Self-reflection proposal on digital competence for regular primary education teachers: the Selfie For Teachers model

Luiz Carlos Sacramento da Luz
Master of Science in Education
Institution: Universidade Federal do Recôncavo da Bahia (UFRB)
Address: Rua Rui Barbosa, 710, Cruz das Almas – BA, CEP: 44380-000
E-mail: dnluizluz@gmail.com

Eniel do Espírito Santo
Ph.D. in Science Education
Institution: Universidade Federal do Recôncavo da Bahia (UFRB)
Address: Rua Rui Barbosa, 710, Cruz das Almas – BA, CEP: 44380-000
E-mail: eniel@ufrb.edu.br

ABSTRACT
Expansion of Digital Information and Communication Technologies (DICT) applied to education requires increasingly prepared educators to interact and produce knowledge, thus avoiding the mere transposition of analogue information to digital. Accordingly, analysis of the digital competence of teachers through self-reflection is a necessity in the face of the contradictions that the 21st century experiences, primarily with the Covid-19 challenges. The purpose of this study is to analyze the importance of the Selfie for Teachers model in the construction/improvement processes of digital competences of educators in primary education, providing them with a self-reflection on their level of digital skills. To this end, we opted for the methodological strategy of an exploratory and descriptive study, using bibliographic research on the subject as data source. The article concludes that the theoretical Selfie for Teachers model encourages teachers and suggests, through real-time returns, possibilities to constantly build on and improve their digital competence.

Keywords: digital competence, teachers, Selfie For Teachers, primary education, DICT.

RESUMO
A expansão das tecnologias digitais de informação e comunicação (TDIC) aplicadas à educação exige professores cada vez mais preparados para interagir e produzir conhecimentos, evitando assim a mera transposição de informações do analógico para o digital. Dessa forma, a análise por meio da autorreflexão das competências digitais docentes é uma necessidade frente às contradições que o século XXI vivencia, sobretudo, com os desafios da Pandemia da Covid-19. O objetivo deste estudo é analisar a importância do modelo Selfie for Teachers nos processos de construção/aprimoramento das competências digitais dos
professores na educação básica, proporcionando-lhes uma autorreflexão acerca do seu nível de proficiência digital. Para tanto, optamos pela estratégia metodológica da pesquisa exploratória e descritiva, utilizando como fonte de dados a pesquisa bibliográfica sobre a temática. O artigo conclui que o modelo teórico de autorreflexão Selfie for Teachers convida e sugere ao professor, por meio das devolutivas em tempo real, possibilidades de construir ou aprimorar de forma constante suas competências digitais.

**Palavras-chave:** competências digitais, professores, Selfie For Teachers, educação básica, TDIC.

1 INTRODUCTION

Inherent to historical, political and, above all, social contractions that Brazilian education has always experienced, it is unquestionable that the 21st century presents itself as a historical landmark that leads us to redefine archaic methodological practices, shackled to traditional pedagogy that does little to contribute towards the education of students.

Undoubtedly, diffusion of technologies applied to education, mainly in the final decades of the 20th century, contributed towards disrupting more traditional curricular and reproduction theories. However, the need for redefining teaching and learning processes gains space in the interaction and development of a globalized society, now viewed as the relationship of people with the most diverse and complex realities in which he is inserted.

As pointed out by Freire (1991, p. 43), “from the relations of individuals with reality, resulting from being with it and within it, through acts of creation, recreation and decision, they is dynamizing their world. Dominating reality. Humanizing it.” Thus, the school plays a role that goes beyond being a mere production oriented facility, but an institution that promotes emancipation.

With the unexpected advent and latent dissemination of Covid-19, in the early 2020s, throughout the planet, a standstill began accompanied by a significant number of deaths, characterizing an unprecedented sanitary crisis. Thus, in order to guarantee survival, society was obliged to socially isolate, and it forced education, especially primary education, to reinvent itself in order to offer minimal alternatives to continue systematic education on an online perspective.
“Within this disruptive context, knowledge regarding pedagogical potentials of digital technologies became a *sine qua non* condition for educators”, states Santo, Lima e Oliveira (2021, p. 115).

Since pedagogical tradition, especially in Brazil, is based on classroom teaching, there are few experiences regarding Hybrid Education and even the most advanced primary education institutions do not have adequate pedagogical support with this modality, which requires research, adaptations and necessary formation. Such fact causes concern with polysemic suggestions regarding the application of the online modality. Consequently, the need arose, in such an adverse situation, to provide an education with minimum quality, which could through technologies dialogue with students with the purpose of not only transmitting information, but of producing knowledge.

