OPEN

RESEARCH-BASED DEVELOPMENT AND IMPLEMENTATION WITH AN EVIDENCE-BASED FUTURE.

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CONTENT

INTRODUCTION

In 2015, the Online Physical Education Network launched to the public as OPENPhysEd.org. The website provided free access to outcomes-based curriculum resources for physical educators. Visitors to the website could register for a free membership that granted unlimited access to 8 elementary physical education curriculum modules.
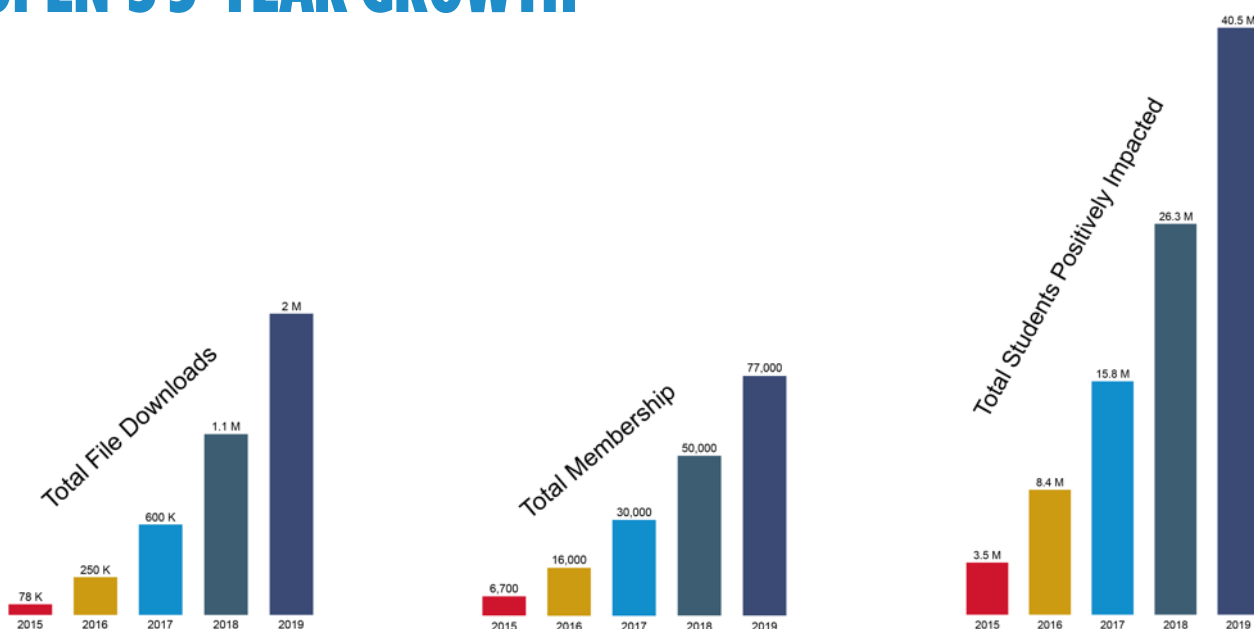
The OPEN project was focused on providing equity of access to curriculum content and was staffed by 1 full-time employee utilizing funding and shared services of BSN Sports – a for-profit sporting goods apparel and equipment company. Lab and office space for OPEN was provided by the State University of New York College at Cortland in the Department of Physical Education's Activity and Movement Pedagogy Lab (AMP Lab).

In less than 5 full years, OPEN evolved into the nation's largest professional learning organization serving physical education professionals and school-based physical activity leaders. As of December 31, 2019, OPEN's free online membership served 77,000 educators with more than 3,500 pages of curriculum content delivered electronically through more than 2 million document downloads.

This white paper provides a brief summary of the research-based foundation of OPEN's development, gives a snapshot of early data collected documenting the organization's impact, and outlines short-term research goals for building OPEN as an evidence-based professional learning platform.

OPEN'S 5-YEAR GROWTH

Total File Downloads
- 2015: 78 K
- 2016: 250 K
- 2017: 600 K
- 2018: 1.1 M
- 2019: 2 M

Total Membership
- 2015: 6,700
- 2016: 16,000
- 2017: 30,000
- 2018: 50,000
- 2019: 77,000

Total Students Positively Impacted
- 2015: 3.5 M
- 2016: 8.4 M
- 2017: 15.8 M
- 2018: 26.3 M
- 2019: 40.5 M

EMPOWERMENT THEORY

OPEN's dissemination design of access and instructional freedom is based Julian Rappaport's foundational work within the field of community psychology (1981). Rappaport proposed that social systems benefit from a balance of equality and freedom. Both of these forces are valued within western cultures. However, they exist in a paradoxical relationship. Too much freedom will limit equality, and too much equality will limit freedom. Empowerment resolves this paradox and exists at the point where freedom and equality are balanced. In practice this suggests that citizens faced with social problems must have equitable resources as well as the freedom to use those resources in unique and creative ways that take local culture and community needs into account.

