The High School Student and the 21st Century College

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Abstract

Educational research affords the opportunity for teacher training programs to bridge learning theory and instructional design. Examining social and emotional learning and the use of pragmatic social constructivism can address the current climate surrounding a high school student and the 21st Century College. A program recommendation concerning the use of a living systems theory lens and learning gardens illustrates how social and emotional learning and pragmatic social constructivism can find practical application. Data collection and research methodologies provide the necessary tools for today's teacher to engage in the educational system as he or she enters the field or is already involved.

Keywords: social and emotional learning, education research, constructivism, living systems, learning gardens, high school adolescents, college students, emerging adulthood, teacher training

The High School Student and the 21st Century College

The 21st Century college student is facing new challenges as it concerns the social and emotional development in relationship to motivation, self-esteem, peer-acceptance, purpose, connectedness, and trust (Flanagan & Bundick, 2011). The cultivation of cooperative and collaborative learning programs in high school can assist in creating an easier transition from high school to college (Flanagan & Bundick, 2011). Educational research can support linking theoretical learning paradigms and activity together in order to support social and emotional development.

Research by Matsuba, Hart, and Atkins (as cited in Flanagan & Bundick, 2011) showed that cooperative exercises and programs that involve adolescent students lead to positive effects as it concerns social and emotional well-being. Accounting for the social and emotional well-being of a high school student in the 21st Century can help establish a greater sense of positive self-worth as the adolescent learner prepares for the college transition (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009).

Research by Ulsaner (as cited in Flanagan & Bundick, 2011) showed that programs involving cooperation and collaboration between students, educators, and the local community indicated positive relationships between self-efficacy, well-being, and positive outlooks. Arnett's (2000) Theory of Emerging Adulthood explained that an adolescent entering the age range of 18-25 is in a highly volitional period of exploration involving love, work, and a worldview. Research by Astin, Vogelgesang, Ikeda, and Yee (as cited in Flanagan & Bundick, 2011) illustrated how collaborative and cooperative learning environments lends to the building of student self-worth, meaning, interpersonal skills, and the fulfilling of self-potentiality.

The factors involving the cultivation of adolescent development in the research done by Astin et al., Markus, Howard, and King, and Youniss and Yates (as cited in Flanagan & Bundick, 2011) support having a positive impact on the volitional and exploratory phase of adolescent development that Arnett's (2000) Theory of Emerging Adulthood purports. Addressing these social and emotional needs in relationship to the high school adolescent can better prepare the student for the emerging adulthood period he or she will enter when beginning college (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2001; Zins, Payton, Weissberg, & O'Brien, 2007).

The first part of this paper will explore how social and emotional learning (SEL) and pragmatic social constructivism can serve as a tool for teachers in order to facilitate a healthy learning environment that cultivates self-efficacy on the part of the learner. Particular research (see Table 1) involving the use of Hattie's 800 meta-analyses (as cited in Huitt, Huitt, Monetti, & Hummel, 2009a) will show that problem-solving teaching, cooperative versus individualistic learning, and cooperative versus competitive learning strategies can benefit the high school adolescent within his or her learning community.

The second part of this paper will recommend the use of a living systems theory educational design (Widhalm, 2011) and a learning gardens project (Williams & Brown, 2011) in order to address cultivating the SEL of a learner with pragmatic social constructivism. Living systems theory and a program involving the use of learning gardens can assist in teacher training programs for high school teachers in order to show how he or she can cultivate the social and emotional learning environment of high school adolescents (Capra 2004, Widhalm, 2011; Williams & Brown, 2011). Hattie's 800 meta-analysis study (as cited in Huitt et al., 2009a) also shows how research supported the importance of creativity programs and outdoor/adventure programs as having a positive impact on student achievement. In as much, a program like a

learning garden can aid the high school student as they prepare to make his or her way toward college.

