Summary of Research Relating to Educational Practices Incorporated into the International Baccalaureate: Middle Years Programme

The design of the International Baccalaureate – Middle Years Programme incorporates a wide range of research-based educational practices. Here is a summary of research pertinent to a number of these practices, with a particular focus on evidence of positive impact upon student achievement. A brief explanation of each practice is included as well. If you are interested in reading further, related articles and texts are listed, and full copies of the studies are available via our district IB website.

Brain-Based Learning

What is it?:

"Brain-based learning refers to teaching methods, lesson designs, and school programs that are based on the latest scientific research about how the brain learns, including such factors as cognitive development—how students learn differently as they age, grow, and mature socially, emotionally, and cognitively" ("Brain-Based Learning Definition", 2013).

Research:

A 2014 meta-analysis of 31 studies which had investigated the effectiveness of brain-based learning on students' academic achievement between the years 1999-2011 found a positive impact upon students' academic achievement in 35 out of 42 comparisons (Gözüyesil, 2014).

For further reading:

Blakemore, S-J and Choudhury, S. 2006. "Development of the adolescent brain: Implications for executive function and social cognition". *Journal of Child Psychology and Psychiatry*, 47(3/4). pp. 296–312.

Johnson, SB, Blum, RW, Giedd, JN. 2009. "Adolescent Maturity and the Brain: The Promise and Pitfalls of Neuroscience Research in Adolescent Health Policy". *Journal of Adolescent Health*, 45(3). pp. 216–221.

Yilmaz, K. 2011. "The cognitive perspective on learning: Its theoretical underpinnings and implications for classroom practices". *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 84(5). pp. 204–212.

Concept-Based Curriculum

What is it?:

"Concept-based instruction is driven by "big ideas" rather than subject-specific content. By leading students to consider the context in which they will use their understanding, concept-

based learning brings "real world" meaning to content knowledge and skills" ("Getting the Big Idea: Concept-Based Teaching and Learning", 2013).

Research:

A 2011 case study examined the impact of the application of an inquiry-based concept-related physics curriculum on student attitudes and learning in a secondary physics classroom in southern New Jersey. Students who had previously used a traditional physics curriculum were presented with a 10 week inquiry-based concept-related physics curriculum on electricity and magnetism. The observations, interviews and artifact analysis revealed that students were more engaged in learning physics through their discoveries in relating physics concepts to real world applications, a growing personal interest in the value and relevance of science learning, and a disconnect between the students' and teacher's perceptions about what is important in learning physics. The study recommends that the rigidity of a traditional physics curriculum with its emphasis on covering many topics and the mathematical language of physics should give way to a more inquiry-based concept-related curriculum that incorporates exploration, hands-on inquiry activities, and real world connections (Molotsky, 2011).

A 2006 study set out to determine if a non-traditional physical education curriculum better educated high school students to live a healthy lifestyle than did a traditional curriculum. Students were identified as concept-based (60), traditional (60), or mixed (60) participants. Participants' knowledge of health-related fitness concepts was assessed using the FitSmart test. Concept-based students showed significantly more knowledge of fitness concepts than did mixed students and traditional students (Lungarini, 2006).

For further reading:

Erickson, HL. 2007. *Concept-based Curriculum and Instruction for the Thinking Classroom* (Second edition). Thousand Oaks, California, USA. Corwin Press.

Erickson, HL. 2008. *Stirring the Head, Heart and Soul: Redefining curriculum, instruction, and concept-based learning.* Thousand Oaks, California, USA. Corwin Press.

Erickson, HL. 2010. "Conceptual Designs for Curriculum and Higher-Order Instruction". In Marzano, R (editor). *On Excellence in Teaching*, Anthology. Bloomington, Indiana, USA. Solution Tree Press.

Milligan, A. and Wood, B. 2010. "Conceptual understandings as transition points: Making sense of a complex world". *Journal of Curriculum Studies*, 41(2). pp. 223–239.

Contextual Learning

What is it?:

"According to contextual learning theory, learning occurs only when students process new information or knowledge in such a way that it makes sense to them in their own frames of reference (their own inner worlds of memory, experience, and response). The mind naturally seeks meaning in context by searching for relationships that make sense and appear useful" ("Contextual Learning Definition", 2012).