In 2014, Jardine and Driedger brought Rappaport's work to the field of risk communication and charged risk communicators to use empowerment to, "focus research communication efforts on the issues of justice."

In 2015, socioeconomic inequities found within American educational systems were even more profound within the physical education community. Most physical educators lacked access to outcomes-based instructional materials that were both aligned to physical education standards and best-practices as well as to the academic rigor principles guiding the instruction in Math, Science and Language Arts. OPEN was built to help the physical education community overcome this inequity by empowering teachers with accessible resources that provided instructional freedom within a research-based framework. OPEN sought to provide educators both freedom and equality, and therefore empowerment.

INSTRUCTIONAL DESIGN

The OPEN development council began its backward-design process using the scope and sequence provided by the SHAPE America grade level outcomes for K-12 physical education (2013). These standards and learning outcomes provided a definition of rigor and a development road map for content creation.

In order to further align the curriculum content to evidence-based practices found in other academic content areas, OPEN referenced the work of Charlotte Danielson (2013) and Robert Marzano (2014). Danielson's domains of teaching and Marzano's instructional rigor strategies were embedded into the DNA of every OPEN instructional module – past, present, and future.

Additionally, OPEN began to focus heavily on developing the academic language of physical education, health, and social and emotional learning. The work of Bowers and Keisler (2010) as well as Constantinou and Wuest (2014), informed the direction of OPEN's academic language resources and assessments, which are provided in every module.

OPEN was also one of the first publicly available resources to translate Norman Webb's Depth of Knowledge Levels (2002) for the physical education classroom. Tiered questioning has been shown as an effective way to ensure rigorous teaching and learning. Every OPEN learning activity includes depth of knowledge question sets for teacher reference and application. This comprehensive approach to content design sets OPEN apart from traditional physical education and physical activity curriculum resources.

In the Fall of 2019, OPEN extended its development work with the release of an Early Childhood Movement module based on the Multisensory Multilevel Health Education Model for Diverse Communities (Williams & Swierad 2019). This evidence-based framework merges functional design components from three main domains: art, culture, and science.

Using this framework, OPEN and Hip-Hop Public Health partnered to create the Rhythm & Move Early Childhood Movement program designed to teach young children about emotional and behavioral self-regulation, relationships with other children, and basic nutrition education concepts. The program includes comic book art, hip hop music, movement exploration, and nutrition education in order to help teachers work toward early learning developmental indicators.

Over the course of 5 years and across all grade levels and targeted content areas, OPEN's backward-design process has been built upon a research-based foundation. Further, the OPENPhysEd.org electronic dissemination platform makes OPEN's ongoing program development system both sustainable and accessible to all educators.

PROFESSIONAL LEARNING

In an effort to further empower physical education and activity leaders, OPEN began to provide on-site professional development in the Summer of 2015. At that time OPEN had 3 certified physical educators coached and qualified as OPEN trainers. By the end of 2019, OPEN had built, trained and certified a professional development cadre of 67 OPEN National Trainers. In 2019, OPEN delivered 267 onsite professional development events to more than 18,000 teachers.

The foundational infrastructure for OPEN's cadre was built using the Professional Development Practices document created by the Centers for Disease Control and Prevention (CDC) and RMC Health (2017). The goal was to build an infrastructure that was sustainable and effective in delivering professional learning experiences and support for thousands of teachers per year. OPEN used the CDC's Training of Trainers Model and evaluation guide to prepare and grow its national training team.

