The application of the Research-Action methodology in the context of New Media: Systematic Literature Review

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ABSTRACT

The interest in New Media has been increasing in research areas due to the growing amount of information and the constant development of technology. The form of information consumption has become more and more comprehensive and accessible, making it increasingly easier for society to identify the best and fastest ways of intervention to obtain relevant information for educational and social growth. However, there are still models of content transmission that need to be adapted to certain places, audiences, and needs, which requires more studies to identify the problem and beyond this, recognition of cause and effect in order to propose improvements in the process of social development. To act on social and educational problems, the Action-Research methodology presents itself as a possible solution. This methodology is characterized by constant collaboration between researchers and stakeholders living in the context of the problem, and the redefinition of solutions until the final goal is reached. Critical group thinking is thus central to the successful development of solutions to the problem at hand. Thus, this systematic literature review aims to identify and analyze the research conducted around New Media, with the implementation of the Action Research methodology. The SCOPUS database was used for the analysis, in which eight articles were found, with a time interval between 2015 and 2022, that used and operationalized the practice of Action-Research methodology to achieve the proposed empirical objectives, cyclically redefining the implemented actions in a participatory action context. This systematic literature review, further explores different contexts and areas of study, with the implementation of Action-Research methodology in relevant problems that are presented and analyzed through a meta-analysis. In this follow-up, in the meta-analysis it was possible to verify the diversity of contexts in the new means in the use of the methodology, not being permanent the area of education. In addition, the use of the methodology generated new perspectives for development and the possibility of future studies on the problems that were being investigated.

Keywords: Methodologies, Action-research, New media, Prisma.

1 INTRODUCTION

Each investigation must follow an explicit, disciplined, and systematic approach so that it leads to the most appropriate results (Mohajan 2018). Within the various existing methodologies, this article focuses on the Research-Action methodology, which emerged through Kurt Lewin, an influential personality in its dissemination, through his work on labor relations in the 1940s, in which he helped social workers to improve their practices. This paradigm was perfected by Lawrence Stenhouse and later by Stephan Kemmis and Jack Whitehead to study educational contexts in particular (Koshy 2010, as cited in Barden 2013). Carr

and Kemmins (1986), define the Research-Action methodology as systematic, reflective, directed to rationalize, understand, and improve practice (Barden 2013). Thiollent (2005) stresses the resolution of a collaborative problem in its definition. He also mentions that it is characterized by being a social investigation in which researchers and participants get involved in a cooperative and participatory way. Therefore, in this methodology, the people involved in the investigation actively participate in the search for a solution, together with the researchers (Ventura 2012).

Action-Research provides a study and an influence on society, thus aiming to promote interaction between science and practice, that is, if on the one hand it obtains information that would only be possible to collect through the "actors" involved in the situation investigation, on the other hand, contributes in practice to the solution of the previously created problem, in order to support the actors in the transformation of the situation (Thiollent 2005, as cited in Ventura 2012). Action is a pragmatic co-creation of knowledge "with", and not "about" people. In this way, any actor or participant will have a fundamental role in the scientific investigation to be developed, as well as creating an impact on the real and practical context in which It is involved.

The Research-Action methodology contemplates successive stages, designed by Kemmis & McTaggart (1988), giving the perception of the existence of a spiral, as it is possible to verify in Figure 1. The presented cycle implies, in a first phase, a plan, that is, what may result in individual and collective improvement, as well as the data collection plan. Action and observation are embedded in complex realities in which part of the planning will effectively be put into practice. At this stage the data will be results of the context in which it is inserted. Reflection is defined by a period in which meaning is attributed to the data or by discussion among peers about them. At the end of first cycle, we move on to a second in order to concretely explore the idea, and in order to implement improvements in what was found (Maxwell 2015).

Figure 1. Action research cycle by Kemmis & McTaggart (1988) (Maxwell 2015)
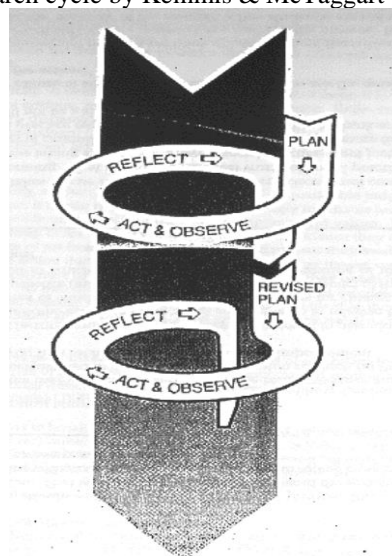
When good Action Inquiry takes place, stakeholders within a given context learn that they can explore rigorously about a given situation. It turns out that experts are not needed to do the research for someone else. As awareness of the issues increases, it is clearly understood how global challenges are linked to local problems, and vice versa, which will make citizen engagement fundamental and necessary for the development of practical knowledge. In short, it is known that Action-Research is being well developed when quality requires: (1) articulation of objectives; (2) partnership and participation; (3) contribution to the theory-practice of action-research; (4) suitable methods and processes; (5) capacity for action; (6) reflexivity and (7) meaning (Bradbury 2015).

