ISSN 2178-2229

DOI: https://doi.org/10.18764/2178-2229v32n2e25074

The Fedathi Sequence in teacher education: a systematic literature review

Raiele Conceição Cavalcante
ORCID: https://orcid.org/0000-0001-5498-1033

Francisco Herbert Lima Vasconcelos
ORCID: https://orcid.org/0000-0003-4896-9024

Daniel Brandão Menezes
ORCID: https://orcid.org/0000-0002-5930-7969

Abstract: The assessment of teacher quality, previously based on education and certifications, has in recent decades begun to emphasize the development of skills and abilities through teaching methodologies. The Fedathi Sequence stands out in this context for promoting autonomy and critical reflection in student learning. However, its implementation cannot be dissociated from institutional conditions and public educational policies, such as continuous training, time for planning, and adequate infrastructure. This research aims to understand the application of the Fedathi Sequence in teacher training and its involvement with management policies. The research adopted a qualitative and exploratory approach, using a systematic literature review according to the PRISMA statement. The inclusion criteria selected studies that discuss the Fedathi Sequence and its application and impact on teacher training, resulting in 1042 identified works and 12 selected articles. The data were organized into tables, and the analysis followed Bardin's categorization. The results show that the Fedathi Sequence is applied in different educational contexts, with its phases (Position Taking, Maturation, Solution and Test) being fundamental to the learning process. In the field of teacher training, the methodology has been integrated into development programs, promoting reflective and innovative practices. However, the analysis of the publications reveals a gap in the discussion on educational policies, indicating the need for further study in this area.
Keywords: fedathi sequence; pedagogical mediation; teaching methodology; continuing training.

1 Introduction

Teacher training plays a crucial role in the quality of education, directly impacting the teaching-learning process and the integral formation of the students. Historically, the quality of teachers was assessed by their level of schooling, previous formation, and certificates obtained throughout their career (Abrucio, 2016). Although these variables remain relevant, recent decades have witnessed a growing interest in identifying the essential skills and competencies required during initial training and

continuing teacher education. This new perspective emphasizes the importance of teaching methodologies, career insertion through mentoring, and collective pedagogical work, in order to ensure effective student learning.

Within this context, one of the key focuses of teacher training has been to understand how innovative methodologies can affect learning outcomes (Abrucio, 2016). The Fedathi Sequence has emerged as a promising teaching methodology to transform the teacher´s role by placing students in learning situations that foster autonomy and critical reflection, crucial elements for a quality education. Research conducted by Andrade *et al*. (2019), Lima (2007), Santos (2007), Santos (2017) and Sousa (2015) demonstrates that the Fedathi Sequence is an educational approach centered on transforming the teacher's attitude through actions that encourage students' autonomy in searching for answers.

Authors such as Fontenele, Borges Neto and Santos (2015) argue that teachers should adopt a posture that allows students to act autonomously, promoting a change in their pedagogical stance, making them more collaborative, interactive and mediating in the process of training and self-training. However, the implementation of methodologies such as the Fedathi Sequence cannot be seen in isolation from institutional conditions and public education policies. Without access to quality continuing education, sufficient planning time, and minimal infrastructure, even the most effective methodologies will have limited impact (Davis *et al*., 2011; Faria; Maggi, 2022; Imbernón, 2010).

Understanding the structure and application of the Fedathi Sequence is therefore essential to ensure its effective implementation. The methodology unfolds across three levels: Preparation, Experience and Analysis, guiding the teacher from the planning phase to the evaluation of classroom activities (Sousa, 2015). During the Preparation phase, the didactic session is planned based on previous knowledge of students about the content.

The Experience phase represents the moment in which the didactic session is implemented, following the phases of Position Taking, where the teacher presents a challenge, encouraging knowledge construction based on the students' prior knowledge; Maturation, where students reflect and investigate, developing solution strategies; Solution, the moment in which students organize and present their responses to the proposed problem; and Test, where students formalize and

summarise their solutions, relating them to scientific content and seeking generalizations. Throughout these phases, the teacher is guided by principles that underpin and transform their attitude in the classroom, transitioning from a mere transmitter of content to a facilitator and mediator of knowledge (Borges Neto, 2018).

Following the implementation of the Experience phase is the Analysis, which Sousa (2015) defines as the third level of the Fedathi Sequence. This phase aims to evaluate the work conducted, addressing both students and the teacher, with a focus on the development of the activity. It provides an opportunity for observation and reflection on teaching practice.

The essence of the Fedathi Sequence, according to Oliveira and Barbosa (2019), lies in the mediation of principles that support teacher behavior, contributing to the conscious and autonomous learning of students, regardless of the teaching environment. However, student autonomy and the transformation of teaching behavior must be supported by institutional backing (Faria; Maggi, 2022). According to Abrucio (2016), successful implementation of pedagogical innovations requires educational policies that ensure accessible continuing education, planning time, and an adequate learning environment.

Improving quality and equity in the educational field cannot be attributed solely to teacher training and professional development. Although well-prepared teachers are essential, such training must be aligned with public policies, valuation of the profession, and adequate educational funding (Faria; Maggi, 2022). According to Abrucio (2016), teacher development gained prominence in Brazil after unsatisfactory results in national and international assessments, prompting educational reforms focused on improving performance indicators. However, this emphasis on standardized evaluations often disregards structural inequalities within education networks, leading to policies that pressure teachers without ensuring better working and training conditions.

In order to understand the relationship between the Fedathi Sequence, teacher training, and its implications for educational policies, it is crucial to explore aspects related to teacher education. Imbernón (2010) questions what knowledge, models, and innovative modalities are necessary in initial training and continuing education. The ongoing renewal of theoretical and practical knowledge is vital, raising the question of how such renewal takes place. According to Abrucio (2016), teacher's pedagogical

formation encompasses content knowledge that will be taught, basic general training, considered a social capital that underpins the ability of learning to learn, and specific knowledge related to each teaching field. Furthermore, training in teaching practice and methodologies is essential so that teachers can continuously motivate and educate students.

This study aims to understand the application of the Fedathi Sequence in teacher training and its involvement with management policies. To this end, systematic literature review was conducted, following the guidelines of Kitchenham (2007) and Newman and Gough (2020). This approach is essential to synthesize existing knowledge, identifying gaps, identify gaps, validate findings, and contribute to educational advancement. The process included the formulation of guiding questions, inclusion and exclusion criteria, selection of databases, and the use of specific search strings to identify relevant publications on the Fedathi Sequence. The selected articles were analyzed and categorized according to Bardin's approach (2021).

The structure of the present study develops from this introduction and expands into a detailed account of the methodological procedures that guided the research. This section outlines the study's fundamental characteristics, encompassing all steps from the systematic review to the treatment and analysis of the research corpus. In a logical sequence, the results and discussion unfold, answering the guiding questions that oriented the investigation. Finally, the study's contributions to the educational field are presented in the final considerations, offering an integrated and cohesive view of the research's development and impact.

2 Methodological Procedures

According to Prodanov and Freitas (2013), the present research is basic in nature, as it aims to generate knowledge on the topic addressed without practical application. This study is characterized as exploratory with a qualitative approach, since it aims to understand the application of the Fedathi Sequence in teacher training and its involvement with management policies. To this end, a systematic literature review was conducted based on the works of Kitchenham (2007), Newman and Gough (2020) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines presented by Page *et al*. (2022).

A systematic review, according to the updated PRISMA statement guidelines,

> [...] perform several critical functions. They can provide syntheses of the state of knowledge in a field, from which future research priorities can be identified; they can address questions that would otherwise go unanswered by individual studies; they can identify issues in primary research that need to be corrected in future studies; and they can generate or evaluate theories about how or why phenomena occur (Page *et al*., 2022, p. 2).

