

Technology Education Versus Liberal Arts Education?

By Oscar Plaza

This work analyzes the positioning of technology education within the tradition of classical liberal arts education. I propose ideas for mutual enrichment of classical liberal arts disciplines alongside technology education.

It is my contention that technology education is general education for a technological world. Indeed, there is a correlation between the purpose of critical thinking of general education and being surrounded by artifacts. Yet, thinking and making are inseparable. Both actions inform each other.¹ The design and problem-solving activities that are at the core of technology education do provide an excellent setting for developing qualities such as work habits, decision-making skills, effective use of resources, skills to interact positively with others, and ability to locate, evaluate, and act upon information of all kinds.¹ All these skills are transferable not only to the workplace, but to the making of a competent and humanistic person as well.² More and more all work activities, including traditional professions, are becoming service related depending upon complex technological systems.³ To understand and manage those systems requires a great deal of technology education.⁴ The contribution of services was put at the bottom during the industrial era. Now, service delivery promises the most intellectually challenging and technically difficult tasks of the future.⁵

An Inquiry In Common Ground

My proposition is to create a common ground on which to build an educational approach that eliminates the sharp cleavage between liberal arts education and technology education.

Worldview Models

My starting point is the concept that all academic disciplines have a worldview in mind. No matter how small the focus of their lenses, they see the whole world through those lenses. But, we cannot identify “betterness” looking at an academic discipline through the lens of another. Then, my proposition is to accept the

idea that each discipline carries a worldview that deserves the same academic respect. This respect will be tested when confronting an issue. The day we think that all issues must be thought of in conjunction with colleagues from different fields, we will be really serious about other worldviews.

Principles

The practice of any discipline implies the guidance of certain principles. Each of us knows that the set of principles we follow is useful to the progress of our discipline. We know other disciplines have their own principles and that probably they are useful to their endeavors. Usually, we do not give attention to the principles of others. However, principles shape the soul of a practitioner. If we are serious about common ground, we should start by attempting to understand the principles of other disciplines.

Technology education cultivates an intellectual domain; therefore, it has developed principles. It has a body of knowledge about how people create, produce, use, and assess human-made artifacts. It has a mode of inquiry that focuses on the practices of invention, innovation, and design. Technology is as ancient as civilization (Dorn & McClellan, 1999; Pacey, 1990), and this historical asset means that technology studies are foundational to any thorough educational process.

Education as a Continuum

Given equally valued worldviews and principles, we could see the educational process and system as a continuum. Education as a continuum does not move from one discipline to another (such as from one discrete point to another), but instead observers in this continuum would search for different perspectives. Liberal arts and technology education would not be different compartments, but they would have different perspectives on addressing the same reality.

In a continuum model of education, we would address any issue simultaneously from

the liberal arts and technology education points of view. Practitioners in both fields would engage each other not only for the sake of knowing and understanding the other, but for accomplishing their own aims. We should learn that we cannot address what we must by just getting more involved in our own worldview.

Education as a continuum is not symbiosis or syncretism. Technology education and liberal arts maintain their own identities but they realize that they cannot educate the educand of the future on their own. Liberal arts would learn that tools not only enhance human physical abilities, but also shape human comprehension abilities. Technology education would learn that liberal arts is not only about reflecting reality, but also about seeing reality. Education as a continuum is not about joint efforts but about intellectual honesty.

Instructional Models

Assuming a common ground for liberal arts education and technology education, we can think about common instructional models. These models should not share a common background because we try to work together. Instead, we should reach the point at which we use a common instructional background model due to the needs of our own field.

Building Up An Educational Model for the Future

The Promise of High-Tech

It was said that television was going to change schools, even displace the teacher. Teachers are still here, competing with television shows for student attention, but still here. Therefore, there is reason for skepticism about the high-tech threat to the teacher. Precisely because of high-tech, I think there are reasons for more teachers, yet another kind of teacher. The dilemma is that nobody knows exactly how this "new" teacher will look.

Information-technologies development is the key to the high-tech impact on education. Traditionally, the teacher was the authoritative sole conveyor of reliable information; not anymore. However, information is not knowledge and certainly not wisdom at all. The handling, managing, and rumination of information is becoming the big challenge of the educational

process. To "navigate" with the student throughout this ocean of information is becoming the job of the teacher.