In this context, the main objective of this article is to find out how the Action-Research methodology has been applied in practical cases of investigations carried out over a period of 10 years. With regard to the structure of the document, it was elaborated highlighting two parts: (1) Process of the systematic review of the literature through the PRISMA method and (2) meta-analysis of the investigations found in which the investigated methodology was used. The article ends with the highlight of the main conclusions and with the presentation of the bibliographical references.

2 SYSTEMATIC LITERATURE REVIEW PROCESS

This systematic literature review was developed following the guidelines of the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) method (Figure 2), which is defined by eligibility criteria; description of information sources; search strategies; selection process of studies relevant to the case; results and data synthesis (Moher et al, 2009). In this segment, the structure of this research is composed of: exploratory research and keywords; analysis and selection of studies and eligibility criteria for studies relevant to the topic.

2.1 EXPLORATORY RESEARCH AND KEYWORDS

The database used to develop the research was SCOPUS, which is the largest database that gives access to multidisciplinary subjects (ELSEVIER n.d.). The keyword selected for this investigation, chosen in the classroom context, was "action research" AND "new media". In order to start the systematic review of the bibliography, the search was filtered by "Title, Abstract, Keywords" in order to have enough information to search for articles that focus on the theme in question. Consequently, the database presented n= 38 documents for analysis.
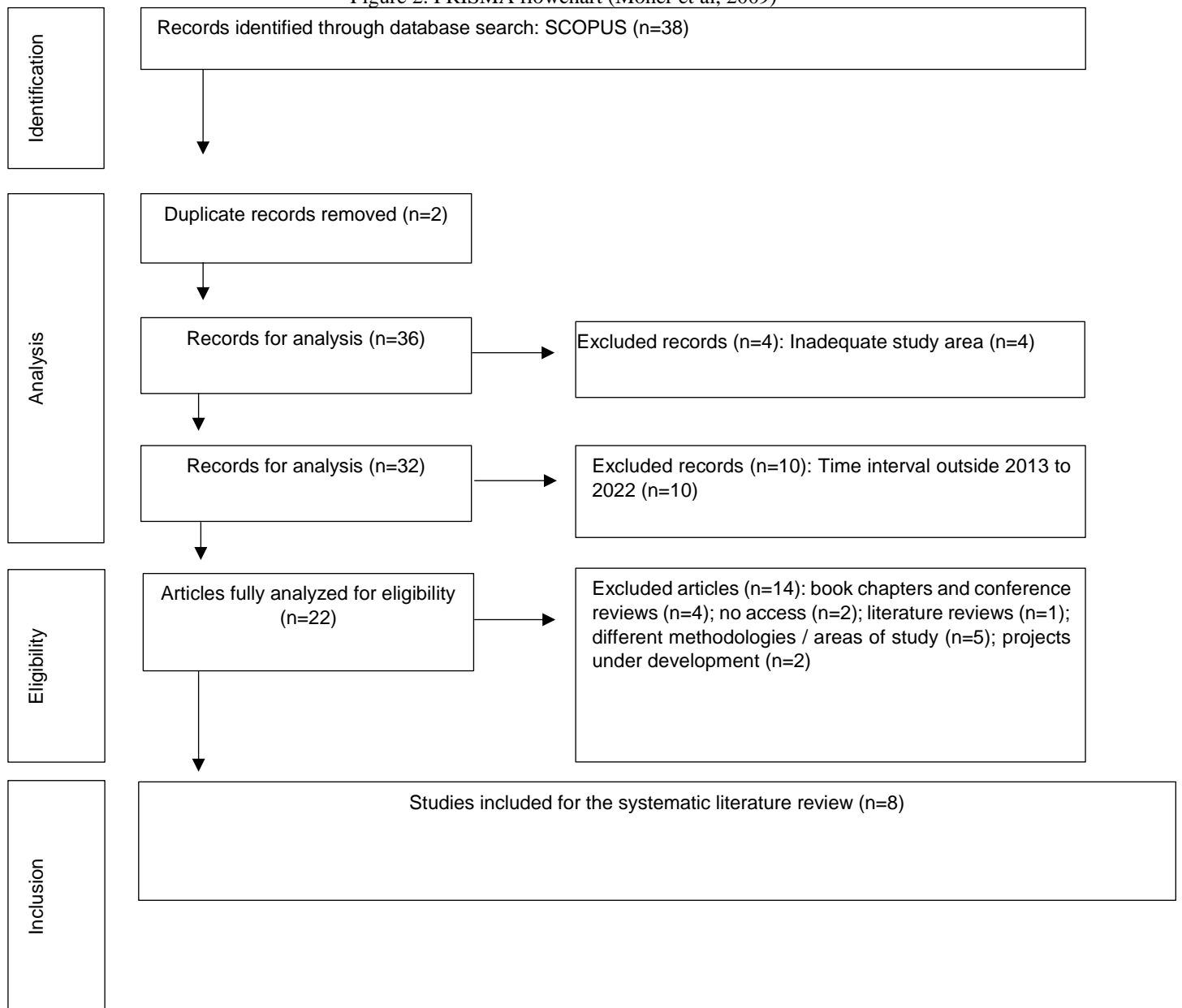
2.2 ANALYSIS AND SELECTION OF STUDIES

