Awareness & Critical Thinking (ACT) Program:
How School Librarians Can Teach Children to Detect and Avoid Misinformation

Dr. Tara Zimmerman, assistant professor at Texas Woman's University, seeks funding in the amount of $362,402 through the Laura Bush 21st Century Librarian Program for the Awareness and Critical Thinking (ACT) Program. ACT is a three-year Early Career Development research project to investigate and strengthen school libraries' role in educating students about the dangers of online misinformation, how to detect it, and avoid it (Goal 2, Objective 2.2 for Early Career Development). The ACT Program extends the PI's past research (Alsaid et al., 2020; Khader et al., 2021; Zimmerman, 2018, 2022; Zimmerman et al., 2019, 2020a, 2020b, 2022), and builds upon her eight years of experience as a school librarian to conduct research in collaboration with librarians in two school districts using interview methods and content analysis. The PI employs mixed methods to study information behavior, misinformation, and information literacy. Her recent work introduced the concept of social noise as a factor in information behavior [Zimmerman, 2022].

Statement of Need – School-age children are using social media at increasingly higher rates (McClain, 2022), making them more susceptible to misinformation. This is particularly true of YouTube (Auxier et al., 2020). Young people today are increasingly exposed to misinformation, with one study indicating a 50% increase between 2018 and 2020 (Howard et al., 2021). The spread of misinformation via social media is considered a threat to democratic societies (Olaniran & Williams, 2020), influencing social issues, political attitudes, and trust in traditional media (Mitchel, Shearer, & Stocking, 2021). Thus, there is a need for a program or curriculum specifically focused on teaching these digital literacy skills. K-12 schools can support this need for increased information literacy, providing students with these critical skills as part of their primary and secondary education. Recent examples of researchers developing ways to educate children about the dangers of misinformation include Colwell, Hutchison, & Woodward's (2022) study of the ways digital tools and texts could be used to integrate various types of literacy in schools, as well as the University of Washington Information School misinformation escape room project (Paraschivoui et al., 2021). Studies have found that disinformation is best combated by teaching good information seeking practices (Sullivan, 2019), and school librarians, with their expertise in information literacy theory and practice, are ideal for implementing this type of instruction. Today's students will need the ability to evaluate information in order to lead healthy, productive lives in a democratic society. This approach benefits all K-12 students by laying a foundation of information literacy skills that will inform their decision-making well into adulthood.

Project Design - The ACT Program will be developed over a three year period and will consist of three main phases. The research team will include the PI, two graduate students in an ALA-accredited Master's program, and four school librarians. The team will present results at conferences and publish in scholarly and practitioner venues throughout the project. This research will address the following questions: RQ1: To what extent do school libraries teach information literacy skills, specifically identification of misinformation, to K-12 students? RQ2: What technology and information literacy skills, approaches, and teaching programs would be most effective in increasing students' awareness of misinformation and ability to detect it? RQ3: How effective was the implementation of this program, evaluated based on both objective measures of students' understanding of and ability to detect misinformation as well as on the subjective experiences of students, librarians, and other stakeholders? Research findings from the ACT Program will be shared throughout the grant period with library professionals, academics, and participating educators. Papers and presentations will be submitted to regional, state, national, and international conferences. Manuscripts will be submitted to peer reviewed journals, such as *Journal of the Association for Information Science and Technology* (*JASIST*) and practitioner publications for school librarians and administrators, such as *Knowledge Quest*, and venues that reach both audiences such as *School Library Journal*. The curriculum and teaching plan will be freely downloadable by any librarian or teacher.

Year 1: The project will begin with a survey of Texas school librarians with the support of the Texas Library Association and the Texas Association of School Librarians. This survey will assess information literacy skills currently being taught in K-12 schools, focusing on ways in which misinformation is addressed. Survey results will be analyzed using qualitative thematic analysis (Braun & Clarke, 2006) as well as statistical analysis. An advisory board for the project will be recruited, consisting of a school librarian, school administrator, K-12 curriculum writer, and learning technology specialist

representing a diverse range of perspectives who will provide expertise and be compensated for their time and input. The advisory board is not fully set at this time, but Donna Kerley of Denton (TX) Independent Schools and Amanda Kordeliski of Norman (OK) Public Schools have committed to serving.

Year 2: Based on findings from the survey, the PI will design a program to address the need for this type of education in schools. The PI will partner with the Denton (TX) Independent School District and Norman (OK) Public Schools and their school librarians to implement the program. Four librarians serving different grade levels in the Districts will be invited to participate and will be compensated for their time throughout the school year. The program will most likely take the form of a curriculum and teaching plan that will guide school librarians serving various grade levels to instruct students in understanding the threat of misinformation and develop skills to detect and avoid it. The program will take place for a full school year, with student data being collected throughout the year to assess progress made. At the beginning of the program, students will be tested to establish a baseline of information literacy regarding misinformation and will be tested again at the end of the year to measure progress. In addition, participating librarians, classroom teachers, and students will be interviewed at various stages of the process to collect data about implementation, stakeholder response, and overall impacts of ACT. Interview data will be analyzed using thematic analysis (Braun & Clarke, 2006).

Year 3: An outside evaluator from the University of North Texas College of Education will perform an external review of the program. Data collected from students, librarians, and the external review will be analyzed and used to modify and improve the curriculum and teaching plan as needed. A full, scaffolded version of the curriculum and teaching plan will be created online and made available to other schools for implementation, along with teaching tips and examples gained from the program. The research team will launch and promote the curriculum by attending LIS workshops and conferences, presenting it to school librarians, and giving examples of its implementation and effectiveness with students.

Broad Impact - This research will guide school librarians in teaching students about the dangers of misinformation with the goal of increasing their awareness and skills to resist misinformation. We will create and pilot this program in two large school districts. The diversity of schools in this district will ensure that the curriculum is tested by a wide range of students and educators representing different racial groups, economic backgrounds, and geographic circumstances. This diversity will help us design the ACT program to be transportable and scalable to schools of various types and sizes. By giving school librarians this tool to teach information literacy and awareness of misinformation, we are developing an intervention to address society's collective vulnerability to misinformation and implementing it at the K-12 level, with our youngest and most vulnerable citizens who will have the most impact on the long-term health of our information culture.

Diversity Plan - Diversity is a key factor in the success of the ACT Program because the curriculum developed must be scaffolded across grade levels, generalizable for all types of schools and communities, and accessible for students with a range of abilities. The curriculum and implementation process will be inclusive of schools, educators, and students from a variety of economic and geographic circumstances (rural/urban/suburban). Officially recognized as a Hispanic Serving Institution (HSI), Texas Woman's University is well-positioned to understand and serve minority and underserved populations. We will work with school districts in Denton, TX and Norman, OK to determine specific school sites for this project so that participating school librarians will encounter the broadest possible range of students and experiences. The majority of the student population in Denton ISD is non-white (57.7%), over one-third of students are considered economically disadvantaged, and one-fifth are considered English language learners. In Norman Public Schools, 44.6% of students are non-white and one-third are economically disadvantaged. Both districts encompass a range of school locations and demographics that can be targeted to maximize diversity of students participating in the ACT Program.

Budget - The estimated 3-year ACT Program budget is $362,402, including course buyout support for the PI for each semester of the project, reducing the PI's teaching load from 3:3 to 2:2 ($49,557); PI summer support ($44,898); tuition support and hourly wages for two Master's students ($60,380); travel, including school librarians' travel to conferences ($37,500); participant incentives for four school librarians ($40,000); materials and supplies ($4,797); consultant fees (23,000); fringe benefits ($36,155), and indirect costs figured at 42.7% of salary and wages ($66,115).