

Teaching Yourself to Teach with Objects

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At the centre of all our programs at the Nova Scotia Museum is a belief in the tremendous power of objects to educate. In fact, we think it is as important for people to learn to use objects as a means of discovering things about themselves their world as it is for them to use words and numbers.¹

I've worked at the Nova Scotia Museum now for four years and I'm still fascinated by what I'm learning about the power of objects to educate. Furthermore, the longer I'm at it, the more I'm convinced that a museum approach to education has a great deal to offer classroom teachers. Unfortunately, learning how to use objects effectively in your teaching is not quite as easy as falling off a log. As is the case with acquiring some other important teaching skills, it takes both some time and some effort. To get right down to it, what this means is that you have to learn to read objects as skillfully as you have already learned to read our printed language. And as in all skill development, there's no room for fudging the basics. The foundation of your being able to use objects as a teacher is your learning how to use them yourself for your own continuing self-education.

Since you probably were not trained as a child to read objects, it may be even harder for you to learn this skill than it will be for your students. But don't worry; you don't have to become an expert in order to begin to use objects with your students, and as soon as you begin you can start to reap some of the benefits.

So perhaps the first step in helping you learn how to teach with objects, we should look at some of the advantages of this approach.

Objects are Fascinating

One of the major advantages is that most people are capable of being fascinated by "things." It seems to me that if you can focus your work with students on something that fascinates them, you are at least starting the race on the right foot.

Of course, to say that most people are capable of being fascinated by most objects is not to maintain that most of us actually go through our lives sparkling with enthusiasm for the multitude of objects we encounter daily. As a matter of fact, we simply are not equipped by our training even to see many of the things in our world, much less be fascinated by them; and often our schooling predisposes us to ignore even those things which surround us most closely every day. (We'll return to this later.) In spite of this, however, most people are capable of being fascinated

by a tremendous variety of things which they might otherwise ignore — if their attention is drawn to those things. The simplest way of focusing someone's attention on an object, of course, is to point to it or hold it out to them, in effect saying, "Here! Look at this!" It's also helpful sometimes to ask a simple focusing question or two such as "Isn't this beautiful?", or "What do you think this is?", or "Have you seen anything like this before?", or "What do you think is significant about this?" Museums have evolved quite elaborate devices called exhibits for drawing people's attention to objects — but usually in the classroom the simpler approach is all that's necessary to get the ball rolling.

It is perhaps worth noting that I have held up lots of different objects in front of an amazing variety of people, asked questions about them and never yet have I had someone shrug and say "Who cares?", "So what!" or "Don't bother me with such trivia!" Indeed, my experience has been that when you encourage people to focus their attention on an object, especially the kind of objects we tend to have lying around museums, they generally respond with enthusiasm and begin to generate a whole series of questions themselves.

On one occasion I even found myself involved in a quite exciting session of "object-based-discovery-education" with a group of men who were hanging around in a Halifax garage. I had been to an in-service in Truro and discovered on my way home that one of my tires was soft. I pulled into a service station and backed up to the air pump. As I was attending to the tire, I noticed that a couple of men who had been standing near the pump had caught sight of an open box of mammal skulls that I had carted along to the in-service and which was now sitting on top of a pile of boxes in my back seat.

"Well, look at that!" one said to the other. "I bet he was a mean critter!" the other replied. They motioned to some other men who were talking inside the garage, who sauntered over to join them. By the time I was finished with my tire there was quite a group gathered around the back of my car and they had a lot of questions. "What's that one?" "Where did you get them?" "Is that a dog?" "No, it's a wolf, isn't it?" "How can you tell what animal it came from?"

I could hardly ignore these questions. I brought out my box of skulls, set it on the lid of the trunk and we talked for twenty minutes or so about animal skulls and teeth, and, among other things, about how you can look at the teeth and tell whether a skull came from a plant eater, a meat eater or an animal who eats a bit of everything.

As I drove away, I felt strangely like a street-corner evangelist who had just delivered his first soap-box sermon. I wasn't quite sure I was comfortable with that. But I was also pleased; because I had been talking with a group of teachers earlier that afternoon about how fascinating such objects were and how useful this made them to teachers; and here my contention had been unexpectedly confirmed, albeit privately, but confirmed nonetheless.