Based on the PRISMA method, the review was done with an eliminatory character, through filters, in order to minimize the search for documents that were not relevant to the problem in question. According

to the flowchart shown in figure 2, the first search corresponded to a total of n= 38 records, without any filter added. However, n= 2 duplicate records were found, which resulted in n= 36 study objects. Then, a filter was applied in the study area that presented n= 32 studies, in which n= 4 were excluded because they belonged to inadequate areas, such as medicine and mathematics. It is important to point out that at this moment the foreign language was not filtered, since documents in English were automatically found. Due to the relevance of the topic and to analyze current content, it was decided to add a filter in the time interval, thus excluding n= 10 studies, resulting in n= 22 documents for full analysis.

Figure 2. PRISMA flowchart (Moher et al, 2009)

Identification

Records identified through database search: SCOPUS (n=38)

Analysis

Duplicate records removed (n=2)

Records for analysis (n=36) → Excluded records (n=4): Inadequate study area (n=4)

Records for analysis (n=32) → Excluded records (n=10): Time interval outside 2013 to 2022 (n=10)

Eligibility

Articles fully analyzed for eligibility (n=22) → Excluded articles (n=14): book chapters and conference reviews (n=4); no access (n=2); literature reviews (n=1); different methodologies / areas of study (n=5); projects under development (n=2)

Inclusion

Studies included for the systematic literature review (n=8)

2.3 ELIGIBILITY CRITERIA

After using the search filters, n= 22 documents remained for the eligibility criteria to be applied. Thus, n= 14 objects were excluded with the following criteria: book chapters and conference reviews, n= 4, in which the Action-Research methodology was not applied in full and/or did not contain enough information to compose the design/ methodology process; lack of free access n= 4; literary review without application of methodology n=1; did not use the Action-Research methodology and/or the contextualization of the study did not address the new media n= 5 and, finally, the existence of projects still under development that, consequently, did not address results within the scope of the n= 2 methodology, a total of n= 8 articles became eligible for this systematic literature review, which are shown in Table 1 for subsequent meta-analysis.

Table 1. Analysis of the application of the Research-Action methodology

Author and year	Context in new media	Design/Process	Justification for the use of the methodology
Jia & Tung 2022	Social Inclusion	**Plan:** Understanding the needs of seniors regarding participation in artistic activities through communication with stakeholders. Subsequently, the needs were projected into the interactive device and the activity that accompanies it. **Action and Observation:** The elderly in the community were invited to use the device and participate in the activity. It was observed how the participants used the device and how they adhered to the activity, through semi-structured interviews and through feedback from the users' experience. **Reflection:** Improved the device and the corresponding activity based on the observation step. In the second cycle, the steps were continued with the same purposes and the activity was reflected at the end.	No justification was found for using the Action-Research methodology.
Nuryanti et al, 2020	Social Inclusion	**Plan:** Direct the digital social change process in a more positive direction for the village. **Action and observation:** A discussion group was held in the village. **Reflection:** It was found that the public wants an open or inclusive flow of information that allows all elements of society to know and use information on the internet. **Revised plan:** Creation of activities for the digital inclusion of the community. **Action and observation:** Development of activities by the web team to disseminate information to the community**.** **Reflection:** The inclusive communication approach undertaken by the Susukan village web team has extended access to the same information	"(…) action research is a participatory process that is concerned with developing practical knowledge to achieve useful goals." (Nuryanti et al, 2020) The methodology is used to develop action and reflection, as well as theory and practice in participation with others. It also serves to find solutions and concerns of individuals or groups.