Master/Mentor/Facilitator

The role and model of the teacher of the future are highly debated, and it will take time to reach certain consensus. Meanwhile, I propose the master/mentor/facilitator model. I think the idea combines the best of the traditional and of the "new." The master conveys the tradition of the teacher as the knowledge/wisdom authority. The mentor brings the idea of the lighthouse, of someone always there for encouragement and guidance. And, who is going to navigate with the student in the new high-tech school? We need the facilitator. Yet, the teacher will still be the commissioner of an academic discipline whether traditional or not. The teacher will still convey the meaning and excitement of a subject matter.

Multicurricula

The multicurricula idea is a curriculum with many entries. There would be as many curricula as students. No matter the entry, students would have the chance to grasp the core of traditional and new disciplines and end with a specialization on his or her own.

Meanwhile, I see two approaches to the integration of liberal arts and technology education curricula. One approach calls for technology education courses tailored as part of the general education curriculum.¹ There are courses with certain tradition that follow this pattern, such as Technology and Society, Technology and Culture, and Technology and Civilization. There are also new courses that more specifically address the issues of integration and technology education as part of the liberal arts curriculum.⁶ These new course developments call for the straight integration of technology education into the liberal arts curriculum.⁷

A second approach, which I propose, attempts a more integrative manner. The idea is to make technology education a component of integrative core courses curricula. Integrative core courses are developed around an integrative topic to which many disciplines, therefore teachers,

contribute. I believe that there is no topic about nature, humanity, or metaphysics to which technology education is alien. Furthermore, technology education should come with its own topics for integrative core course development.

Integrative core courses are difficult to develop. They are more than just a lecture series course developed around a common topic delivered by instructors from different disciplines. They are a group of instructors from different disciplines addressing together a common topic. I think that the solving/problem model of technology serves well this purpose because it requires a group of people with different backgrounds to tackle an issue together.

Integrative core courses are more adequate to the multicurricula idea. The issue is not about renegotiation of educational resources allocation, especially time curriculum, or sharing of resources among the different disciplines. The issue is curricula and course structures that address the new environment of the educational process.⁸

While some may see the entire world as a stage, Jones (1997) sees the entire world as a classroom and every "one room hut" as an access point in the age of information. The

global culture is progressing at a speed that puts the educational model for the future outside the bounds of any grand design. Nevertheless, this is not a justification for giving up or for business as usual. Education will go through fundamental changes, whether we like it or not, because the outside reality will demand a replacement of the industrial era school model we have now. Nonetheless, I believe that teacher experiences provide extremely valuable advice for change, as the following quotation shows:

I am reminded of a new technology teacher who began her first teaching job in a classroom that had no equipment for the first two months. In those first two months, however, her students were guided through problem-solving activities, technology-awareness games, simple experiments, and even philosophical discussions about technology. Once the equipment arrived, she found herself teaching primarily about how to use the equipment, and her students spent more time sanding than thinking. In looking back, she remarked that she did more technology education in those first two months than she did in the rest of the school year. (Flowers, 1998, p. 8)

Dr. Oscar Plaza is an Instructor of Economics and Applied Technology at the South Texas Community College, McAllen.

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Footnotes

- ¹ For philosophical developments of this idea, see Heidegger (1977) and Pitt (2000).
- ² For a detailed analysis of contemporary competency, see "Career Development and Workforce Preparation: Educational Policy Versus School Practice," *The Career Development Quarterly*, September 1996, pp. 20-37.
- ³ For a discussion of liberal arts education, see "Initiating the Conversation" and "The Classical Liberal Arts Tradition" (Glyer & Week, 1998).
- ⁴ See, for example, Pitt's (2000) definition of technology as "humanity at work."
- ⁵ See recent report by National Academy of Engineering and National Research Council (2002).
- ⁶ Rifkin (1996) analyzes the impact of technological changes on the workforce.
- ⁷ A good example is the effort of the University of Wisconsin-Stout. "Technology Is Required as University General Education," Leonard F. Sterry, paper delivered at the Annual ITEA Conference, March 23-25, 1997, Tampa, FL.
- ⁸ Examples of this kind of effort include *Technology as Liberal Education: A Model Course*, ITEA Task Force on Technology Education as Liberal Education, 1993; and *Exploring Technology*, Leonard F. Sterry and Robert W. Hendricks, T&E Publications, 1997.
- ⁹ For another discussion on integration, see "Integrating Liberal Arts and Professional Education," Christopher Flannig (Glyer, 1998).
- ¹⁰ See, Postman (1995) for a discussion of the new educational environment.

