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Psychology's Contribution to Education: An Essay Review

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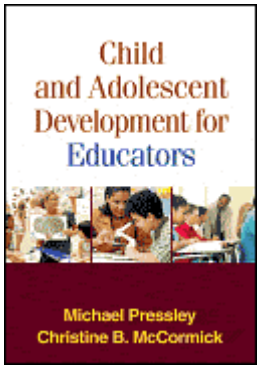
It is taken for granted by those who design programs of initial teacher education that a course in developmental psychology is a necessary and easily defensible inclusion. Indeed for many years I taught such courses myself. However, as I became a more experienced, and I hope, wiser, education professor I began to both listen more carefully to my students' objections to these courses and to question the role that psychology plays in education, and has played for a very long time. I should say at the outset that Pressley[1] and McCormick's recent text is a solid contribution to the genre and most of what I will say is not aimed at the book but at the place of psychology in teacher preparation and at the weaknesses of textbooks generally.



[1] Pressley, who died on May 23, 2006, was an eminent researcher in the area of reading comprehension.

Textbooks and Teaching

To deal with Pressley and McCormick's book first, it includes much that is standard in developmental psychology texts: material about the discipline of developmental psychology; the broad trends and major methods of studying children and their development, and descriptions of the different domains of development: physical; cognitive; social. In addition and more relevant to teaching, there is a chapter on child and adolescent mental health issues by David G. Scherer, and chapters on the development of intelligence and its relation to academic competence, and the growth of academic motivation.

The coverage of the major thinkers is also given standard treatment and in the section on theories of development the usual cast of characters appears: Piaget, Vygotsky, Erikson, Freud, and others. Typically, textbooks are written from secondary sources, including other textbooks and each edition takes the reader—and writer—further and further away from primary sources. The book illustrates much that is wrong with textbooks in the area, and I shall make a case study of the coverage of Piaget's ideas as an illustration.

The section on Piaget contains a summary of the surface features of his theories, especially the ideas that are easy to package as "soundbites" and therefore to teach: the Stage Theory is the most egregious example. It begins with the ominous observation that "…his descriptions of and explanations of development have some serious flaws…" (p. 61). Despite this, the major part of the section is devoted to the theory and a comparatively short segment at the end—less than a page—covers some of the theory's "serious flaws," flaws so serious indeed that they call into question the entire theory.

Michael Pressley

Deeper understanding of Piaget's theory makes obvious the origins of the "flaws." What is not often appreciated and certainly rarely if ever mentioned in textbooks is the extent to which Piaget's theory is the product of the now thoroughly discredited ideas that dominated scientific thinking and its social science derivatives in the later half of the 19th century. Textbooks tend to present his ideas as brilliantly original, however; more accurately, they are a development of those that were in circulation at the time he was commencing his work. That his work did not become known in the English-speaking world for some decades after he commenced his studies of children undoubtedly helped to obscure the origin of his ideas in the intellectual milieu of the time. As an example, he was strongly influenced by the ideas of

Rousseau and his Progressivist followers, including Spencer. Freud's notion of stages of psychic development also influenced his thinking. Most significant, however, is the influence of Lamark (Morss, 1990).

Piaget 's theory of the development of intelligence is biological, that is, he believed that the growth of intellect was a genetically controlled biological process exactly comparable to physical maturation, in fact, to him it was a form of physical maturation. See Piaget (1969) for an example of the heavily biological nature of his theories. It is this underlying assumption that dictates that the hypothesized four stages are universal and inalterable, and that there is no room for teaching in the growth of mind. This stands despite the addition by Piaget later in his career of the occasional throw-away line about there being some role for experience in the processes he describes. Those who wish to cling to the theory avidly cite these addenda, while ignoring the main edifice.

Piaget was also a Lamarkian and in common with others of that ilk regarded the human psyche as formed by the cumulative experiences of the "race," which were imprinted on the germ plasm. He was also a recapitulationist (Morss, 1990), i.e., he believed that the mind in its process of development from infancy to adulthood recapitulated the mental evolution of the human species. The theory's four stages, then, were not derived from his observations of his own infants, rather he observed his infants in the search for evidence to support what he expected to find on the basis of his beliefs about the mental development of the species as a whole. Thus he predicted—and "found"—that infants would be "autistic"—defined as a "state of chaotic nondifferentiation between subject and object" (Piaget, 1969, p. 152) —in the way that he and others of his time believed was typical of the primal "savages" who were the ancestors of our species. Slightly older children would be "egocentric" and "superstitious" in their thinking, like the tribal peoples who were their distant ancestors, as well as "less developed" contemporary peoples. Mental development would culminate in the appearance of modes of thought typical of the most evolved human: the rational, scientific Westerner.