Research:

In a 2011 study of engineering students, two groups were taught a statistics unit using a contextual approach and two using a non-contextual approach. Findings showed a significant difference for the post-test mean score between the contextual and non-contextual groups, with the contextual group scoring higher (Kamaruddin, 2011).

For further reading:

Edwards, R. 2009 "Introduction: Life as a learning context?". In Edwards, R, Biesta, G and Thorpe, M. *Rethinking Contexts for Learning and Teaching: Communities, Activities and Networks*. London, UK and New York, USA. Routledge. pp. 1–13.

Johnson, EB. 2002. *Contextual Teaching and Learning: What It Is and Why It's Here to Stay.* Thousand Oaks, California, USA. Corwin Press.

Parnell, D. 2001. *Contextual Teaching Works!* Waco, Texas, USA. CCI Publishing.

Pike, G. 2008. "Citizenship Education in Global Context". Brock Education, 17. pp. 39–49.

Westera, W. 2011. "On the changing nature of learning context: Anticipating the virtual extensions of the world". *Journal of Education, Technology and Society*, 14. pp. 201–212.

Curriculum Mapping

What is it?:

"Curriculum mapping is a process for collecting and recording curriculum-related data that identifies core skills and content taught, processes employed, and assessments used for each subject area and grade level" ("Curriculum Mapping", 2016).

Research:

A 2002 study set out to determine if second through sixth grade achievement test scores in reading, language, mathematics, science, and social studies showed improvement following curriculum mapping. The study was conducted over a two-year interval: one before curriculum

mapping and one after curriculum mapping. After curriculum mapping, students scored higher than they had prior to curriculum mapping (Shanks, 2002).

For further reading:

Hayes Jacobs, H. 1997. *Mapping the Big Picture: Integrating Curriculum and Assessment K–12*. Alexandria, Virginia, USA. ASCD Publications.

Hayes Jacobs, H. 2004. *Getting Results with Curriculum Mapping*. Alexandria, Virginia, USA. ASCD Publications.

Differentiated Instruction

What is it?:

"Differentiated instruction is an approach to teaching in which educators actively plan for students' differences so that all students can best learn. In a differentiated classroom, teachers divide their time, resources, and efforts to effectively teach students who have various backgrounds, readiness and skill levels, and interests" ("Differentiated Instruction", 2016).

Research:

A 2008 study of six fourth grade classrooms compared students who had experienced whole-class and differentiated instruction to determine which is the more effective instructional strategy in a standards-based curriculum taught in an inclusive classroom environment. Results revealed statistically significant improvements in student achievement levels of students taught utilizing differentiated instruction as opposed to whole-class instruction (Luster, 2008).

For further reading:

Tomlinson, CA. 2004. "Sharing responsibility for differentiating instruction". *Roeper Review*, 26 (4), pp 29–34. In Murawski, WM. 2010. Collaborative Teaching in Elementary Schools: Making the Co-Teaching Marriage Work! Thousand Oaks, California, USA. Corwin Press.

Tomlinson, CA. 2008. *The Differentiated School: Making Revolutionary Changes in Teaching and Learning*. Alexandria, Virginia, USA. ASCD Publishing.

Tomlinson, CA and McTighe, J. 2006. *Integrating Differentiated Instruction and Understanding by Design*. Alexandria, Virginia, USA. ASCD Publications.

Tomlinson, CA, Kaplan, SN, Renzulli, JS, Purcell, JH, Leppien, JH, Burns, DE, Strickland, CA and Imbeau, MB. 2008. *The Parallel Curriculum: A Design to Develop Learner Potential and Challenge Advanced Learners* (Second edition). Thousand Oaks, California, USA. Corwin Press.

Formative Assessment

What is it?:

"The goal of formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. More specifically, formative assessments help students identify their strengths and weaknesses and target areas that need work, help faculty recognize where students are struggling, and address problems immediately. Formative assessments are generally low stakes, which means that they have low or no point value" ("Formative vs. Summative Assessment", 2015).