Context and Role

Educational research affords an opportunity for teachers to have a unique tool-at-hand in order to work with effective teaching modalities. The ability to test whether a particular curriculum is effective can find measure in effect size (Huitt, Huitt, Monetti, & Hummel, 2009a). In terms of standard deviation and correlational values, when an effect size measures 0.40 or better than statistical significance shows that a particular teaching strategy is having an important and practical impact on the learner (Huitt et al., 2009a). Hattie's (as cited in Huitt et al., 2009a) 800 meta-analysis review identified variables that had a significant (>0.40) impact on school environment efficacy. Hattie employed the Cohen's method of calculation known as "d", in order to test relationships between variables in relationship to education (Huitt et al., 2009a). The variables identified in this paper all met that criteria--problem-solving teaching measured d=0.61, cooperative versus individualistic learning measured d=0.59 and cooperative versus competitive learning measured d=0.54 (Huitt et al., 2009a). With statistical significance in mind, each of these factors relates to learning theories and instructional strategies that can benefit teachers in training as they prepare to enter the field.

Effective use of a learning theory creates an opportunity for an educator to employ strategies that can have a positive impact on student achievement and development (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Research by Klem and Connell (as cited in Durlak et al., 2011) showed that 40-60% of high school students lost interest in his or her education. Durlak et al. (2011) suggested that students respond best in an environment in which

their peers, teachers, and families work collaboratively in cultivating a healthy educational atmosphere.

Social and emotional learning (SEL) creates an environment for students to develop positive goal orientations, establish a respect for self and other, and make good choices while simultaneously being grounded in cognitive, affective, and behavioral awareness (Durlak et al. 2011). Zins, Payton, Weissberg, and O'Brien (2007) stated that teachers could create learning strategies that foster student self-regulation and self-efficacy by recognizing collaborative efforts that students contribute to the school environment. Zins et al. further stated that effective teacher engagement in this way could create an impetus for students to want to contribute to the school community. SEL strategies can nurture student-directed feedback as the active principles of problem solving, creating, and doing nurture intelligence strategies like those found in emotional intelligence theories (Zins et al. 2007). Pragmatic social constructivism offers a way to work with SEL strategies, problem solving teaching, cooperative versus individualistic learning, and cooperative versus competitive learning.

Basic tenets of a constructivist learning theory consist of exploratory and discovery learning, community activity and shared inquiry, processes of emergent learning, authentic curriculum design, and varied learning experiences (Alesandrini & Larson, 2002). Dewey (1938) furthered basic tenets of constructivism by introducing pragmatic and social degrees of relation within a prescriptive science based methodological approach. Through the interaction of thinking and doing steeped in problem-based, collaborative, and experiential contexts, student-centered learning constructs can begin to emerge while the teacher serves as a guide (Gordon, 2009). In this way, the learner is integrating knowledge and experience within a problem-based approach that lends to developing answers within individual and social contexts (Gordon, 2009).

Classroom instruction centered in such a way offers a teacher the opportunity to create an environment of transformational leadership reaching across teacher- and student-centered learning roles (Minter, 2011).

Questions arise surrounding a pragmatic social constructivist approach as it concerns the role of the teacher. Traditional constructivist approaches state that the teacher is a guide that plays a detached role from the learning that is taking place (Driscoll, 2005). Pragmatic social constructivism as thought about in a Deweyan perspective (as cited in Minter, 2011) suggests that a mix of teacher centered learning (TCL) and student centered learning (SCL) provides a healthy balance as it concerns classroom management. In considering, the examination of cooperative versus individualistic and cooperative versus competitive learning strategies, pragmatic social constructivism offers the opportunity for a teacher to engage in adaptive roles.

Freiberg and Lamb (2009) offered that a person-centered classroom management strategy involving teacher demonstrated SEL approaches, school connection, a positive school and classroom environment, and student self-discipline could lead to an effective learning environment. Research conducted over a 56 year time period by Cornelius-White (as cited in Freiberg & Lamb, 2009) showed that positive cognitive affects occurred in students that assuaged student dropout rates while cultivating learner confidence, motivation, and efficacy. Perkins (as cited in Huitt, Monetti, & Hummel, 2009b) suggested that a sound teaching strategy consist of clarity, practice, feedback, and motivation.

Huitt (as cited in Huitt, Monetti, & Hummel, 2009b) offered a transactional model of direct instruction that employs the use of presentation, practice, assessment and evaluation, as well as monitoring and feedback. Balancing a classroom environment in person-centered management styles and effective direct instruction can afford the opportunity for a shared

learning experience to take place where the rewards for teacher and learner are intrinsic and extrinsic within the classroom maturation process (Freiberg & Lamb, 2009). The opportunity to use what Minter (2011) called, "situational leadership" emerges as a strong tool for a teacher in addressing the qualities inherent in cooperative versus individualistic learning and cooperative versus competitive learning environments (p. 58).

