

Capitalism, Science Education & Wellbeing: A Critical Review

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INTRODUCTION

Although it may seem that each of us thinks and acts independently, evidence and arguments strongly suggest that we are enmeshed in a giant web of living, nonliving and symbolic entities that is largely under control by relatively few capitalists who, essentially, are using us for their own gains while wreaking havoc all around (McMurtry, 2013). Among crucial entities largely serving capitalists are fields of science and technology (S&T) (Mirowski, 2011) and their educational counterparts (Bencze, 2001). In this brief review, some justification for these claims are provided, with special focus on capitalist emphases on science education.

PRO-CAPITALIST SCIENCE EDUCATION

Overview

Very broadly, capitalism is a system in which relatively few individuals and groups own means of production of good and services (and, more recently, promises of future outcomes) and, through monetary exchanges, gain financial and other profits. Science education is, apparently, a key instrument of capitalist wealth creation, supplying, overall, a relatively small group of *knowledge producers* - such as scientists, engineers, business managers, etc. - and much larger groups of people who can serve as *knowledge consumers*, ready to faithfully follow labour instructions and enthusiastically and unquestioningly purchase goods and services (Giroux & Giroux, 2006). Support for these claims are provided in the two sections below.

Identification and Education of Knowledge Producers

Very often, science education is like an athletics 'selection and training camp,' a competitive process to determine which students may qualify for higher education in fields of science and technology/engineering (and mathematics, etc.). Among criteria for selection are students' abilities to work quickly with *abstractions* - such as laws and theories and engineering designs. This often seems to occur through commonly-used inquiry-based learning (IBL) approaches, in which students are asked to explore physical phenomena and/or information on the Internet (for example) and generate required abstractions. Since not all students may have sufficient cultural or social capital (Bourdieu, 1986) to discover required abstractions - just as when, for example, people cannot see 'Jesus' in the image at right - IBL can be *discriminatory*, easier for more advantaged students. Such problems of discovery can make science education seem like a 'survival of the richest' experience.

Training Consumers

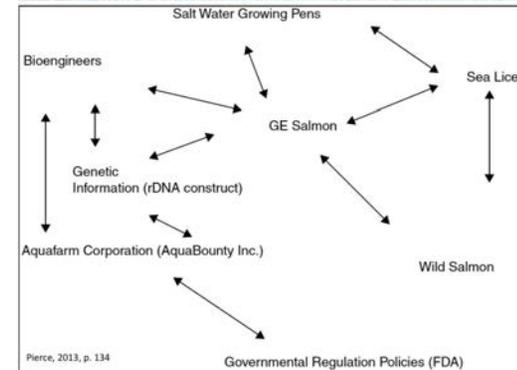
For most students, especially prior to optional courses, science education appears to be a highly *indoctrinating* and *disempowering* experience - some aspects of which are discussed, with examples, in the sub-sections below:

• Science Education as Indoctrination.

For capitalists' economic successes, it helps if most citizens are *subjectified*; that is, their thoughts and actions are either controlled or predictable. Much of schooling, for example, is *standardized* (and monitored) - thus encouraging *general conformity*. More particularly, however, it seems especially helpful to marketers that students may develop strong faith in processes of science and engineering to relatively smoothly - e.g., through teacher guidance or 'scaffolding' in inquiry activities - lead to widely-accepted conclusions about laws and theories. Such faith can lead to confidence in capitalists, who largely influence fields of S&T.



- Citizen Disempowerment via Science Education. To promote consumerism, it can help if most citizens lack knowledge and skills that would enable them to develop (and repair) their own products and services. Among ways school science may help in this regard, a prominent problem is *intensification* - i.e., relatively rapid passage through activities and topics, often without time for personal applications, that can lead to confusion. At the same time, because of the generally-large 'content' (e.g., learning laws & theories) demands, teachers' guidance/scaffolding of inquiries can limit students' *expertise* for developing their own knowledge. Related to this, students often are isolated - particularly in terms of assessment and evaluation - thus limiting extents to which students can benefit from each others' expertise. Perhaps the biggest contribution to consumerism, however, pertains to extent to which S&T knowledge is presented in *reductionist* (and *de-problematized*) ways. Students may be led, for instance, to perceive genetically-modified (GM) salmon as isolated, rich, food supplies - while, in reality, they are part of larger networks that include problematic entities like sea lice that can harm GM and wild salmon and corporations that concentrate profits (Pierce, 2013). Even when students search the Internet about such realities, information often is limited or altered to avoid references to harms that could be linked to capitalists (Oreskes & Conway, 2010). Students not exposed to such more complex and problematic aspects of S&T in their relationships with powerful societal members are much less likely to question consumer products and services.



CONCLUSIONS

In light of the above critiques, it appears that approaches to science education are needed that prioritize more realistic, problematized and empowering education for all students; in other words, science education that prioritizes social justice and environmental wellbeing.

REFERENCES

- Bencze, J.L. (2001). Subverting corporatism in school science. *Canadian Journal of Science, Mathematics and Technology Education*, 1(3), 349-355.
- Bourdieu, P. (1986). The forms of capital. In J.G. Richardson (Ed.), *The handbook of theory: Research for the sociology of education* (pp. 241-258). New York: Greenwood Press.
- Giroux, H.A., & Giroux, S.S. (2006). Challenging neoliberalism's new world order: The promise of critical pedagogy. *Cultural Studies ↔ Critical Methodologies*, 6(1), 21-32.
- McMurtry, J. (2013). *The cancer stage of capitalism: From crisis to cure*. London: Pluto.
- Mirowski, P. (2011). *Science-mart: Privatizing American science*. Cambridge, MA: Harvard University Press.
- Oreskes, N., & Conway, E. (2010). *Merchants of doubt*. London: Bloomsbury Press.
- Pierce, C. (2013). *Education in the age of biocapitalism: Optimizing educational life for a flat world*. New York: Palgrave Macmillan.