Objects are not age-specific

A second major advantage of using objects in teaching is that, unlike print materials objects are neither age-specific nor tied to a particular grade level. In other words, students do not have to have attained a specific reading level or stage of conceptual development in order for them to be able to see an object and engage in an educationally worthwhile discussion about it. This is not to say that every object will hold equal interest for students at all levels. But many objects, for example a stone tool or a queen crab, could be used with equal success with a primary class and a group of university students. I am of course not maintaining that students at various levels will see these objects in the same way. Students at each level will see a specific object through the eyes of their own experience and they will bring to it their own questions and their own observations. Those of the Grade 3 student will likely be different to those of the Grade 11 student. But beware! This doesn't necessarily mean that the former will be less acute or less valid than the former.

This point was driven home to me by an incident that occurred a few years ago. In those days, as I wandered around the province talking to teachers about using museum resources in their teaching, I took along a clutch of native Nova Scotian turtles. I used them to illustrate that one of the benefits of using objects was that even young children can often be helped to understand quite complex concepts when they can discover them concretely manifested in objects.

So, as an example, I suggested that the wood turtle, painted turtle and snapping turtle which I had with me could help students understand the quite abstract biological principle that in all creatures there is a symbiotic interrelationship between body structure and behaviour. And then I would demonstrate by taking the wood turtle out of the box and setting it on the floor among the teachers. The wood turtle has a heavy shell both on its back and its belly which affords it ample protection against predators. So when it looked up at the eager smiling faces of the humans that surrounded it, and perceived them as a potential predatory threat, it responded by doing the typically turtle thing; it withdrew completely into its shell and became like a rock.

The painted turtle, however, has a much lighter and somewhat less extensive shell, so although it is possible for this turtle to withdraw into its shell, it doesn't afford nearly as much protection as the shell of the box turtle. When I took the painted turtle out of its box and it perceived the threatening crowd of humans, it responded by using its very uncharacteristic turtle-speed to try to escape, scabbling across the floor.

Now, when I took the snapping turtle out of its box and we examined it, we saw immediately that it had no shell covering its underside, only a small, diamond-shaped patch in the centre of its belly. So it simply couldn't withdraw into its shell. But of course, what the snapping turtle has developed is a very aggressive defensive behaviour. It snaps. It has a very powerful set of jaws and an amazingly long neck which can extend virtually to the back of its shell. Thus it can defend itself effectively, front and back.

So by examining my turtles, it was fairly easy to discover that each species had developed its own complementary adaptations of body structure and behaviour.

Usually the strength of the example was enough to make the point, but one day I dropped in with my kits and turtles to Plymouth School, which is down the Wedgeport Road, and talked to teachers during their recess. I had been showing off the turtles and talking about them when one of the teachers said, "My grade 1s would really like to see your turtles, and do you think you could bring them down to my class?"

Of course I agreed, but with some trepidation because I know that while on one level this teacher was saying, "Oh, do bring them down, my students would be delighted!" on another level, she was saying, "Come on! Put your money where your mouth is! Let's see if your theorizing works in practice!"

Well, I was pretty sure it would, but I had never tried it out with Grade 1 students before, and so I mentally crossed my fingers as I walked down the hall towards her classroom.

I needn't have worried. I sat with her students who were gathered in a circle on the carpeted floor, and we looked at the turtles and talked about them. They were fascinated and asked good penetrating questions and I was delighted because they really did seem to be getting the point about the relationship between the turtle's physical and behavioural adaptations.

Everything was going well until I noticed out the corner of my eye that one little brat over at the edge of the group was turning the snapping turtle over on its back. The poor turtle would no sooner right itself than this beastly kid would turn it on its back again. This same procedure happened three or four times while I was rising up in righteous indignation (all my instincts for the prevention of cruelty to animals rushing to the fore) until I towered above the offender.

He looked up at me with innocent excitement on his face, powerful enough to stop me in my tracks. "Look!" he cried, "the snapping turtle doesn't just use his neck to get at you to bite you; he uses it to turn himself over so you can't get at his stomach!"

I looked. What he had said was true. The instant that you turned the snapping turtle on his back; he used his neck as a pivot and turned himself over again. We tried the same thing with the wood turtle; it hardly reacted at all. Indeed, it was as much a rock on its back as it was on its belly. Oh, eventually it would have turned itself over, slowly and languorously (I have since seen it do that), but it was obviously in no great hurry on that day.

I was excited! Because not only had this child obviously understood what I had been suggesting about animal adaptation, he had extended the concept beyond the point to which I had taken it. He had discovered something I hadn't seen. I had spent a lot of time playing with the turtles, looking at them carefully, and discussing them with a wide variety of people, but I had never noticed what that little boy noticed.

