a quandary, not unlike that of a violinist who, when asked how he goes about playing the violin, can of course demonstrate his art but cannot explain his technique in abstract terms.

The Socratic method, then, is the art of teaching not philosophy but philosophizing, the art of not teaching about philosophers but of making philosophers of the students.

The teacher who seriously wishes to impart philosophical insight can aim only at teaching the art of philosophizing. He can do no more than show his students how to undertake, each for himself, the laborious regress that alone affords insight into basic principles. If there is such a thing as instruction in philosophy, it can only be instruction in doing one's own thinking; more precisely, in the independent practice of the art of abstraction. The meaning of my initial remark, that the Socratic method, as a method of instruction in philosophy, is the art not of teaching philosophy but of teaching philosophizing, will now become clear...

We find dialogue employed as an art form in fiction and drama and as a pedagogic form in instruction. Theoretically these forms are separable but actually we require of every conversation liveliness, clarity, and beauty of expression, as well as espousal of truth, decisiveness, and strength of conviction. Even though the emphasis varies, we like to recognize the teacher in the artist and the artist in the teacher.

We must furthermore distinguish between a conversation reduced to writing...
—even though it is a reproduction of actual speech—and a real conversation carried on between persons. Conversations that are written down lose their original liveliness, "like the flower in the botanist's case." If, in spite of this, we are to find them satisfactory, the atmosphere from which this discord has been only a few didactic conversations in literature. trying to establish results, but solely with acting according to his own insight, the more insistent: How is Socratic instruction possible?... If the end of education is rational self-determination, i.e., a condition in which the individual does not allow his behavior to be determined by outside influences but judges and acts according to his own insight, the question arises: How can we affect a person by outside influences so that he will not permit himself to be affected by outside influences? We must resolve this paradox or abandon the task of education....

We must bear in mind that instruction in philosophy is not concerned with heaping solution on solution, nor indeed with establishing results, but solely with learning the method of reaching solutions. If we do this, we shall observe at once that the teacher's proper role cannot be that of a guide keeping his party from wrong paths and accidents. Nor yet is he a guide going in the lead while his party simply follow in the expectation that this will prepare them to find the same path later on by themselves.

On the contrary, the essential thing is the skill with which the teacher puts the pupils on their own responsibility at the very beginning by teaching them to go by themselves —although they would not on that account go alone—and by so developing this independence that one day they may be able to venture forth alone, self-guidance having replaced the teacher's supervision.

As to the observations I am about to make, I must beg to be allowed to cull
incidental examples from my own long experience as a teacher of philosophy, for unfortunately the experiences of others are not at my disposal.

Let me take up first the requirements imposed on the teacher and then go on to those placed on the pupil. Once a student of mine, endeavoring to reproduce a Socratically conducted exercise, presented a version in which he put the replies now into the teacher's mouth, now into the pupil's. Only my astonished question, "Have you ever heard me say 'yes' or 'no'?" stopped him short. Thrasymachus saw the point more clearly; in Plato's Republic he calls out to Socrates: "Ye gods! . . . I knew it . . . that you would refuse and do anything rather than answer." The teacher who follows the Socratic model does not answer. Neither does he question. More precisely, he puts no philosophical questions, and when such questions are addressed to him, he under no circumstances gives the answer sought. Does he then remain silent? We shall see. During such a session we may often hear the despairing appeal to the teacher: "I don't know what it is you want!" Whereupon the teacher replies: "I? I want nothing at all." This certainly does not convey the desired information. What is it, then, that the teacher actually does? He sets the interplay of question and answer going between the students, perhaps by the introductory remark: "Has anyone a question?"

Now, everyone will realize that, as Kant said, "to know what questions may reasonably be asked is already a great and necessary proof of sagacity and insight." What about foolish questions, or what if there are no questions at all? Suppose nobody answers?

You see, at the very beginning the difficulty presents itself of getting the students to the point of spontaneous activity, and with it arises the temptation for the teacher to play out a clue like Ariadne's thread. But the teacher must be firm from the beginning, and especially at the beginning. If a student approaches philosophy without having a single question to put to it, what can we expect in the way of his capacity to persevere in exploring its complex and profound problems?

What should the teacher do if there are no questions? He should wait—until questions come. At most, he should request that in the future, in order to save time, questions be thought over in advance. But he should not, just to save time, save the students the effort of formulating their own questions. If he does, he may for the moment temper their impatience, but only at the cost of nipping in the bud the philosophical impatience we seek to awaken.

Once questions start coming—one by one, hesitantly, good ones and foolish ones—how does the teacher receive them, how does he handle them? He now seems to have easy going since the rule of the Socratic method forbids his answering them. He submits the questions to discussion.

All of them? The appropriate and the inappropriate?

By no means. He ignores all questions uttered in too low a voice. Likewise those that are phrased incoherently. How can difficult ideas be grasped when they are expressed in mutilated language . . . ?

Sometimes clarification comes with the counterquestion "Just what do you mean by that?" But very often this will not work because the speaker does not know what he means himself. The work of the discussion group thus tends automatically either to take up the clear, simple questions or to clear up unclear, vague ones first.

We are not so fortunate in the problems of philosophy as we are in the problems of mathematics, which, as Hilbert says, fairly call to us: "Here I am, find the solution!" The philosophical problem is wrapped in obscurity. To be able to come to grips with it by framing clear-cut, searching questions demands many trials and much effort. It will therefore scarcely surprise you to learn that a semester's work in a seminar in ethics yielded nothing except agreement on the fact that the initial question was incongruous. The question was, "Is it not stupid to act morally?"

Of course, the instructor will not submit every incongruous question to such protracted examination. He will seek to advance the discussion through his own appraisal of the questions. But he will do no more than allow a certain question to come to the fore because it is instructive in itself or because threshing it out will bring to light typical errors. And he will do this by some such expedient as following the question up with the query: "Who understood what was said just now?" This contains no indication of the relevance or irrelevance of the question; it is merely an invitation to consider it, to extract its meaning by intensive cross-examination.

What is his policy as regards the answers? How are they handled? They are treated like the questions. Unintelligible answers are ignored in order to teach the students to meet the requirements of scientific speech. Answers, too, are probed through such questions as:

"What has this answer to do with our question?"

"Which word do you wish to emphasize?"

Who has been following?"

Do you still know what you said a few moments ago?"

"What question are we talking about?"

The simpler these questions, the more flustered the students become. Then, if some fellow student takes pity on his colleague's distress and comes to his aid with the explanation, "He surely wanted to say . . . ," this helpful gesture is unfeelingly cut short with the request to let the art of mind reading alone and cultivate instead the more modest art of saying what one actually wants to say.

By this time you will have gathered that the investigations run a far from even course. Questions and answers tumble over one another. Some of the students understand the development, some do not. The latter cut in with groping questions, trying to re-establish contact, but the others will not be stopped from going ahead. They disregard the interruptions. New questions crop up, wider of the mark. Here and there a debater falls silent; then whole groups. Meanwhile, the agitation continues, and questions become constantly more pointless. Even those who were originally sure of their ground become confused. They, too, lose the thread and do not know how to find it again. Finally, nobody knows where the discussion is headed.

The bewilderment famed in the Socratic circle closes in. Everyone is at his
The Socratic Method: Nelson

An individual is far from learning to think logically, even though he has learned to conclude by all the syllogistic rules that Caius is mortal.