This research method seeks to identify, evaluate and synthesize all available and relevant evidence in the literature for a specific research question through rigorous and transparent steps, in order to make the study reproducible and updatable. From the perspective of Newman and Gough (2020), systematic literature reviews in the educational field contribute to the improvement of educational practices and the advancement of knowledge in the investigated area.

Researchers such as Kitchenham (2007) and Newman and Gough (2020) consider that specifying the research questions is the most important step in the systematic review, as it guides the entire research methodology, from study selection to the way they are evaluated. Therefore, the questions for this systematic review are specified in the following Table 1.

Table 1 - Questions of the Systematic Literature Review on the Fedathi Sequence

Research Questions
Q1: How does the literature describe the application of the Fedathi Sequence in teacher training?
Q2: In what ways is the Fedathi Sequence adopted within the pedagogical practices of educators?

Source: Authors

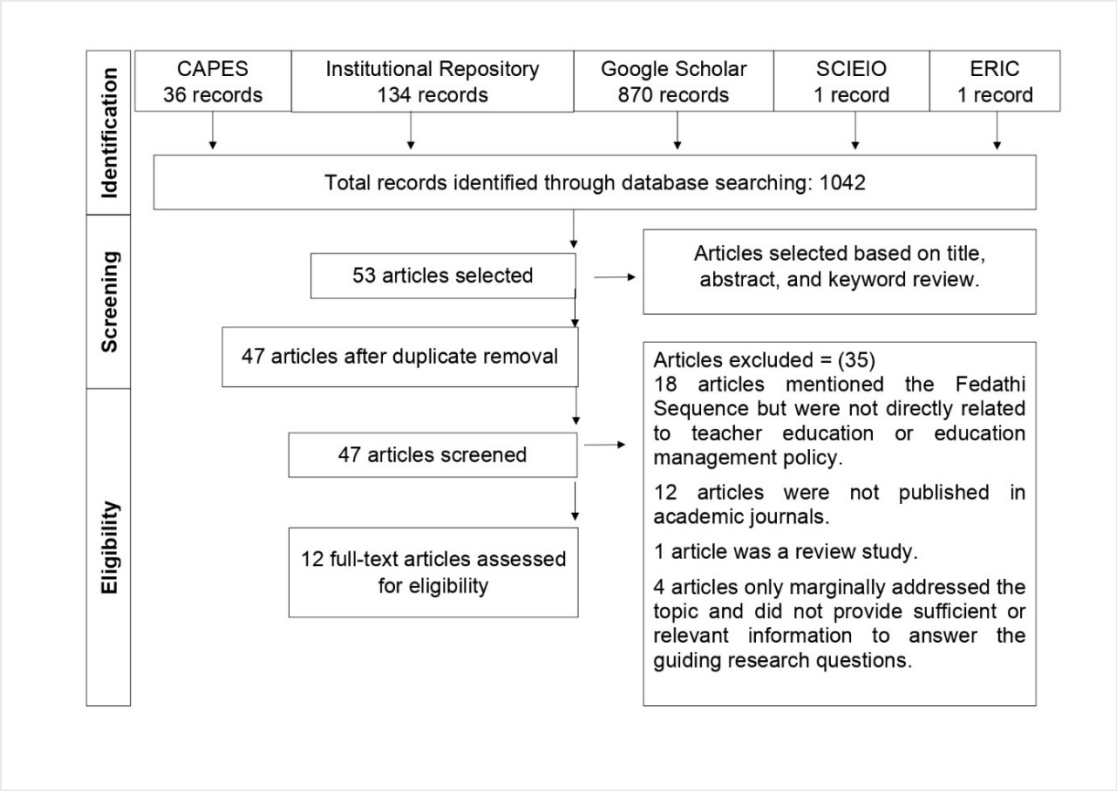
In order to conduct a transparent systematic study, the following inclusion criteria were established: 1) articles that discuss the Fedathi Sequence and its application or impact on teacher training; 2) studies that aim to understand the application and effects of the Fedathi Sequence on teacher education; 3) research that explores the Fedathi Sequence from both theoretical and empirical perspectives, allowing for a comprehensive and detailed understanding of the topic; 4) articles that present data and results regarding the use of the Fedathi Sequence in educators' pedagogical practices and its impact on student academic performance.

As for the exclusion criteria, the following studies were removed: 1) those that mention the Fedathi Sequence but are not directly related to teacher education or

teacher training management policy; 2) studies that were not published in academic journals; 3) publications in languages other than English, Portuguese, or Spanish; 4) review articles; 5) studies that touch on the topic but do not provide sufficient or relevant information to answer the guiding questions of the review.

To define the corpus, five databases were considered: 1) Coordination of Improvement of Higher Education Personnel (CAPES, in portuguese), for its access to a vast number of high-impact national journals; 2) Institutional Repository from the Federal University of Ceará (FUC), for concentrating studies that address the specificities and nuances of the Fedathi Sequence; 3) Google Scholar, for its ability to provide access to a wide range of academic content; 4) Scientific Electronic Library Online (SCIELO); and 5) Education Resources Information Center (ERIC), both of which were used to search for international articles related to the topic. The combination of these databases ensured a holistic and complete approach, integrating national and international sources for an in-depth analysis of the subject.

Figure 1 - PRISMA Flow Diagram illustrating the different phases of the systematic review.



Source: Authors (2025)

Therefore, the following strings were used: “Fedathi Sequence”, “Fedathi Sequence and teacher training”, “Fedathi Sequence and policy”; “Fedathi Sequence, teacher training, and policy”, and “Fedathi Sequence”. The search encompassed articles published in the selected databases up to September 2023. The flow of identification and selection of the articles located is illustrated in Figure 1.

The initial search yielded 1,042 documents. A preliminary selection of 53 articles was made based on the analysis of titles, abstracts, and keywords related to the topic. For the final selection of studies, the procedures outlined by Kitchenham (2007) and Newman and Gough (2020) were followed. During this stage, duplicate studies were removed, and a full reading of the articles was carried out to apply the inclusion and exclusion criteria. At the end of this process, twelve articles remained for final evaluation.

The twelve selected articles underwent a quality assessment, following Kitchenham's (2007) fundamental premise that assessing the quality of primary studies is crucial for conducting a robust systematic review. This assessment plays a vital role in the inclusion process, ensuring the reliability and relevance of the data used in the investigation.

For the analysis of the selected articles, the categorization method proposed by Bardin (2021) was employed. The process began with a pre-analysis phase aimed at organizing the material, during which two Excel spreadsheets were created to structure, prepare, and extract the data for analysis.

The first spreadsheet, titled “Selection,” focused on identifying and organizing the selected articles. Information such as year of publication, authors’ names, article titles, journal names, and QUALIS ratings was extracted. The articles were then arranged in ascending order by year of publication, as shown in Table 2.

