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The EcoEducational-BioPsychoSocial Model in Everyday Education: A Suggestion for Researching Holistic Well-Being as a Contribution to Healthier Learner Autonomy

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Abstract

In this short article, we propose that education could benefit greatly if students and teachers were tuned into the biopsychosocial parts of our holistic well-being, which is considered to be autonomy supportive, as a prerequisite of learning. Thus far, education has largely operated on a bias toward cognitive processes as the sole meaningful contributor to learning, focusing on the acquisition of knowledge while often seeing the biological, psychological, and social contextual contributions as unrelated. With the recent generation of positive psychology and positive sociology, researchers and educators alike are becoming more aware of the contribution that contextual well-being (i.e., considering biopsychosocial factors) has upon learning. This growing awareness suggests the need to broaden rather than narrow our understandings of causality both in the classroom and with learning at large. We propose that showing attention to this wider context could improve student learning substantially and support student development of a more sustainable autonomy.

Keywords: educational ecologies, biopsychosocial model, well-being, positive psychology and sociology

There are times in our classrooms when students' behavior-learning connections should not be ignored. Examples might include when our students are nodding off in otherwise interesting classes, when they are running constantly to the bathroom, when they continually sit in the back as far away from others as possible, when they chronically come late and dart off quickly at the bell. These students may be suffering from biopsychosocial problems that are disturbing and limiting their educational endeavors. This is natural as students live the vast majority of their lives away from our classrooms and yet are still bringing the rest of their worlds to class with them through their biologies, psychologies, and sociologies. In this article we propose that showing at least a modicum of attention to this wider context could improve student learning substantially.

The BioPsychoSocial Model

We both independently first read about the *biopsychosocial model* in Deci and Flaste (1995, pp. 170-173) in late 2019. Tim then further educated himself with several articles which describe and expand on the ideas (Borell-Carrió, 2004; Reisinger, 2014), while Curtis read and considered further about its relation to performance (Cotterill, 2017). Although Tim had heard from a variety of sources over the years that "everything is connected," such as in some highly recommended TED talks by Tom Chi (TED, 2016) and Robert Sapolsky (2017) and from his father when he was a teenager, he was not aware that the medical field in particular had had a hard time breaking away from what was known as the *biomedical model*, in which medical doctors mainly looked at health only in terms of the physical body and ignored other possible psychological and social influences. Engel and colleagues produced a more expansive positive model called the biopsychosocial model (Engel, 1977). There have been several articles on its application to special needs education (Reisinger, 2014), but there is little about its application toward education at large, which could also align positive psychology and sociology with our learning goals. We would like to begin taking this next step in this article.

Background

One vastly influential connective scheme from the 20th century was Maslow's *hierarchy of needs* (1943). While the bottom two layers of the hierarchy are mostly biological and understood to underpin the upper layers, those upper layers have mostly to do with our psychologies and socialization (see Figure 1). All layers are likely to affect each other and may be pre- and corequisites of effective learning.