Christine B. McCormick

Those who cheerfully teach Piaget to their students might be somewhat taken aback at the origins of the ideas they purvey. However, most learn what they know of the "great thinkers" from texts like the one under consideration here, so they are unlikely to get to the bottom of the assumptions that underlie the theories they teach. That each new text repeats the shallow descriptions of the accepted theories typical of the genre assures the continuation of the bowdlerized and cartoon-like versions.

The treatment typical of theories such as Piaget's is also a concern for the potential effects that it has on students' thinking. Consider what students encounter: an introduction to a body of thought that starts with the polite and brief statement the theory is "flawed," that is, wrong; a relatively detailed treatment of the theory itself, and a final short section on problems that research has revealed with the theory. The message conveyed could plausibly be that scholarship is a sort of game or a series of empty rituals: citing the right person, tossing in a few criticisms and ending by drawing the conclusion that the ideas are worthwhile without regard to the criticisms presented. This is not a good way to develop a well-honed critical intellect and the process may also give the impression that it is not truth that matters in such debates, just the citation of the correct names. Piaget's inclusion in standard texts means that he must be a "name," regardless of the flaws evident in his thinking.

I certainly see signs of this in my own students' essays; a shallow summary of the standard known facts of Piaget's theory, a quick coverage of a few of the main criticisms and a relapse into praising the theory for its insight and importance. But maybe it is not fair to expect too much of undergraduates… or is it? Perry (1970) wrote on the development of students' thought, especially how they respond to the discovery that there is great deal of argument and disagreement in thinking about any human topic. Perry contends that students (potentially) pass through four stages:

1. Duality: "There are two positions on any question, the right and the wrong. Kindly give me the right answer";
2. Multiplicity: "There are lots of positions on any question, none of which is right: it's all just matter of opinion." (Many routinely incoherent undergraduate student arguments belong here);
3. Relativity: "The right theory or position is determined by the context";
4. Commitment: "There are many theories and positions on the issue but, based on the evidence, this is the one that I favor."

It is perhaps unfair to expect novice thinkers to display the characteristics typical of the mature theorist who has made a commitment to a particular position after many years' study and thought. However, what could be of concern is whether textbooks provoke students to develop intellectually or instead encourage them to linger overlong as a devotee of duality or multiplicity. Textbooks generally present ideas and theories as a sort of intellectual smorgasbord and encourage implicitly the tendency to mix and match ideas at will without due consideration as to whether the resulting mélange is in any way coherent. I am not the first to express this concern. (See Ault, 1987.) Marketing pressures are at play here: it probably does not make financial sense to come down on the side of

one theory or another, or even to omit any of those usually included if this risks alienating potential book buyers. Best, then, to continue to serve up tidbits of information about the usual theories without any attempt to evaluate or weight these in any purposeful or sensible way.

As I was composing this review an example was posted on a practitioners' listserv, to which I subscribe, that illustrated how the use of textbooks as a primary source perpetuates across the academic generations a thin knowledge of the theory and literature. The listserv is conspicuous for the high percentage of requests along the lines of "I have just been assigned to teach X. Does anyone know a good text in the area?" Occasionally someone attempts to question the use of texts and this was one response:

> Here is why I chose textbooks …
> a) I did not have enough confidence in my ability to come up with a comprehensive and manageable reading list. I assumed that the textbooks would ensure comprehensive yet balanced coverage without overwhelming students with reading;
> b) I wasn't sure whether my students would be able to independently comprehend journal articles at this level, and whether I would have adequate time to scaffold this skill,
> c) At the same time, was unaware of what alternatives I could use - nearly all my undergrad courses involved texts, and the few who used books/chapters were 400-level courses. I wasn't sure how to proceed.