“Well, that’s not too extraordinary,” I said to myself, “after all, I’m fairly new to turtledom.” So when I got back home, I reported what we had discovered to Debby Burleson, the science educator in our section of the museum and the person who taught me all I knew about turtles. She had never noticed this either.

So I went to talk to John Gilhen in the Science Section, who is “Mr Nova Scotian Turtle” and who knows more about these creatures and their habits than anyone else I know. He had never noticed this either.

But the little boy in Grade 1 at Plymouth School had noticed it. That’s exciting; and says a lot about the power of objects to educate.

Objects help us to document the history of ordinary people

A third major advantage of using objects in teaching is that they can help you and your students understand something about the lives of the ordinary people who were your ancestors.

Until fairly recently, this sort of thing wasn’t a great priority in our society. The conventional wisdom had it that some people “made history” while others did not. And history, or so this view went, was made by the few and not the many, by the Kings and Generals and Cabinet Ministers and Prominent Citizens and not by the great mass of ordinary people. This is a view of history with which I now profoundly disagree.

However, the way in which history was taught when I went to school and university certainly reflected this bias; the great concern was with political and military history, with battles, treaties and acts of parliament. We were led to believe that this was the true stuff of history.

But even then it didn’t seem to have very much connection with who we were, and where we had come from. And I was a middle-class kid from Truro, supposedly the kind of kid for whom school curriculums were designed.

I didn’t even begin to understand what alienation from school history really was until I taught working class Black and White kids from the North End of Halifax, and found that there were virtually no curriculum materials available that bore any relationship whatsoever to their lives and their peoples’ history.

It was some time around that point in my life as a teacher that I began to realize that, as far as I could see, the major reason for studying history was to learn about our past and thus understand something of the dimensions of our present and the possibilities of our future. But in order for this to work for my students, they had to perceive the history that we studied as their history. For most students that you ever taught, and, when you get right down to it, for most of your students as well, history is not “history in the great tradition” but the history of ordinary people. This need not limit the scope of your whole course of study, but it certainly does

determine the starting point and the overall perspective.

One of the problems is that for the most part our ordinary ancestors didn't leave much documentary evidence of their lives. Certainly, some of them wrote letters that survive; a few kept diaries that have been preserved; they were included in censuses, and recorded at their births, marriages and deaths. They also sang songs and told tales. From all of these things we can learn something. But among the most important "documents" that ordinary people leave behind are the things that they made and used in their everyday lives. And if you learn to understand what these "artifacts" have to say, they can shed great light for both you and your students on who these people were and what their lives were like, what their limits and possibilities were, how they thought, what they valued, and how they shaped our world.

Using objects helps students develop important intellectual skills

Another significant benefit of learning how to use objects with your students is that it gives them the chance to develop their capacity for careful, critical observation of their world.

Developing this skill requires practice and often we don't provide enough opportunity for this in the course of our students' education. Also, there can be blocks to learning this skill. Sometimes the process is short-circuited because our students already have a name for what we'd like them to look at. "Oh yes," they say, "I know what that is, it's a butterfly!" Period! End of conversation!

In a sense this is not surprising because the ability to put a name on something is in itself a skill which we spend a lot of energy promoting in schools. There's a great deal of emphasis, particularly in the early years of schooling, on helping children to name and number the various things they experience. You can usefully think of conceptual and symbolic pigeon-holes into which we stuff the actual things we experience.

This process of naming and numbering is undeniably important. It certainly is vital to our communicating with each other. It helps us to organize our experience. It liberates us from having to treat each thing we encounter as something new and different. And, because we can name and number we are freed to play around with the abstractions without having to lug around the heavy baggage of countless individual things.

So this whole business gets legitimate emphasis in the early years of schooling. Indeed, naming and numbering are the foundation skills of language development and mathematics respectively and these are, of course, key to the entire educational enterprise.

But often it is important to be able to see our world freshly and without the baggage of old names and numbers, for these can insulate us from clearly seeing the fullness of the world which lies behind our abstractions. We need to develop the ability to suspend our reliance on conventional abstractions so that we can look at things anew, and in a careful, critical way.

Ironically, when we do this effectively, it often leads to the generation of new, subtler sets of names and numbers to express our new understandings about the world.

This power of critical observation, then, is ultimately as important an intellectual skill for your students as is the power of naming and numbering. The capacity for fresh, critical observations is the basis of good research, and as your students advance in school that skill becomes increasingly vital. But being able to see the world clearly and to ask good probing questions of it is as important in a whole variety of non-academic life situations as well. So it's certainly worth spending time developing this facet of your students' intellects. Using objects in your teaching provides the opportunity.