Then, in early 2019, OPEN began the process of integrating the Learning Forward Standards for Professional Learning (2011) into its development, training, and evaluation process. This evolution retains the important aspects of a training cadre from the CDC/RMC Health model, while focusing professional learning outcomes on improving teacher effectiveness in order to drive student results.
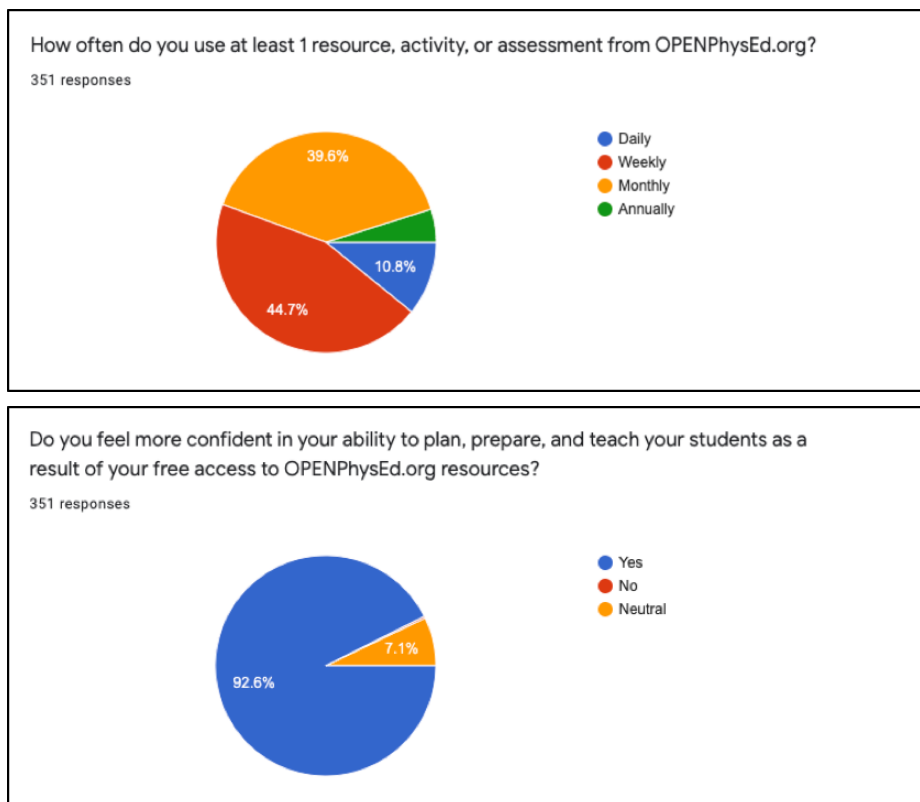
EVALUATION OF OPEN'S IMPACT

The rapid growth of OPEN's reach has forced the organization's infrastructure and resources to focus on development and dissemination in an effort to keep up with teacher demand. However, the partnership with the State University of New York Research Foundation and The State University of New York College at Cortland has enabled OPEN to collect early data from the outset of the project. These data are currently used for internal evaluation, and inform planning for future research studies, with the goal of publishing the results in peer-reviewed journals. The SUNY Cortland AMP Lab is tasked with helping to collect data and to assist with ongoing development of outcomes-based content.

TEACHER SELF-REPORTED IMPACT SURVEY

In December of 2019, OPEN collected pilot data from impact surveys from 351 members in an effort to understand how often these members used OPEN resources, activities, or assessments, and to understand OPEN's impact on teacher efficacy. The results were overwhelmingly positive with greater than 50% of members using OPEN content daily or weekly and an additional 40% using OPEN content monthly. Additionally, 92.6% of the members reported feeling more confident in their ability to plan, prepare, and teach as a result of free access to OPEN resources. 7.1% felt neutral on this item.

The data suggest that OPEN is being used on a consistent basis by a large percentage of its members, and it also suggests that a positive association may exist between OPEN and teacher efficacy. This early look at OPEN's impact on its membership will help focus future studies on accessibility, sustainability and effectiveness.

How often do you use at least 1 resource, activity, or assessment from OPENPhysEd.org?

351 responses

- Daily
- Weekly
- Monthly
- Annually

39.6%
10.8%
44.7%

Do you feel more confident in your ability to plan, prepare, and teach your students as a result of your free access to OPENPhysEd.org resources?

351 responses

- Yes
- No
- Neutral

92.6%
7.1%

OPEN AND PECAT

In 2019, OPEN began work to analyze all of their published curriculum content using the Centers for Disease Control and Prevention Physical Education Curriculum Analysis Tool (PECAT). By the end of 2019, a preliminary analysis had been conducted on all primary (grades k-2) curriculum content and intermediate (grades 3-5) curriculum content.