The issue of undergraduates' grasp of major theories might seem less weighty if it were not for the echoes that I hear in the thinking of full-blown educators, including or especially at the university level. Despite the long history of research that calls into question the truth of his theory, Piaget is everywhere, cited in support of theory, practice, and research proposal. That "flaws" render the theory invalid appears to be no impediment to these ritual invocations. The effect of so many people learning their education theory from the thin and sketchy coverage encountered in textbooks is evident in the tendency to also cite Vygotsky in support of the same theory, practice, or research proposal. Those who commit this intellectual sin do so presumably because both are described as "constructivist" (the educational flavor of the decade), although neither understood himself thus. Examples are legion but a recent comment by Branco, Pessina, Flores, and Salomao (2004, p. 4) illustrates the tendency and underlines some of the pitfalls it entails:

> Coconstructivism [sic] or sociocultural constructivism (as we now refer to the perspective), consists of a general term that refers to a theoretical

> approach in developmental psychology that creatively synthesizes the major ideas and principles proposed by Piaget and Vygotsky …. It is not a specific theory, but a broad approach that includes a number of versions of possible productive integrations between constructivist and sociohistorical perspectives.

A theoretical approach without an underlying theory is an interesting concept, but indicative perhaps of the impossibility of achieving a coherent theory by combining contradictory models. The rebadging of Piagetian and Vygotskian theories as "constructivist" disguises the inconvenient truth that they are fundamentally at odds with each other. Indeed Vygotsky formulated his theory in part to refute the claims made by Piaget, and one cannot believe both without lapsing into intellectual incoherence: matter and antimatter in the same location lead to annihilation. Piaget's theory is, as I have noted, biological: intelligence develops in the same way as other physical attributes, under the control of genetic forces, which were shaped in Lamarkian fashion by the "history of the race." For Vygotsky, mind is an historico-cultural product, formed from the basic building blocks of the elementary mental processes via interaction with members of one's culture. Children in other words develop their human faculties through serving an "apprenticeship in thinking" (Rogoff, 1990; 2003)

It is simply not possible to believe both Piaget's and Vygotsky's theories at once and retain intellectual integrity. Many of my students map the Piaget-Vygotsky conflict onto the "nature versus nurture" debate and derive the conclusion that, as in "nature versus nurture," the "correct answer" is that the truth is neither entirely nature/Piaget nor nurture/Vygotsky but "a bit of both." The human tendency to commit the fallacy of the golden mean undoubtedly also contributes. In other words, the mistaken belief that the truth in a debate characterized by two opposing extremes always lies somewhere in the middle contributes to the reasoning that the correct answer is "a little Piaget, a little Vygotsky." It is doubtful that more mature thinkers would commit this logical fallacy. However, it is certainly true that many academics seem happy to fight to the death for the right to believe both theories at once, or at least the comic book versions of same. Nonetheless, as Vygotsky (1997, p. 3) himself noted "A concept that is used deliberately, not blindly, in the science in which it was created, where it originated, developed, and was carried to its ultimate expression, is blind, leads nowhere, when transported to another science."

It might be taking things too far to attribute the lamentable state of educational research to the tendency to cite both Piaget and Vygotsky, but such a shallow grasp of the theories cited to support programs of research does point to a lack of intellectual rigor in much educational thinking. Indeed it may even be that much of what is seen in educational

research is an example of Smedlund's (1997) conjecture that a great deal of supposedly scientific thinking in psychology (and related disciplines) is just commonsense masquerading as something else. The citing of a "name" or two supposedly, then, confers scientific respectability on the enterprise of dealing in commonplaces. Certainly at the post graduate level much research commences with a student's interest in some topic or other, which is followed by the search for a theory with which to gloss the process. If everyone is citing Piaget and Vygotsky, then there is no need to look much further.

Other theorists covered in the text under consideration could be similarly critiqued. I am at a loss to see what use to an educator are the theories of Freud and Erikson, for instance. It is doubtful that many scientists of human behavior any longer take these theories seriously; and they are becoming, I would suspect, historical oddities. In truth, much of what is presented in developmental and educational psychology texts represents a sort of compendium of failed ideas of the 19th and 20th centuries.