...
lent reflection. Obviously, there is much soundness in this view. Yet many a person may be moved to doubt this praise after he has listened to the hodgepodge of questions and answers at a philosophical debate and noted the absence, despite the outward discipline, of the tranquility that belongs to reflection. It is inevitable that what is said by one participant may prove disturbing to another, whether he feels himself placed in a concession in maintaining the rigorous but the obstacles I have in mind do not It is the instructor's duty to make no lie in the intellectual sphere and for that the students' imperfect understanding; must be the fruit of his prior education. The student's will power by-product in the course of philosophical disturbances are unavoidable because of but it is a fact that one becomes a philo­sopher, not by virtue of intellectual gift~ but by the exercise of disciplined will. This may sound strange only if the students are possessed of a reason even the most skillful teacher finds them an insurmountable barrier. It is impossible to achieve this as a by-product in the course of philosophical instruction. The student's will power must be the fruit of his prior education. It is the instructor's duty to make no concession in maintaining the rigorous and indispensable demands on the will; indeed, he must do so out of respect for the students themselves. If, for the want of requisite firmness, he allows himself to be persuaded to relax his stand, or if he does so of his own accord to hold his following, he will have betrayed his philosophical goal. He has no alternative: he must insist on his demands or give up the task. Everything else is abject compromise.

"The immediate and tangible material of philosophy is language which presents concepts through words. In its wealth, supplied from many sources, reason dwells concealed."

dependent position by intelligent re­marks or is distracted by poor ones. It is inevitable that collaboration should pro­gressively become a trial of nerves, made more difficult by increasing de­mands on personal tact and tolerance.

To a great extent these disturbances can be obviated by an instructor who, for instance, will ignore the innumerable senseless answers, cast doubt on the right ones with Socratic irony, or ease nervous unrest with some understand­ing word. But his power to restore har­mony to the play of ideas is limited un­less the others are willing to pursue the common task with determination.

It should be admitted that many dis­turbances are unavoidable because of the students' imperfect understanding; but the obstacles I have in mind do not lie in the intellectual sphere and for that reason even the most skillful teacher finds them an insurmountable barrier. He can enforce intellectual discipline only if the students are possessed of a disciplined will. This may sound strange but it is a fact that one becomes a philo­sopher, not by virtue of intellectual gifts but by the exercise of will....

But it is impossible to achieve this as a by-product in the course of philosophical instruction. The student's will power must be the fruit of his prior education. It is the instructor's duty to make no concession in maintaining the rigorous and indispensable demands on the will; indeed, he must do so out of respect for the students themselves. If, for the want of requisite firmness, he allows himself to be persuaded to relax his stand, or if he does so of his own accord to hold his following, he will have betrayed his philosophical goal. He has no alternative: he must insist on his demands or give up the task. Everything else is abject compromise.

Of course, the student should know the details of the demands to be made on his will. They constitute the minimum required for examining ideas in a group. This means, first, the communication of thoughts, not of acquired fragments of knowledge, not even the knowledge of other people's thoughts. It means, fur­ther, the use of clear, unambiguous language. Only the compulsion to com­municate provides a means of testing the definiteness and clarity of one's own conceptions. Here, protesting that one has the right feeling but cannot express it will not avail. Feeling is indeed the first and best guide on the path to truth, but it is just as often the protector of pre­judice. In a scientific matter, therefore, feeling must be interpreted so that it may be evaluated in accordance with concepts and ordered logic. Moreover, our investigation demands the commun­ication of ideas in distinctly audible and generally comprehensible speech, free from ambiguities. A technical termino­logy is not only unnecessary for philo­sophizing but is actually detrimental to its steady progress. It impairs to meta­physical matters, abstract and difficult in any case, the appearance of an esoteric science, which only superior minds are qualified to penetrate. It prevents us from considering the conclusions of un­prejudiced judgment, which we have seen to be the starting point of meaning­ful philosophizing. Unprejudiced judg­ment, in its operation, relies on concepts that we have, not on artificial reflec­tions, and it makes its conclusions un­derstood by strict adherence to current linguistic usage....

After all that we have said, what is it that we gain with this demand on the pupil? Only those who, by using comprehensible language, adhere to the con­cepts we have and become practiced in discussing them will sharpen their critical sense for every arbitrary definition and for every sham proof adroitly derived from such verbal definition. If the requirement of simple and clear language is observed, it is possible, in Socratic teaching, merely by writing the theses of two mutually contradictory doctrines on the blackboard, to focus at­tention on the verbal definition under­lying them, disclose its abuse, and thereby overthrow both doctrinal opinions. The success of such a dialectical performance is achieved —and this is its significant feature—not by flashes of inspiration but methodically, i.e., through a step-by-step search for the hidden premise at the bottom of the contradictory judgments. This method will succeed if the student, struck with suspicion at such a sophism, attends closely to the meaning of the words, for these words, when used in an inartificial sense, put him on the track of the error.

Do not misunderstand me. I do not advocate the point of view that so-called common sense and its language can satisfy the demands of scientific philo­sophizing. Nor is it my purpose, in dwell­ing on simple elementary conditions seemingly easy to fulfill, to veil the fact that the pursuit of philosophizing re­quires rigorous training in the art of ab­straction, one difficult to master. My point is this: We cannot with impunity skip the first steps in the development of this art. Abstraction must have some­thing to abstract from. The immediate and tangible material of philosophy is language which presents concepts through words. In its wealth, supplied from many sources, reason dwells con­cealed. Reflection discloses this rational knowledge by separating it from intuitive notions.

Just as Socrates took pains to question locksmiths and blacksmiths and made their activities the first subject of discus­sion with his pupils, so every philosoph­er ought to start out with the vernacular and develop the language of his abstract science from its pure elements.
Logical Thinking and Multiple Classification in Kindergarten Students

Kevin W. Saunders and Lawrence N. Meyerson

Introduction

The work of Jean Piaget has had far reaching effects on elementary education and specifically mathematics curriculum development. His claims are double-edged, in that they describe which concepts children supposedly can and cannot understand at certain ages and in that these concepts supposedly cannot be taught until the child is ready. "When adults try to impose mathematical concepts on a child prematurely, his learning is merely verbal; true understanding of them comes only with his mental growth." This article will focus on multiple classification; that is, the ability of kindergarten age children to classify according to two attributes at the same time.

Kevin W. Saunders is Assistant Professor of Philosophy and Mathematics at Northern Michigan University. Lawrence N. Meyerson who has been an Assistant Professor of Mathematics at Northern Michigan University, is now preparing to enter the School of Law of Seton Hall University.

It is often claimed by developmental psychologists, particularly those of the Piaget school, that kindergarten age students are incapable of classifying by more than one variable simultaneously (Formanek, Gurian and Kofsky2,3). Combining these beliefs with the presumption that the children must develop these concepts on their own has prevented non-trivial work with Venn diagrams from entering into kindergarten and early elementary mathematics curriculum. Specifically, this precludes the possibility of kindergarten children working with Venn diagrams depicting two non-disjoint sets.

The National Council of Teachers of Mathematics, in its Curriculum Agenda for the 1980's has called for problem solving to be a focal point for curriculum development in the upcoming decade. Developing logical thinking early in a child's mathematical career will help create the relational thinking needed to develop strategies for problem solving.