PECAT RESULTS (GRADES K-5)

Grades K-2 Standard Outcomes	Percentage of Outcomes Addressed
Standard 1 Outcomes	88% by content and assessment
Standard 2 Outcomes	100% by content
Standard 3 Outcomes	75% by content
Standard 4 Outcomes	83% by content and assessment
Standard 5 Outcomes	67% by content

Grades 3-5 Standard Outcomes	Percentage of Outcomes Addressed
Standard 1 Outcomes	83% by content and assessment
Standard 2 Outcomes	80% by content and assessment
Standard 3 Outcomes	100% by content and assessment
Standard 4 Outcomes	94% by content and assessment
Standard 5 Outcomes	92% by content and assessment

With 33 instructional modules for grades k-5, OPEN provides teachers with more than enough content to fill an entire year of physical education across all elementary grade levels. However, in an effort to fully address all of the SHAPE America Grade-level Outcomes, the PECAT evaluation suggests that further work can be done to build both learning activities and assessments – most notably for grades K-2. This type of detailed analysis is critical to the outcomes-based development process and will guide content creation in 2020. OPEN's PECAT evaluation for Middle and High School grades is currently underway.

SOCIAL MEDIA SENTIMENT ANALYSIS

This past year OPEN conducted a sentiment analysis using Netlytic, a cloud-based text and social networks analyzer that is used to summarize sentiment and climate across communication networks. OPEN actively seeks to build its online learning community across several social media platforms. Its biggest platform is on Twitter with a network of more than 14,000 followers. We analyzed the sentiment towards the @OPENPhysEd twitter handle across a 30-day sample in March 2019.

The analysis discovered overwhelmingly positive sentiment for OPEN on social media with 208 posts featuring 223 "good" feelings and 5 posts that included "bad" feelings. Further analysis of each of the "bad" sentiments it can be concluded that even the "bad" words were used with positive intent. The post below provides insight.

> Left Cortland at 9:30pm Monday Made it to Buffalo around 12:30am The @NYSAHPERD WZ conf at 8am Back to Cortland to by 5pm Tuesday. Tired but inspired by the awesome group of **#PhysEdTs** I shared **@OPENPhysEd** with today! **#teachershelpingteachers**

In this post the teacher had shared OPEN resources at a regional conference. The "bad" feeling was flagged by the word "tired." However, you can see that in this context the overall sentiment was good.

Of additional interest in this analysis was the flagging of "neutral" words that appeared frequently in social media posts. Of these "neutral" terms the following words were most relevant to the mission and work of OPEN: Free (61 appearances), Team (45 appearances), Resources (47 appearances).

It's important to note that Twitter accounts belonging to employees of OPEN, BSN Sports, US Games and SUNY Cortland were removed from this analysis in order to ensure an evaluation of the greater community of followers.

PROFESSIONAL DEVELOPMENT PARTICIPANT EVALUATIONS

Throughout the 2019 calendar year OPEN collected 2,339 formal evaluations of onsite professional development events. Evaluations were collected using a Google Form and were completed by teachers before they left the event venue. Each survey included 6 items.

Item 1:
Overall, how would you rate the quality and usefulness of today's presentation?
(1=Poor to 4=Fantastic)
Average score: 3.88 out of 4 ★★★★

Item 2:
The presenter demonstrated comprehensive knowledge of subject matter.
(1=Disagree; 2=Somewhat Disagree; 3=Neutral; 4=Somewhat Agree; 5=Agree)
Average score: 4.93 out of 5 ★★★★★

Item 3:
The presenter conveyed the content clearly and effectively.
(1=Disagree; 2=Somewhat Disagree; 3=Neutral; 4=Somewhat Agree; 5=Agree)
Average score: 4.90 out of 5 ★★★★★

Item 4:
The presenter helped me understand how the workshop material related to my environment.
(1=Disagree; 2=Somewhat Disagree; 3=Neutral; 4=Somewhat Agree; 5=Agree)
Average score: 4.89 out of 5 ★★★★★

Item 5:
The session was well organized, and time well spent.
(1=Disagree; 2=Somewhat Disagree; 3=Neutral; 4=Somewhat Agree; 5=Agree)
Average score: 4.89 out of 5 ★★★★★

Item 6:
I gained new knowledge and usable skills and will be able to apply them.
(1=Disagree; 2=Somewhat Disagree; 3=Neutral; 4=Somewhat Agree; 5=Agree)
Average score: 4.89 out of 5 ★★★★★

The number of surveys collected is noteworthy with a sample size of more than 2,000 participants. Additionally, evaluation data suggest that OPEN professional development events are well received, effective, and well organized. This early success underscores the need for more validated and peer-reviewed work to be done with OPEN in this area. The ability to survey such a large sample size can provide important insights into the professional learning needs of educators. OPEN is well positioned to facilitate data collection in this area.