Mitra (2011) offered that education is a self-organizing system and that the learning experience is the emergent appearance of something that had not been there before. A living systems approach and learning garden activity provide the opportunity for an educator to employ the aforementioned theoretical principles concerning problem-solving learning, cooperative versus individualistic learning, and cooperative versus competitive learning strategies in a high school environment.

Recommendations

Widhalm (2011) described educators as being architects of living, self-organizing systems. Educators have the opportunity to create a rich learning environment that cultivates the attributes of a person as he or she self-organizes. By viewing an educational classroom environment as an organic whole, a teacher has the ability to design instruction that can foster sustained and systemic approaches to learning (Widhalm, 2011). Widhalm described an autopoietic (self-organizing) process of learning in which the system as a dynamic whole creates the ability for the learner to generate new insights, processes of knowing, and self-efficacy. Booth-Sweeney (as cited in Widhalm, 2011) defined a living system as being, "…an animate arrangement of parts and processes that continually affect one another over time" (p. 3).

Capra (2004) furthered the living systems theory by recognizing the patterns that emerge within self-organizing systems that work together in a communal fashion in order to create

networks that lend to processes that can sustain themselves over time. These communal and networking processes express flexibility and diversity in a continuous self-organizing fashion that establish long-term partnerships while cultivating short-term goals (Capra, 2004). Doll (as cited in Widhalm, 2011) stated that if education can be seen as a living system, an opportunity exists to move away from the rigid straight-and-box style of learning to one of elaboration, collaboration, and cooperation between the educator, students, school system, and community. Teachers can use a theoretical living systems lens in a classroom and school-wide environment to steer the pragmatic social constructivist approach to learning instruction.

Huitt's et al. (2009a) breakdown of the 800 meta-analysis review also pointed out the importance of considering home context variables, school-level variables, and classroom input variables in order to present a systems-based approach to looking at the educational environment and student achievement. Two variables that emerged within the school-level are creativity programs (d=0.65) and outdoor/adventure programs (d=0.52) (Huitt et al., 2009a). A learning garden offers the ability for the teacher to start this project as an individual in a particular discipline or grade level or in teamwork fashion across disciplines and grade levels.

Learning gardens provide the opportunity to create a place that brings teacher (s) and student (s) together in order to cultivate learning outcomes (Williams & Brown, 2012). Williams and Brown (2011) described learning gardens as, "pedagogy with pedology (the study of soil)" and offered that learning gardens help to nurture the value of biological diversity, awakening senses, a sense of place, interconnectedness, and authentic practical experience (p. 1). The learning gardens offer the opportunity for the learners to work collaboratively with one another to solve the myriad of problems that will arise in the organizing, design, implementation, choices, and overall effectiveness of such an agricultural endeavor (Williams & Brown, 2012).

This allows the learners to experience being a part of something much bigger than them, than the knowledge they are gaining, through the practical applications of trial and error, successes and failures and teaching reciprocity (Williams & Brown, 2012).

Cooperative learning and problem solving involving the learning garden process effectively brings SEL and pragmatic social constructivism components to the fore ground. The learning gardens offer a multi-disciplinary approach that extends beyond a single classroom and into the school system and local community. Through cultivating his or her own food, learners have the opportunity to give back to the school community by supplementing school lunch programs (C., & Atkins, 2012; Wright, 2012). Research showed that schools with learning gardens already in place cultivated a 60% increase in healthy food choices, a 42% increase in attitudes about food, and a 32% increase in improved eating habits (C., & Atkins, 2012). Wright (2012) reported that learning gardens also extend outwardly into district farm gardens, community events, educational events, emergency preparedness, and joint-use of space in schools in Oakland, CA that have such curriculum in place.

Conclusion

In conclusion, I am proposing that social emotional learning (SEL) is beneficial to both academic learning and civic engagement. I believe that social constructivism is the learning theory paradigm that is most effective and efficient in addressing SEL and that focusing on problem-solving and cooperative learning are classroom activities that fit within the paradigm and contribute to developing the knowledge and skills associated with SEL.

