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Building of Causality: A Future for School Librarianship Research and Practice

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FEATURE

BUILD OF *Causa*

A Future for School Librarianship Research and Practice

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Wouldn't you like to see into the future, to know which of your many activities will actually make a difference in the lives of the learners you touch? This issue of *Knowledge Quest* centers on the future of librarianship, that is, what is ahead for our professional practice, the way we conduct it, the way we measure success, and how we communicate this value to others. While telling school librarians to be "data driven" is instructive and certainly forward-looking, this commandment lacks a key element that we reinforce to our learners and colleagues: to understand which changes work, we must contrast intended future outcomes with knowledge of documented past outcomes. The difference between the two tells us whether and how our efforts to affect our communities through a particular program, lesson, expenditure, or collection element has made the impact we needed.

The Colorado Study (Lance, Wellborn, and Hamilton-Pennell 1993) and its many replications in other states have demonstrated that when educators and learners had access to a qualified school librarian in the context of a thoughtfully built, adequately resourced, technology-rich, and widely accessible school library, learners tended to flourish on traditional measures of reading and science achievement, regardless of the district or community's relative wealth and other external factors (Scholastic 2016). This correlational research has been vital for communicating the value of school librarians and school libraries to decision makers and other stakeholders. This entry point has also allowed the *Causality: School Libraries and Student Success II* (CLASS II) researchers to take the next step of framing an agenda to conduct research to show how school librarians "cause" improved learner outcomes.

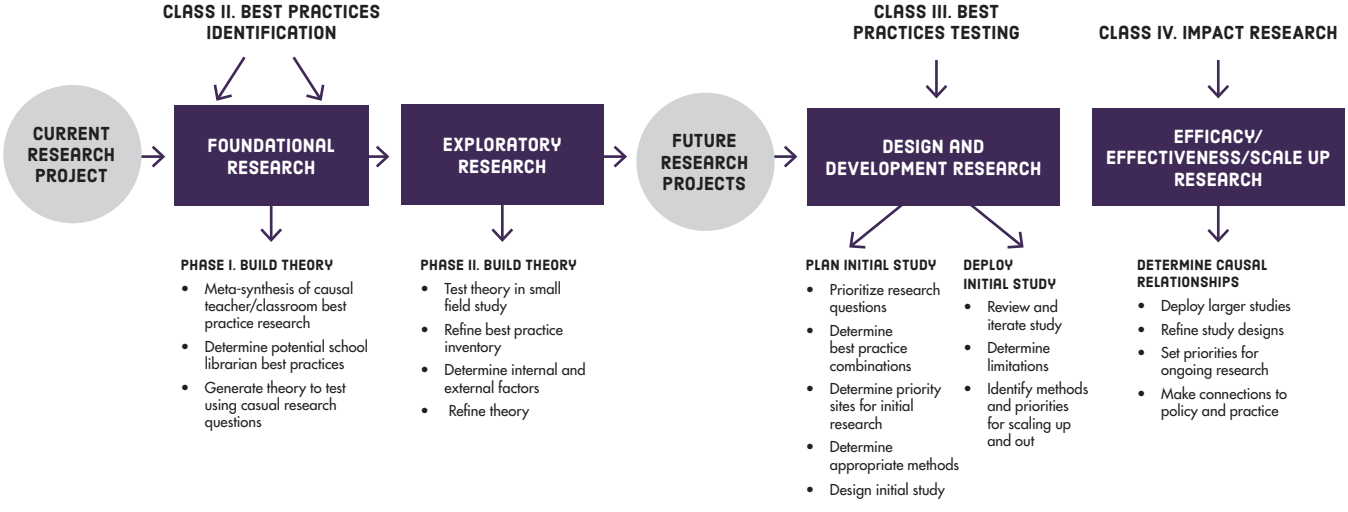
The CLASS II project, funded by a research grant awarded to the American Association of School Librarians (AASL) by the Institute for Museum and Library Services (IMLS), is aimed at establishing the foundation for comparison and groundwork for causal research. In this article, we share the CLASS research agenda and progress to date and demonstrate how this effort to chart the future of school librarianship research has the potential to guide and strengthen professional growth and implementation. The resulting knowledge will help school librarians create meaningful, authentic learning experiences that impact and influence the next generation of learners.

Our Heritage

Since the Colorado Study and its replications were conducted, the U.S. educational context has changed significantly. Technology has continued to transform education, and three decades of political and social change have made engaging learners with digital tools and technical competencies crucial for their future learning and future career plans. To ensure that this preparation is taking place and resulting in effective experiences, educational policymakers have increasingly embraced and required detailed levels of evidence and accountability measures.