We intend to show that multiple classification in kindergarten children is
possible if a proper introduction to the subject is used. Not only can children of that age work with a two-set Venn diagram, but they may be led to discover for themselves the need for overlapping the circles.

**Procedure**

There were two groups of kindergarten students taught by the same teacher. We administered two Piaget tasks to each student of both classes. Lessons were developed and taught for seven weeks, once a week, to the students of one class (test class). The other class will be referred to as the control class. Neither group had received previous instruction similar to the content of our lessons. There were eleven students in the test class and fifteen in the control class. At the end of the sequence of lessons, the Piaget tasks were read ministered.

**Piaget Tasks — Description and Results**

**TASK A**

**Materials:**
1. One row of blue objects (christmas tree, sailboat, pumpkin, bucket)
2. One row of stars in different colors except blue. (orange, red, green, brown)
3. Single objects similar to individual objects pictured in (1) and (2) and several stars, one of which is blue.

**Experiment:** Arrange the materials in the following manner:

```
o
 o
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An empty space is provided at the point of intersection of the two rows of objects (see figure above). The child was handed cards which depicted different objects and different colors and told to choose the picture that best fills the empty space. The blue star was the correct response.

**TASK B**

**Materials:**
1. A set of small red triangles
2. A set of large red and green triangles
3. Three envelopes

**Experiment:** A set of triangles varying in size (large or small) and color (red or green) was placed in front of the child. The small triangles were all red, and the large triangles were red or green. The object of the task was to determine whether any of the blocks could be placed in more than one category. We asked each student the following questions:

(a) This envelope is for red things. Do all the small things belong in the envelope with the red? Why? (Yes, all of the small blocks are red.)
(b) This envelope is for triangles. Do the green blocks belong in this envelope? Why? (Yes, the greens are triangles.)
(c) Do the reds go in the envelope for triangles? Why? (Yes, all the reds are triangles.)
(d) This envelope is for small blocks. Do the greens belong in it? Why? (No, the greens are all large.)

Successful performance required at least three correct responses with three correct reasons. (Correct answers are in parentheses.)

A student has multiple classification ability when he or she passes both Piaget tasks. That is, an answer of blue star in task A, and three out of four correct responses (with correct reasons) on task B is a pass (P), and failing at least one test is a fail (F).

The results of the pretest indicated that both the test and control classes could not classify by more than one attribute at the same time. In the test class, 1 out of 11 students passed both tasks. In the control class, 3 out of 15 students passed both tasks. (See charts on pages 19 and 20 for specific results.)

**Description and Observations**

Lessons were scheduled once a week for twenty minutes per session. The students would be introduced to Venn diagrams through the use of rope loops laid out on the floor. Once the students were familiar with inclusion and exclusion based on possessing or lacking an attribute and had discovered the need for overlapping the loops when considering two attributes and two loops, the remaining lessons would involve attribute blocks and circles drawn on a chalkboard. In the authors' experience, children could be led to discover the need for overlapping the circles (or ropes) by actively involving the children in the problem.

In the first lesson a loop of rope was laid out on the floor. The teacher said "Everyone with a green shirt on should stand in the rope." Children inside the rope were asked to explain why they were inside and children outside were asked why they were outside. This was repeated using various attributes that may be applied to children including cases in which everyone or no one stood within the loop as well as an attribute that was worded using a negative (not wearing blue). The students had no difficulty in any of the exercises determining where they should stand.

A student was then asked to place a second loop on the floor, in which he placed it so that there was no overlap with the first. This, of course, raises a problem, but in order to first become accustomed to working with two ropes, the problem was momentarily avoided by choosing two attributes such that no child met both. Boys were asked to stand in one rope and girls in the other and then children with brown pants in one and children with blue pants in the other.

The next step was to face the problem of two attributes, both of which would be met by some children. Boys were asked to stand in one rope and children with blue shirts in the other. There were three students having both attributes. Each took a place in one of the circles and each time any of them chose a place to stand it was pointed out that he had the other attribute and should be in the other circle. By chasing the children back and forth between the ropes the problem of something or someone meeting two attributes and having to be classified according to both became a per-
sonal problem for the children and the need for a solution became more obvious.

Bill offered the first solution, suggesting that we cut in half those with the problem, but then decided a simpler method would be to have them stand with one leg in each rope. The teacher objected that they would not then be inside either rope. Joanne seemed not to recognize any real problem and suggested that they all stand in the boys' rope. Since no other solutions were offered and to help Joanne see the problem, two other attributes, both of them met by Joanne, were chosen. She stood with one foot in each rope and again the teacher objected that she was not inside either one. Ivan then suggested moving the ropes together so that they touched. He did so and directed Joanne to stand on top of the ropes at the point where they touched. While the proposal drew praise, the same objection was raised. Bill then suggested tying the loops end to end to form one big loop and again the solution was not accepted, since there would no longer be two loops. Since no other solutions were forthcoming and the attention span of the students was about spent, the problem was left for the next session.

In the next lesson the children were again invited to place the ropes on the floor and again they were placed with no overlap. The teacher identified one rope as being for people wearing yellow and the other for people wearing green. Ivan, who was wearing both colors, told the class that "we still got a problem." Shane said he had the answer and ordered everyone out of the ropes. He then placed the ropes one on top of the other, so Ivan would then be able to stand in both. This created a problem for Bill, who was wearing green but not yellow. He pushed the yellow rope over slightly to give himself room to stand in the rope for children wearing green without being in the rope for children wearing yellow. There was, of course, still a problem for anyone wearing yellow but not green. Thinking that Bill was close to a solution, the teacher asked him to fix the ropes. Concentrating on only his own problem he removed one rope and placed it so that it intersected the other circle at only one point. This caused Ivan's problem to return. The class was again asked for a solution and Joanne overlapped the ropes and found a place for Ivan to stand.

The ropes were left overlapped but reidentified as being for children wearing red and for girls. Virginia, who was wearing red, stood in the girls' rope but not in the intersection. Bill noticed the mistake and suggested that she move to the middle (intersection). The ropes were again changed, this time to girls and six year olds. Joanne, who was six, did not stand in the intersection, but Ivan and Bill corrected her. The next combination was for children wearing brown and four year olds (no one in the class was four), and the last was for children wearing red and five year olds. In each of the last two cases the children all found their proper places and when questioned, they explained why they were standing where they were. The ability of the children to find their places in such a situation would certainly appear to involve some multiple classification ability. They had to consider two attributes and determine whether they met both, one but not the other, or neither, and stand in the appropriate spot.

An attempt was made at the end of the lesson to determine where an unspecified child would stand, if the ropes were for boys and five year olds. They were told they could ask questions about the child under consideration. The students didn't seem to understand what they were to do or what questions to ask. Their attention was also waning and it was decided to end the lesson.

