A Short Commentary on “Where Does Creativity Fit into a Productivist Industrial Model of Knowledge Production?”

Marcia Gentry

Ghassib (2010) takes the reader through an interesting history of human innovation and processes and situates his theory within a productivist model. The deliberate attention to creativity as human capital that informs scientific processes provides a refreshing view to processes often viewed by the lay-person as mysterious and for the few.

I would like Ghassib (2010) to operationally define “modern science.” The discussion of economic impact and the number of scientists, engineers, technicians, and administrators needs a situated context. Does Ghassib (2010) consider those of us working in the social sciences scientists, or does he reserve the term scientist for those working in the STEM disciplines. What about medicine? Is a practitioner in any field considered a technician or can some practitioners also be scientists? Defining the scope and context that underpin this model of scientific process and scientific practice would enhance readers’ understanding of the theory he posits.

Although I don't disagree with the assertion that science is a large industry in terms of capital investment and number of employees, some data to substantiate these claims would enhance this discussion. Additionally, specific examples of how needs are created, the effects of such creation on science and life-styles, and a description of how demands have increased have evolved over a relatively short time could also provide a clearer picture of the context for the theory. Is scientific knowledge a major industry or a component in many major industries? And how does scientific knowledge differ from what Ghassib (2010) terms knowledge enterprise?

I wonder if scientists, or the producers, as Ghassib (2010) terms them, are actually bred. How does one breed a mind, or how does a knowledge factory breed and nurture a network of high quality minds. Perhaps he means to say identifies, finds, and nurtures. True, universities compete for top students and then faculty mentor and develop the next generation of scientists. I struggle trying to picture the army of engineers to which he refers, aren't engineers, at least some of the time, scientists?

I would also like to see a discussion of the creative scientist to which Ghassib (2010) refers on page 4 under item #4. Is there a difference between this creative scientist and a regular scientist? How much knowledge is needed for creativity, how much stifles creativity?

I find the idea of a variety of methods of scientific practice and research exciting and with profound implications for how we approach teaching science to children. If children are constrained by a lock-step “scientific method” as commonly taught in most schools, then might we be stifling their own methods and creativity. This notion gives credence to constructivist approaches to developing understanding (e.g., Bruner, Dewey, Vygotsky).
I would like more discussion on why Ghassib (2010) reduces scientific reason to only two basic components and why must these components be mathematized? Why not simply theorization and experimentation, and why not include explanation and reflection as intermediate steps between what he determines as dialectic? Can one experiment and return to theory without considering findings in the context of the theory?

How does logical and practical testing square with creativity? Is there room for intuitive leaps, knowledge that is innate before testing? I would like to see more attention to creativity, its definition, and its central role within the “science industry.” I believe taking the text to a level with a figural model of how these components interact and interrelate would strengthen the written argument.

After reading and responding to this manuscript, I gave it to 9 future social scientists—known in some circles as doctoral students. I asked these students to read and respond to the manuscript by considering what about the theory they found interesting, profound, or appealing. Then I asked them to consider what questions, gaps, or issues they would like to see the author address. Following are the results of the students’ perceptions of the strengths and weaknesses of this theory as presented in the manuscript. Table 1 summarizes their comments on and reaction to Ghassib’s (2010) theory.

Table 1: Future Scientists’ Comments on the Theory.

<table>
<thead>
<tr>
<th>Interesting, Profound, or Appealing</th>
<th>Questions, Gaps, or Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of historical framework is impressive, complete, and provides excellent underpinning for the theory.</td>
<td>More citations and evidence for assertions presented in the historical framework would strengthen the manuscript.</td>
</tr>
<tr>
<td>A unique connection is posited between creativity and science with a new framework for understanding.</td>
<td>The creativity component of the model needs elaboration and description similar to that provided for the history and industrial components.</td>
</tr>
<tr>
<td>Well-made connection between theory and knowledge production.</td>
<td>Explanation and examples of the communal nature of science are warranted.</td>
</tr>
<tr>
<td>Profound idea of the creation of perceived needs.</td>
<td>Include definition, theoretical background, and a conceptual framework for creativity.</td>
</tr>
<tr>
<td>The industrial model is well described and provides a clear basis for the theory.</td>
<td>Elaborate on the scientific method referenced in the theory.</td>
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</tbody>
</table>

Reference

About the Author

Marcia Gentry is the Director of the Gifted Education Resource Institute (GERI). Marcia joined the faculty at Purdue in 2004 after spending 8 years as a professor in Minnesota where she began her research into student perceptions of school experiences and directed graduate programs in gifted education. She accepted the role of GERI director in January of 2008. Her research has focused on the use of cluster grouping and differentiation; the application of gifted education pedagogy to improve teaching and learning; student perceptions school; and on non-traditional services and underserved populations—areas in which she has over 50 publications. Marcia is chair-elect of the American Educational Research Association Special Interest Group, Research on Giftedness and Talent. She has also served on the National Association for Gifted Children’s Board of Directors and is recipient of its Early Scholar Award. She frequently contributes to the literature, regularly participates in international, state, and regional venues concerning gifted child education and educational research, and she serves on the editorial review boards of 5 journals including Gifted and Talented International. Prior to her work in higher education Marcia taught math and science to middle school students, enriched curriculum to gifted elementary students, and she served as a regional administrator for gifted programs.

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TITLE: A Short Commentary on “Where Does Creativity Fit into a Productivist Industrial Model of Knowledge Production?”
SOURCE: Gifted Talented Int 25 no1 Ag 2010

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