However, for this knowledge production it was necessary to qualify the teacher, no longer through secular traditional literature or even by means of thick textbooks from historical libraries, but through online digital interfaces of self-reflection to guide the construction or improvement of the digital competence of educators. In this respect, the European Union presented the European Framework for the Digital Competence of Educators (DigCompEdu) to the educational community and, in the high phase of the Covid-19, the *Selfie for Teachers* model, with a digital interface including theoretical support focused on the specific needs of primary education teachers.

In the context of a volatile, uncertain, complex and ambiguous society (VUCA), the Brazilian National Common Core (BNCC) curriculum defines the concept of digital competence as “mobilization of knowledge (concepts and procedures) and skills (practical, cognitive and socio-emotional), such as attitudes and values to solve complex demands of everyday life, the full exercise of citizenship and the world of work” (Brazil, 2017, p. 8).

In this regard, this article aims to analyze the importance of the theoretical *Selfie for Teachers* model in the construction/improvement processes of the digital competence of primary education teachers, considering the need for self-reflection on the returns of their levels of knowledge. And, as specific objectives,
the intention is to: a) identify the pedagogical functionality of the *Selfie for Teachers* model in the self-reflection process of the pedagogical competence for primary education teachers; b) recognize the importance of digital competence of primary education teachers in the teaching and learning processes; c) point out the need for dissemination and application of the model as a formative tool for improvement of the pedagogical practice of primary education teachers. As such, we opted for the methodological strategy of a descriptive exploratory research, using as source of data bibliographical research on the subject.

2 COVID-19 PANDEMIC: HISTORIC AND CONTEMPORARY LANDMARK FOR THE RESIGNIFICATION OF THE PERCEPTION OF DIGITAL COMPETENCES OF EDUCATORS

The advent of the Sars-cov-2 virus, causing the Covid-19, which was considered as a pandemic in 2020, with yet immeasurable consequence, began in 2019, when the scientific community announced an unknown virus, with a high potential for proliferation, and which could decimate thousands of lives in a short period of time. This moment, a historic and contemporary landmark, was characterized by a rational search for understanding the impacts of the virus and for a vaccine that could immunize the population.

Contamination occurred at a rapid pace, without the necessary time for scientists to develop efficient protocols to guarantee minimum health protection conditions. Thus, the scientific community itself was in doubt about necessary procedures and basic care in relation to the Covid-19 pandemic, and the World Health Organization (WHO) was questioned and inquired about the effectiveness of its guidelines.

In view of the various contradictions, the consensus was that the transmission of the virus occurred in a classic and non-exclusive means through contaminated respiratory droplets, mainly through coughing or sneezing of contaminated individuals, confirming the hypothesis of the high power of proliferation. Accordingly, distancing and social isolation were adopted by all the continents as some of the safest measures to save lives.
In this uncertain and frenetic pandemic context, primary education was instigated by society itself to present alternatives to mitigate the impacts on education and on pedagogical coexistence necessary for the development of students. Thus, the teaching and learning processes begin to be supported by technology, especially online. Under these conditions, various factors must be understood for the construction of pedagogical designs that respect and effectively contribute towards and educational process that goes beyond the contributions offered by the secular tradition of Pedagogical History.

Accordingly, the challenge wasn’t to reproduce, above all by means of emergency remote education, the basic and elementary premises of classroom education. It was necessary to construct a disruptive process of the education model based on physical presence, now made impossible due to social distancing.

In such disruptive context, knowing how to use pedagogical potentialities of digital technologies became a sine qua non for educators, especially considering the methodological specificities of online education and, above all, avoiding the mere transposition of the classroom pedagogical practices to the virtual “universe” (Santo; Lima; Oliveira, 2021, p. 115).

As such, in order to fully and consciously explore the potentialities of digital technologies in the search for the construction of a didactic design capable of meeting the elementary needs of the primary education students, the perception of the digital competences of the educators comprising this cycle of education was of great importance. It would be useless to structure a technological education without awareness of what digital competences these professionals would need to construct or improve. However, what is hereby presented as an elementary condition in practical terms was not greatly considered, resulting in a misstep in technology-mediated education in Brazil during the Covid-19 pandemic.

Still with the imminent fear of contamination and without any past historic guidance that could be researched in the History of Pedagogy or even in reference manuals of Medicine, immediate response was necessary in order not
to further paralyze the systematic processes of education, the educators, especially those from primary education, were experimenting the new, intuitively, paths that could contribute to the learning process in the most diverse aspects possible.