Table 2 – Articles selected in the systematic review

Year	Author(s)	Title	Journal	QUALIS Rating
2017	Santos	The Formation of the Professor of Mathematics: Fedathi Sequence Methodology (SF)	Revista Lusófona de Educação	A1
2017	Santos and Matos	The Creative Insubordination In The Continuous Training Of The Pedagogue For The Teaching Of Mathematics: Do The Subalterns Speak?	REnCiMa	A2
2018	Souza, Nascimento and Lustosa	Teaching Brazilian Sign Language as first language: curriculum in practices of supervised stage of Letras Libras’ Course	Entrepalavras	B2

2019	Abreu *et al.*	Fedathi sequence methodology in holiday discipline curriculum, evaluation and creativity in mathematics of fundamental education	*Brazilian Applied Science Review*	C
2019	Oliveira and Pereira	The Use Of Teaching Engineering And Fedathi Sequence As Methodological Tools For Math Teacher Training	Boletim Cearense de Educação e História da Matemática	B1
2020	Felício, Menezes and Borges Neto	Generalized Fedathi Training: Teacher Training Methodology	Boletim Cearense de Educação e História da Matemática	B1
2020	Mendonça, Oliveira and Borges Neto	Content Analysis of the Continued Teacher Training Process Based on the Fedathi Sequence and the Reflexive Teacher Proposals	ACTIO	A3
2020	Ponte Filho and Borges Neto	Pedagogical Decentralization in an Educative communication Action Guided by the Fedathi Sequence	comunicação & educação	A4
2020	Vieira, Mourão and Braga	Conceptions About The Mathematics Teacher Formation In The Mais Paic Program	Expressão Católica	B1
2021	Filício, Menezes and Borges Neto	FEDATHI SEQUENCE FOR CHANGE IN PRACTICE:Case Study Of A Scientific Theater Experiment	Teia	A2
2023	Borges Neto *et al.*	Fedathi sequence: a methodological proposal for fundamental and high school in Guinea-Bissau	*Acta Scientiarum. Education*	A2
2023	Scipião *et al.*	Learning styles in continuing teacher education: analysis on an extension course	*Acta Scientiarum. Education*	A2

Source: Authors

Subsequently, a preliminary reading ("floating reading") of the twelve selected articles was conducted to obtain an initial understanding of the material. Following this step, the units of analysis were defined, leading to the creation of a second spreadsheet entitled “Data Collection.” This spreadsheet was filled with key information such as country of publication, title, identification (author, year), research problem/question, object of study, objectives, theoretical contribution, approach, research universe/participants, methodology, main results, and key conclusions. The following table presents a synthesis of some of the collected data, specifically the objectives and research participants.

Table 3 – Summary of data collection: research objectives and participants

Identification (Author/Year))	**Objective**	**Research Universe/Participants**
Santos (2017)	To analyze the contributions of the Fedathi Sequence (FS) methodology during a training course with elementary school mathematics teachers	Mathematics teachers

Santos and Matos (2017)	To present the Fedathi Sequence (FS) methodology and the Cultural Theory of Objectification (CTO) as proposals for the professional development of mathematics teachers in basic education	Basic education mathematics teachers
Souza, Nascimento and Lustosa (2018)		Nine deaf students and thirteen hearing students with different levels of proficiency in Brazilian Sign Language (Libras)
Abreu *et al*. (2019)	To demonstrate that students are more likely to learn when there is a dialogical relationship between teacher and student, where the learner is the protagonist of their own knowledge, mediated by the educator	30 students enrolled in the course "curriculum, evaluation and creativity in mathematics of fundamental education"
Oliveira and Pereira (2019)	To explore teaching methodologies that facilitate mathematics instruction, aiming to identify, understand, and apply methods that support explanation and experimentation of mathematical concepts	Mathematics teachers
Filício, Menezes and Borges Neto (2020)	To present a teacher training proposal incorporating characteristics and conceptions derived not only from the PROFEM program but also from other programs linked to the Fedathi Sequence	
Mendonça, Oliveira and Borges Neto (2020)	To analyze the content of mathematics teachers' discourse in continuing education, through the lens of the reflexive teacher and Fedathian posture	46 public school mathematics teachers
Ponte Filho and Borges Neto (2020)	To analyze what teachers from a municipal school in Ceará think about "pedagogical decentralization" based on their professional routines	11 early years elementary school teachers
Vieira, Mourão and Braga (2020)	To report experiences from the Continuing Education Program for Elementary School Mathematics Teachers – Final Years, within the Learning at the Right Age Program (MAIS PAIC), from June 2016 to October 2018	
Filício, Menezes and Borges Neto (2021)	To investigate how the Fedathi Sequence can transform teaching practices, based on the impressions of the participating teacher and students	One basic education teacher
Borges Neto *et al*. (2023)	To present the Fedathi Sequence as a methodological approach capable of improving the teaching-learning process in elementary and middle school in Guinea-Bissau	
Scipião *et al*. (2023)	To analyze reflections on teachers' practices based on interactions in the discussion forums of the TelEduc platform of the aforementioned course	5 mathematics teachers working in the early years of public elementary schools

Source: Research data.

Regarding the analysis and interpretation of results, the categorization was based on the key characteristics of the selected studies. To ensure a more systematic

approach, categories were created to address the guiding questions of the study and to deepen the understanding of the content under investigation.

3 Application of the Fedathi sequence in teacher education

In order to gain a broader understanding of how the Corpus of research describes the incorporation and application of the Fedathi Sequence in teacher education, this section presents four categories: Definition and Constituent Elements, Exploration of Educational Objectives, Contexts and Specific Applications, and Challenges and Limitations.

By delving into the constituent elements of the Fedathi Sequence, it becomes evident that this theoretical-methodological teaching proposal aims to address contemporary educational challenges, especially those related to teacher education and practice. The studies analyzed (Abreu *et al.*, 2019; Felício; Menezes; Borges Neto, 2020; Felício; Menezes; Borges Neto, 2021; Ponte Filho; Borges Neto, 2020; Santos; 2017; Vieira, Mourão; Braga, 2020) highlight that this methodology was conceived by Dr. Hermínio Borges Neto, coordinator of the Laboratório de Pesquisa Muitimeios da Faculdade de Educação [Multimedia Research Lab of Education School] of the Federal University of Ceará. Although initially developed for teaching mathematics, over three decades it has expanded to other educational areas.

Its pedagogical principle focuses on a shift in teacher posture, aiming to place the student in a learning-centered situation. Authors such as Felício, Menezes and Borges Neto (2020), Mendonça, Oliveira and Borges Neto (2020), Oliveira and Pereira (2019), Santos and Matos (2017) and Vieira, Mourão and Braga (2020) describe the key elements of the Fedathi Sequence as experienced through four sequential and interdependent phases: Position Taking – presenting the problem situation; Maturation – generating hypotheses toward a solution; Solution – representing and structuring models or schemes to resolve the problem; and Proof – formalizing the knowledge taught by the teacher. These phases enable students to assume a central role in the learning process, actively engaging in their own development, while the teacher facilitates both teaching and learning.

According to the research corpus, this mediation occurs through the integration of the principles of the Fedathi Sequence, which guide teacher practice throughout the

process. In their studies, Abreu *et al*. (2020), Felício, Menezes and Borges Neto (2020, 2021), Mendonça, Oliveira and Borges Neto (2020), Ponte Filho and Borges Neto (2020), Santos (2017) and Scipião *et al*. (2023) briefly address some foundational principles of the Fedathi method, such as Plateau (leveling students' prior knowledge), Didactic Agreement, Counterexample, The Question and the Conception of Error, Hand in Pocket Posture, and Mediation. These principles support and enhance the collective construction of knowledge, encouraging active student participation throughout the educational process.

Furthermore, in the works of Felício, Menezes and Borges Neto (2020, 2021) and Ponte Filho and Borges Neto (2020), the Fedathi Sequence is presented as a research methodology interpreted through a teaching lens. This research approach, rooted in Daniel Brandão Menezes's 2018 doctoral thesis, is a scientific framework built on the expansion of studies and reflections surrounding the Fedathi Sequence during graduate study in Brazilian Education titled " Mathematics Topics."

The authors provide a brief description of the stages of the Fedathi Sequence Research Methodology (Problem, Modeling, Application, and Results). The first two stages correspond to the exploratory and preparatory phases of the research, during which the topic is explored, the problem is defined, and the methodological structure of the study is outlined (Felício; Menezes; Borges Neto, 2020). The latter two phases, Application and Results, involve data collection and result analysis, respectively.