In response to these changes, in April 2014 AASL convened a group of educational researchers at a national forum called *Causality: School Libraries and Student Success* (now known as CLASS I). At the CLASS I meeting, researchers from across the country discussed and debated the potential for causal research in school librarianship. The symposium participants explored

Figure 1. CLASS research agenda phases.



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the complexity of separating the influence of effective certified school librarians from the influence of the physical spaces and resources of school libraries. Participants raised questions about defining learner achievement when they asked whether measures besides standardized test scores—measures such as discipline referrals, attendance, or graduation rates—should be considered. Audience members passionately called for greater clarity about how we, as a profession, defined and measured information fluency and the indirect impacts of school librarians who work with other educational professionals to improve learner outcomes. Dr. Thomas Cook, an expert in causal research methods, led a panel of experienced researchers who explained the methodological challenges of these issues. From this rich discussion, the symposium leaders drafted a white paper (AASL 2014) that established an ambitious ten-year agenda for school library research directed toward building causal research. A key feature of the white paper was a graphic that illustrated how the agenda might unfold, as figure 1 shows.

As figure 1 depicts, the symposium leaders distilled the discussion and proposed a research agenda in line with the *Common Guidelines for Education Research and Development* (Institute of Education Sciences and National Science Foundation 2013), the prevailing guide to federal views of best practice in educational research. The CLASS forum research agenda (AASL 2014) builds a thorough and elaborate approach to causal research that will ultimately align school library research with federally recognized scientifically based empirical research. Unlike single case studies or small-scale action research implementations, each part of the study phase of the research agenda builds on the one before, all leading to the ultimate goal of research that clearly identifies the causal implications of school library practice.

Using the Past to Predict the Future

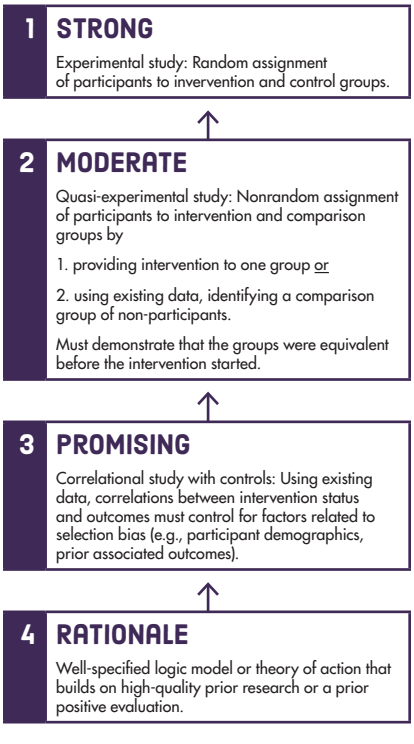
Work on the agenda has begun with the CLASS II research project. The CLASS II project began in late 2015 with teams of researchers from Florida State University (FSU), Old Dominion University (ODU), and the University of North Texas (UNT) who were tasked with implementing the first phase of the research shown in figure 1. As with most research, an important first step was uncovering what we already know about the problem. Guided by the research question "What causal relationships exist between school-based malleable factors [i.e., aspects within the school environment that can be controlled] and learner outcomes?" the three teams have been engaged in a major aggregation and synthesis of existing high-quality experimental and quasi-experimental causal research published since 1985. To enhance the breadth of the studies in the data set, each of the teams has taken a slightly different approach to data collection:

- FSU examined the studies included in the U.S. Department of Education's Institute of Education Sciences (IES) What Works Clearinghouse (WWC) <https://ies.ed.gov/ncee/wwc>. To provide educators with the information to make evidence-based decisions, the WWC contains research on programs, products, practices, and policies in education.
- The ODU team focused on searching several leading periodical databases and "snowballing" the causal research they found by gathering and reviewing articles in the articles' reference lists.
- The UNT team used the Scopus database to deeply examine library and information studies (LIS) literature for causal studies.

The resulting data set, composed of over four hundred studies, contains causal education research studies that document causal relationships between things educators do and significant positive learner outcomes.

The passage of the Every Student Succeeds Act (ESSA) and the subsequent release of guidelines regarding levels of evidence for educational interventions (U.S. Dept. of Ed. 2016) underscored the immediacy of the work undertaken by the research teams. Figure 2 illustrates ESSA's levels of evidence and the types of study designs that must be used to produce a study meeting a particular evidence level.