The search for understanding digital competences of educators is not related to investments in the acquisition of technological equipment for provision of mediation, or even a theoretical discussion of productive applicability of contents, but rather of how an educator could apply a curriculum to meet the needs of the globalized society, now also due to the Covid-19 pandemic, consistently, without knowing whether the professional was prepared for such challenge. In this context, it is possible to state that:

> Educators were flung into virtual environments, with formation processes eased and often merely instrumental or, in the majority of cases, without any formation capable of providing them with the development or improvement of digital competences demanded by the online spaces (Dias-Trindade; Santo, 2021 p. 100).

Thus, a dimensionality arises based on the potentialities of cyberspace, virtual learning environments, digital interfaces and many other terms that educators were not aware of, or had any conceptual or even procedural domain. However, social inequality became even more latent with the absence access to internet, to a mobile phone, notebook or tablet with minimum quality to ensure the possibility of classes or virtual meetings, despite the limited public policies of digital accessibility prompted by the adverse conditions resulting from Covid-19.

It is a fact that the Covid-19 pandemic induced educators to a reflexive and multidimensional pedagogical praxis, based on a disruption of the tradition of oral schooling for contemporary teaching and learning processes, in a perspective of digital alphabetization and literacy. Due to the need to recognize and improve digital competences of educators, literature shows us that several studies have been conducted. However, among them, international prominence and recognition was given to the European Framework for the Digital Competence of Educators (DigCompEdu), for its seriousness and functionality, as addressed hereunder.
3 DIGCOMPEDU - EUROPEAN FRAMEWORK FOR THE DIGITAL COMPETENCE OF EDUCATORS

In response to the challenges proposed by the globalized society and to the technological advance that inserts and naturalizes the most diverse forms of online technology in everyday life, the EU Science Hub sought to categorize digital teaching skills, according to the European Framework for the Digital Competence of Educators (DigCompEdu). Accordingly, through self-reflection, these professionals can and should construct and/or improve the necessary digital pedagogical competences to enable in a didactic way the elementary processes of Pedagogy: teaching and learning of students. The European Framework for Digital Competence of Educators consists of,

[...] a framework for the development of educators’ digital competence in Europe. It aims to help Member States in their efforts to promote the digital competence of their citizens and boost innovation in education. The framework is intended to support national, regional and local efforts in fostering educators’ digital competence, by offering a common frame of reference, with a common language and logic (Redecker, 2017, p. 7).

Thus, it is understood that the founding basis of DigCompEdu is supported by three structuring competences:

● Educators’ professional competences;
● Educators’ pedagogic competences;
● Learners’ competences.

It is observed that the three principles present ramifications that comprise 7 (seven) important points of attention for the self-reflection process of educators:

1. Professional engagement;
2. Digital resources;
3. Teaching and learning;
4. Assessment;
5. Empowering learners;
6. Facilitating Learners’ Digital Competences;
7. Open Education.
It is considered that seven levels of perception of progression of digital proficiency are presented by the self-reflection model of the DigCompEdu, by area, including the new emerging area of Open Education, related to “use of open licences in educational resources, open educational practices for more inclusive teaching, publication of research as ‘open science’ and availability of research data as ‘open data’” (Mora-Cantallops et al., 2022, p. 13).

Nevertheless, both in Europe as well as in Brazil, the concern with the formation of educators that meet the aspirations of students is not something new, as per the presentation letter of the BNCC “it will not alter present inequalities in primary education of Brazil, but it is essential for changes to begin, apart from curricula, it will influence initial and continued formation of educators [...]” (Brazil, 2017, s/p., emphasis added).

Still in relation to the assertion of the need to form educators for a broad and liberating education through digital technology, the authors Santo, Lima e Oliveira (2021, p. 04) state that,

In order to understand educational gaps regarding the pedagogical use of digital technologies it is important to understand the context of the formation of educators acting in the first years of primary education in Brazilian public schools. Throughout the 20th century, what prevailed in teacher training courses in Brazil was a formation based on the ideal of technical rationality.

Digital competences should be explored throughout the whole Education, from its first stages, thus, the study and need for the formation of educators in digital practices is an extremely demographic issue that permeates all of the cycles of pedagogy practice. Regarding this immediate necessity, some institutions simply implement TVs, radios, notebooks and computers, stating that they were prepared for online or hybrid education.

In the face of such challenges, it is opportune to present the concept of competence.

The term competence originates from the Latin “competentia” meaning proportion and symmetry. Nevertheless, competence refers to the ability to understand a given situation and take an adequate attitude towards it, through thorough assessment seeking a way in which to
solve the issue with the purpose of acting and completing it in the best possible way. Competence is also related to “knowing how to do something”, which in turn involves a number of skills (Conceição et al., 2017, p. 4).