Extension courses and workshops conducted by Mendonça, Oliveira and Borges Neto (2020), Oliveira and Pereira (2019), Ponte Filho and Borges Neto (2020), and Scipião *et al.* (2023) explore different perspectives. Oliveira and Pereira (2019) focus on the importance of using methodologies and learning objects, including the Fedathi Sequence. Mendonça, Oliveira and Borges Neto (2020) aim to train mathematics teachers from a Fedathian perspective, while Ponte Filho and Borges Neto (2020) adopt the stages of the Fedathi Sequence to conduct educommunication-based training. Scipião *et al.* (2023) analyze the relationship between learning profiles, highlighting the Theory of Objectification and cognitive styles.

Thus, from the definition of the Fedathi Sequence, the discussion moves on to the exploration of the educational objectives it proposes. This category aims to analyze the educational goals proposed by the Fedathi Sequence in teacher education. According to the studies analyzed, the objectives of this methodology focus on two

areas: improving teaching practices and fostering students' active engagement in learning situations.

The first area relates to teacher posture. The studies reviewed show that the purpose of the Fedathi Sequence in teacher education is to enable educators to develop more meaningful and creative teaching practices that facilitate mathematics instruction (Oliveira; Pereira; 2019; Santos; Matos, 2017). The works of Borges Neto *et al*. (2023) and Felício, Menezes and Borges Neto (2021) highlight that this teaching method brings about a “didactic rupture” from traditional instructional models. That is, it seeks to redefine the teacher's role in the classroom through reflection on everyday situations, encouraging educators to become investigators of their professional practice and pedagogical actions (Mendonça; Oliveira; Borges Neto, 2020).

Another area identified is related to student participation. The objectives of implementing this methodology in the classroom aim to place the student in the role of a mathematician, through the processes of inquiry and problem solving, establishing a deep interaction between teaching and learning. Furthermore, it seeks to foster students' interest in what is taught in the school environment by facilitating effective conceptual exposure and experimentation. Additionally, it seeks to stimulate research, reflection, investigative thinking, collaboration, and the systematization of knowledge (Borges Neto *et al*., 2023; Oliveira; Pereira, 2019; Santos, 2017).

From this analysis of educational objectives arise various contexts and specific applications of the Fedathi Sequence. This category allows for a better understanding of how the Fedathi Sequence is applied across different educational settings. It also makes it possible to identify variations in the methodology’s implementation across educational levels and disciplines. The analysis of the research corpus reveals a wide-ranging approach to using the Fedathi Sequence.

In Table 4, it is possible to observe a variety of approaches to teacher education, such as pedagogical workshops, training proposals, classroom experiences, courses, document analysis, and extension courses. Most of the studies (Mendonça; Oliveira; Borges Neto, 2020; Oliveira; Pereira, 2019; Ponte Filho; Borges Neto, 2020; Santos, 2017; Santos; Matos, 2017; Scipião *et al*., 2023) target in-service teachers, emphasizing continuing education for professional development.

Table 4 – Contexts and Applications of the Fedathi Sequence in Teacher Education

Author (Year)	Activity Format	Theoretical Approach	Target Audience	Type of Training
Santos (2017)	Pedagogical workshops	Fedathi Sequence	Mathematics teachers in early elementary education	Continuing education
Santos and Matos (2017)	Training proposal	Fedathi Sequence and Theory of Objectification	Basic education mathematics teachers	Initial and Continuing Education
Souza, Nascimento and Lustosa (2018)	Classroom experience	Fedathi Sequence, social-interacting theory, Metalinguistic awareness and Deafness	Students in the Brazilian Sign Language (Libras) undergraduate program	Initial training
Abreu *et al.* (2019)	Classroom experience	Fedathi Sequence	Undergraduate students in Pedagogy	Initial training
Oliveira and Pereira (2019)	Extension course	Didactic Engineering and Fedathi Sequence	Mathematics students and teachers	Continuing education
Felício, Menezes and Borges Neto (2020)	Training proposal	Reflexive Teacher and Fedathi Sequence	Teachers	Initial and Continuing Education
Mendonça, Oliveira and Borges Neto (2020	Course	Reflexive Teacher and Fedathi Sequence	Mathematics teachers	Continuing education
Ponte Filho and Borges Neto (2020)	Course	Pedagogical Decentralization and Fedathi Sequence	Elementary school teachers (early years)	Continuing education
Vieira, Mourão and Braga (2020)	Document analysis		Mathematics teachers from the MAIS PAIC Program	Continuing education
Felício, Menezes and Borges Neto (2021)	Classroom experience	Fedathi Sequence		
Borges Neto *et al.* (2023)	Training proposal	Guinean Education and Fedathi Sequence	fundamental and high school teachers in Guinea-Bissau	Continuing education
Scipião *et al*. (2023)	Extension course	Learning Styles, Theory of Objectification, and Fedathi Sequence	Mathematics teachers	Continuing education

Source: Research data.

The target audience ranges from students to mathematics teachers, from early elementary school to secondary education, including students from undergraduate programs in Brazilian Sign Language (Libras) and Pedagogy. Within the scope of the Libras course, Souza, Nascimento and Lustosa (2018) apply the Fedathi Sequence to construct the theoretical and methodological foundation for didactic sessions during the Supervised Curricular Internship course. This approach aims to promote reflective and collaborative experiences centered on the concept of Libras as a first language.

Regarding the application of the Fedathi Sequence in the Pedagogy course, specifically in the subject "Curriculum, Evaluation, and Creativity in mathematics of fundamental education," Abreu *et al*. (2019) proposed to analyze the contributions of this methodology to the development of meaningful learning. They emphasize the importance of a dialogical approach between teacher and student, where the learner assumes a central role in the construction of their own knowledge, with the teacher acting as a mediator.

As shown in Table 4, among the twelve articles analyzed, three (Borges Neto *et al*., 2023; Felício; Menezes; Borges Neto, 2020; Santos; Matos, 2017) propose teacher education strategies that incorporate the Fedathi Sequence. The proposal by Santos and Matos (2017) targets mathematics teachers in early elementary education, both in initial and continuing education. It integrates the Fedathi Sequence with the Theory of Objectification, aiming not only to enhance teaching practices but also to foster student learning through creative insubordination.

Felício, Menezes and Borges Neto (2020) present a proposal for Generalized Fedathi Training based on principles from the In-Service Teacher Training Program (PROFEM), using the Fedathi Sequence as a methodology for teaching, research, and training. Their goal is to “[…] contribute to teaching practice, considering the potential of teachers in supporting their students’ learning” (Felício; Menezes; Borges Neto, 2020, p. 25–26). The study seeks to reflect on teaching practices and promote a logical-deductive-constructive approach.

The study by Borges Neto *et al*. (2023) aims to enhance teaching practices and contribute to overcoming challenges faced in Guinean education. The authors note that although the implementation of the Fedathi Sequence does not solve all educational issues in the country, it can offer valuable contributions to teacher practice:

> [...] The Fedathi Sequence emerges as a promising pedagogical alternative within the African educational context, as it fosters student engagement in the construction of knowledge, positioning the teacher as a mediator to facilitate discussion around the content, thus making the class more dynamic and less tiring for students (Borges Neto *et al*., 2023, p. 7).

However, the implementation of this methodology requires adaptation to local conditions, including teacher training and institutional support, as it demands that teachers reinvent their practice. Borges Neto *et al*. (2023) emphasize that knowledge construction occurs through a teaching-learning process—whether collective or individual—that depends on meaningful learning experiences.

Transposing the Fedathi Sequence into this context requires more than merely applying its principles; it involves planning that avoids prescriptive approaches disconnected from the local educational reality. The studies analyzed indicate that the Fedathi Sequence is flexible and adaptable to different educational settings, but its effectiveness is directly linked to teacher engagement and commitment.