		to marginalized communities and the Internet literate community. The project steps can occur repeatedly in several cycles until the problems that occur in the community can be solved by collective decisions, these being: • Diagnosis carried out in the village to identify potential problems due to lack of digital scope. • Planning the action to improve access to digital, as well as training for residents. • Action and evaluation of the proposed investigation.	In this way, most of the times the graph associated with the methodology is a spiral of self-reflection: plan, act and observe, reflect, and find facts, then plan again.
Barchas-Lichtenstein et al, 2020	Journalism	**Plan: Understand how early career adults use STEM media and how best to support STEM literacy.** **Action and observation: Watch news and explore media formats with the application of new techniques.** **Reflection: The public's analysis and adherence paradigms were not always aligned with the initial objective.** **Revised Plan: Improvement of the plan to make use of the possibilities of online platforms for news co-construction, such as live blogging in scientific events.** **Action and observation: Understanding the comments that match different online platforms with the different audiences of those platforms.** **Reflection: Recognize both approaches to audience engagement as the audience collaborated in a new way.** **It should be noted that throughout the investigation, face-to-face meetings were created (they met every quarter during the life of the project to reflect on the production of media, on the results and on theoretical explorations of cause and effect). Also documented were changes in the production team's approach to creating STEM stories aimed at early career adults throughout the project, as well as the thought process of the participants.**	The methodology is justified by the little application in studies related to journalism. The article also points to the value of action research as a methodology for developing theory into professional practice.
		Plan: Implement a flexible cycle of continuous improvement in education. **Action and observation: Construction of the learning social framework.** **Reflection: Improving immediate practices at the end of each week to help inform curriculum content.** **Revised plan: Evaluate research progress.** **Action and observation: Create screenshots of online conversations of students who worked after most classes.**	Action research in educational contexts is seen as a sustainable form of professional learning. In addition, it is used by education professionals to improve practices and sometimes to inform institutional policies more clearly. "Action research and its ability to provide continuous

Casey and Evans 2018	Pedagogy	**Reflection: Continue to create projects and encourage student-centered interaction, encouraging students to take more responsibility for their own learning and that of their peers.** **In this way, the project followed the following steps: (1) The participant-researcher provided a full teaching load; (2) The participant investigator reduced her teaching and classroom responsibilities and worked part-time (four days a week); (3) The researcher-participant taught a class and devoted more time to the analysis and writing of her doctoral thesis.**	improvement to practice was welcomed by the authors as they considered the challenges that new open, social and participatory media could bring." (Casey & Evans, 2018)
Jocson 2015	Pedagogy	**Plan: Creation of weekly activities related to the theme in question and, from the fifth to the eighth week, build posters and a project using editing tools.** **Action and Observation: Creation of the project and its presentation** **Reflection: Feedback session between peers of what was accomplished** **Revised plan: Through the previously given feedback, social and educational issues were worked on to create a documentary.** **Action and Observation: Collaboration between peers and community members, participation in topic-focused surveys, eventually led to video documentaries and interactive websites.** **Reflection: Share difficulties regarding the creation of short videos and finalization of a documentary and a preliminary interactive website.** **During the 8th and 15th weeks, the professor joined the projects as a researcher-participant.**	Action-research is a methodology that enables teachers to guide their work in a cyclical, contextual, ethical and reflective way, with the aim of moving towards learning and change.

3 META-ANALYSIS

Of the articles eligible for this research n= 8, it appears that all projects meet all the criteria for analysis of the action research methodology, although some discrepancies were found. As for the application of the methodology in the new media context, n= 5 articles related to pedagogy were collected: n= 2 from social inclusion and n= 1 from journalism. During a period of 10 years, a greater number of researches were carried out around the area of education, and this area is often mentioned in the literature to exemplify contexts of insertion of the methodology. However, in recent years (2020 and 2022) a change of context has already been observed, extending also to social inclusion and journalism, always framing itself in the new media.