The European Framework for the Digital Competence of Educators states that “[...] the educator’s specific digital competence lies in effectively orchestrating the use of digital technologies in the different phases and settings of the learning process” (Redecker, 2017, p. 20).

Based on this reflection, the curricular guidelines for primary education point out the need for overcoming what the educators learn at University and the need to develop and resignify digital competences for teaching new generations. Accordingly, the old Brazilian National Curricular Guidelines for Primary Education already identified the need for the development, skills and characteristics of the digital environment, requiring educators “[...] to use scientific and technological knowledge, rather than their teaching experience, in other words, requires skills that the course of formation, in most cases, did not develop” (Brazil, 2013, p. 59).

As presented by the BNCC, it is necessary that the student be prepared to “use digital technologies for communication and information in a critical, meaningful, reflective and ethical manner in various social practices (including school) to communicate, access and disseminate information, produce knowledge and solve problems” (Brazil, 2017, p. 9).

In such scenario, in the constant search for educational quality in primary education during times of Covid-19, the Selfie for Teachers emerges as an interface capable of dialoguing in educational cycle.
4 SELFIE FOR TEACHERS: A DIGITAL COMPETENCE THEORETICAL MODEL FOR PRIMARY EDUCATION TEACHERS

However, it is also essential that the school understands and further incorporates new languages and operating modes, unveiling possibilities of communication (and also of manipulation), and that the schools educate on the more democratic uses of technologies and on a more conscious participation in the digital culture. When taking advantage of the communication potential of the digital universe, the school can institute new means of promoting education, interaction and the sharing of meanings between teachers and students (Brazil, 2017, p. 61).

The Covid-19 pandemic caused, due to distancing and social isolation dichotomy versus the need for a globalized education that could address the emergency requirements of primary education, that educators had the responsibility of researching and understanding the use of DICT to offer the necessary conditions to meet the daily needs of students in a simple, direct and enjoyable manner though technology-mediated environments.

Accordingly, one of the greatest challenges was how to assess the digital competences of educators. There was no space for significant teaching and learning hypotheses, based on the assumption that the educators did not have the domain and pedagogical knowledge that could be associated to the practice and to the challenges of a globalized education through online technology.

The issue is not reduced to the simplistic question of having or not knowledge, of point out right or wrong, but in the analysis of the level of proficiency of these professionals, thus, an analysis through self-reflection would not bring about a conception of frustration or inefficiency to this educator but it would contribute towards making/taking part of training guided to the level of the educator at the time of self-reflection.

The concern for preparing primary education teachers to address modern-day challenges permeates through all imaginable boundaries. In Brazil, the BNCC had already mentioned the legal and pedagogical duty of schools in the interaction between educators and students for the full formation of digital literacy.

However, the European Union, also with the aim of offering significant and reliable alternatives to address learning issues in current times, using the
DigCompEdu, created the Selfie For Teachers, which in essence is a theoretical model anchored on a self-reflection digital interface, based on the European Framework for the Digital Competence of Educators for primary teachers.

Thus, in September 2021, the European Commission's science and knowledge service issued a version dedicated to the analysis of digital competences of primary education teachers, easy-to-apply, with direct language and offering feedback with pedagogical guidance using graphs in real time.

From this perspective, it is understood that this change in paradigm instills the need for teachers, mainly regular primary education, with high qualification to fully exercise the construction of emancipatory knowledge demanded by contemporary contradictions. “The foundation of learning and human development, on which countries can develop, in a systematic manner, other levels and modalities of education and training” (UNESCO, 2016).

Accordingly, it is possible to perceive that the concern with the formation of educators is a global issue, in other words, the form in which teaching and learning processes occur cannot and should not lack methodological systematization. However, how to optimize interaction without considering the digital competences of these primary school teachers as a sine qua non premise? Thus, Selfie for teachers arises as a self-reflection digital interface that is not interested in assessing performance but to train teachers in reference to the challenges of technology-mediated education in order to construct or improve the educators digital competences.