Some of the later activities would require using Venn diagrams with attribute blocks, so a lesson was devoted to familiarizing the children with the attribute blocks. A set with three shapes (circles, triangles and squares), four colors (red, yellow, green and blue) and two sizes (large and small) was employed. The pieces were magnetized and placed on a metal surface. The teacher held up a large yellow circle and asked the children to choose a piece that was different. Of course, each piece would be different in some way but with each choice the child was asked to explain the difference. The exercise was repeated with a large blue triangle. Students were then asked to choose a piece that was the same in some way as a small green square and then a small yellow triangle.

A sequence of blocks was placed on the board and the students were told there was a rule that the pieces followed and were asked to place the piece that they felt could be next in sequence. If they were correct, the piece was left there and the next piece was sought. The pieces selected were small red circle (correct), small blue circle (incorrect), small blue square (incorrect), large red circle (incorrect), small green triangle (correct), small red triangle (correct), small green square (correct), small blue square (incorrect) and large red circle (correct). The sequence was
now much longer and the children were asked to guess the rule. The first guess was a listing of shapes but the second child correctly guessed red, green, red, green, . . . .

The exercise was then repeated using circle, square, circle, square, . . . as the rule. The results were similar. This was not intended as a multiple classification exercise. Success would actually depend on concentration on only color, shape or size rather than a combination. Although a change in the attribute being considered might be necessary, there was no need to consider two properties of a piece at the same time. The intent was simply developing familiarity with the attribute blocks in preparation for the next lesson.

In the next lesson a loop was drawn on the chalkboard and labelled "(draw triangle)". The teacher explained that the string was for triangles and choosing a yellow triangle, the teacher asked someone to put it in the picture and a student correctly placed it inside. A red triangle was next, and when a child placed it inside the string, another child recognized the mistake and placed it outside. Students were then asked to pick pieces that belonged inside and others that belonged outside the string. The rule was changed to blue blocks and the exercise was repeated.

The teacher again changed the rule — this time to triangles — and asked a student to draw a string for squares. Joanne volunteered and traced another string with no overlap of the first string. The teacher chose pieces and asked the students to place them where they belonged. The diagram below shows the pieces and placements. The letters indicate the color of the piece and the number and name indicate the order in which the piece was chosen and the child who placed it. Note that the only mistakes were in the early part of the exercise in placing the large green triangle.

The teacher left the strings on the board but changed the rules to red for the left string and green for the right. Each child was given a piece to place or asked to find a piece belonging in a particular area and in each case the child was successful. The combinations of attributes in these two exercises were such that a piece could not meet both, so the students only needed to consider one attribute at a time and see if the piece had that attribute. It was not really a matter of multiple classification but rather a consideration, singularly, of two attributes.

The rule was again changed. The left string was now for triangles and the right was for blue pieces. Justin was asked to place the large red triangle and Virginia the small blue square. Both were successful. Andy was then asked to place the large blue triangle; he placed it in the right string. He was asked why it belonged there and he replied that it was for triangles. Joanne moved the piece into the string for triangles. When it was pointed out that the piece was also blue, she suggested putting it in between the strings, but Nicole objected that it had to be in both strings. She was given the chance to redraw the string so that the piece could go in both, but she had no suggestions. Andy stepped in and redrew the strings with an overlap. Nicole agreed that that was what she meant and placed the large blue triangle in the intersection. John then correctly placed the large blue square and Ivan the large red circle. Virginia placed the small blue triangle incorrectly (perhaps due to incomplete erasure of the old strings) but was quickly corrected by Bill. This last exercise seems to have required some multiple classification ability. The thinking process was the same as in the case of the overlapped ropes on the floor, but it had been transferred to a situation lacking the same sort of personal involvement.

In the fifth lesson the teacher drew a string for triangles and asked a student to draw one for big pieces. Joanne volunteered and drew the second string with no overlap. The strings were labelled with "(draw triangle)" and a silhouette of an elephant for large. Jonathan correctly placed the little yellow triangle and Bruce the large blue square. Andy was then asked to place the large red triangle and placed it in the string for big pieces. Joanne, seeing that it was a triangle moved it to the other string. Bill pointed out that the strings needed to be overlapped and redrew them placing the large red triangle in the intersection. Shane then correctly placed the large red circle explaining that it was big but not a triangle. Nicole was asked for a piece that belonged outside and correctly chose the small red square. John was asked for a piece belonging in the middle and correctly chose the large yellow triangle.

The labels were changed to small (silhouette of a fly) and red (a red patch of no recognizable shape) and Jonathan correctly placed the small blue circle. Virginia incorrectly placed the large red triangle in the intersection, but was corrected by Bruce. Ivan incorrectly placed the small red square in the red string but not in the intersection and was corrected by Bruce. John then correctly placed the large green square and Shane and Andy found pieces belonging in the non-intersection part of the "little" string and the non-intersection part of the "red" string respectively. The explanation offered by students for the placement of pieces required the recognition of the pieces' multiple attributes.

Now that the students had gained some familiarity with attribute block string pictures, the next step was to not identify the string but to give clues as to
its defining attribute. A single loop was drawn on the board and the students were presented with a pictorial list of things the string could be for. The list included red, yellow, green, blue, circles, triangles squares, big and little. A large yellow triangle was placed inside the loop as a clue and the students were asked to choose other pieces and put them where they thought they belonged.

The child, piece played, area chosen and result are listed below. Incorrectly placed pieces were removed from the chalkboard but could be reused by later students.

<table>
<thead>
<tr>
<th>Name</th>
<th>Piece Played</th>
<th>Area</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>large blue triangle</td>
<td>outside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Jonathan</td>
<td>large yellow square</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Nicole</td>
<td>small yellow circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Bruce</td>
<td>large yellow circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Ivan</td>
<td>small yellow square</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Shane</td>
<td>small red triangle</td>
<td>inside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Justin</td>
<td>small yellow triangle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Andy</td>
<td>small blue square</td>
<td>outside</td>
<td>correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>large blue circle</td>
<td>outside</td>
<td>correct</td>
</tr>
<tr>
<td>Joanne</td>
<td>large blue circle</td>
<td>outside</td>
<td>correct</td>
</tr>
</tbody>
</table>

Bill then correctly guessed that the rule was “yellow.”

The students were highly successful in this exercise and the early guesses particularly indicated the use of multiple classification. The first guess, while incorrect, was a best possible guess in that it matched the clue in two of its three attributes. The second and fourth plays were also best possible guesses, while the third seemed to be based on a consideration of only one attribute. Once the fourth piece had been played, there were all three shapes and both sizes in the string and the students concentrated on color until all the yellow pieces had been played. Then they played pieces outside the string.

The exercise was repeated with a small red triangle placed inside the string as a clue. The pieces played and results were as follows.

<table>
<thead>
<tr>
<th>Name</th>
<th>Piece Played</th>
<th>Area</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill</td>
<td>large red triangle</td>
<td>inside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Joanne</td>