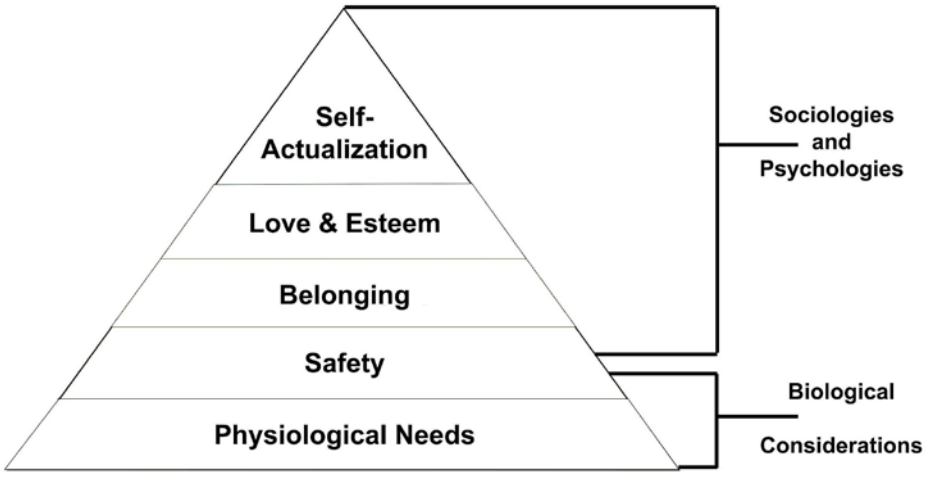

Figure 1. Maslow's Hierarchy of Needs

There may be certain moments in one's life when we might observe things as more obviously connected to each other, that in fact these different elements of our lives cannot really exist without each other. To some, it may sound ludicrous to separate them. However, in much of science, medicine, business, and education, we often try to isolate the variables of phenomena in order to try to understand those variables more concretely, which makes learning them simpler. While this might work sometimes in pure sciences, such as chemistry, in other domains, the systems and variables that influence and affect a variable can be inextricable from each other and thus disallow us to truly isolate that variable. When we still approach our knowledge and answers through that isolation, our solutions may in fact suffer from that very isolation, not properly accounting for other related and causal factors. The scientific method seeks to isolate and purify a causal event. In our modern world though, we are finding that nearly everything is connected to and influencing everything else, and a great deal needs greater contextualization, perhaps in a dynamic systems way of thinking (Larsen-Freeman & Cameron, 2008).

Many medical practitioners have long known these ideas, and while they seek to be specialists in one or two domains, they are in today's world tasked with continual learning from neighboring fields. Psychologists no longer just study psychology, but rather social-psychology, clinical psychology, cognitive psychology, developmental psychology, evolutionary psychology, forensic psychology, health psychology, neuro-psychology, educational psychology, and occupational psychology (to name just a few). However, these subfields are reductionist, i.e., looking more narrowly at particular kinds of psychology, not seeking to expand but rather to reduce the scope of the fields in order to make them more understandable for specific needs. This sort of reductionism is often apparent in teaching within subject domains as well. Engel's critique of biomedicine (as reductionist) is summarized in Figure 2 below (from Borrell- Carrió, Suchman, & Epstein, 2004). Carl Jung (1957) offers another example (see Appendix A).

1. A biochemical alteration does not translate directly into an illness. The appearance of illness results from the interaction of diverse causal factors, including those at the molecular, individual, and social levels. And the converse, psychological alterations may, under certain circumstances, manifest as illnesses or forms of suffering that constitute health problems, including, at times, biochemical correlates.
2. The presence of a biological derangement does not shed light on the meaning of the symptoms to the patient, nor does it necessarily infer the attitudes and skills that the clinician must have to gather information and process it well.
3. Psychosocial variables are more important determinants of susceptibility, severity, and course of illness than had been previously appreciated by those who maintain a biomedical view of illness.
4. Adopting a sick role is not necessarily associated with the presence of a biological derangement.
5. The success of the most biological of treatments is influenced by psychosocial factors, for example, the so-called placebo effect.
6. The patient-clinician relationship influences medical outcomes, even if only because of its influence on adherence to a chosen treatment.
7. Unlike inanimate subjects of scientific scrutiny, patients are profoundly influenced by the way in which they are studied, and the scientists engaged in the study are influenced by their subjects.

Figure 2. Engel's Critique of Biomedicine

Parallels in teaching

We are in no way suggesting that teachers in the classroom are doctors nor that we are treating medical problems. However, we think that teachers will recognize that their students are also situated partially in parallel with the descriptions above, in that all students learn somewhat differently from each other and when afforded one-to-one counseling or advising directed toward individual situations, they seem to blossom and thrive. This is certainly also one of the powerful soothing effects of schools opening self-access centers that offer one-to-one advising (Mynard, 2019), which may derive from the idea that advising is autonomy-supportive and thus engenders more energy, vitality, and health (Ryan & Deci, 2008). We hope that good friends and teachers have good "bedside manners" that show respect and helpfulness and engage students for better well-being, which we predict will be followed by more successful, autonomy-supportive education.