Moreover, Table 4 shows that some studies (Borges Neto *et al*., 2023; Santos; Matos, 2017) combine the Fedathi Sequence with other frameworks, such as the Theory of Objectification, Social-interaction Theory, Metalinguistic Awareness, Deafness, Didactic Engineering, Reflexive Teaching, Pedagogical Decentralization, Learning Styles, and Guinean Education. These integrations indicate a pursuit of a more comprehensive and holistic training. Additionally, Table 4 covers a span of several years (2017 to 2023), reflecting a sustained interest and research focus on the theoretical-methodological proposal of the Fedathi Sequence over time.

In summary, the analysis of this category—specific contexts and applications—through Table 4 reveals a diversity of contexts, audiences, and theoretical approaches in the application of the Fedathi Sequence in teacher education. Despite its adaptability and relevance across different educational scenarios, it is also crucial to consider the challenges and limitations encountered during its implementation. The establishment of this category aimed to identify the difficulties faced when incorporating the Fedathi Sequence into teacher education programs.

The analysis of the selected studies revealed a range of perspectives. Notably, the work of Abreu *et al*. (2019) highlights the reflections of Professor Hermínio Borges Neto, a leading figure in the development of the methodology. According to him, “[...] the greatest challenge of the methodology is achieving recognition within the academic

context, and consequently within schools, precisely because of its local origin, in contrast to the prevailing preference for imported educational paradigms" (Abreu *et al*., 2019, p. 2492).

Another significant point is presented in the study by Mendonça, Oliveira and Borges Neto (2020), in which participating teachers identified the Maturation phase as a major challenge. This stage requires students to take primary responsibility for their own learning, which implies a shift away from the traditional dependence on receiving ready-made content. The implementation of the hand-in-pocket pedagogy is also considered demanding, as it necessitates that teachers possess strong didactic skills, comprehensive content knowledge, and effective planning abilities. Furthermore, instructional time is frequently cited as a constraint, often used to justify resistance to adopting new methodological approaches to teaching.

These converging perspectives highlight the complexity involved in adopting the Fedathi Sequence—from gaining academic recognition to overcoming practical challenges such as paradigm shifts and fostering student autonomy. This set of challenges underscores the importance of innovative pedagogical approaches and the need to overcome barriers to effectively improve teacher education.

However, it is important to note that the remaining studies present a consistent gap regarding the specific discussion of limitations and challenges related to the use of the Fedathi Sequence in teacher education. Most of the reviewed works do not provide an in-depth exploration of the difficulties encountered during the implementation of this pedagogical approach.

Santos (2017) mentions the lack of time as a limiting factor during workshops but does not detail the specific limitations of the Fedathi Sequence. Santos and Matos (2017) mention teacher resistance to change and issues of power, but not challenges directly tied to the sequence. Felício, Menezes and Borges Neto (2020), as well as Oliveira and Pereira (2019), do not explicitly address the challenges involved in using the Fedathi Sequence in teacher education.

Borges Neto *et al*. (2023) and Ponte Filho and Borges Neto (2020) acknowledge that there is no "miracle methodology" and emphasize teachers' resistance to decentralized approaches. The latter highlight the lack of continuing education as a key challenge and advocate for educational policies that promote high-quality

communication between teachers and students, emphasizing students as active constructors of knowledge.

Souza, Nascimento and Lustosa (2018) briefly mention challenges during the Compulsory Libras Internship, but not specifically those related to the Fedathi Sequence. Vieira, Mourão and Braga (2020) note some resistance to innovative methodologies but do not identify specific barriers to the use of the Fedathi Sequence.

Felício, Menezes and Borges Neto (2021) and Scipião *et al*. (2023) also do not address the challenges experienced with the Fedathi Sequence in teacher training, leaving a significant gap in understanding the practical difficulties of this approach. While several studies mention generic challenges—such as implementing dynamic curricula and teacher resistance to change—there is a noticeable lack of deeper analysis concerning the specific obstacles related to the Fedathi Sequence in teacher education, highlighting the need for further research on this topic.

4 The Adoption of the Fedathi Sequence in pedagogical practice

With the aim of understanding the contributions of existing literature on the subject, this section undertakes a comprehensive analysis, structured into four distinct thematic categories: classroom experience, teacher training proposals, training workshops/courses, and impact on educational policy. These categories are delineated to examine, respectively, the direct application of the methodology in classroom settings, its incorporation into teacher education initiatives, its implementation in professional development contexts, and its broader implications for teacher training and educational policies.

An analysis of the articles addressing classroom experiences reveals that in the study by Souza, Nascimento and Lustosa (2018), the implementation of the Fedathi Sequence takes place within the context of teaching Brazilian Sign Language (Libras) as a first language. The authors highlight four stages of the methodology: Position Taking, Maturation, Solution, and Proof. The approach is employed in a mixed educational environment involving both deaf and hearing students and aims to foster student reflection and formulation, thereby encouraging the construction of knowledge. The Fedathi Sequence is applied in specific phases, ranging from reflections on the teaching of Libras as L1 (first language) to the development of annual teaching plans

and bilingual didactic materials. The study underscores the importance of teacher mediation throughout the process, particularly through the use of guiding questions that help students overcome challenges without providing ready-made answers.

In the study by Abreu *et al*. (2019), the adoption of the Fedathi Sequence serves as the methodological foundation for a vacation course in a Pedagogy degree program, aiming to promote both action and reflection on the proposed activities. To implement this methodology, the authors apply the four fundamental stages of the Fedathi Sequence (Position Taking, Maturation, Solution, and Proof). The article emphasizes the importance of this approach in fostering the meaningful construction of concepts by students, with strategic teacher interventions serving as mediating elements. The findings and discussions presented in the study indicate that participants viewed the Fedathi Sequence as a necessary and valuable methodology, contributing to a more dynamic teaching practice and challenging the notion that the responsibility for student learning rests solely with the teacher.

Felício, Menezes and Borges Neto (2021) apply the Fedathi Sequence both as a teaching and research methodology. As a pedagogical method, the sequence serves to structure and mediate the development of scientific theater in basic education. As a research framework, it guides the planning and execution of a study aimed at investigating how the Fedathi Sequence may contribute to the transformation of teaching practices through engagement with scientific theater.

The analysis of classroom implementation across studies by Souza, Nascimento and Lustosa (2018); Abreu et al. (2019); and Felício, Menezes and Borges Neto (2021), reveals practical dimensions of the Fedathi Sequence, particularly in relation to teacher mediation, critical reflection on pedagogical processes, and the meaningful construction of knowledge. In contrast, investigations into teacher education proposals, such as those conducted by Felício, Menezes and Borges Neto (2020) and Santos and Matos (2017), illustrate how the methodology is introduced and integrated within the context of teacher training programs.

Regarding teacher education proposals, the articles reveal a variety of approaches. In the study by Santos and Matos (2017), the authors adopt a perspective aimed at meeting students' needs while promoting teacher autonomy and aligning with the guidelines of the National Curriculum Common Basis (BNCC). The teacher education proposal presented in this study involves the adoption of two instructional

methodologies: the Fedathi Sequence and the Theory of Objectification. The aim is to demonstrate how teachers can reflect on the development of their own pedagogical practices through methodologies and theories that encourage creative insubordination. The use of the Fedathi Sequence is incorporated through a training proposal focused on designing didactic sessions based on the methodology's principles and theoretical foundations.