# EFFECTIVENESS OF THE OPEN TRAIN THE TRAINER MODEL

In the Summer of 2015, OPEN began the process of formally preparing a cadre of OPEN National Trainers. The first OPEN National Trainers Conference was held in the AMP Lab on the SUNY Cortland campus and included a group of 8 OPEN National Trainers. In July of 2019, 67 OPEN National Trainers participated in the OPEN National Trainers Conference at the Frisco Hotel Convention Center in Dallas, Texas. Data on trainer efficacy was collected at baseline, pre-workshop and post-workshop to measure the training effectiveness.

The study included a sample size of 19 teachers/trainers with an average of 18 years of teaching experience. Three electronic surveys were given using modified questions from the Physical Education Teaching Efficacy Scale published by Humphries, Hebert, Daigle, and Martin (2012).

Data was collected in 3 competency intervals. The baseline trainer self-efficacy score was recorded at point 1. At point 2, all trainers had received 5 weeks of focused homework leading up to the conference. Finally, point 3 records the efficacy score at the completion of the conference. As illustrated in the graph below, there was significant improvement in trainer efficacy from point 1 to point 3 as a result of this train the trainer professional learning experience.

As the OPEN National Training team continues to move toward the Learning Forward Standards for Professional Learning, the success of this study will help inform the process and content of future train-the-trainer studies.

ESTIMATED MARGINAL MEANS OF MEASURE 1

Error bars: 95% CI
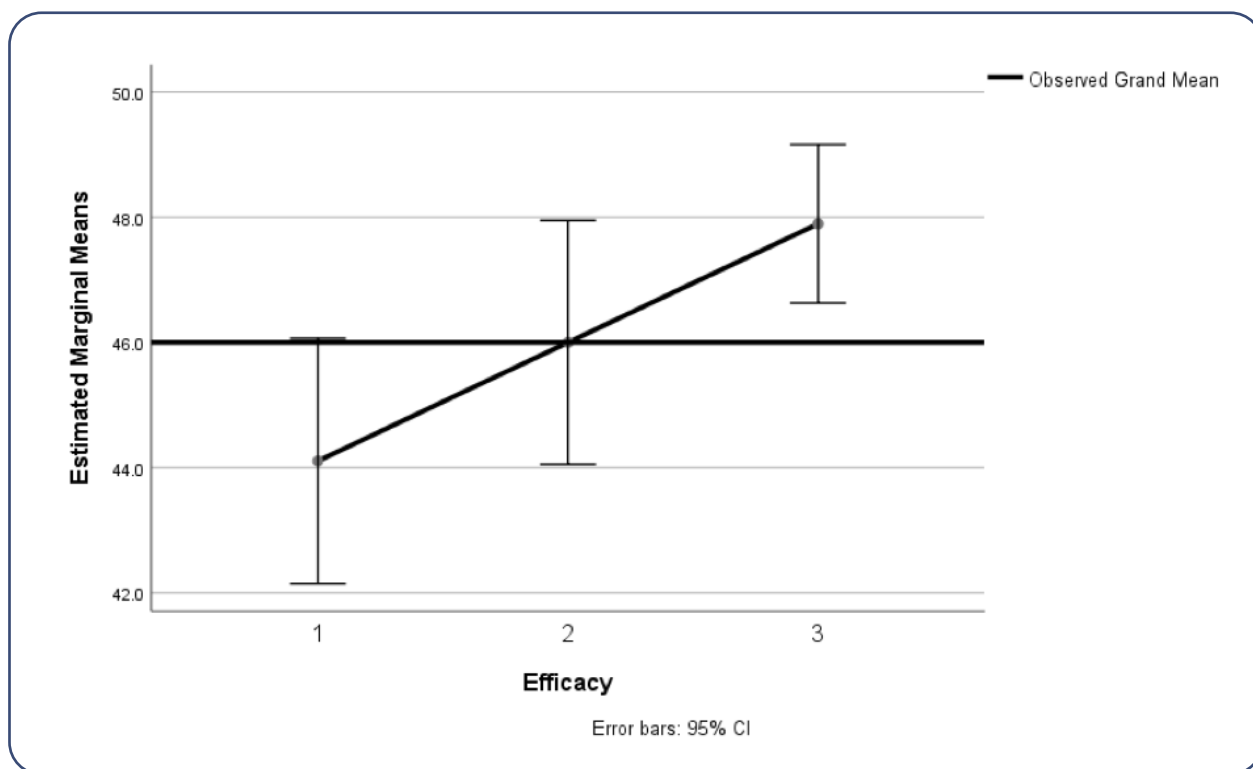
WORKING TOWARD AN EVIDENCE BASE