Consequently, one objection students have to being required to take courses based around the ideas contained in the average developmental text is that what they are studying is not really children but other people's – now often discredited - ideas about children. In other words they are studying the discipline of developmental psychology and not the development of children. I have sympathy with this complaint. There is an argument to be made for the place of the study of historical ideas in a program of general education. However these should not dominate a course that is supposedly designed to give aspiring practitioners useful and relevant knowledge of children and how they develop. Apart from anything else, being exposed to a diet of discredited theories does nothing to encourage students to see theory generally as a useful source of knowledge about teaching.

The place of psychology in education

All this might be just academic were it not for strong evidence that Piaget's ideas have had damaging effects on education. His dim view of the intellectual capacity of young children has lowered expectations of what they can learn and achieve. Indeed his theory is more useful—or would be if it were true— for deciding what children cannot do, rather than what they can. As Piaget noted "The intellectual and moral structures of the child are not the same as ours" (1969, p 153). Children are not quite human and as different from adults as "tadpoles are from frogs." Education, then, should follow development, rather than development being led by education. Human larva should not be presented with tasks, in effect, that they cannot already do any more than tadpoles should be removed from the water and required to hop. In this notion can be heard the echoes of Rousseau's

thinking, particularly that "children's educational programs should be confined to those things in which they have a natural interest" (Darling, 1994, p. 8). This notion was also justified by an appeal to biology: "Underpinning this argument lies Rousseau's conviction that nature has implanted in the child certain instincts for the purpose of promoting development" (p. 8). Piaget's insistence on the importance of play can be traced straight back to Rousseau.

As an aside, a vicious circle is also set up by theories such as these, in that when children can not do what they have not been taught it is taken as proof that they are not ready to learn it. This can result in the steady pushing back of the "right time" to teach certain material. Worse than that, it can excuse poor teaching or the use of inappropriate methods, as the pupils' failure is attributed to lack of readiness. My students have inadvertently provided me with plenty of examples of this practice, that is, excusing poor teaching via blaming the victims for their lack of readiness to study the subject matter presented.

Others (see especially Egan, 1997; 2002) have traced in greater detail the trail that leads from Rousseau to Spencer, Dewey, Piaget and to contemporary pedagogical "commonsense," so I shall make my comments on that topic brief. That commonsense has filtered out of the academy and into the models of childhood, education and learning held by citizens of Western nations, and now beyond. I suspect that one of the reasons that students so readily accept the ideas of Piaget and the other Progressivist thinkers is that these fit with what they already "know": they become the scientific justification for commonsense, and the circle is thus completed. This also explains why it is so hard to shake students and others from their devotion to the sound bite version of the theory, with its insistence on the commonplaces of *phases* and *stages*; *readiness*; *active learning*; the *guide by the side* in place of the *sage on the stage*, and more. This contributes strongly to the state of affairs described by Carnine (2000, np) "In education, research standards have yet to be standardized, peer reviews are porous, and practitioners tend to be influenced more by philosophy than evidence."

Indeed, the origins of Piaget's appeal lies precisely in his appearing to provide reputable scientific justification for the philosophy and beliefs of our hyper-individualist postmodern age, of which Bauman (1995) has observed "The supervisor, the foreman, the teacher all vanish—together with their powers to coerce, yet also to release from responsibility. It is now a matter of self-supervising, self-scrutinizing and self-teaching. The individual is his/her own guard and teacher; …" (pp 113-114). Piaget is regarded, via his seeing no place for teaching in the development of intelligence, as providing support for the contemporary view of the individual as heroically self-creating. As Bjorklund

(2005, p. 79) maintains "Because of Piaget's work it is difficult for us today to conceive of the child as a passive organism, shaped and molded by environmental pressures." What is missing from this reading of Piaget's theory is, as I discussed above, the realization that in Piaget's theory the child is instead merely molded by the genetic imprint of his or her ancestors' experiences. The passion with which people cling to the belief that Piaget justifies what they wish to believe about children is demonstrated by Bjorklund's description of the empirical work that has discredited the theory as "forty years of Piaget bashing" (p. 103).