With regard to the teacher education proposal presented by Felício, Menezes and Borges Neto (2020), the authors adopt a perspective grounded in the Generalizable Fedathi Sequence, presenting a teacher training model aligned with the Fedathi Sequence Research Methodology. This program aims to address the pedagogical profile of teachers, often shaped by traditional didactic methods, by encouraging more reflective and innovative teaching practices. The Generalizable Fedathi Training follows a logical-deductive-constructive approach, beginning with the empowerment of school leaders and teachers. The structure is organized into cycles encompassing the stages of Theoretical Trial, Planning, Execution, Refinement, and Database. Each stage is aligned with the Fedathi Sequence Research Methodology, offering a practical and integrated framework. The underlying goal is to foster a transformative process in teachers' professional practice through the internalization of Fedathi Sequence principles. The training includes empowering the teaching group, planning didactic sessions, implementing practices in the classroom, analyzing and refining the results, and finally, incorporating these experiences into a shared database to promote collective learning and knowledge dissemination (Felício; Menezes; Borges Neto, 2020).

Regarding the proposal presented by Borges Neto *et al*. (2023), it emerged from the need to offer teacher training and an updated teaching methodology to improve educational practices in Guinea-Bissau. The authors emphasize the phases of the Fedathi Sequence and their contributions to the teaching and learning process. However, they point out that,

> [...] any teaching-learning methodology, as previously mentioned, does not, by itself, solve the problem of learning difficulties. It is necessary to rely on other strategies that can assist in the teaching-learning process, such as continuing teacher education, curriculum, school management policy, infrastructure, Political-Pedagogic Project, content, methodology, educational resources, etc. All of this, in our view, requires investment (Borges Neto *et al.*, 2023, p. 7).

The transformation of the educational system requires a set of strategies that go beyond teacher qualification, encompassing policies that promote the appreciation of the teaching profession, adequate infrastructure, and institutional support. Thomazini and Jacomini (2019) emphasize that such appreciation must be based on three pillars: fair income that allows teachers to sustain themselves with a single job while conferring prestige to the profession; initial and continuing education aligned with practical demands, fostering competence and autonomy; and a structured career path that includes time for teaching, study, and collective development.

Furthermore, Bazzo and Scheibe (2019), as well as Jacomini and Penna (2016), argue that improving and democratizing educational management depends on conditions that ensure student access and retention, freedom to teach and conduct research, pluralism of ideas, democratic management, respect for diversity, and the assurance of quality standards. These factors, together with educational policies, are essential for addressing the challenges of teaching and learning.

The successful implementation of such strategies requires financial resources, time, and significant effort. In “Public Education with Good Results,” Faria and Maggi (2022) highlight that prioritizing and investing in policies focused on teachers, learning assessment and monitoring, the role of the Department of Education, curriculum, and teaching materials are crucial for reducing dropout and evasion rates, minimizing inequalities, and promoting learning.

The studies by Mendonça, Oliveira and Borges Neto (2020), Oliveira and Pereira (2019), Ponte Filho and Borges Neto (2020), Santos (2017) and Scipião *et al*. (2023) discuss the implementation of the Fedathi Sequence through workshops and training courses. These were analyzed based on their objectives, structure, methodology, participants, teaching materials, and training outcomes.

The mathematics workshops led by Santos (2017) aimed to enhance teachers’ classroom development of content. Following the planning principles of the Fedathi Sequence, the workshops were conducted in two phases—initially in a traditional classroom setting and later in a computer lab. Comprising six didactic sessions, the training focused on practical engagement with mathematical content and understanding local variables. The target audience included undergraduate and graduate students, as well as municipal and state school teachers. Participant

assessment was based on constructive performance in handling teaching materials and in the (re)elaboration of concepts, highlighting a reflective and practical approach.

The extension course offered by Oliveira and Pereira (2019) aimed to investigate mathematics teachers' perceptions regarding the importance of using methodologies and Learning Objects. The theoretical and practical approach addressed Information and Communication Technologies, Learning Objects, and applied methodologies in mathematics teaching, including the Fedathi Sequence. Approximately sixteen mathematics teachers participated, contributing to a broad view of innovative teaching practices.

The course conducted by Mendonça, Oliveira and Borges Neto (2020) sought to train mathematics teachers from a Fedathian perspective, using five forums on the Moodle platform. Discussions were guided by readings from the book *Fedathi Sequence: Fundamentals* (Borges Neto, 2018), focusing on the guiding question of how the methodology can be applied in teaching practice. Forty-six teachers participated and reflected critically on pedagogical practices, highlighting the Maturation phase and the hand-in-pocket pedagogy as innovative and challenging elements.

The extension course coordinated by Ponte Filho and Borges Neto (2020) went beyond merely teaching about educommunication.[1]. Across nine sessions, the course aimed to understand teachers' realities through shared pedagogical experiences. Emphasis was placed on participants' interpretations of generative themes, fostering interactive and reflective training. Eleven early-years teachers from a municipal school in Fortaleza participated. Although specific materials were not detailed, the four stages of the Fedathi Sequence guided the course structure.

According to Ponte Filho and Borges Neto (2020), participants were encouraged to record classroom activities that presented teaching challenges, marking Position Taking stage. Each session began with the screening and discussion of these videos, promoting Maturation. The dynamics continued with small group discussions about the difficulties faced, guided by the generative theme proposed by the course coordinator.

[1] Educommunication constitutes an interdisciplinary approach that integrates education and communication with the aim of fostering more interactive, participatory, and democratic learning environments. It encourages student autonomy, critical thinking, and dialogical engagement through diverse modes of communication.

Subsequently, teachers shared their conclusions and experiences in a collective and educommunicative debate, integrating Fedathi Sequence concepts (Solution pha,se).

The course by Scipião *et al*. (2023) aimed to explore relationships between learning profiles using various theories. Conducted remotely, it followed the phases of the Fedathi Sequence and involved ninety participants, including ten trainers. The research focused on five participants who met the criterion of being public-school mathematics teachers in the early years. Teaching materials included study texts and guiding questions for activities, although specific materials were not detailed. Scipião *et al*. (2023) highlight that the research results were based on participants' perspectives on the Theory of Objectification, with an emphasis on cognitive styles. The course combined synchronous and asynchronous training through Google Meet and TelEduc platforms.

The “category impacts on educational policy and teacher training” aimed to analyze studies addressing educational policy issues, in order to understand the integration and application of the Fedathi Sequence in teacher training and its interaction with management policies. Among the twelve reviewed articles, only four briefly discussed educational policy. Santos and Matos (2017) highlight the creation of National Curriculum Common Basis (BNCC) in 2017, questioning teachers' participation in curricular reform policies, teacher training, and assessment. The study reflects on the Fedathi Sequence and the Theory of Objectification, acknowledging the teacher's role as a knowledge mediator. While the Fedathi Sequence focuses on teaching, the Theory of Objectification holds that teaching and learning are inseparable, presenting creative insubordination as a responsible form of curricular innovation. The relevance of teacher education grounded in creative insubordination is underscored, taking ethical principles and their implications for educational policy into account.

The study by Ponte Filho and Borges Neto (2020) points to the urgent need for educational policies that promote improved communication between teachers and students. The authors emphasize the lack of adequate teacher training and the absence of a clear policy to improve communication between students and education professionals. Moreover, they stress that the discourse of official documents often reflects teachers' discomfort with concepts such as "pedagogical decentralization" and educommunicative principles.

The research by Vieira, Mourão and Braga (2020) highlights the initiative by the State of Ceará, which invested in teacher training to meet Goal 5 of National Education Plan (PNE), presenting the Literacy Pact at the Right Age Program as a policy to support municipalities. The authors detail the strategies adopted during training sessions, such as the use of the Fedathi Sequence and Constructive Alignment. They emphasize that these initiatives are vital to building quality education aligned with the PNE goals. The partnership between trainers and teachers is seen as essential to the program's success, despite challenges such as some teachers' resistance to innovative methods.

