Impact of Online Journal Club On Educational Research Literacy: Introducing An Ongoing Project

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Abstract— **In the field of education science research and training on research literacy are still in their infancy. The strategy for enhancing the research literacy of students pursuing advanced degrees begins with their proficiency in reading research literature. This paper introduces an ongoing three-year research project that seeks to develop a theoretical framework for measuring educational research literacy, to implement a series of online journal club (OJC) events for global postgraduate students, and to evaluate the efficacy of OJC in increasing educational research literacy levels among participants. It solicits the participation of educational scholars as interviewees, OJC hosts, and/or research partners.**

Keywords—research literacy, journal club, active learning, researcher development, postgraduate research students

I. INTRODUCTION

In many universities, neither the faculty members nor the students in education science programs receive adequate training in research literacy. Research literacy skills enable researchers to participate in a larger scientific conversation about what studies are required to advance current research and practice, and they must be systematically taught, practiced, and honed so that researchers can make efficient and effective use of the available literature. Globally there is a continuous informality of the whole researcher development process, which leaves the maturity of researchers to chance [1]. Moreover, there are few studies on research literacy. On May 19, 2022, a search for "research literacy" in the titles/abstracts/keywords of all Scopus papers yielded only 192 results since 1996. Over half (59 percent) were about healthcare research literacy, striking the importance of research literacy as a tool to increase the participation rate of patients or other subjects in medical research projects [2], [3], or emphasizing its significance in healthcare education [4], [5], or investigating its impact on the engagement of evidence-based practices by healthcare professionals [6], [7]. Comparatively, there are far fewer studies on the research literacy of other subjects, such as educational research literacy (ERL) [8], [9].

Teaching methods of research literacy included poster presentation [10], didactic training and experiential workshops [11], animated videos [12], evidence-based practice [13], mnemonic strategy [14], and seminars [15]. Using journal club as a signature pedagogy was, however, not investigated in the research literacy literature and rarely applied in the education literature [16]. The journal club enjoys a long history of popularity among healthcare

scholars and practitioners [17], [18]. Its first informal appearance was in London in the middle of 1800s [19]. The first formal journal club in the academic settings was initiated at McGill University in 1875 [20]. The healthcare specialists and researchers may consider the journal club as "a group of individuals who meet regularly to evaluate critically the clinical application of recent articles in the medical literature" [20, p. 401]. To search the term of journal club within titles/abstracts/keywords of all publications in Scopus resulted in 2,538 records since 1900. An early investigation of the distribution of these publications by discipline found that journal clubs are most prevalent in healthcare-related fields, but have recently spread to other fields, such as science and engineering. The outcome confirmed that introducing the journal club to researchers and students in the field of education science will be a novel endeavor, and the associated research will be useful for understanding the journal club's potential as a pedagogy to train research literacy among a new audience.

The research literacy training was studied among a broad audience, including community members [11], [21], social workers [3], [22], university students [14], [23], [24], faculty members [15], [25], class teachers [26], nurses [6], and even chaplains [27]. The research subjects were frequently small in number, confined to a specific small region, and lacked a sufficient diversity of backgrounds to strongly support a favorable effect of the training. Along with the growth of the Internet, it is crucial to study how new web technologies might assist research literacy development online to engage a much bigger audience with open access, as well as how they can alter the structure of scholarly communities [28]. The author believed that a research literacy study that not only develops a theoretical framework to measure research literacy in the digital age, but also contributes empirical data from less-applied domains, such as education science, with a globally diverse audience as its research subjects, can be a significant contribution to the scientific discussions in research literacy, pedagogy, and eLearning. The purpose of this brief paper is to solicit feedback from peers as well as potential project participants and collaborators on an ongoing, three-year research project that was initiated in response to the perceived gap in research and practice identified above.

II. OUTLINE OF THE PROJECT

Impact of Online Journal Club on Educational Research Literacy: Towards New Model, Measurement, and Practice, or "OJC Project" in short, aims to conduct research and practice that can improve the understanding towards training and evaluating the educational research literacy. It will adopt the multiphase mixed methods design [29]. In this design, researchers conduct multiple mixed-

methods projects with a common objective, and this approach is popular in the evaluation or program implementation fields, where multiple-phase project is conducted. These projects may switch between quantitative, qualitative, and mixed-methods studies, but they build upon one other to achieve a common program goal. The same research design was utilized in the author's doctoral dissertation [30], and she has experience implementing it.

Between April 2022 and March 2025, three phases of study will occur over the course of three years.