In the Classroom: Broadening What We See; Start Small

As mentioned above, there are times when behavior-learning connections cannot be ignored and for which a simple or narrow explanation may not suffice. A simple

explanation may not be enough for us to understand what is happening and interact in a way that is optimally beneficial and autonomy-supportive for our students. A student who is falling asleep in class may have a psychological media addiction to computer games and be playing all night, possibly be working at part-time jobs until 2 a.m. each night to pay for student loans, or be living alone for the first time and just not regulating herself well. An overly narrow view (that the student just needs to exert more effort) with an overly narrow solution (simply admonishing such a student to "pay attention" as if it is a simple issue of straightforward effort regulation) is not likely to help address the root problem and may in fact become a further wedge between herself and the class, including at a motivational level. The implication that her difficulty is a mere, simple lack of effort regulation can elicit a perception of failure and a discrepancy between who she is and who she feels she, herself wants to be or ought to be; or between who she is and who others want her to be or think she ought to be. Some negative potentials of such various discrepancies are feelings of low self-efficacy, shame or embarrassment, guilt, and anxiety, to name a few (Higgins, 1987). Along with a feeling of low self-efficacy, this perception of failure can also trigger a potential negative shift in the boundary between perceiving these discrepancies as challenges or threats (Cotterill, 2017).

The opposite of *narrowing* is *expanding*, which Grinker (1964) proposed as *eclecticism* and which Engel expanded on later with the biopsychosocial model, suggesting it replace the old biomedical model that ignored the parts played by our minds and societies. The biopsychosocial model has of course also been criticized as too eclectic, i.e., "anything goes" and thus sometimes "unscientific," as humanism currently tends to be. While it has been applied to special educational needs (Reisinger, 2014), it has not been widely applied to general education. Our contention is that it should be applied to everyday education, just as civility (Porath, 2016).

In the field of educational linguistics, we often unnaturally treat grammar, vocabulary, spelling, writing, and speaking as separate and distinct. While we can learn them in this way for a short time, sooner or later we are using them all together in a blend that we call *communicative second language acquisition*. This is similar to how medical scientists have long separated and specialized on parts of our bodies in hopes of better understanding them. While this intense specialization in a variety of fields has indeed rewarded us with great knowledge, its overemphasis can also make us blind to other contributing factors to health and successful practice at times, across any number of

domains. With a broader understanding of contributors of illnesses, we might improve our control over illnesses and create better experienced longevity. One recent addition to this area is the book by Hoshi and Kodama (2018), in which various studies have been correlated to show how environmental, psychological, and social well-being (among other factors) contribute to a healthy longevity (see Figure 3).