Figure 2. ESSA levels of evidence (adapted from Herman et al. 2017).



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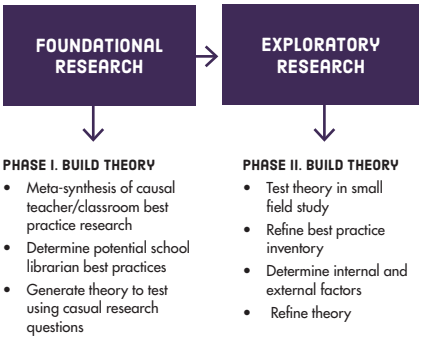
This predisposition for autonomous learning can with a foundation of evidence, school **LIBRAR** learning ecosystem as the future needs of the

As figure 2 shows, "strong" is the strongest level of evidence because all studies in this category include experimental designs with random assignment of participants to intervention and control groups. The next level of evidence, "moderate," is closely related, as the short arrow suggests. A study that has been categorized as producing moderate evidence will include a quasi-experimental design, less rigorous because either participants are not randomly assigned to groups or participants are compared to others who did not participate in the study rather than compared to a control group. The next level of evidence, "promising," has considerably less strength; as the arrow length indicates, the evidence is considerably further from the ideal. Studies in the promising category are correlational, not causal, with a sample that is controlled for selection bias. Finally, "rationale," the lowest level of evidence, as indicated by the longest arrow, demonstrates the weakest evidence but is derived from a well-designed study based on a sound logic model or theory of action. The levels of strong and moderate correspond to the type of research CLASS II has been concerned with identifying.

As we write this in December 2017, the three teams are working through their aggregated studies to verify and synthesize those that represent strong and moderate research; these two levels are considered the "gold standard" by federal educational policymakers. However, many excellent studies fit into the promising and rationale levels. These latter two levels of evidence are important foundations for understanding which interventions are candidates to be used in study designs likely to produce strong or moderate evidence. Studies at the promising and rationale levels also provide important depth and detail to understand why and how factors studied in experimental and quasi-experimental designs work for learners.

As we verify our data, we are following what IES and NSF (2013) have called "Foundational Research" by grouping the studies by topic and synthesizing the study findings to identify educators' classroom best practices. These practices will allow the researchers to build theories that will be tested in subsequent studies of school librarians in school libraries. Figure 3 illustrates the components of foundational research and the following phase of theory testing.

Figure 3. CLASS II phases of identification of best practices.



As figure 3 suggests, we will take the findings from the foundational stage of the research to develop theories about which factors might be fruitful for causal studies about the impact of a school librarian on learner achievement. For example, we have synthesized the significant findings and conclusions from research in the strong and moderate categories illustrated in figure 2 that reported that when learners were taught systematic means for problem solving, they were able to use those skills to increase their mathematics achievement. (Examples of these studies include Cardelle-Elwar 1995; Hembree 1988; Jitendra, DiPipi, and Perron-Jones 2002.) Because school librarians also teach problem solving in many different types of schools,

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be **NURTURED** from an early age, and, **IANS CAN CONTRIBUTE** to this workforce evolve.

this effective classroom practice is opportune for causal study in a school library context. In the coming months, we will be publishing similar syntheses with possible school library research directions in leading educational research journals.

As we continue to refine and finalize the syntheses, we will generate a series of theories, based in strong and moderate evidence, to be tested in the field by school librarians in authentic school library contexts. The results of these field studies (illustrated in the "Exploratory Research" phase of figure 3) will demonstrate which of the theories is ready to be examined in a larger causal study using one of the project designs shown in the "Future Research Projects" area of figure 1. In the coming months, the field studies will begin at selected sites throughout the U.S.

CLASS II research has the potential to affect more than school librarians who are already in service. To take our problem solving example further, if future causal research studies also conclude that school librarians' problem-solving instruction makes a difference in learners' mathematics achievement, then this finding not only suggests that school librarians might seek collaboration with mathematics educators in this area but also might engage in mathematics professional development to hone school librarians' own problem-solving knowledge and instructional strategies. Because mathematics is a curriculum area rarely included in studies of collaboration between educators and librarians, the evidence that school librarians' problem-solving approaches are effective may drive pre-service educators to more strongly focus on problem solving in the pre-service curriculum and include mathematics faculty in the design of those units. Because school librarians also teach visualization and data skills, close work with mathematics educators in the areas of problem solving and interpreting data and statistics may help learners gain the kinds of skills needed for college and career.

