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Introduction to the special issue on evolutionary educational psychology

Stephanie A. Owens

Appalachian State University, USA

In our current culture, one in which we no longer need to know the growing cycles of plants to gather, the seasonal migration patterns of herding animals, how to construct an atlatl, or which plants make the best poison for arrow tips. In the modernized Western world, children must learn the skills needed to survive in a highly technical society, skills such as how to use a computer program, balance a checkbook, develop and maintain a stock market portfolio. Moreover, these skills cannot necessarily be learned “on the job” as they require a background of basics, such as reading, writing, and mathematics, not to mention understanding the basic mechanisms of capitalistic economy and navigating a social world filled with strangers.

Modern public schooling was designed with the hopes that it would be the “great leveling agent”; all children will be given the opportunity to learn the basics and succeed. However, schools do not seem to be fulfilling that promise, as evidenced by low student motivation, an increase in enrollment in “alternative” private and charter schools, a dramatic rise in “disorders” such as Attention Deficit Hyperactivity Disorder (ADHD) only viewed as an illness in the school setting (see Bjorklund & Bering, this issue), and high stress levels in children, to name only a few.

In a campaign to improve education, some contemporary educational reforms attempts strive to mandate standards-based education and tests. These decisions are made under the assumption that holding students, teachers, schools, local school districts, and state governments accountable for student achievement as indicated by test scores will motivate everyone to ensure the success of all students. In contrast, educational anthropologists suggest that schools only serve the middle and upper classes of society because the culture of school matches the values of these subcultures (e.g., believing that stock investments are important to learn for survival). These researchers conclude that public schooling essentially fills the role of replicating a class-based structure that affords little movement “up the social ladder.” They emphasize that education is essentially a part in the process of social reproduction, a

E-mail address: owenssa@appstate.edu (S.A. Owens).

construct used to explain low student motivation and low levels of academic achievement in certain subcultures (e.g., low-income students) (Fordham, 1996; Heath, 1983; MacLeod, 1978; McQuillan, 1998).

The two views on education presented above are just examples of divergent beliefs regarding human learning and the role of education in our modern world. Other beliefs underlying reform movements include student-centered education, expeditionary learning, and experiential education (Lambert & McCombs, 1998). Most major trends in education and educational reform have been derived from behaviorism or constructivist philosophical orientations (Berliner, 1992) and, more recently, from cognitive science (Bruer, 1993).

While all of these philosophical orientations toward education have merit and are partially grounded in biological theory, we suggest that educational principles must be grounded in a more holistic understanding of human biology, particularly from a consideration of the biological evolutionary roots of human learning. Importantly, we are not asserting that people necessarily need to learn how to gather tubers or to process nuts and seeds; but we do, however, contend that researchers must acknowledge that problems faced by our ancestors who lived in a very different physical, social, and technological world shaped the way humans still learn today. The purpose of this special issue of *Learning and Individual Differences* is to begin the exploration and public discourse into how insights into human cognition from evolutionary psychology may or may not inform educational theory and praxis.

Evolutionary psychology is based on the assumption that the human mind is a result of the evolutionary process (Cosmides & Tooby, 1992). A universal human cognitive architecture evolved in response to problems posed while an ancestral species lived in a particular environment, the Environment of Evolutionary Adaptiveness (EEA). The EEA for a unique hominid cognition was most likely the Miocene and Pleistocene periods, from 2 million to 10,000 years ago, prior to advent of the agriculture and domestication processes (Campbell, 1995). Thus, in order to better understand the nature of human learning, as we are essentially Pleistocene hunters and gatherers living in modern society, we must begin with an understanding of the nature of these problems (e.g., living in complex social groups, hunting, processing food that was gathered, child rearing, choosing mates, etc.) and the nature of the local conditions of the EEA in which the solutions evolved (Tooby & Cosmides, 1989). Only at this point may we fully grasp how humans learn and the role of what we label teaching in the process of learning.

1. Summary of this special issue

The articles presented in this special issue include theoretical explications of how basic human cognition impacts and shapes modern schooling and practical applications of this perspective. From a theoretical perspective, Bjorklund and Bering aptly point to the fact that the human mind and children's minds evolved in response to problems posed by the physical and social environment of our ancestors 1.8 million to 10,000 years ago, prior to the "agricultural revolution." Yet at the 10,000 years ago mark, cultural evolution began to make leaps forward to ultimately propel *Homo sapiens* into the industrial and information ages. The

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