Addressing the education system in Guinea-Bissau, Borges Neto *et al*. (2023) shed light on changes in teaching methodologies since the colonial period, highlighting the rigidity and lack of dialogue between teachers and students. The study highlights persistent challenges, such as widespread grade repetition and the absence of meaningful interaction between teachers and learners, noting that the methodologies employed in the classroom should be a concern not only for teachers but also for schools and national education policies. Within this context, the Fedathi Sequence is presented as a methodological proposal to support teachers in basic education.

In summary, this analysis reveals a broad range of empirical and theoretical perspectives and contributions related to the Fedathi Sequence, contextualized within various educational settings. It also highlights a gap in the discussion of educational policy across the reviewed publications—particularly relevant given the importance of theoretical understanding for effective implementation.

5 Final Considerations

Throughout this study, the research questions were addressed through an analysis of the research corpus, which highlighted the application of the Fedathi Sequence in teacher education as a key approach for enhancing pedagogical practice and the teaching and learning process, revealing a variety of implementations. Additionally, the analysis uncovered valuable contributions. It was found that the application of the Fedathi Sequence in teacher education occurs in multiple contexts, such as pedagogical workshops, extension courses, and classroom experiences, encompassing both initial training and continuous formation teachers. This diversity of

contexts suggests the versatility and relevance of the Fedathi Sequence as a theoretical and methodological approach.

On the other hand, the study also identified a significant gap: the limited exploration of the difficulties, challenges, and constraints faced by teachers when implementing this pedagogical approach. Furthermore, although some studies mention the relationship between the Fedathi Sequence and public policies, the discussion on how this methodology contributes to and engages with these policies remains insufficient.

The objective of this systematic literature review was partially achieved. The first goal, understanding the application of the Fedathi Sequence in teacher education, was met through the analysis of articles that demonstrated the use of this methodology in various contexts. However, the second objective, exploring its connection with educational policies, was only superficially addressed in the reviewed studies. Only four articles briefly mentioned the topic, discussing the National Common Curricular Base (BNCC), the need for policies to enhance teacher-student communication, continuing education programs, and structural challenges in basic education. Nevertheless, the direct relationship between the Fedathi Sequence and educational policies was not thoroughly examined, indicating a gap in the existing literature.

This study has contributed knowledge about the practical application of the Fedathi Sequence in diverse educational contexts, highlighting its relevance for teacher education. Moreover, the results emphasize the need for future research that delves deeper into the interaction between this pedagogical approach and educational policies, as well as the challenges teachers face in its implementation.

REFERENCES

ABRUCIO, Fernando Luiz. **Teacher Education in Brazil**: Diagnosis, Policy Agenda, and Strategies for Change. São Paulo: Moderna, 2016.

ABREU, Dalmario Heitor Miranda de *et al.* Fedathi sequence methodology in holiday discipline curriculum, evaluation and creativity in mathematics of fundamental education. **Brazilian Applied Science Review**, v. 3, n. 6, p. 2489-2500, 2019. Available at: https://ojs.brazilianjournals.com.br/ojs/index.php/BASR/article/view/4704/4342 . Accessed on: October 10, 2023

ANDRADE, Wendel Melo *et al.* Fedathi Sequence methodology in the teaching, teaching and teaching learning process: An integrative review. **Brazilian Journal of Development**, v. 5, n. 12, p. 29858-29869, 2019. Available at: https://ojs.brazilianjournals.com.br/ojs/index.php/BRJD/article/view/5293/4822 . Accessed on: September 12, 2023.

BARDIN, Laurence. **Content Analysis**. São Paulo: Edições 70, 2021.

BAZZO, Vera; SCHEIBE, Leda. Back to the future...setbacks in the current teacher education policy. **Revista Retratos da Escola**, Brasilia, v. 13, n. 27, p. 669-684, 2019. Available at: https://retratosdaescola.emnuvens.com.br/rde/article/view/1038 . Accessed on: February 28, 2025.

BORGES NETO, Hermínio. **Fedathi Sequence: Foundations**. Curitiba: CRV, 2018.

BORGES NETO, Hermínio *et al.* Fedathi sequence: a methodological proposal for fundamental and high school in Guinea-Bissau. **Acta Scientiarum. Education**, v. 45, 2023. Available at: http://educa.fcc.org.br/pdf/actaeduc/v45/2178-5201-aseduc-45-e52913.pdf . October 10, 2023

DAVIS, Claudia Leme Ferreira *et al*. Continuous Education for Teachers in some Brazilian states and counties. **Cadernos de pesquisa**, v. 41, n. 144, p. 826-849, 2011. Available at: http://educa.fcc.org.br/scielo.php?pid=S0100-15742011000300010&script=sci_abstract . Accessed on: February 28, 2025.

FARIA, Ernesto Martins; MAGGI, Lecticia. **Public Education with Positive Outcomes:** Strategies and Actions Mapped by Research in Over a Thousand School Networks Across All Regions of Brazil. São Paulo: Santillana Educação, 2022.

FELÍCIO, Milínia Stephanie Nogueira Barbosa; MENEZES, Daniel Brandão; NETO, Hermínio Borges. Generalized Fedathi Training: Teacher Training Methodology. **Boletim Cearense de Educação e História da Matemática**, v. 7, n. 19, p. 24-40, 2020. Available at: https://revistas.uece.br/index.php/BOCEHM/article/view/2906/2550 Accessed on: October 10, 2023

FELÍCIO, Milínia Stephanie Nogueira Barbosa; MENEZES, Daniel Brandão; BORGES NETO, Hermínio. FEDATHI SEQUENCE FOR CHANGE IN PRACTICE:case study of a scientific theater experiment. **Revista Teias**, v. 22, n. 64, p. 132-150, 2021. Available at:: http://educa.fcc.org.br/pdf/tei/v22n64/1518-5370-tei-22-64-0132.pdf . Accessed on: October 10, 2023

FONTENELE, Francisca Cláudia Fernandes; BORGES NETO, Hermínio; SANTOS, Maria José Costa dos. Relations between Fedathi Sequence and the Meta Levers n Linear Algebra lessons. **Revista de Educação Matemática e Tecnológica Libero-Americana**, v. 6, n. 1, 2015. Available at: https://periodicos.ufpe.br/revistas/emteia/article/view/2264/1831 . Accessed on: October 03, 2023

IMBERNÓN, Francisco. **Continued teacher training**. Artmed Editora, 2010.

JACOMINI, Márcia Aparecida; PENNA, Marieta Gouvêa de Oliveira. Teaching career and recognition of the significance of teaching: working conditions and professional development. **Proposições**, v. 27, n. 2, p. 177-202, 2016. Available at: https://www.scielo.br/j/pp/a/M34nYfJTrzB4Sfv7NqVgTTp/. Accessed on: February 28, 2025.

KITCHENHAM, Barbara Ann; CHARTERS, Stuart. Guidelines for perrforming Systematic Literatura Reviesws in Software Engineering. **EBSE Technical Report**. Durham: EBSE, 2007. Available at: https://legacyfileshare.elsevier.com/promis_misc/525444systematicreviewsguide.pdf . Accessed on: September 02, 2023.

LIMA, Ivoneide Pinheiro de. **Mathematics in the Training of Pedagogy Professionals**: Pedagogical workshops and the Teleduc platform in the development of mathematical concepts. 184 pages. 2007. Doctoral Dissertation. Dissertation (Ph.D. in Education) – Faculty of Education, Federal University of Ceará, Fortaleza. Available at: https://repositorio.ufc.br/bitstream/riufc/3088/1/2007_Tese_IPLima.pdf . Accessed on: September 02, 2023.