Getting Started

Enough of the advantages of incorporating object in your teaching. How do you get started?

As I suggested above, the basic thing you need to do before you can use objects effectively with your students is to learn something yourselves about looking at objects carefully and probingly and critically. You need to get enough experience working with objects yourselves that you begin to trust them as legitimate sources of information. That can be hard, especially for people who were trained in academic disciplines where written materials (books, newspapers, pamphlets, manuscripts, letters, grocery lists, etc) tend to be treated as the only truly valid sources of information.

But how to get started? Well, just as in learning to read there's no substitute for reading, and in learning how to write there's nothing quite like writing, the best way to develop your capacity for looking at objects is to look at objects. It's not even necessary to use museum objects in order to get started. Museums are undeniably a good source of fascinating artifacts and specimens; after all, that's our business. But the world is filled with all sorts of things that will amply reward careful, probing observation, and there are certain advantages to starting with something that is part of your own world — advantages that, I hope, will become clear as we proceed. So choose something you find lying around your home or school and begin.

And now for a little practice...

A contemporary artifact that I often use in my discussions with groups of teachers is the Styrofoam cup. There are no particular reasons for choosing Styrofoam cups over a whole host of other possible things, other than the fact that in most rooms where I find myself talking with teachers these cups seem to be amply distributed, in people's hands, on tables, on floors and even sometimes in trash cans. And for the most part, the cups don't seem to belong to anyone, so are easily appropriated for my purposes. I've also used ball point pens, paper diapers, tape recorders, electric irons, chairs, door stoppers, hamburger containers and whole variety of other contemporary objects with equal effect.

So pick up a Styrofoam cup and join me in looking at it. How would you describe it? It's a white cup with a narrow base, and sides which flare gradually to a wider lip.

Is there anything significant about this colour and shape?

Yes. It's white because that's the colour of the foam that was used to make it. You can even see the individual beads of foam on the surface, so it's really quite unadorned. I guess there's been no attempt to decorate it because its purpose is simply utilitarian. There is a kind of beauty, though, in the cleanness and simplicity of the solid color and the plain lines.

What about the cup's shape?

The flared sides make them easy to stack, and convenient to store. Also, Styrofoam cups don't have a handle. They don't need one because Styrofoam is a good insulator, so you won't burn your hand holding a hot cup of coffee. But this makes its shape more like that of a glass than that of a cup. I suppose we call it a cup because it would sound strange or contradictory to call it a Styrofoam glass.

That's an interesting point. Is there anything else worth mentioning about its size and shape?

Yes. The lip is thicker than the rest of the side. I suppose that this strengthens it, although it may also be more comfortable to drink out of a cup with a thicker lip. It's hard to say. Oh, I also measured how much liquid this cup would hold; six ounces, as compared to eight or ten ounces in an average mug.

I guess that means you can get more cups out of the coffee maker if you're serving a group.

Yes, and make a bigger profit if you're selling it.

Is there anything else worth mentioning about the physical characteristics of this cup?

*Yes. The following words and symbols are embossed on the bottom: Fibracan/700S/
Montreal&Toronto.*

What do they tell you?

That the company that made the cup was called Fibracan and that it has offices or factories or both in Montreal and Toronto. I suppose 700S is some sort of product code; I'm not sure. There's also something about the sound of 'Fibracan' — it seems to fit with the current fashion for contracted names and corporate logos that has given us names like Domtar, Alcan, Devco and Canfor. Twenty-five years ago, if the company existed, it was probably called the Fibre Container Company of Canada or something like that. So either it's a new company, or an old company with a new name. Maybe the old company needed a new name when it started

making containers out of Styrofoam rather than wood fibres.

That would be something worth checking on. What else do you see?

In the centre of the bottom, there's a somewhat raised circle about 7mm in diameter, and the surface of this circle seems rougher than the surface of the rest of the cup.

What do you make of this?

I don't really know. It strikes me that it might have something to do with the way the cup was made.

How was the cup made?

I don't really know. But as I mentioned before, it seems to be made from thousands of tiny particles of foam. Maybe the cup was made in a mould, and the rough part on the bottom indicates the place where the particles were injected into the mould. But that's just speculation. It's obviously machine-made rather than hand-made. But I'd only be guessing at what the machine was like and precisely how the cup was made.

But, even your not knowing is significant in a sense.

I don't follow you.