<td>small blue triangle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>small yellow circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Andy</td>
<td>small green triangle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Justin</td>
<td>large green circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Shane</td>
<td>large red triangle</td>
<td>outside</td>
<td>correct</td>
</tr>
<tr>
<td>Ivan</td>
<td>large red square</td>
<td>outside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Bruce</td>
<td>small red square</td>
<td>outside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Nicole</td>
<td>large red square</td>
<td>outside</td>
<td>incorrect</td>
</tr>
<tr>
<td>Jonathan</td>
<td>small red square</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>John</td>
<td>small red circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Bill</td>
<td>small yellow circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Joanne</td>
<td>small blue circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>small green circle</td>
<td>inside</td>
<td>correct</td>
</tr>
<tr>
<td>Andy</td>
<td>large blue square</td>
<td>outside</td>
<td>correct</td>
</tr>
</tbody>
</table>

Jonathan then correctly guessed that the rule was “small.”

Again the students were highly successful and again multiple classification ability was indicated by the early guesses. The first four choices all matched the clue piece in two of its three attributes. This could, of course, happen by chance, but the time spent by the children in choosing their piece indicated that some thinking as to the best choice was occurring.

The last two lessons were spent in a similar sort of activity but using a two set diagram and two clues. After again establishing the need for an overlap and having students place and explain the placement of pieces, the teacher explained that this time they would not be told what the strings were for. The same list of possibilities was presented to the students. The small yellow square and large red triangle were placed in the regions indicated below.

The regions were not numbered on the board and are here only to simplify discussion.)

The class was then asked to identify the strings and in unison said they were for yellow and square. Earlier in the exercise (at the line with the ”•”) Shane had indicated that he knew the answer and whispered the correct answer to the teacher.

While the students naturally found this exercise more difficult than the previous puzzle, they again indicated multiple classification ability. The first, second and fourth pieces all matched the clue in region two in two of its three attributes. The fifth and sixth do as well but fail to take into account the additional piece now in that area. When the children turned to region four, the first and third guesses again matched two of the three attributes of the clue piece, but by this time enough information may have been gathered from previous guesses to make speculation on the children’s guesses somewhat shakey.

In the seventh lesson the game was played again. The small red square and the large blue square were placed in the regions indicated.
The pieces played and results were as follows.

<table>
<thead>
<tr>
<th>Student</th>
<th>Piece</th>
<th>Correct/Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justin</td>
<td>small red triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Nicole</td>
<td>small blue square</td>
<td>3/4 correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>large green square</td>
<td>3/4 correct</td>
</tr>
<tr>
<td>Shane</td>
<td>large red triangle</td>
<td>1/4 correct</td>
</tr>
<tr>
<td>Ivan</td>
<td>small yellow square</td>
<td>3/4 incorrect</td>
</tr>
<tr>
<td>Joanne</td>
<td>small red square</td>
<td>2/4 correct</td>
</tr>
<tr>
<td>John</td>
<td>small green square</td>
<td>3/4 correct</td>
</tr>
<tr>
<td>Bruce</td>
<td>large yellow circle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Eric</td>
<td>large red square</td>
<td>2/4 correct</td>
</tr>
<tr>
<td>Bill</td>
<td>small yellow circle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Justin</td>
<td>large red circle</td>
<td>4/4 incorrect</td>
</tr>
<tr>
<td>Nicole</td>
<td>large yellow square</td>
<td>3/4 correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>small yellow triangle</td>
<td>1/4 incorrect</td>
</tr>
<tr>
<td>Shane</td>
<td>small yellow triangle</td>
<td>1/4 incorrect</td>
</tr>
<tr>
<td>Ivan</td>
<td>large yellow triangle</td>
<td>1/4 incorrect</td>
</tr>
<tr>
<td>Joanne</td>
<td>small yellow triangle</td>
<td>3/4 incorrect</td>
</tr>
<tr>
<td>John</td>
<td>large yellow triangle</td>
<td>1/4 incorrect</td>
</tr>
<tr>
<td>Bruce</td>
<td>large red circle</td>
<td>4/4 incorrect</td>
</tr>
<tr>
<td>Eric</td>
<td>large green circle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Bill</td>
<td>small green circle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Justin</td>
<td>large red circle</td>
<td>4/4 incorrect</td>
</tr>
<tr>
<td>Nicole</td>
<td>large blue triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Virginia</td>
<td>small blue triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Shane</td>
<td>large blue triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Ivan</td>
<td>small blue triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Joanne</td>
<td>large yellow triangle</td>
<td>1/4 incorrect</td>
</tr>
<tr>
<td>Virginia</td>
<td>small yellow triangle</td>
<td>4/4 correct</td>
</tr>
<tr>
<td>Shane</td>
<td>large blue triangle</td>
<td>4/4 correct</td>
</tr>
</tbody>
</table>

The students were then asked to whisper their identification of the strings to the teacher. Nicole, Shane, John and Bill correctly identified the strings as red and square. Justin, Virginia, Ivan, Joanne, Bruce and Eric all had at least one string misidentified.

The use of multiple classification is not as easily seen in this exercise. The second and third guesses match two of the attributes of one of the pieces previously played and now in region three, but the fifth ignores the other information about the region. Beyond that the information available from new pieces in the picture and from pieces that were incorrectly played makes any analysis difficult.

From the observations, the authors felt that the students were showing some ability to classify by more than one attribute simultaneously. Simply discovering the need to overlap the circles in a Venn diagram would seem to require such an ability. The thinking displayed in the choice of pieces in the later lessons strengthened that belief. To test that belief and to see if the ability, if it had indeed been developed, carried over to other situations, the Piaget tasks were repeated.

**Results and Conclusions**

The results of the post-tests revealed significant changes in the test class, but not in the control class. Consider the following chart.

<table>
<thead>
<tr>
<th>TASK A</th>
<th>TASK B</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>Pretest</td>
</tr>
<tr>
<td></td>
<td>(Figure chosen to fill empty slot)</td>
</tr>
<tr>
<td>BIRTHDATE</td>
<td>Post-test</td>
</tr>
<tr>
<td>Virginia</td>
<td>brown star</td>
</tr>
<tr>
<td>9/13/74</td>
<td>brown star</td>
</tr>
<tr>
<td>John</td>
<td>green boat</td>
</tr>
<tr>
<td>3/23/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Shane</td>
<td>green boat</td>
</tr>
<tr>
<td>9/9/76</td>
<td>blue star</td>
</tr>
<tr>
<td>Eric</td>
<td>green boat</td>
</tr>
<tr>
<td>4/30/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Nicole</td>
<td>red tree</td>
</tr>
<tr>
<td>9/22/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Joanne</td>
<td>blue star</td>
</tr>
<tr>
<td>11/10/73</td>
<td>blue Christmas tree</td>
</tr>
<tr>
<td>Justin</td>
<td>blue star</td>
</tr>
<tr>
<td>10/12/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Bill</td>
<td>blue Christmas tree</td>
</tr>
<tr>
<td>9/13/74</td>
<td>brown star</td>
</tr>
<tr>
<td>Andrew</td>
<td>orange star</td>
</tr>
<tr>
<td>5/19/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Bruce</td>
<td>blue star</td>
</tr>
<tr>
<td>5/5/74</td>
<td>blue star</td>
</tr>
<tr>
<td>Ivan</td>
<td>red Christmas tree</td>
</tr>
<tr>
<td>11/20/73</td>
<td>blue star</td>
</tr>
</tbody>
</table>

A "P" in the last column means that the student passed both tasks. (Recall: pass in TASK A — blue star, pass in TASK B — at least 3 out of 4 [3/4] correct answers with correct reasons.)

---

This chart represents the number of students who were not able to multiply classification at the beginning of the study, but developed that facility by the end of the study. If we discard those students who already possessed multiple classification ability at the outset, 50% of the test class whose pretest did not show multiple classification ability were able to demonstrate this ability on the post-test, while only 8.3% of the control class indicated the same shift.

We have shown that in the proper setting with the proper approach, kindergarten children are capable of learning multiple classification. Our observations and the testing indicate that this is not merely a verbal understanding, but a true understanding of the concept. The fact that the control class did not show a comparable increase in multiple classification ability indicates that it is not simply due to maturation.
### Results — CONTROL CLASS

<table>
<thead>
<tr>
<th>NAME</th>
<th>Pretest</th>
<th>TASK A (Figure chosen to fill empty slot)</th>