In an effort to continually promote teacher and student empowerment through the balance of freedom and equality, OPEN seeks to provide tens of thousands of educators with flexible instructional tools that are developed using research-based and evidence-informed best practices. The challenges that this type of dissemination face are compounded by the pace at which the instructional resources are being consumed and shared throughout the country and the world.

Currently, the quality of content being developed and the effectiveness of professional learning experiences being delivered remain OPEN's top priority. The collection of data so far has focused on teh internal evaluation of these two priorities. The evolution of this process will shift the process from an internal evaluation to a peer-reviewed evaluation. OPEN invites other research organizations to begin using its outcomes-based resources for interventional studies in an effort to build a strong evidence base for the field.

For more information please contact:
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About BSN Sports: Dallas-based BSN SPORTS is the leading marketer, manufacturer and distributor of sporting goods apparel and equipment. A division of Varsity Brands, BSN SPORTS markets and distributes its products to over 100,000 institutional and team sports customers in colleges and universities, middle and high schools, and recreational programs throughout the United States via catalog, e-commerce, and direct sales. Focused on providing game changing solutions through local partnerships, multi-brand selection and one-stop shopping for equipment and uniforms, BSN SPORTS' more than 3,000 employees have been helping elevate participation in team sports since 1972. For more information about BSN SPORTS please visit www.bsnsports.com.

RESOURCES

Bowers, E. & Keisler, L. (2010). Building academic language through content-area text. Strategies to support English language learners. Huntington Beach, California. Shell Education.

Centers for Disease Control and Prevention School Health Branch, & RMC Health (2017). CDC professional development practices. Retrieved 4 April, 2019, from https://www.cdc.gov/healthyschools/tths/pd_practices.htm.

Constantinou, P. & Wuest, D. (2014). A quick toolkit for enhancing academic language in physical education academic language. 10.13140/RG.2.2.17584.66568.

Danielson, C. (2013). The framework for teaching evaluation instrument, 2013 instructionally focused edition. Retrieved 17 January, 2017, from https://usny.nysed.gov/rttt/teachers-leaders/practicerubrics/Docs/danielson-teacher-rubric-2013-instructionally-focused.pdf

Foley, J., Hart, A., MacDonald, L. (2020). "Leading beyond the PETE program: How the OPEN and SUNY Cortland partnership impacts K – 12 physical education." National Association for Kinesiology in Higher Education National Conference, 9 January 2020, Indian Wells, CA. Conference Presentation.

Hess, K. K., Jones, B. S., Carlock, D., & Walkup, J. R. (2009). Cognitive rigor: blending the strengths of Bloom's taxonomy and Webb's depth of knowledge to enhance classroom-level processes.

Humphries, C. A., Hebert, E., Daigle, K., & Martin, J. (2012). Development of a physical education teaching efficacy scale. Measurement in Physical Education and Exercise Science, 16(4), 284-299.

Jardine, C.G., & Driedger, S.M. (2014). Risk communication for empowerment: An ultimate or elusive goal? In J. Arvai & L. Rivers III (Eds.), Effective risk communication (pp. 258-276). New York: Routledge.

Killion, J., & Crow, T. L. (2011). Standards for professional learning. Learning Forward.

Marzano, R. J., & Toth, M. D. (2014). Teaching for rigor: A call for a critical instructional shift. Learning Sciences Marzano Center Monograph.

Online Physical Education Network (2020). All Website Data OPENPhysEd.org. Retrieved 1 January, 2020 from https://analytics.google.com/analytics/web/#/report-home/

Rappaport, J. (1981). In praise of paradox: A social policy of empowerment over prevention. American Journal of Community Psychology, 9(1), 1-25.

SHAPE America. (2013). Grade level outcomes for K-12 physical education. Reston, VA: Author.

Webb, N. L. (2002). Depth-of-knowledge levels for four content areas. Language Arts, 28 (March).

Williams, O., & Swierad, E. M. (2019). A multisensory multilevel health education model for diverse communities. International Journal of Environmental Research and Public Health, 16(5), 872.