How psychology colonized education

Psychology's influence in education is a direct result of the dominance of the social movement known as Progressivism. Progressivism *then* means something quite different from what it means *now*, when Progressive education is understood to conflate with "child centered education," "constructivism" and its synonyms. Progressivism developed as an ideology during the Industrial Revolution when massive changes to all aspects of life were occurring. Much of the change was a result of the advances in scientific and technological knowledge. Faith in science's capacity to solve all human problems was high, as was belief in the benefits of material change and progress. "New" meant "better," and traditional ways were regarded as inferior.

Also of extreme importance to the development of Progressivist ideas was Darwin's theory of evolution. The laws of evolution were seen to apply not just to the biological world but also to the social realm. Movement "forward" was regarded as the law in all spheres, and cultures were thought to evolve from simple inferior forms such as hunting and gathering, to superior and advanced forms, such as modern industrialized democracies.

All these ideas influenced Progressivist notions about education. The tired, old teaching methods of the past were to be discarded in favor of the new. Faith was placed in the ability of science to reveal what these methods should be via the discovery of the laws that governed how people develop and learn. Education itself was to help students to become everyday scientists and to understand and investigate their world in scientific and creative ways. It was to fit them into the exciting new age that had dawned by making the content and methods of education practical and relevant. As I have noted above, just as societies supposedly evolved from primitive to complex, individual human development was thought to recapitulate that process. Progressivists believed that children possessed the qualities of savages, that is, their minds were relatively undifferentiated and dominated by thought processes that were simple, concrete and irrational. As they grew, their minds became increasingly complex, differentiated and rational.

It is indeed something of a paradox that so-called child centered education was actually founded on a very dim view of children's capacities, with children conceived of as the human equivalent of tadpoles or caterpillars. This is because the original meaning of the term was "based on knowledge of children's nature and abilities, and the natural development of the mind," rather than "focused on the individual child" and "being sympathetic to children," the latter being how my under-graduates all immediately understand the term. It is also somewhat ironic that one major group of contemporary Progressivists' sworn enemies are also Progressivists, although they would not describe themselves thus. Those who counter the claims of child centered education with an insistence on standards, testing, streaming, accountability, and evidence-based practice are also the heirs of the original Progressivists, sharing their faith in science as the means for discovering the way forward. Labaree has noted the common antecedents of the two opposing camps, which he names *pedagogical* and *administrative* Progressivism (2004).

At the same time that estimates of children's abilities were being lowered moves were afoot that saw them increasingly excluded from the adult world and from productive activities. Labor laws were enacted that prevented children below a certain age from working, and universal compulsory schooling was introduced. These moves undoubtedly also contributed to the decline in the status of children, particularly in a society that measures people's value by the paid work they do.

Piaget has come in for some heavy criticism here, but there are other important examples of how the "scientific" ideas of the late 19th and early to mid 20th centuries had lamentable effects on teaching and learning. The origins of the reading wars can be traced back to this period. Practitioners had derived efficient means of teaching reading and writing some millennia ago, and appropriate techniques persisted into the 19th century in English speaking countries. However, no old fashioned method was safe in the Progressivist era with its associated social Darwinian and recapitulationist ideas (McGuiness, 2004; 2005).

Writing systems vary across time and between language communities and, unsurprisingly, to those under the sway of social Darwinian thinking, not all are created equal. Instead some systems, for example logographic systems, are the most primitive and alphabetical systems, such as ours, not surprisingly, are the most "highly evolved." Children's speech perception was proposed to recapitulate this evolution, such that they move from perceiving whole words to syllables and finally phonemes. Teaching reading, then, must—as always—be led by development, so reading instruction should proceed from whole word approaches to the introduction of phonemes when children are deemed ready (McGuiness, 2004). Paradoxically, whole language proponents also derive support from the mistaken belief that mature readers do not sound out words but take in whole words at a glance. Taken together the two sets of wrong ideas see development as

running in a sort of circle, starting and ending with reading as driven by sight words.

Regrettably none of this is true but its acceptance has led to the Anglophone phenomenon of large numbers of perfectly intellectually able children struggling to learn to read, which in its turn has seen the "discovery" of the culturally specific disorder of "dyslexia," a sort of perpetual lack of "reading readiness" (see McGuiness, 2004, for cross-national data that illustrate the culturally specific nature of dyslexia). Lack of awareness of the thoroughly unscientific basis of the ideas that underlie their favored technique has led proponents of whole language techniques to see themselves, implicitly or explicitly, as faithful followers in the footsteps of Rousseau, letting teaching be led by development while their opponents preach notions insensitive to the developmental needs of "human larva." For McGuiness the take-home message to be derived from well-informed understanding of both English orthography and human speech development is "If you have an alphabetic writing system, you must teach an alphabetic writing system. There is no pretending you have something else" (2004, p. 75), "something else" being, for example, a logographic system that requires the memorization of whole words, one could add.