<th>Pretest</th>
<th>TASK B (Number of correct responses out of 4)</th>
<th>Post-Test</th>
<th>TASK B (Pass/Fail (Post-Test))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corine</td>
<td>blue star</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Charles</td>
<td>blue star</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matt</td>
<td>brown star</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heidi</td>
<td>blue star</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacob</td>
<td>brown Christmas tree</td>
<td>4/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elna</td>
<td>brown star</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tina</td>
<td>red moon</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don</td>
<td>brown star</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pam</td>
<td>brown star</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derek</td>
<td>blue star</td>
<td>4/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greg</td>
<td>red moon</td>
<td>2/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jill</td>
<td>red Christmas tree</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neash</td>
<td>blue star</td>
<td>1/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brandl</td>
<td>red moon</td>
<td>2/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark</td>
<td>red Christmas tree</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pam</td>
<td>brown boat</td>
<td>0/4</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A "P" in the last column means that the student passed both tasks. (Recall: pass in TASK A — blue star, pass in TASK B — at least 3 out of 4 [3/4] correct answers with correct reasons.)

### FOOTNOTES:

7. For those who are interested in a statistical analysis, a comparison of proportions shows a significant difference at the .02 level.

### REFERENCES


Acknowledgement: We would like to thank the classroom teacher, Linda Bullock and the school principal, Kenneth Martin, for their cooperation and support in this study.
Unlike a lot of others, I first learned about philosophy for children directly from Matt Lipman and Ann Sharp. One of my colleagues who knew of my interest in child development had mentioned this to another philosopher who in turn had mentioned it to them. When they drew up the list of potential participants for their first training program for Ph.D. level philosophers, I was included. I accepted the invitation with misgivings. Philosophy seemed to me to be a successful program at the college level in part because it did not exist at the precollege level. Consequently, the students were not turned off by a poor first impression. Two things changed my mind. First, the people who served as staff at the training sessions really knew what they were doing. They knew philosophy and they knew both how to present it to students and to their teachers. Secondly, I learned a lot about the teaching of any subject from them. What I learned made me realize how poor a job college level people were doing while giving college students their first exposure to philosophy. If our college level operation did not turn students off, certainly a better done precollege exposure would also be successful. I returned home determined to try out the program.

You cannot just run into a school board office and announce that you have a new program for them to try. There are too many people who do that for the board to take any of them seriously except as political threats. After several false starts I decided that I really did not know how to start. I decided that some experience teaching with the IAPC materials would give me the insight needed to genuinely help teachers use them and to give me credibility in talking to administrators. You would think that it is harder to get into a classroom than it is to get a new program adopted. Actually, it proved much easier for I could offer something that most school systems cherish — parental involvement. With this in mind, I approached the principal of my son’s elementary school. I explained the program to him and in doing so conveyed the seriousness of my intent. I left him a copy of Harry Stotlemeyer’s Discovery in an honest impression of what I wanted to do. It was important that everyone realize that the philosophy for children program was educationally sound and unlikely to arouse political opposition in the community. Clippings about successes in New Jersey served this purpose well.

Much to my delight, I was invited to take over a fifth grade class one hour a week for the winter. I was assured that the students were those in the best reading group. Spending their time with me rather than in traditional language arts instruction was unlikely to harm them — very much!

The first week that I taught found me...
very nervous. I knew how to handle a class full of eighteen year olds, but I was not so sure about eleven year olds. I told their teacher that he could use the free time however he wanted: unfortunately, he used it for every purpose but learning how to teach philosophically. I had but one copy of *Harry* and 25 students. What to do? I read them a chapter or part of a chapter each week. After the reading, I passed out work sheets which contained a list of questions to see if they followed the story as well as some exercise to enable us to work with the philosophical ideas in the story. The first week the student repeated Harry’s discovery and learned how and when to reverse sentences. I could see the excitement grow when they went on to make discoveries of their own.

Probably the most exciting and rewarding day for me came when we discussed Dale’s classmates’ reaction to his predicament. That day began with my reading the story of Dale and the flag and the views of his classmates as expressed in Chapter Ten. After the story, we began to go through the questions to see if they had followed the events. I asked them, “When should you take another’s opinion for your own?” A girl raised her hand, “When they agree with you.”

The class laughed. Then another girl gave the answer in the story. “When they are an expert. When they are an authority on the subject.”

Now the class took over. We had heard from the good student. From the front row came the voice of one of the class cynics. “I’m not so sure,” he called out, “sometimes when the doctor says that you need an operation — he needs a vacation or a new porch more.”

“Hmph;” came an anonymous female voice. Her father must be a doctor. But from the back came a voice of support. “Yeah, my mother says to always get a second opinion. Like when one store offers a chair at a certain price, ask at another to find out what the value really is.”

And so it went, until someone said that you could always find out the price of something by looking for a sale advertisement in the newspaper and our comparison shopper retorted that some stores sales prices are higher than other stores regular prices!

Of course, when the experts disagree you have to decide for yourself. We disagreed with Mrs. Halsey who had counseled to always accept the experts and we made up our own minds. This discussion of appeal to authority was better than any I had had in a college class. Now, when I relate the story to my students who are teachers, there is recognition that philosophy can be taught to young people. Not only was the experience rewarding, but I got invited back. This time I will be working with a teacher who next year will be a coordinator of teachers of the gifted. She will be taking *Harry* with her.

Now and then I run into one of my former students around the village. They usually say hello and reminisce about the class. What seems to have impressed them the most is that I listened to them and took their ideas seriously. Perhaps, the children love philosophy because we each have to listen to the other. With such discussions, I found it easy.
In twentieth century America the State's primary relationship to children has been protective and paternal. Through juvenile law and a host of social services the State has aimed to care for children in the face of life's hardships — even when this has meant doing so over the objections of parents or of the children themselves. Since the benevolence of child protection was generally presumed to be obvious, the State felt little need to elaborately justify this sprawling body of law. Over the last decade, however, a number of educators, psychologists, and philosophers have challenged the value of special protection for children and pressed for laws which treat children on a more equal footing with adults. The voices of children's rights have, at the very least, made the justification of paternalism toward children a live question. In this context Laurence D. Houlgate offers The Child and the State as "one attempt to construct and defend a normative theory of juvenile rights" (Xiii).