Research:

A 2013 study was conducted to gather evidence regarding effects of formative assessment on middle school mathematics and reading students' achievement. The major findings of this study suggest that formative assessments are positively related to student achievement in reading and mathematics. Results suggest that short-cycle reading formative assessments result in positive gains for students. The interaction between student and school-level long-cycle mathematics assessment frequency suggested that students who attend schools that administer a greater number of long-cycle mathematics formative assessments experience positive gains in mathematics achievement. In addition, short-cycle mathematics formative assessments seem to have a particularly strong positive effect on the achievement of students who are economically disadvantaged (Kline, 2013).

For further reading:

Black, P, Harrison, C, Lee, C, Marshall, B and Wiliam, D. 2002. *Working Inside the Black Box: Assessment for Learning in the Classroom*, London, UK. GL Assessment.

Brookhart, S, Moss, C and Long, B. 2009. "Formative assessment that empowers". In Scherer, M. *Challenging the Whole Child: Reflections on Best Practices in Learning, Teaching and Leadership*. Alexandria, Virginia, USA. ASCD Publications.

Tarras, M. 2005. "Assessment—Summative and Formative—Some Theoretical Reflections". *British Journal of Educational Studies*, 53(4). Pp. 466–478.

Wiggins, G. 1998. *Educative Assessment. Designing Assessments to Inform and Improve Student Performance*. San Francisco, California, USA. Jossey-Bass Publishers.

Growth Mindset

What is it?:

"After studying the behavior of thousands of children, Dr. Carol Dweck coined the terms fixed mindset and growth mindset to describe the underlying beliefs people have about learning and intelligence. When students believe they can get smarter, they understand that effort makes them stronger. Therefore they put in extra time and effort, and that leads to higher achievement" ("Decades of Scientific Research that Started a Mindset Revolution", 2015).

Research:

In a 2015 study, researchers examined teacher-related variation in the effects of a classroom intervention designed to impact seventh graders' beliefs about the nature of ability in science as fixed or malleable. Analyses of quantitative data from seven science classrooms across two teachers revealed significant teacher effects in the extent to which students' beliefs about mindset, students' mastery-oriented learning goals, and students' achievement were sustained several months following the intervention (Schmidt, 2015).

For further reading:

Dweck, C. 2006. *Mindset: The New Psychology of Success*. New York, USA. Random House.

Habits of Mind

What is it?:

The Habits of Mind are an identified set of 16 problem solving, life-related skills, necessary to effectively operate in society and promote strategic reasoning, insightfulness, perseverance, creativity and craftsmanship. The understanding and application of these 16 Habits of Mind serve to provide the individual with skills to work through real life situations that equip that person to respond using awareness, thought, and intentional strategy in order to gain a positive outcome ("Habits of Mind", 2000).

Research:

A 2015 program evaluation was implemented within a suburban elementary school to evaluate a Habits of Mind character education program to determine its effectiveness in promoting academic achievement and appropriate school behaviors. Academic performance of students in grades 3 and 4 improved while the intervention was ongoing, and behavioral performance of students in kindergarten through grade 3 improved during program implementation (Royce, 2015).

For further reading:

Costa, AL and Kallick, B (editors). 2000. *Assessing and Reporting on Habits of Mind*. Alexandria, Virginia, USA. ASCD Publications.

Costa, AL and Kallick, B (editors). 2000. *Discovering and Exploring Habits of Mind*. Alexandria, Virginia, USA. ASCD Publications.

Inquiry-Based Instruction

What is it?:

"Inquiry-based learning starts by posing questions, problems or scenarios—rather than simply presenting established facts or portraying a smooth path to knowledge. The process is often assisted by a facilitator. Inquirers will identify and research issues and questions to develop their knowledge or solutions. Inquiry-based learning includes problem-based learning, and is generally used in small scale investigations and projects, as well as research" ("Inquiry-based learning", 2016).

Research:

A 2009 study examined the effects of inquiry-based science instruction and traditional science instruction on student achievement across science, mathematics and reading and compared the effects of inquiry-based science instruction and traditional science instruction on student achievement. Results indicated that inquiry-based science instruction was associated with significant positive gains not only in science achievement, but also in mathematics and reading achievement. The positive relationship between inquiry instruction and student achievement was found above and beyond the contributions of traditional science instruction, which generally showed no significant relationship to student achievement. Findings support the theoretical position that inquiry-based science instruction can have robust benefits across the curriculum (Hung, 2009).