A. Phase 1: Literature Review and Interviews

The purpose of the first phase of activities is to understand experienced researchers' literature reading strategies and develop the educational research literacy model. Two major research activities include critical literature review and individual interviews with education researchers. A thorough literature review using the methodology of Lin et al. [31] will analyze evaluation studies of research literacy and its synonyms in order to establish a theoretical framework for assessing research literacy as a competency. Interviews conducted online with experienced researchers in the field of education science will elucidate the literature reading techniques of experienced researchers, and their research literacy training experiences as both learners and instructors. The interview data will be analyzed using the comparative content analysis method proposed by Glaser and Strauss [32] as part of the grounded theory practice. This phase will produce a scale that may be used as a direct reference when creating or evaluating an educational program that attempts to promote or increase research literacy. The data will be examined, and the outcomes will inform the project's subsequent phase.

B. Phase 2: Survey Study

The second part of the project will create and evaluate a survey scale based on the scale from Phase 1. Researchers and students enrolled in education science programs throughout the world will be invited to participate in the online survey. Regardless of the number of questions in the questionnaire, a previous study indicated that "the participant size of 50 is very poor, 100 is poor, 200 is fair, 300 is good, 500 is very good, and 1000 is excellent" [33, p. 4]. "There are no fixed rules for use of sample size for a questionnaire for validation, but it is suggested to use sample size as large as possible to have higher respondents to question ratio" [34, p. 13]. The methodological technique for validating the survey instrument will be guided by Boparai, Singh, and Kathuria's [35] research.

C. Phase 3: Intervention and Experiment

Informed by the results of earlier phases, the third phase will conduct a series of OJC events with global educational academics as hosts and worldwide higher degree research students from programs connected to education sciences as participants. The events will be conceived and designed as an online educational intervention to improve the research literacy of postgraduate students in education science. At least two host researchers will be present in each event to analyze and present a high-quality, well-recognized scholarly article within the field. The OJC events will be held online using a Moodle-based learning management system and its integrated videoconferencing application BigBlueButton. The usage of online communication platforms like Twitter and LinkedIn will boost community participation and event promotion. Information and participation techniques are updated at: https://researchic.com.

The CLEAR instructional design model [36], which was developed by the author in 2021, will guide the creation of OJC events. Since its first appearance, the model has been validated by a pre-experiment as an effective instructional design approach to realize online active learning in the Moodle environment, and provide a self-regulated, fulfilling, engaging, and satisfying online learning experience that can significantly improve university students' cognitive understanding of a given topic [37]. Yet the small sample size led to many untested hypotheses. Therefore, this phase of research will adopt the CLEAR model to guide the design of OJC events so that real experiments with a larger audience can provide additional evidence to evaluate the model's effectiveness.

The CLEAR model is an acronym for Create, Learn, Extend, Apply, and Reflect [37] (Fig. 1).

- Create: To require students to produce tangible output as the class's primary assessment activity.

- Learn: To provide the foundational knowledge to students.

- Extend: To guide students to extend their learning beyond the classroom.

- Apply: To allow social feedback on each student's tangible output and facilitate interaction for peer learning (e.g., individual, group).

- Reflect: To aid students in becoming more learning-conscious individuals using critical thinking and reflective inquiry.
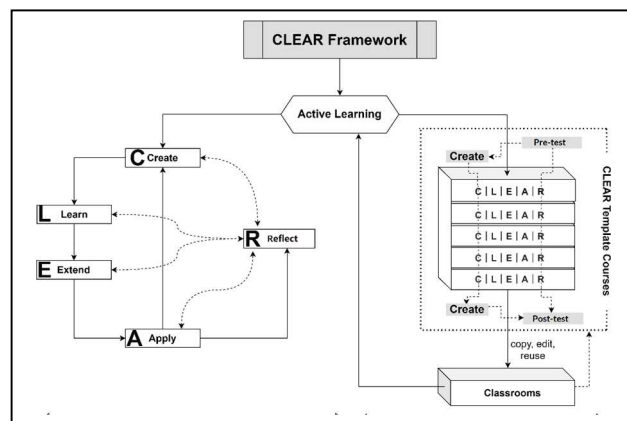

Fig. 1. The CLEAR instructional design model

The OJC events are slated to begin between October 2023 and January 2025 for a duration of one year. In addition to these occurrences, the author will undertake a pre- and post-test control group experiment. The objective is to assess the intervention's effectiveness in enhancing the research literacy of participants. The data will be analyzed applying the paired samples t test. It was proposed that a sample size of 34 would be sufficient for detecting differences between dependent means with a medium effect size, while 199 participants would be required for detecting differences with a small effect size [8].

III. CONCLUSION

Due to the perceived lack of scholarly studies and online practices on educational research literacy training, the OJC project will investigate the feasibility of using the online journal club as a pedagogy to improve the research literacy of higher degree research students. It will also provide education science students and early-stage researchers with an essential online training opportunity in educational research literacy. This short paper presents the plan for the ongoing OJC project with the purpose of soliciting peer evaluation and inviting academics to participate in the research (as interviewees, OJC event hosts, or/and collaborators). The OJC project has the potential to generate and pioneer a new field of eLearning, researcher training, and pedagogy due to its multidisciplinary nature. It will create new avenues for promoting open and reusable internet-based research literacy training for the worldwide audience.

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