Houlgate surveys the legal status of children in America today with an eye toward highlighting the differences between the treatment of children and adults. In light of these differences he poses a pair of questions: (i) Can we justify denying children any of the legal liberties granted adults? (ii) Can we justify offering children any special legal claim rights not offered to adults? Houlgate needs two questions here because there are two distinct ways of treating children and adults differently. As the first question suggests, liberties like the right to vote, the right to make contracts, and the right to be on the street after 11 p.m. are routinely granted to adults and withheld from children. On the other hand, rights to support and protective services through social service agencies are often available to children but not to adults. Houlgate calls access to these sorts of special treatment "claim rights". In short, the State offers children less than adults in some respects and more than adults in others. Is there any way to make sense of this difference in treatment in two directions?

Houlgate does not see any underlying consistency in the way children are presently treated in American law. He observes that the answers to his two basic questions have not been, and will not be, established through interpretation of the Constitution by the Supreme Court. Indeed, he argues that the State has no general position on these questions which is both theoretically coherent and reflective of our actual practices and policies toward children. Through an examination of several possible arguments to justify special treatment of children, Houlgate attempts to fill the theoretical void and set a standard for consistent treatment of children under the law.

As it happens, the void Houlgate has in mind is not so much a lack of theory as a lack of application of theory to the issues of juvenile law. His operating principle, although not new, is eminently sensibly; few could really take exception to it. The principle is: "It is justifiable to deny a legal liberty right or grant a claim right to a class of beings if this produces maximum happiness consistent with the principle of just distribution." (96) In other words, children
may be barred from voting or they may be offered special medical benefits (not available to adults) as long as one can show two things. First, the whole society will be better off in the long run if children and adults are treated differently. Houlgate devotes a chapter to explaining and clarifying this version of utilitarianism. Second, the long run social good must not come at the expense of justice. For Houlgate, justice demands that everyone has “an equal chance of achieving the best life he is capable of.” (100) If this means treating people differently, so be it. But society may not treat children differently from adults, on this view, unless both of these conditions are met at the same time.

Although Houlgate has taken great pains to make theoretical space for special care and protection of children, his book is no apology for current American legal practices. The measure of a book, such as this one is the willingness of the author to see the theory through to its consequences. Houlgate, to his credit, insists that very little in the way of special treatment toward children is, in fact, justified. He rejects the justification of liberty-denying status offences, such as incorrigibility, for all but the very young children who lack the capacity for rational choice. (125) For even the youngest children he rejects legal restrictions on morally offensive conduct (sexual activities, for example), leaving open only the possibility that repeated misconduct or dangerous conduct might be the basis of denying certain liberties to the pre-rational child. Houlgate also argues that child neglect statutes should intervene in family life less than they presently do and that the juvenile delinquency statutes are unjust — hence, unjustifiable. In practice, Houlgate is very close to the advocates of equal rights for children, despite his efforts to accommodate paternalism in theory.

The Child and the State is carefully organized and the developing argument is clearly posted along the way. For a book which aims to apply its ideas to specific legal practices, however, it leaves a substantial portion of the argument undeveloped. In places the lack of detail seriously blunts the force of the argument. This is part of the difficulty with Houlgate’s treatment of some children’s “lack of the capacity for rational choice”.

Houlgate is willing to agree that children who lack the capacity for rational choice may be justifiably denied certain liberty rights (such as the right to vote), or justifiably granted certain claim rights (such as special medical benefits), as long as the special treatment is based on an appropriate need. Houlgate does not happen to think that most children lack this capacity, but the principle he articulates is compatible with a rather controlling and extensive paternalism. How, after all, are we to decide whether a particular child has the capacity for rational choice or not? For example, how can we tell if a child’s choice to spend earnings on a trip to Disney World rather than to save it for tuition to a good school is rational? Houlgate begins to tell us what the capacity for rational choice is in Chapter 5. There he describes it as the capacity to choose on the basis of evidence presently available. (66) So far, so good. The criterion refers to the reasoning process and the problem of figuring out who is not yet in control of this process seems manageable. Did the child weigh alternatives before selecting Disney World? A short interview would reveal the answer.

Unfortunately, Houlgate drops this criterion of rational choice for another. He shifts his terminology from “rational” choice to “reasonable” choice and so moves from a fairly clear criterion to a very murky one. The criterion for rational — now reasonable — choice requires the ability to make choices which are not “self-harm risking”. However, the judgment about what is harmful to children is a value judgment about which there is hot and bitter dispute. Does a child do self-harm by passing up the chance to attend a particular school? To answer this question we must answer others: What is the value of education in our society? Is private education more beneficial than public education? If anything, we are farther from clarity about the capacity for rational choice than when we started.

As a result, Houlgate has offered us no guidance as to whether normally developed children between the ages of (I suppose) five and thirteen may be justifiably denied liberty rights or not for reasons having to do with the capacity for rational choice. This is not close enough for a theory which purports to set a standard to guide legislation.

Houlgate does have another way through this problem open to him. In several places he argues that it is not justifiable to deny a liberty right or create a special claim right without empirical proof that a group of people lack the capacity in question. (96, 97, 103) Since Houlgate finds the empirical studies on this topic inadequate and inconclusive, he might argue that special treatment for children is not yet warranted. On this view, children would have all and only the rights of adults until they could be shown to lack the capacity for rational choice. I suppose it would work something like this: When children were no longer “very young” — say, at age five — they would receive their liberty rights and lose their special claim rights. The State, however, would reserve the right to try to prove that any given child lacked the capacity for rational choice. If proven, that child would revert back to the pre-five-year-old status until he or she was found to have the capacity at another hearing.

I have no idea what Houlgate would say about this proposal. One can well imagine that it would create a bureaucratic nightmare. We know all too well that theoretically sound principles do not always make the best policy. Any effort to develop policy on the basis of theory must cast at least one eye in the direction of ramifications and consequences. Houlgate does not spend much time on this sort of speculation, and that is my major problem with the book. He has developed his theory at a level of abstraction which allows the paternalists and the children’s liberationists to fight all of the old battles within his terminology. Houlgate still has the work of translating theory into policy before him.

Review by:

Howard Cohen
Department of Philosophy
University of Massachusetts/Boston
REBECCA

by Ronald L. Reed

*Rebecca* is one of a series of stories to be published by the IAPC in 1981. *Rebecca* is aimed at first grade. The story has already been used with kindergarten and first grade students in both Texas and New Jersey. If the anecdotal reports are to be believed, children enjoy the stories, and consequent discussion in the classroom helps improve their thinking skills.

An excerpt from *Rebecca* is being published in this issue in the hope that some teachers may want to discuss it with their students and then share the results with us. A few sample exercises have also been included to give an idea of the sort of activities that can be employed when working with *Rebecca* in the classroom.

---

My name is Rebecca.
I am eight years old
My hair is black.
   My hair is something like your hair (if you have hair.)
I live in a tree in my backyard.
My backyard is next to Robert's backyard.
Robert is my friend.
I have an elephant.
It is green and eats my sunflowers.
   I know elephants should not be green.
   But if an elephant is green, should it eat sunflowers?
   I don't know.
Maybe you know, but I don't.
   What if you had an elephant — would it be green?