For further reading:

Llewellyn, D. 2002. *Inquire Within: Implementing Inquiry-Based Science Standards*. Thousand Oaks, California, USA. Corwin Press.

Interdisciplinary Learning

What is it?:

"Interdisciplinary teaching is a method, or set of methods, used to teach a unit across different curricular disciplines. For example, the seventh grade Language Arts, Science and Social Studies teachers might work together to form an interdisciplinary unit on rivers" ("Interdisciplinary teaching", 2016).

A 2012 study focused on the interdisciplinary teaching of history, literacy, and the visual arts, asking the following questions: How does students' learning in history change following their participation in an interdisciplinary history-literacy-visual arts curriculum, and how does their learning compare to students who learn the same content through traditional teaching approaches?; in what ways, if any, do students who participate in an interdisciplinary history-literacy-visual arts unit demonstrate engagement, historical thinking skills, and aesthetic skills during the unit?; and how do teachers view the feasibility and effectiveness of implementing an interdisciplinary history-literacy-visual arts curriculum? Fifth grade classes in two schools in the same district with similar demographics were compared. While students at both schools performed similarly on the pre-assessment, students in the experimental classrooms scored better than the comparison classroom students on the post-assessment. In addition, the experimental group of students demonstrated procedural and substantive engagement, historical thinking skills, and aesthetic development skills throughout the teaching of the unit. In addition, teachers identified several benefits to interdisciplinary instruction, including high levels of student engagement and demonstration of higher order thinking skills (Brugar, 2012).

For further reading:

Dowden, T. 2007. "Relevant, challenging, integrative and exploratory curriculum design: Perspectives from theory and practice for middle level schooling in Australia". *Australian Educational Researcher*, 34(2). pp. 51–71.

Erb, T. 1996. "Following the bandwagon of curriculum integration: beautiful music or deep ruts?" *Middle School Journal*, 28(1). p. 2.

Hayes Jacobs, H. 1989. *Interdisciplinary Curriculum: Design and Implementation.* Alexandria, Virginia, USA. ASCD Publications.

Multiple Intelligences

What is it?:

The theory of multiple intelligences was developed in 1983 by Dr. Howard Gardner. It suggests that the traditional notion of intelligence, based on I.Q. testing, is far too limited. Instead, Dr. Gardner proposed eight different intelligences to account for a broader range of human potential in children and adults. These intelligences are: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, interpersonal intelligence, intrapersonal intelligence, and naturalist intelligence (Armstrong, 2012).

In a 1999 study, the effect of implementation of multiple intelligences on language arts curriculum in middle schools was examined through the lens offered by middle school language arts teachers who have implemented multiple intelligences in their classrooms. Four broad domains were the focus of the study: student performance, pedagogy, curriculum and assessment. The highest level of change when multiple intelligences was implemented was found in the area of student performance (Feeney, 1999).

For further reading:

Gardner, H. 1993. *Multiple Intelligences: The theory in practice*. New York, USA. Basic Books.

Gardner, H. 2006. *Multiple Intelligences: New Horizons in Theory and Practice*. New York, USA. Basic Books.

Gardner, H. 2011. *Frames of Mind: The Theory of Multiple Intelligences*. New York, USA. Basic Books.

Service Learning

What is it?:

"Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities" ("Definition of Service Learning", 2016).

Research:

In a 2016 study, four educators who utilized service-learning in the high school classroom were interviewed to understand their experiences with service-learning. Through data analysis, three themes emerged: personal impacts of service-learning, student impacts of service-learning, and challenges to service-learning. Participants explored their feelings of pride, their relationships with students, connectedness between peers and family, and increased number of strategies within a teacher toolbox as the main personal motivations to implementing service-learning. Student impacts included breaking down misconceptions and preconceived notions, influencing decisions after high school, and developing increased buy-in and engagement (Maguire, 2016).

The purpose of a 2009 study was to discover whether participation in a service-learning project increased student engagement in the learning process. It examined the extent to which a service-learning project engaged Grade 8 students in the learning process in a rural south Florida school. Ninety students participated in a 6-week service-learning project. Qualitative data suggested that participants' level of engagement was higher during a service-learning project. Participants found the service-learning project empowering, meaningful, and more engaging than traditional classroom experiences (Kirschner, 2009).