Well, it seems to me that it's not unusual that you don't know these things. In some sense it's characteristic of our time and our history that we tend not to understand how the things that we use every day are made, what they're made from, where they're made or by whom. This is true not only of Styrofoam cups but of all sorts of things that are probably even more important to us. Our grandparents knew much more than we do about where the things they used came from, how they were made, from what and by whom.

You mean, compare a Styrofoam cup with a tin mug, for example?

Sure. The one is made from a strange material, in a mysterious way, in an anonymous factory hundreds of miles away...

...And the other was made from tin and solder, by Earle Lantz the local tinsmith, in a way that requires some skill, but which our grandparents knew about since they had watched him do it in his shop which was right behind his store, which was in the centre of their village.

Exactly. So maybe our Styrofoam cup tells us that we're a bit more alienated from our world than our grandparents were from theirs.

At the very least, it says something about the complexity of our world, compared with the simplicity of theirs.

What else is significant about your cup?

It's cheap!

What does cheap mean?

It means that it didn't cost very much, of course; that you can buy these cups for only pennies apiece.

If you drank your coffee and tea out of Styrofoam cups every day, how many would you use in the run of a year?

At least two a day — somewhere between 700 and 800 in a year.

Is that cheap?

I suppose not. But at least Styrofoam cups are sanitary and convenient.

What do you mean by 'convenient'?

You don't have to wash them. People don't like washing dishes; they'd rather spend their time doing other things.

What do you do in the time you save not washing coffee cups?

It's not that I do anything in particular. I guess it's a more a general attitude rather than a specific exchange. People today always seem to be in a hurry; we're always looking for ways of saving time. And there's another aspect to this too.

What's that?

Well, it always used to be the women teachers in our school who were commandeered into washing the cups and saucers. We just aren't willing to do that anymore.

That makes sense. What do you do with your Styrofoam cup rather than wash it?

I throw it away. It's disposable; it's made to be used only once and then tossed out.

What happens to it when you toss it out?

It becomes garbage.

And what then? Does it decompose easily?

No, like a lot of the things that we throw away, it isn't bio-degradable and so it just sits there without rotting. So if it's thrown on the street it becomes part of the garbage problem.

Some people would maintain that we have so many disposable things in our society that even if people didn't throw them out on the sidewalk, the sheer bulk of our disposables would mean we'd have a garbage problem.

That's true. Look at the difficulty we have trying to find landfill sites. I wonder if there's a way of re-cycling Styrofoam.

Not that I know of. It would be a useful project for someone to work on. By the way, what's Styrofoam made from?

I don't really know; but I think it's made from petroleum.

Oh! So we must have lots of oil, since we can afford to throw away things made from it so readily.

I'll ignore your sarcasm and answer your question anyway. No, of course, we don't have oil to throw away; but I'd be willing to bet that Styrofoam cups were developed at a time when we thought we did. I wonder if our current consciousness about the energy crisis will have any effect on the use of Styrofoam cups.

I'm sure it will. You know you can often learn a lot by looking at the changes in the patterns of use and distribution of artifacts, and I've been in two schools lately where I've noticed changes that might turn out to be trends. In the first school, some teachers were washing out their Styrofoam cups and leaving them in their mailboxes. In the second school, they stopped buying them altogether. They say that since the energy crisis they have become more and expensive and that that, couple with the budgetary crisis in education, has made them unaffordable.

Maybe the museum had better start collecting them before they all disappear.

Not a bad idea.

Conclusion

I hope that the foregoing exercise will begin to give you a sense that there is a lot that can be learned from a careful look at even apparently insignificant things like Styrofoam cups. The Styrofoam cup has quite a story to tell if we're able to listen. It's a story that is not only about

Styrofoam cups, but also about us, about some of our values and the choices that we make, about some of our limits and possibilities, and about some of the crises that characterize our world.

As you're developing your skills with objects it's sometimes easier to see the connections between objects and their broader context if you start with things from our own world. So I think it's worth beginning with the familiar. But after you get the hang of it you'll discover that the same sorts of questions can be asked of historical artifacts, and that they too have exciting stories to tell about the context from which they come and about the lives of the people who made and used them.

As you develop your skills, you'll begin to see all sorts of ways of using objects profitably with your students.

Try it.

¹ These words are a direct quotation from an internal Nova Scotia Museum document on museum education, but paraphrase part of a statement concerning the educative power of objects written by the editors of ART TO ZOO, a publication of the Office of Elementary and Secondary Education of the Smithsonian Institution, Washington DC 20560. Their statement appeared on page 4 of the September issue of ART TO ZOO.