   Would it eat sunflowers?
   See what I mean! These things are so hard to think about!
Exercise 1: Similarity and Difference

(a). Put five small objects on the floor. Ask your pupils if they can name a way in which all five things are alike, and if they can name a way in which all five things are different.

(b). Now ask your students to collect five more objects which are like the first five in the way that the first five are like one another.

Do you know how long I've spent trying to teach my elephant to fly?
Eight weeks and five days!
Can you imagine what it's like to spend day after day, for eight weeks and five days, trying to get an elephant to fly?
I make Robert laugh.
He says everyone knows you can't teach an elephant to fly.
Huh! What does he know!
It takes at least eight weeks and five days to teach a green elephant to fly
(and even then he won't fly so well).
I don't know how long it takes to teach a red elephant to fly.
Or an orange elephant.
Or a purple elephant.
Maybe you don't know either.
But if you knew, would you tell me?
If you can't tell me anything about elephants, do you think maybe you could tell me something about frogs?
I love frogs.
I don't love princes, but I love frogs.
It's not that I really, really know any princes. Not really.
All I'm saying is, if I ever met a prince, I'll bet I wouldn't like him.
My mother told me a story once about a frog. Do you know what happened?
In this story, there was this girl, and she kissed this frog, and it turned into a prince, just like that.
The story made me sad.
I don't understand how that could happen, just from a kiss.
From a kiss, can you imagine!
I don't understand it.
Even if you smile at a frog, it wouldn't turn into a prince.
I'll bet, even if you shook hands with it, or gave it a castle to live in, it wouldn't turn into a prince.
So that's why I felt sad, because I love frogs, and I don't love princes, and yet this girl kissed this frog, and it became a prince, just like that.
I think a lot about frogs and elephants and princes.
What do you think a lot about?
Robert says he thinks a lot about turtles, but not about frogs.
What are some of the things you don't think about?
Did you ever try not thinking about a frog?
Try it! Go ahead, try it!
When you get tired, switch over and don't think about a turtle for a while. And when you get tired of that, you can listen to some more of my story.
Exercise: Appearance and Reality

Ask your students if they can remember having something happen to them which turned out to be different from what they thought it was at first. If someone in the class says that he or she can remember some such experience, have that student complete the following sentence: "I thought it was ____________, but it was really _________________.

Now ask the next volunteer to do the same thing, and so on around the room.

One day, when I was riding down Camden Road, my foot got caught in the pedal. I lost my balance and the bike fell over.

My knee was cut.

I cried.

The tears ran down my cheeks and into the corners of my mouth.

I sort of liked their taste. They tasted sweet.

Robert says, when he cries, his tears taste salty. I wonder if he could be mistaken about something like that.

Or could I be mistaken?

Or could we both be right?

Why do you think I cried?

I'll bet you think it was because I fell off my bike.

Well, you're right. But that was only one of the reasons I had for crying.

There was another reason.

It was a big reason.

I think it was a good reason, but Robert said he didn't think so.

Robert, What does he know!

This was the reason I cried.

I was confused by the questions in my mind. There were three hundred and forty-seven of them, all running around in my mind. I'll bet if you had three hundred and forty-seven questions running around in your mind, you'd cry too.

Three hundred and forty-seven.

That's a lot of questions!

Take question Number 71. It kept running around in circles in my mind.

And question Number 163 kept jumping up and down, trying to catch my attention.

And question Number 288 kept trying to shove the other questions out of the way, and that made them all start pushing and shoving each other.

It was terrible.

It was just plain awful.

Would you like to know what question Number 71 was about?

I can tell you, it's no secret.

I have lots of other secrets that I don't tell anybody.

Especially not Robert.

But I can tell you what question Number 71 was.

What I wondered was, if a girl could kiss a frog and make it turn into a prince, could a boy kiss a frog and make
Discussion Plan: Secrets

(a) What is a secret?
(b) Why do we want to keep some things secret?
(c) Why is it that we don’t mind telling some secrets to some people?
(d) Do you have a secret you wouldn’t tell anyone?
(e) Do you love your secret as much as you love your toys?
(f) Are there things which you used to keep secret which you don’t any longer?
(g) Can secrets grow?

Exercise: Can Something Change and Still Stay the Same?

Have each child make a play-dough elephant. Then ask them to “change” the elephant in some ways. First, ask them to put a small design on his hind leg. Next ask them to put a hat on his head. Then ask them to reshape his trunk.

Then ask each child after he has made three changes, if it is still an elephant.

It turn into a princess?
When I asked Robert to do me a favor and kiss a frog, he made a face at me.

And take question Number 163. I kept telling it to be patient.

But it wouldn’t be patient. Up and down. Up and down. It just kept jumping up and down in my mind.

Finally I told it okay.

Here’s what it turned out to be:

Suppose a girl kisses a frog and it turns into a prince?

And suppose the same girl then kisses the prince. Would the prince turn into a frog?

That was Number 163.

I’ll bet you wonder what I said to question Number 163.

I’d be very surprised if you didn’t wonder what I said to 163.

Well, I didn’t say anything.

I just shrugged my shoulders. And do you know what?

Question Number 163 just kept on jumping up and down, because it couldn’t see me shrug my shoulders.

At least that was the reason I figured out.

But how come my thoughts can’t see me shrug my shoulders? I don’t understand.

And that’s one of the reasons I was crying.

Anyhow, I said to myself, okay, suppose the prince does turn into a frog, so what?

And that’s when question Number 288 popped into my head, just like that.

Question Number 288 was, How many times can you kiss a frog?

Do you see the problem? Sure you do.

Suppose you kiss a frog and it turns into a prince.

And suppose you kiss the prince and it turns into a frog.

Don’t you see what it means?

It means some things have to be kissed three times in order to be kissed twice.

At least that’s what I think it means.

But that brings me to question Number 289: how do we know it’s the same frog?

Maybe a frog that hasn’t yet been a prince is very different from a frog that’s
been a prince for a while. Maybe it’s not
the same frog at all. Maybe frogs that
become princes are very different from
frogs that princes turn into.

And that brings me to question
Number 290: how many times can you
kiss a frog? I mean, how many times can
you kiss the same frog?

Those are all the questions I can tell
you about just now.
Not that that’s all I have to tell you.
I have lots more to tell you.
But I’ll bet you want to think about
some of those questions.
You’re not like Robert. He says he
doesn’t care a bit about my old ques-
tions.
I hope you’re like me.
But if you’re not like Robert, and
you’re not like me, then who are you
like?
That’s what I want to know.

Exercise: Story Construction

At this point in the story, ask your
students how they, as a group would
complete the story. You be the scribe.
Have them tell you what to put down.
When they feel the story is complete,
put it away. Later you can read it to
them, so that they can compare their
version to the one in the book.
WHERE TO APPLY FOR FUNDING

School districts that would like their teachers taught to use Philosophy for Children next year, and would like to apply for appropriate grants, should give particular attention to two funding sources, one of them brand-new and very attractive to schools wishing to expand both their humanities and their reasoning skills:

—The National Endowment for the Humanities has announced the availability to school districts of practitioner grants in the humanities. These will have a maximum limit of $10,000, and can be used for teacher-training consultants, released time, stipends, or other possible components of an educational program in elementary or secondary schools aimed at improving the teaching of humanities. Application forms can be obtained from Mr. Francis Roberts, Elementary and Secondary Education Program, National Endowment for the Humanities, Washington, D.C. 20506. The deadline for receipt of applications is November 1, 1980.

—A number of states offer Title IV-C adoption grants. These generally run from $3,000 to $10,000. Deadlines vary; December 1 is common. Model grant applications can be furnished by the IAPC. Contact the Title IV-C office in your State Department of Education.

Since the IAPC is developing a variety of training options, so as to be flexible enough to provide training in any part of the country, the specific option that meets your needs should be identified and requested in your grant proposal.