In recent decades, histories of childhood have been written, unsurprisingly, from the perspective of contemporary ideas. These condemn our forebears for regarding children from the age of eight as little adults. Naturally, the laws of Progressivism would dictate, if we do things differently from our forebears, then we do things better than them. Our forebears are depicted as "wrong minded" and even vicious for their beliefs about the roles of children and the nature of childhood.

A familiarity with what was expected of at least some children and what they achieved, certainly makes our expectations look very paltry and wrong minded. The infant school aged Princess (later Queen) Elizabeth wrote for her father's (King Henry VIII) birthday a little book of praise for him in four languages. Her half brother, Edward VI, by the time he died at 15, was well and truly King of England. He had a vision of what he wished the country to be and had embarked on making it so by skill, cunning, and sheer ability. We would certainly not expect contemporary children to achieve as did these two progeny of King Henry. Many would scarcely believe it possible, and some would probably regard such expectations as child abuse. My feeling is that we have lost more than we have gained by reducing our estimates of children's capacities.

Is psychology really to blame?

As Kieran Egan (2002) observed, psychology has been seen as the foundation of and hand-maiden to education because it was the discipline that was charged with the responsibility of disclosing children's nature and the rules of learning: "as physics is to

engineering, so psychology is to education." This belief underlies the faith in scientific research as the proper guide to educational practice and leads to the sorts of claims that Carmine makes, above, in his call to make education more like medicine, i.e., more "evidence based." And it leads to acceptance of all sorts of fundamentally flawed theories, such as Piaget's, because these both accord with Progressivist principles and claim to be scientific.

However, as my discussion should indicate, it is not so much contemporary psychology that is to blame as the ghosts of its ancient forebears, which still haunt education today. The continued publication of textbooks that retail the failed theories of the 19th and 20th centuries does nothing to exorcise these hoary specters.

Before I speculate on the right place of psychology in education, I would like to comment on one further flaw in the text under consideration, as representative of education texts generally. There is no doubt that schools and schooling have profound effects on the children who experience them. However, there is precious little in the book on these effects. Rather the book—and others like it—give the impression that the children in a teacher's care form a sort of obstacle course that has to be negotiated during the process of getting through the teaching year. A knowledge of the characteristics of each type of obstacle, brought with them into the classroom from their families and their "biology," is useful for successfully completing the course; but a good understanding of how the experience in turn changes the obstacles is not necessary. This view of children as things to which teaching is done appears in the attitudes of very many teachers, even those who are well meaning and caring. Inclusion of work such as that by Culllingford (1990; 2002) would make a good contribution to overcoming the conspicuous lack of the students' eye view of schooling, so odd in a profession that sees itself as child centered.

So, what place is there for psychology in the study of education? I would contend that there is a place for findings from reputable and well-conducted psychological research in programs of initial teacher education. However, I doubt that the most efficient way to include psychological findings is via a stand-alone psychology course, where students are given an overview of psychological theory and research and expected to make the connections to practice, with the doubtful assistance of a few suggestions and examples included at the end of a textbook chapter. Rather I would suggest that the information gleaned from psychology ought to be integrated, that is, used as a source of evidence for best practice and problem solving where it is relevant to the particular concerns of education: what to teach, how to teach it, whom to teach it to and how to assess it. Elliott Aronson's social psychology text *The Social Animal* (2003) is a good model for the sort of thing I have in mind—although not an education text—as are books like the National Research Councils' *How People Learn* (Bransford, Brown & Cocking, 2000) —which is.

Science education has a strong element of challenging students' "mythconceptions," that is, addressing what students already believe about the physical world that interferes with their learning scientific facts. There is certainly a place in a program of initial teacher education for challenging the pedagogical commonsense, derived from discredited theories such as Piaget's, that has leaked out of the academy and into general belief.

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