For further reading:

Berger Kaye, C. 2010. *The Complete Guide to Service Learning: Proven, Practical Ways to Engage Students in Civic Responsibility, Academic Curriculum, & Social Action*. Minneapolis, Minnesota, USA. Free Spirit Publishing.

Kielsmeier, JC. 2000. "A Time to Serve, a Time to Learn: Service-Learning and the Promise of Democracy". *Phi Delta Kappan*, 81(9). pp. 652–657.

Schine, J. 1997. "Service Learning and Young Adolescents: A Good Fit". In Irvin, JL (editor). *What Current Research Says to the Middle Level Practitioner*. Columbus, Ohio, USA. National Middle School Association.

Social-Emotional Learning

What is it?:

"Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" ("What is SEL?", 2016).

Research:

A 2000 study investigated the effects of a social and emotional learning program and corresponding teaching practices on students' social competence. Two sets of second and fourth grade students from 15 schools were followed over two years. Schools were randomly assigned to experimental or comparison group. A developmentally sequenced social-emotional learning program was taught in experimental classrooms by teachers over students' two-year study participation. Comparison classrooms did not implement the program. All students were given a group-administered survey assessing their social cognition and self-perceptions of social behavior. Analyses demonstrated that, in general, the strongest and most reliable predictors of student change were curriculum lessons accompanied by supportive teaching practices over two years of program implementation. Specifically, two years' of lessons combined with teachers' support of student emotion regulation was associated with lower self-reported aggression and negative peer relations and lower preference for aggressive social strategies (Van Schoiack, 2000).

A 2015 study examined the impact of social-emotional literacy instruction for at-risk adolescents ages 13 to 18 at the high school level, particularly in the areas of suspension, expulsion, attendance, connectivity, attitude toward school, resiliency, and relational aggression rates. The findings suggest that programs that provide mentoring and include group educational components can have a positive impact on student awareness and attitude (Garcia, 2015).

For further reading:

Lazarus, PJ and Sulkowski, ML. 2011. *The Emotional Well-Being of Our Nation's Youth and the Promise of Social-Emotional Learning*. Bethesda, Maryland, USA. National Association of School Psychologists (NASP).

Matula, LL. 2004. "Character Education and Social-Emotional Learning: Why we must educate the whole child". MindOH. December 2011.

Understanding by Design

What is it?:

"Understanding by Design, or UbD, is an educational planning approach. UbD is an example of backward design, the practice of looking at the outcomes in order to design curriculum units, performance assessments, and classroom instruction. UbD focuses on teaching to achieve understanding" ("Understanding by Design", 2016).

Research:

In a 2011 study, standardized test scores, attendance measures, and teacher surveys were used to measure the impact of Understanding by Design methods in improving the achievement of eighth grade social studies students. The use of Understanding by Design was shown to have a significant statistical impact upon student performance (Noble, 2011).

For further reading:

Wiggins, G and McTighe, J. 2005. *Understanding by Design* (Expanded second edition). Alexandria, Virginia, USA. ASCD Publications.

Works Cited

Armstrong, Thomas. "Multiple Intelligences." Multiple Intelligences by Dr. Thomas Armstrong. American Institute for Learning and Human Development, 2012. Web. 23 Nov. 2016.

"Brain-Based Learning Definition." The Glossary of Education Reform. N.p., 2013. Web. 23 Nov. 2016.

Brugar, Kristy A. *What Difference does Curricular Integration make? an Inquiry of Fifth Graders' Learning of History through the use of Literacy and Visual Arts Skills*, Diss. Michigan State University, Ann Arbor, 2012.

"Contextual Learning Definition - Center for Occupational Research and Development." CORD, 2012. Web. 23 Nov. 2016.

"Curriculum Mapping." Education World: Virtual Workshop: Curriculum Mapping. Education World, 2016. Web. 23 Nov. 2016.

"Decades of Scientific Research That Started a Mindset Revolution." Science. Mindset Works, 2015. Web. 23 Nov. 2016.

"Definition of Service Learning." Office of Civic Engagement & Service Learning. Fayetteville State University, 2016. Web. 23 Nov. 2016.

"Differentiated Instruction." Differentiated Instruction - Articles, Books, Resources. ASCD, 2016. Web. 23 Nov. 2016.