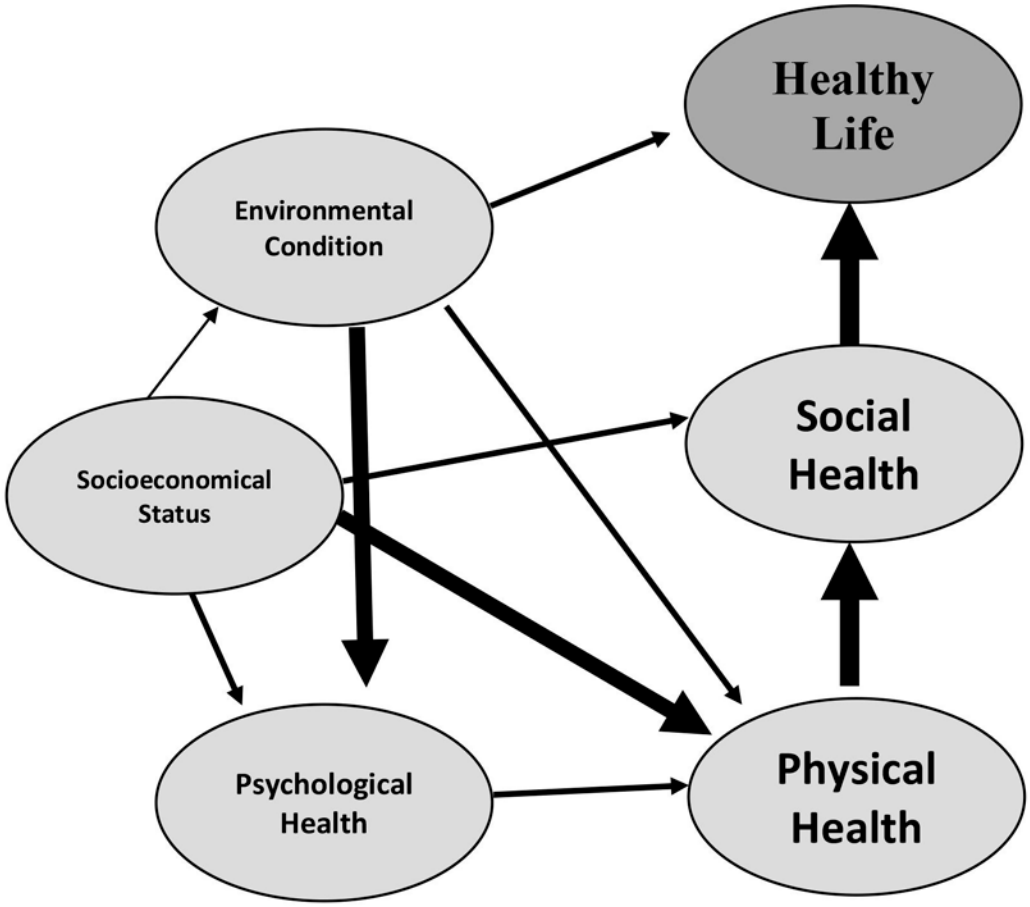

Figure 3. The Structure of Healthy Life Determinants, adapted from Hoshi and Kodama (2018)

Similarly, if we can take a broader understanding of the environmental contributors to language learning and how they are situated in student lives, perhaps we can approach pedagogy in a way that is more effective in supporting both sustained learning and supporting its integration as part of a biopsychosocially healthy life.

Application in a sample activity

What we wish to propose here is construction of an *ecological educational model* that looks more closely at the attributes of the biopsychosocial model and combines them into an *eco-educational biopsychosocial model* for teachers. Here, *ecological* does not denote natural ecology, but instead refers to taking an ecological perspective to understanding that action through opportunities for [inter]action, or *affordances*. These affordances, including opportunities for learning and practice, emerge from the relationship or interplay between a person and their environment, including between learners (see: van Lier, 2004). Actions and potentials cannot be easily or neatly separated from their contexts.

One practical way to apply these ideas is by simply asking our students to discuss them. Tim has experimented with this in the initial five minutes in every classroom with his students' action logs, which are similar to classroom diaries (Hooper & Murphey, in progress; Miyake-Warkentin, Hooper, & Murphey, in progress; Murphey, 1993). He asks students to share action logs that they have written and check in with each other that they are okay, that is to say sufficiently healthy and eager to learn. He often asks them to ask each other about their bio-conditions (e.g., "How much sleep did you get last night?" "Did you have a good breakfast or lunch?" see Appendix B). He wishes to expand this focus in the upcoming semester when students do action log shares. He is going to ask that they add in the data about themselves in form depicted in Figure 4 and talk things over with their partners. He hopes that this will help them to tune into their biopsychosocial prerequisites as a base for learning as well as give him valuable information about the students' lives.