Figure 1 presents a didactical illustration of this continuous learning process and resignification of digital competences. It should be observed that the digital interface may be applied during various phases of the teaching practice, because in a volatile, uncertain, complex and ambiguous society, digital competences are constantly adapted to the new and ongoing challenges presented by contemporaneity.
The interface is presented in an online version and is based on 6 (six) structural principles: professional engagement; digital resources; teaching and learning; assessment; empowering learners and facilitating learners’ digital competence. In order to enable self-reflection, the Self for Teachers model presents a questionnaire comprising 32 (thirty-two) questions, according to Figure 2. When concluding the questionnaire, the educators receive in real time a Selfie (photograph) of the level of their digital competences in relation to the learning teaching processes.
The *Selfie for Teachers* feedback portrays the moment, indicating points for improvement through written signs and statistical graphs, thus interface is continuous in its functionality and can always signal to the educator or to a group the weakest competences or gaps in a given situation. In this manner, the educator will know in which level of competence he/she is situated. The interface presents six levels according to the DigCompEdu classification (figure 3).

![Figure 3 - Levels of digital competence of educators (DigCompEdu).](image)

Thus, the levels of competence inform and guide the educator to recognize the stage in which the educator is at. The levels, for didactical purposes, are as follows:

- **Newcomer (A1):** the educator is aware of the potential of digital technologies for enhancing professional practice;
- **Explorer (A2):** the educator has started, minimally, using educational digital technologies;
- **Integrator (B1):** at this level the educator makes regular use of technologies;
- **Expert (B2):** The educator uses digital technology creatively and critically;
• Leader (C1): here the pedagogic and professional practices are manifested and the intention is the socialization of knowledge, especially with students;

• Pioneer (C2): at this level, the educator is already an emancipator and is fully aware of their activities through digital competences, exploring any virtual spaces for pedagogical purposes (Redecker, 2017).

In accordance with this categorization, it can be perceived that the learning and teaching processes cannot and should not be linear, but cyclical, thus schools should stimulate learning in which educators can effectively contribute, no longer exercising the historical content reproduction. Thus, technology-mediated education through self-reflection of educators extrapolates the most diverse possibilities of construction of assertive educational processes inherent to contemporary challenges.

Hence, the formation of educators shall be focused on specific needs with greater assertiveness in the digital competence gaps. Because it is a digital interface of self-reflection, feedbacks guided by the Selfie for Teachers model are cyclical and educators can constantly self-assess, once it is not a dichotomy of crass hits and misses.

In this context, it is important to emphasize that Selfie for teachers presents to the participant a non-disclosure agreement and, thus, the available information may not be socialized, avoiding any kind of awkwardness or exposure of the professionals who self-assessed. However, we informed herein that it was issued in October 2021 and that new versions with interface improvements may be applied.

5 Conclusions

When analyzing the constant changes of the educational processes, in Brazilian primary education, self-reflection of educators is a process of extreme necessity for didactic and methodological application through DICTs enabling minimum learning conditions, negating all and any simplistic forms for the transmission of information. This is the implementation of a pedagogical praxis
that understands contemporary challenges, among which the Covid-19 pandemic and its effects on learning.

Nevertheless, the study evidenced that self-reflection by means of the Selfie for Teachers is a reality that is not yet applied or understood by many educators, which hinders changes to traditional practices based on prior centuries, completely denying all and any development provided by technologies.

The study also evidences that the School should conduct its educators through ongoing training and guided towards the cycle to which such educator belongs. The training process should be continuous and systematic in the perspective that it should be innovative in the measure in which society transforms.

In such perspective, it will be up to the educators, from the self-reflection analysis, to understand the competences that need to be constructed and/or improved in order to insert their students in a disruptive and emancipatory educational context.

In response to the question that led to this article, the Selfie for Teachers platform contributes significantly by mapping six structuring competences that guide the educator in carrying out technology-mediated education, as well as providing a feedback in real time, in the form of a report and with proficiency graphs that settle any possibilities of doubts of how the professional can and should develop the educational practice, thus digital interface invites the professional to a contemporary emancipatory literacy.

Challenges for the popularization and applicability of the digital interface are also characterized as indicators to be understood by the educational institutions in the five regions of Brazil, despite the online platform being available free-of-charge, translated to 24 languages, in addition to providing digital certification for participants, in this context it is worth mentioning that the platform should be used continuously in a cyclical process of assessment of the digital competences of educators.

This study does not exhaust such a complex subject matter but aims to contribute so that other interested parties may seek for foundations for other
researches. Thus, as suggestions for researches correlated to the study, we put forward: a study of the polysemy of digital competences; availability of the physical resources necessary for use by technology-mediated education and assertive public policies, consistent and focused on the use of digital resources for primary education students in Brazil.

ACKNOWLEDGMENTS

The present paper was carried out with the support of the Higher Education Personnel Improvement Coordination – Brazil (CAPES) – Financing Code “001.”
REFERENCES