MENDONÇA, Adriana Ferreira; OLIVEIRA, Silvia Sales de; BORGES NETO, Hermínio. Content Analysis of the Ongoing Teacher Education Process Based on the Proposals of the Fedathi Sequence and the Reflexive Teacher. **ACTIO: Docência em Ciências**, v. 5, n. 2, p. 1-19, 2020. Available at: https://revistas.utfpr.edu.br/actio/article/view/11725/7621 . Accessed on: October 10, 2023.

NEWMAN, Mark; GOUGH, David; Systematic reviews in educational research: Methodology, perspectives and application. *In*: RICHTER, Olaf Zawacki *et al*. (ed.). **Systematic Reviews in Educational Research**: methodology, perspectives and application. Wiesbaden: Springer VS, 2020, p. 3-22. Available at: https://www.researchgate.net/publication/337464751_Systematic_Reviews_in_Educational_Research_-_Methodology_Perspectives_and_Application . Accessed on: September 02, 2023.

OLIVEIRA, Silva Sales de; BARBOSA, Jéssica de Castro. Pedagogical mediation: Theoretical Approaches of the Fedathi Sequence and the e social interactional theory. *In*: BORGES NETO, Hermínio (org.). **Fedathi Sequence:** Interfaces with Pedagogical Thought. Curitiba: Editora CRV, 2019.

OLIVEIRA, Gisele Pereira; PEREIRA, Ana Carolina Costa. The Use Of Teaching Engineering And Fedathi Sequence As Methodological Tools For Math Teacher Training. **Boletim Cearense de Educação e História da Matemática**, v. 6, n. 18, p. 65-78, 2019. Available at: https://revistas.uece.br/index.php/BOCEHM/article/view/2325/1983 . Accessed on: October 10, 2023

PAGE, Matthew James *et al.* The PRISMA 2020 statement: updated recommendations for reporting systematic reviews. Translation: Taís Freire Galvão e Gustavo Baldin Tiguman. **Epidemiologia e Serviços de Saúde**, Brasília, DF, v. 31, n. 2, p. 1-20, 2022. Available at:

http://scielo.iec.gov.br/pdf/ess/v31n2/2237-9622-ess-31-02-e2022107.pdf . Accessed on: September 02, 2023.

PONTE FILHO, Marcus Henrique Linhares; BORGES NETO, Hermínio. Pedagogical Decentralization in an educative communication training Guided by the Fedathi Sequence. **Comunicação & Educação**, v. 25, n. 2, p. 81-93, 2020. Available at: https://www.revistas.usp.br/comueduc/article/view/172139/168830 . Accessed on: October 10, 2023

PRODANOV, Cleber Cristiano; FREITAS, Ernani Cesar de. **Scientific Work Methodology**: Research Methods and Techniques for Academic Work. 2. ed. Novo Hamburgo: Feevale, 2013. Available at: www.feevale.br/editora . Accessed on: November 2, 2023.

THOMAZINI, Leandro; JACOMINI, Márcia Aparecida. Teacher valorization policy and career of Basic Education teachers in the state of São Paulo. **Praxis educativa**, v. 14, n. 1, p. 115-137, 2019. Available at: http://educa.fcc.org.br/scielo.php?pid=S1809-43092019000100115&script=sci_arttext . Accessed on: February 28, 2025.

SANTOS, Maria José Costa dos. The Formation of the Professor of Mathematics: Fedathi Sequence Methodology (SF). **Revista Lusófona de Educação**, v. 38, n. 38, 2017. Available at: https://revistas.ulusofona.pt/index.php/rleducacao/article/view/6261 . Accessed on: October 10, 2023

SANTOS, Maria José Costa dos. **Relearning Fractions Through Pedagogical Workshops: A Challenge for Teacher's early instruction**. 2007. 134f. Dissertation (Master's Degree in Education) – School of Education, Federal University of Ceará, Graduate Program in Brazilian Education, Fortaleza, 2007. Available at: https://repositorio.ufc.br/bitstream/riufc/6617/1/2007_DIS_MJCSANTOS.pdf . Accessed on: September 02, 2023.

SANTOS, Maria José Costa dos; MATOS, Fernanda Cíntia Costa. The Creative Insubordination In The Continuous Training Of The Pedagogue For The Teaching Of Mathematics: Do The Subalterns Speak? **Revista de Ensino de Ciências e Matemática**, v. 8, n. 4, p. 11-30, 2017. Available at: https://revistapos.cruzeirodosul.edu.br/rencima/article/view/1491/904 . Accessed on: October 10, 2023

SCIPIÃO, Lara Ronise de Negreiros Pinto *et al.* Learning styles in continuing teacher education: analysis on an extension course. **Revista Thema**, v. 22, n. 2, p. 342-357, 2023. Available at: https://periodicos.ifsul.edu.br/index.php/thema/article/view/3224/2261 . Accessed on: October 10, 2023.

SOUSA, Francisco Edisom Eugenio de. **The question as didactic mediation strategy in teaching Mathematics through the Fedathi Sequence**. 2015. 283 pages. Dissertation (Ph.D. in Education) – School of Education, Federal University of Ceará, Graduate Program in Brazilian Education, Fortaleza, 2015. Available at: https://repositorio.ufc.br/bitstream/riufc/14363/1/2015_tese_feesousa.pdf . Accessed on: September 03, 2023.

SOUZA, Margarida Maria Pimentel de; NASCIMENTO, Sandra Patrícia de Faria; LUSTOSA, Francisca Geny. Teaching Brazilian Sign Language as first language: curriculum in practices of supervised stage of Letras Libras' Course. **Entrepalavras**, v.8, n.3, p. 447-468, 2018. Available at: https://repositorio.ufc.br/bitstream/riufc/39926/1/2018_art_mmpsouzaspfnascimento.pdf . Accessed on: October 10, 2023.

VIEIRA, Hebe Mara dos Santos; MOURÃO, David Ribeiro; BRAGA, Adriana Eufrásio. Conceptions About The Mathematics Teacher Formation In The Mais Paic Program. **Revista Expressão Católica**, v. 9, n. 1, 2020. Available at: http://publicacoesacademicas.unicatolicaquixada.edu.br/index.php/rec/article/view/3877/09 . Accessed on: October 10, 2023.

Received in november/2024 | Approved in march/2025

MINI BIOGRAPHY

Raiele Conceição Cavalcante
Master's student in Educational Technology at the Federal University of Ceará (UFC), with a Post-graduate specialization in the Teaching of Mathematics and Physics from the União Brasileira de Faculdades, and a bachelor's degree in Mathematics from the Federal Institute of Maranhão. She is a member of the research group *Núcleo de Pesquisa em Educação, Tecnologia e Formação Docente* (Research Center on Education, Technology, and Teacher Training).
Email: cavalcanteraiele@gmail.com

Francisco Herbert Lima Vasconcelos
Ph.D. in Teleinformatics Engineering and M.Sc. in Computer Science from the Federal University of Ceará (UFC), with a bachelor's degree in Physics Education from the same institution. He is an Associate Professor III at UFC and a permanent faculty member in the Master's Programs in Science and Mathematics Teaching (UFC) and in Educational Technologies (UFC).
Email: herbert@virtual.ufc.br

Daniel Brandão Menezes
Ph.D. in Brazilian Education and M.Sc. in Mathematics from the Federal University of Ceará (UFC), with a bachelor's degree in Mathematics from the State University of Ceará (UECE). He is an Associate Professor at UECE and a permanent faculty member in the Master's Program in Educational Technologies (UFC). He is the leader of the research group *Núcleo de Pesquisa em Educação, Tecnologia e Formação Docente* (Research Center on Education, Technology, and Teacher Training).
Email: brandao.menezes@uece.br

Translated by Felipe Carvalho Bomfim de Lima