Measuring educational effectiveness in relationship to a living systems lens and learning gardens with the cultivation of data can create an opportunity for teachers to work together in professional development settings (Flowers & Carpenter , 2009; Huitt, Huitt, Monetti, &

Hummel, 2009a; Oxley, 2008). Generating further research in relationship to SEL, pragmatic social constructivism, living systems educational design, and learning gardens can lend to addressing many of the psycho-social situations that high school adolescents currently face as they move through high school into college (Durlak et al., 2011; Flanagan & Bundick, 2011; Seligman et al., 2009). Data gathered can in turn lend to building a stronger base for problem-solving teaching, cooperative versus individualistic learning, and cooperative versus competitive learning. All of which can be addressed with a multi-disciplinary and multi-faceted learning garden curriculum in a high school environment.

There are a number of data collection tools available for teachers to implement during classroom instruction without over-burdening an already concentrated curriculum or the diminishing of school resources. The implementation of the following data collection tools can occur within a marking period, a school calendar year, or multiple years at the discretion of the teacher, school administration, or district-wide level. These tools provide an effective way of measuring academic achievement and teacher instructional efficacy in both short- and long-term contexts.

Huitt et al. (2009a) discussed the use of looking at how learning is occurring over time in relationship to time-on-task, content overlap, and success. These three principles find measure in terms of Academic Learning Time (ALT) as the instruction is taking place thus affording the teacher the ability to check for what Huitt et al. described as, "vital signs" (p. 9). Berliner (as cited in Huitt et al., 2009a) illustrated how information collection in relationship to time-on-task, content overlap, and success can supply an informed content variable as it pertains to whether a particular form of instruction creates success.

Flowers and Carpenter (2009) offered a 5-step process that involves looking at a review of school improvement plans, creating a collective data pool, identifying relevant data, examination and discussion of the data, and the setting of goals with evaluative measures of progress. Flowers and Carpenter suggested the use of this 5-step process as a way to examine the inner workings of a school's holistic make-up by studying the parts in a systemic fashion. The data that is collected finds use as a method for establishing a process of inquiry-based systemic collaborative work efforts on the parts of the individuals within the school system (Flowers & Carpenter, 2009).

Oxley (2008) pointed out that the use of such collaborative data collection efforts can lend to determining effective allocation of school resources, time, teacher efficacy, and teacher team building, in determining what can positively affect student proficiency. Oxley cited Southside High School in Atlanta Georgia as an example where teachers implemented research efforts in order to test students focus, coherence, relevance, equity, and priorities. Oxley reported that Southside's High School graduation rate increased over a period of 4 years from 50% to 86%. The data collection and research implementation in this case shows how research can support educational efficacy and dissemination of instructional methodologies that can better prepare a high school adolescent for college.

References

Alesandrini, K., & Larson, L. (2002). Teachers bridge to constructivism. *The Clearing House, 75*(3), 188-121.

Arnett, J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480. doi: 10.1037//0003-066X.55.5.469

Atkins, C. R., & Atkins, V. (2010). *Evaluation of the school lunch initiative: Changing student's knowledge, attitudes, and behavior in relation to food.* Retrieved from http://www.ecoliteracy.org/sites/default/files/sli_eval_full_report_2010.pdf

Capra, F. (2004). *Ecology and community.* Retrieved October 7, 2012, from http://www.ecoliteracy.org/essays/ecology-and-community

Dewey, J. (1938). *Experience & education.* New York, NY: Touchstone.

Driscoll, M. P. (2005). *Psychology of learning for instruction.* Boston, MA: Pearson.

Durlak, J., Weissberg, R., Dymnicki, A., Taylor, R., Schellinger, K. (2011). The impact of enhancing student's social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. doi: 10.1111/j.1467-8624.2010.01564.x

Flanagan, C., & Bundick, M. (2011). Civic engagement and psychosocial well-being in college students. *Liberal Education, 97*(2). Retrieved from http://www.aacu.org/liberaleducation/le-sp11/flanagan.cfm

Flowers, N., & Carpenter, D. (2009). You don't have to be a statistician to use data: A process for data-based decision making schools. *Phi Delta Kappan, 91*(2), 64-67.