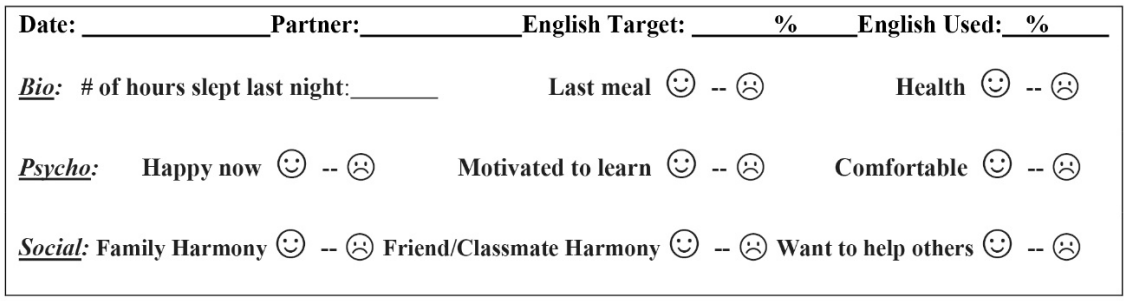

Figure 4: Student Self-Assessment of BioPsychoSocial Well-Being and Readiness to Learn

Next Steps

Invitations to use activities, do research, and make the world a better place

If interested in borrowing and adapting the activity and process described above for classes or as research, we invite readers to do so. While we think action logging would be an appropriate way for students to engage with the ideas of holistic well-being and the BioPsychoSocial Model, please feel free to engage with the ideas in ways that are ecologically fitting for you and your students (and any research constraints). For example, some of you may just try the simple questionnaire at the beginning, middle, and end of term, rather than try it daily in class. For further discussion on the EcoEducational-BioPsychoSocial Model, contact Tim or Curtis, the authors of this article.

Applications and outcomes

We hope to show in future research and articles that by becoming more attuned to contributing influences (BioPsychoSocial) upon growth, well-being, and learning that we can help students deal with those influences and create better learning environments for everyone. Other objectives are to further craft a clear, concise, basic definition of the model, further elucidate its connections to learner autonomy, and to illustrate what it might look like both generally conceptually and through details embedded in real life examples.

Notes on the contributors

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Appendices

Appendix A

Quote from C. G. Jung (1957) p. 19-20

In view of the fact that in principle, the positive advantages of knowledge work specifically to the disadvantage of understanding, the judgment resulting therefrom is likely to be something of a paradox.…The doctor, above all, should be aware of this contradiction. On the one hand, he is equipped with the statistical truths of his scientific training, and on the other, he is faced with the task of treating a sick person who, especially in the case of psychic suffering, requires *individual understanding*. The more schematic the treatment is, the more resistances it—quite rightly—calls up in the patient, and the more the cure is jeopardized. The psychotherapist sees himself compelled, willy-nilly, to regard the individuality of a patient as an essential fact in the picture and to arrange his methods of treatment accordingly. Today, over the whole field of medicine, it is recognized that the task of the doctor consists in treating the sick person, not an abstract illness.

This illustration in the case of medicine is only a special instance of the problem of education and training in general. Scientific education is based in the main on statistical truths and abstract knowledge and therefore imparts an unrealistic, rational picture of the world, in which the individual, as a merely marginal phenomenon, plays no role. The individual, however, as an irrational datum, is the true and authentic carrier of reality, the *concrete* man as opposed to the unreal ideal or normal man to whom the scientific statements refer. What is more, most of the natural sciences try to represent the results of their investigations as though these had come into existence without man's intervention, in such a way that the collaboration of the psyche—an indispensable factor—remains invisible. (An exception to this is modern physics, which recognizes that the observed is not independent of the observer.) So in this respect, too, science conveys a picture of the world from which a real human psyche appears to be excluded—the very antithesis of the "humanities."

Appendix B

Daily Action Logs Entry

Bio: # of hours slept last night:___		**Last meal**: ☺ -- ☹		**Health**: ☺ -- ☹
Psycho: Happy now: ☺ -- ☹		**Motivated to learn:** ☺ -- ☹		**Comfortable:** ☺ -- ☹
Social: Family: ☺ -- ☹		**Friends & Classmates:** ☺ -- ☹		**Desire to help others:** ☺ -- ☹
Class Activities	**Interesting**	**Useful**	**Difficult**	(0 = not at all 4 = completely)
Today data do (above)				
Action Log Share/Talk				
Speed Dictation				
Presentation				
Reading & Discussion				
Home Work				
Call report:				
Teach report:				
Random act of kindness report:				
Etc.				