Feeney, Maureen O. *The Impact of Howard Gardner's Theory of Multiple Intelligences on Change in Middle School Language Arts Curriculum*, Diss. Seton Hall University, College of Education and Human Services, Ann Arbor, 1999.

"Formative vs. Summative Assessment." Teaching Excellence & Educational Innovation. Carnegie Mellon University, 2015. Web. 23 Nov. 2016.

Garcia, Shannon H. *An Analysis of the Impact of Emotional Literacy Instruction on at-Risk Students*, Diss. Brandman University, Ann Arbor, 2015.

"Getting the Big Idea: Concept-Based Teaching and Learning." "Transforming Learning Environments through Global and STEM Education". N.p., 13 Aug. 2013. Web. 23 Nov. 2016.

Gözüyesil, Eda, and Ayhan Dikici. "The Effect of Brain Based Learning on Academic Achievement: A Meta-Analytical Study." Kuram ve Uygulamada Egitim Bilimleri, vol. 14, no. 2, 2014. pp. 642-648

"Habits of Mind." Habits of Mind. Community High School of Vermont, 2000. Web. 23 Nov. 2016.

Hung, Man. *Achieving Science, Math and Reading Literacy for all: The Role of Inquiry-Based Science Instruction*, Diss. The University of Utah, Ann Arbor, 2009.

"Inquiry-based Learning." Wikipedia. Wikimedia Foundation, 18 Nov. 2016. Web. 23 Nov. 2016.

"Interdisciplinary Teaching." Wikipedia. Wikimedia Foundation, 27 Sept. 2016. Web. 23 Nov. 2016.

Kamaruddin, Nafisah K. M., et al. "A study of the effectiveness of the contextual approach to teaching and learning statistics at the Universiti Tun Hussein Onn Malaysia (UTHM)." International Journal of Arts & Sciences, vol. 4, no. 25, 2011. pp. 305-313

Kirschner, Andrew M. *The Impact of a Service -Learning Project on Middle School Students' Level of Engagement in the Learning Process*, Diss. Walden University, Ann Arbor, 2009.

Kline, Abram J. *Effects of Formative Assessment on Middle School Student Achievement in Mathematics and Reading*, Diss. The University of North Carolina at Chapel Hill, Ann Arbor, 2013.

Lungarini, Glenn M. *Physical Education Curricula and their Effect on High School Student's Knowledge of Fitness Concepts*, Diss. Southern Connecticut State University, Ann Arbor, 2006.

Luster, Ramona J. *A Quantitative Study Investigating the Effects of Whole-Class and Differentiated Instruction on Student Achievement*, Diss. Walden University, Ann Arbor, 2008.

Maguire, Lisa. *Teachers' Experiences using Service-Learning in the High School Classroom*, Diss. Northeastern University, Ann Arbor, 2016.

Molotsky, Gregg J. *A Case Study of the Impact of a Reformed Science Curriculum on Student Attitudes and Learning in a Secondary Physics Classroom*, Diss. Drexel University, Ann Arbor, 2011.

Noble, Charhonda L. *How does Understanding by Design Influence Student Achievement in Eighth Grade Social Studies?*, Diss. Capella University, Ann Arbor, 2011.

Royce, William N. *An Evaluation of the Habits of Mind Character Education Program*, Diss. Nova Southeastern University, Ann Arbor, 2015.

Schmidt, Jennifer A., Lee Shumow, and Hayal Kackar-Cam. "Exploring Teacher Effects For Mindset Intervention Outcomes In Seventh-Grade Science Classes." *Middle Grades Research Journal*, vol. 10, no. 2, 2015., pp. 17-32

Shanks, Donna J. *A Comparative Study on Academic Gains between Students in Second Grade through Sixth Grade before and After Curriculum Mapping*, Diss. Tennessee State University, Ann Arbor, 2002.

"Understanding by Design." Wikipedia. Wikimedia Foundation, 16 Nov. 2016. Web. 23 Nov. 2016.

Van Schoiack, Leihua. *Promoting Social -Emotional Competence: Effects of a Social -Emotional Learning Program and Corresponding Teaching Practices in the Schools*, Diss. University of Washington, Ann Arbor, 2000.

"What Is SEL?" CASEL, 2016. Web. 23 Nov. 2016.