Regarding the design and process of the methodology, several articles show some difficulty in clearly presenting the use of the methodology. An example of this is visible in the articles by Ranieri & Bruni (2013) and Jocson (2015), in which they do not actually present what was carried out in the second action cycle but imply its existence, so it is not possible to understand the whole process in a detailed and clear way. There was also the integration of participants, such as students, seniors, and citizens. This decision reinforces the goal of Action Research methodology to involve non-experts in participation research by making them members of the team.

The use of Action-Research methodology has been justified in a number of ways, most notably its use to "monitor work in a cyclical, contextual, ethical and reflective way, with the aim of effecting learning and change" (Jocson 2015); the involvement of "students and researchers are co-learners" (Clark 2013,); the ability to continuously improve practice (Casey & Evans 2018) and, for example, the "developing practical knowledge" (Nuryanti et al, 2020). All of the justifications provided are centered around what the definition of Action-Research is, having only (Jia & Tung 2022), failed to justify the use of the methodology for the research they conducted.

In addition to the analysis of the context in new media, the analysis of the process and the authors' justification for the use of the methodology, additionally an analysis of the research question used, the individual use or not of the methodology and the results was done.

Regarding the research question and objectives only n= 1 article addresses the research question. According to Bradbury (2015), researchers following the Action-Research methodology usually start their project with a research question, even if it is "how can we improve this situation". However, only Barchas-Lichtenstein et al (2020) actually created a specific question, "How are legacy media producers coping with these new realities?" the intention being to explore, develop, apply and improve the challenge they were involved in, thus following the methodological scope under study.

With the analysis of the individualized/group application of methodologies, it was intended to find out whether the investigated methodology was mostly used as the only methodology, or whether the investigations addressed other methodologies, including Action-Research. With the development of the analysis of the eight articles, it was found that most of the methodology is applied using other or methods, such as ethnographic studies and case studies. Of the set of articles analyzed, only two used only the Action-Research methodology and six resorted to the use of case studies as a method to build the research. Barden's (2013) article implements the ethnographic methodology. Throughout the analysis of the eight articles, the article by Clark (2013) stands out, as the nomination for the methodology used was Participatory Youth Action Research, i.e. Participatory Action-Research with Youth. This methodology was retained in the present literature review because it is a proliferation of Action-Research, as Bradbury (2015) argues. The author, Bradbury, adds that at first glance Action-Research methodology is like a soup of practices, however

researchers mix them to match situations, thus developing alternative models for transformational knowledge creation. In this way, methodologies such as feminist participatory research or rural participatory research are created to respond to the methodology needed for a particular context.

Finally, the results did not always justify their success due to the methodology used, but in general all investigations achieved important results. They improved the context in which they were placed and somehow progressed and created practices to combat the problem, with the support of all participants and researchers.

4 CONCLUSION

The main objective of this article was to find out how the Action-Research methodology was applied in practical cases carried out over a period of 10 years. Through the development of a systematic review of the literature, eight articles were collected that fit the previously chosen criteria. In this segment, certain points can be observed that emphasize not only the importance of choosing the Action-Research methodology for the selected studies, but also the justification for the operationalization of each process. The fact that Action Research actively involves the community makes the scientific study more credible. In addition, the methodology has an impact regarding data collection, participatory analysis and social cause immersion, in order to solve real problems.

Through the detailed analysis of each study selected for this systematic literature review, it was also possible to analyze that not always the expected results, at the beginning of the investigation, were those obtained at its conclusion. As the Research-Action cycles developed, community participation interfered in directing the research, adapting reality to each situation. This fact thus generated new perspectives for development and the possibility of future studies, as was exposed, for example, in the article: "FEEL2: An Interactive Device for Older Adults to Experience Synesthesia and Age Creatively" by Jia & Tung (2022).

Another relevant point to be highlighted was the diversity of contexts in new media in the use of the methodology. It appears that the social context has been adapted to practical research movements, respecting the analysis processing cycles and applying the methodology in a creative and innovative way. The study "Negotiating Genre and New Media for STEM News" by Barchas-Lichtenstein et al (2020), is an example of this, in which it brings the journalistic context as an area of study, which, according to the author, is innovative. In this way, the pedagogical context is not the main area in which the Action-Research methodology is applied, as the studies between 2013 and 2017 demonstrate.

It is concluded that in the eight studies, the methodology was not only applied effectively, respecting the rules of the cycles, and fulfilling its purpose of collective participation and social impact, but was also well chosen and directed for each study. Therefore, this validates the credibility of the studies referred to in this literature review using the Research-Action methodology operationalized in the proposed objectives.

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