Causality and the Future of School Librarianship

To justify investments, educational policymakers require that state departments of education provide them with evidence that all educators are engaging in practices that definitively improve learner outcomes. For too long, school librarians have been expected to be as effective as classroom educators but have not had the tools to produce accepted evidence of their effectiveness. The ultimate goal of the CLASS II project is to provide those tools. Certainly the profession's foundation of correlational studies has allowed the likelihood of school librarians' effectiveness to remain a relevant topic. Now is the time to take this pursuit further, and the stakes have never been higher.

To evolve education systems and learning for the demands of a changing workplace, K–12 educators are expected to prepare learners to navigate not only to the next level of school but also to understand how to approach complicated problems that will challenge today's learners when they are part of tomorrow's workforce. In partnership with policymakers, school administrators, and classroom educators, school librarians have a strong role in improving core and technical curriculum knowledge with its new emphasis on creativity, critical systems thinking, lifelong learning, and growth (Manyika 2017). The future of job training in a technological age will require learners to cultivate relevant skills, capabilities, and attributes, such as

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emotional intelligence, curiosity, creativity, adaptability, and critical thinking (Rainie and Anderson 2017). Learning will often need to be self-directed and offered beyond traditional education systems or delivery formats.

This predisposition for autonomous learning can be nurtured from an early age, and, with a foundation of evidence, school librarians can contribute to this learning ecosystem as the future needs of the workforce evolve. Future librarians will scaffold digital literacy to support the learning personalization and create authentic learning practices (Adams Becker et al. 2017) that link education to real-world experiences. AASL's *National School Library Standards* express this future based on six Shared Foundations: Inquire, Include, Collaborate, Curate, Explore, and Engage (AASL 2017). As learning increasingly transcends and blends the classroom with other physical and digital environments (Beck 2015), school librarians will model and mentor these key commitments to not only impact how K–12 education supports technology and information literacy development but also to cultivate learners' lifelong contribution to a knowledge-based society.

The CLASS II researchers' in-depth look at educational research suggests that positive learning outcomes have the potential to be causally linked to school librarians' work in exposing learners to the foundations of digital literacy, digital citizenship, responsible and creative technology use (Adams Becker et al. 2017), inquiry-driven investigation (Diekema, Holliday, and Leary 2011), and knowledge construction in makerspaces (Moorefield-Lang 2014). School librarians' role in a school's readiness to infuse information literacy in curriculum is also a fertile area of exploration (Tan, Kiran, and Singh 2015). Causal research can help identify critical roles for school librarians in ensuring that social justice is present in library and pedagogical decisions around information technology (Dadlani and Todd 2015). The future of education, as reflected in these trends and our new *National School Library Standards*, offers bountiful opportunities to collect evidence to uncover causal relationships between school librarians' activities and positive learner outcomes; ESSA has given us the language to use and the milestones to meet for this evidence to matter.

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Sue C. Kimmel *is an associate professor at Old Dominion University (ODU) in Norfolk, Virginia, where she is graduate program director of the library program. She is a member of the ODU CLASS II research team and author of the book* Developing Collections to Empower Learners *(AASL 2014). Among her other recent publications is " 'It Was…the Word 'Scrotum' on the First Page': Educators' Perspectives of Controversial Literature" (coauthored by Danielle Hartsfield) to be published this year in* Journal of Teacher Education.

Laura Pasquini *is a lecturer at the University of North Texas in Denton. She recently coauthored the New Media Consortium's* 2017 Digital Literacy Impact Study*; the May 2017 article "Selective Openness, Branding, Broadcasting, and Promotion: Twitter Use in Canada's Public Universities," published in* Educational Media International*; and the paper "Sociotechnical Stewardship in Higher Education: A Field Study of Social Media Policy Documents," published in the August 2017 issue of* Journal of Computing in Higher Education.

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Many of us are familiar with the very important warrant to investigate the causal relationship between what school librarians do and how learners thrive and academically achieve. K–12 educators are increasingly expected to deliver learner-centered learning approaches, technology-based support, and effective assessment (Freeman et al. 2017). As the role of classroom educators evolves and broadens, school librarians are inevitably included in and affected by this paradigm shift. As school librarians, we know that we, in and beyond the school library, are well positioned to meet the needs of these pedagogical activities that require planning and access to new digital tools. However, as learners are challenged to demonstrate new skills and competencies beyond rote memorization and drill practices, we have a responsibility to determine how and why we are essential elements on this transformation. Causal research may forge a path for our profession by documenting the ways in which our efforts contribute to the most important future of all—that of our learners.

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