Freiberg, H. J., & Lamb, S. M. (2009). Dimensions of person-centered classroom management. *Theory Into Practice, 48*, 99-105.

Gordon, M. (2009). Toward a pragmatic discourse of constructivism: Reflections on lessons from practice. *Educational Studies, 45*(1), 39-58.

Huitt, W., Huitt, M., Monetti, D., & Hummel, J. (2009a). *A systems-based synthesis of research related to improving students' academic performance.* Paper presented at the 3rd International City Break Conference sponsored by the Athens Institute for Education and Research (ATINER), October 16-19, Athens, Greece. Retrieved from http://www.edpsycinteractive.org/papers/improving-school-achievement.pdf

Huitt, W., Monetti, D., & Hummel, J. (2009b). Designing direct instruction. Pre-publication version of chapter to appear in C. Reigheluth and A. Carr-Chellman, *Instructional design theories and models: Volume III, Building a common knowledgebase.* Mahwah, NJ: Lawrence Erlbaum Associates. Retrieved from http://www.edpsycinteractive.org/papers/designing-direct-instruction.pdf

Minter, M. K. (2011). Learner-centered (LCI) vs. teacher-centered (TCI) instruction: A classroom management perspective. *American Journal of Business Education, 4*(5), 55-62.

Mitra, S. (2011). *The child-driven education.* Retrieved from http://www.youtube.com/watch?v=dk60sYrU2RU

Oxley, D. (2008). Creating instructional program coherence. *Principal's Research Review, 3*(5), 1-7.

Seligman, M. E. P., Ernst, R., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35*(3), 293-311. doi: 10.1080/03054980902934563

Widhalm, B. (2011). Educators as architects of living systems: Designing vibrant learning experiences beyond sustainability and systems thinking. *Journal of Sustainability Education, 2*, 1-17

Williams, D. R., & Brown, J. D. (2011). *Living soil* and sustainability education: Linking pedagogy and pedology. *Journal of Sustainability Education, 2*, 1-18.

Williams, D. R. & Brown, J. D. (2012). *Learning gardens and sustainability education: Bringing life to schools and schools to life.* New York, NY: Routledge.

Wright, J. I. (2012). *School-community kitchens: Resource hubs serving students and surrounding communities.* Berkley, CA: Center for EcoLiteracy. Retrieved from http://www.ecoliteracy.org/downloads/school-community-kitchens

Zins, J., Payton, J., Weissberg, R., & O'Brien, U. (2007). Social and emotional learning for successful school performance. In Matthews, G., Zeidner, M., & Roberts, R. D., *The science of emotional intelligence: Knowns and unknowns* (pp. 376-395). New York: Oxford University Press.

Table 1

Teacher Training

Teacher Training	Teacher	Tchr Char	HE	Micro teaching	0.88
	Teaching	Tchg Strat	ALL	Reciprocal teaching	0.74
	Teaching	Tchg Events	ALL	Feedback	0.73
	Teaching	Tchg Events	ALL	Spaced vs. mass practice	0.71
	Teaching	Tchg Strat	ALL	Meta-cognitive strategies	0.69
	Teaching	Stdt Beh	ALL	Self-verbalization/self-questioning	0.64
	Teaching	Tchg Strat	ALL	***Problem-solving teaching***	0.61
	Teaching	Tchg Strat	ALL	***Cooperative vs. individualistic learning***	0.59
	Teaching	Tchg Strat	ALL	Direct Instruction	0.59
	Teaching	Tchg Strat	ALL	Mastery learning	0.58
	Teaching	Tchg Events	ALL	Worked examples	0.57
	Teaching	Tchg Strat	ALL	Concept mapping	0.57
	Teaching	Cls Input	ALL	Goals	0.56
	Teaching	Tchg Strat	ALL	***Cooperative vs. competitive learning***	0.54
	Teaching	Tchg Strat	ALL	Interactive video methods	0.52
	Teaching	Tchg Events	ALL	Questioning	0.46
	Teaching	Tchg Events	ALL	Behavioral obj./Advance organizers	0.41
	Teaching	Tchg Strat	ALL	Matching style of learning	0.41

- Date selected from Hattie (2009) as reviewed by Huitt et al., 2009a