

**NATIONAL EDUCATIONAL TECHNOLOGY PROGRAM - PROINFO: THINKING
OF EDUCATIONAL POLICY BEYOND IMPLEMENTATION
AT PUBLIC SCHOOL**

***PROGRAMA NACIONAL DE TECNOLOGIA EDUCACIONAL – PROINFO: PENSAR
A POLÍTICA EDUCACIONAL PARA ALÉM DA IMPLEMENTAÇÃO
NA ESCOLA PÚBLICA***

***PROGRAMA NACIONAL DE TECNOLOGÍA EDUCATIVA - PROINFO: PENSANDO
EN LA POLÍTICA EDUCATIVA MÁS ALLÁ DE LA IMPLEMENTACIÓN
EN LA ESCUELA PÚBLICA***

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ABSTRACT: This article aims to analyze the policy of the National Educational Technology Program (PROINFO) in different contexts, considering the articulations - disputes and clashes -, for its idealization and development, going through its performance in the school community. To this end, it appropriates bibliographic research, based on the approach of the policy cycle and the theory of the performance of Stephen Ball and collaborators, when they present educational policies in processes of construction and meaning in different cycles. It is understood that the trajectory of the PROINFO educational policy is marked, above all, by the multiple demands, discourses, meanings, interpretations and actions observed from the context of influence, going through the context of text production and the context of school practice. In these contexts, PROINFO is identified as part of a social agenda, in which different groups of power compete for spaces to legitimize their ideas on the fundamentals of this proposal, which is not simply implemented in public schools.

KEYWORDS: PROINFO. Policy cycle. Theory of performance. School.

RESUMO: *Este artigo tem por objetivo analisar a política do Programa Nacional de Tecnologia Educacional (PROINFO) em diferentes contextos, considerando as articulações – disputas e embates –, para a sua idealização e seu desenvolvimento, passando por sua atuação na comunidade escolar. Para isso, apropria-se da pesquisa bibliográfica, a partir da abordagem do ciclo de políticas e da teoria da atuação de Stephen Ball e colaboradores, quando apresentam as políticas educacionais em processos de construção e significação em*

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ciclos diferentes. Entende-se que a trajetória da política educacional PROINFO é marcada, sobretudo, pelas múltiplas demandas, discursos, significados, interpretações e atuações observadas desde o contexto da influência, perpassando pelo contexto da produção de texto e pelo contexto da prática escolar. Identifica-se, nesses contextos, o PROINFO como parte de uma agenda social, em que diferentes grupos de poder disputam espaços a fim de legitimar suas ideias sobre fundamentos desta proposta que não é, simplesmente, implementada na escola pública.

PALAVRAS-CHAVE: PROINFO. Ciclo de políticas. Teoria da atuação. Escola.

RESUMEN: *Este artículo tiene como objetivo analizar la política del Programa Nacional de Tecnología Educativa (PROINFO) en diferentes contextos, considerando las articulaciones - disputas y enfrentamientos -, para su idealización y desarrollo, pasando por su actuación en la comunidad escolar. Para ello, se apropia de la investigación bibliográfica, desde la perspectiva del ciclo de políticas y la teoría del desempeño de Stephen Ball y colaboradores, cuando presentan políticas educativas en procesos de construcción y significado en diferentes ciclos. Se entiende que la trayectoria de la política educativa de PROINFO está marcada, sobre todo, por las múltiples demandas, discursos, significados, interpretaciones y acciones observadas desde el contexto de influencia, pasando por el contexto de producción de textos y el contexto de práctica escolar. En estos contextos, PROINFO se identifica como parte de una agenda social, en la que diferentes grupos de poder compiten por espacios para legitimar sus ideas sobre los fundamentos de esta propuesta, que no se implementa simplemente en las escuelas públicas.*

PALABRAS CLAVE: PROINFO. Ciclo de políticas. Teoría del desempeño. Colegio.

Introduction

We live in the era of network connectivity, an era driven by the massive presence of digital technologies in the most varied daily activities of the most varied subjects. As a result, human behavior is transformed, its way of being, seeing and experiencing the world starts to embrace other formats, such as digital screens. Faced with so many novelties, digital culture is inaugurated, conceived by Heinsfeld and Pischetola (2017, p. 1354, our translation) as a “cultural marker, which involves both digital artifacts and distinct systems of meaning and communication, capable of describing the contemporary life ways”. Digital culture, associated with technologies, demands new relationships between technique and social life.

Faced with the need to insert the school into the new dynamics of contemporary society, mediated by the networked digital culture, educational policies were designed and formulated to be acted upon by teachers, intending to contribute to the educational process. Now, in 1997, the National Educational Technology Program (PROINFO) appeared, through Ordinance n. 522. Its proposal presents, as its purpose, the constitution of educational

environments using technological artifacts, as a potential resource in teaching-learning practices. For this, it was necessary to acquire and install computer labs in schools, as well as invest in teacher formation – since the development of the program depends, to a large extent, on the adhesion and performance of these subjects to fulfill its objectives.

In this understanding, PROINFO, object of this study, arises amid the demands of the digital culture scenario that drives us to new ways of thinking, relating and (re)creating our daily lives (ALONSO *et al.*, 2014). This brings us back to Ball and his collaborators when “they conceive policies as a process, as something that moves, which happens amidst interactions and in unstable terrain” (ROSA, S. S., 2019, p. 7, our translation). In other words, beyond its implementation in public schools, PROINFO's trajectory is marked by the historical evolution of information and communication technologies (ICTs), by groups participating in debates and disputes in search of legitimizing their ideas in the context of its creation, by teachers, students and the community in general when acting on their proposal through interpretations and resignifications. Thus, the public school, with its school practices, becomes a favorable space for the creation and recreation of policies.

This study results from reflections built in the Postgraduate Program in Teaching (PONSENSINO/UERN/UFERSA/IFRN) about the PROINFO proposal and its implications for the teaching-learning process. In this article, we are interested in analyzing the PROINFO policy in different contexts, considering the articulations – disputes and clashes –, for its idealization and its development, passing through the performance of the program in the school community.

For the development of the study, we appropriated the bibliographic research, which, according to Gil (2010, p. 29-31, our translation), “[...] is prepared based on previously published material. Traditionally, this type of research includes printed material such as books, magazines, newspapers, theses, dissertations and annals of scientific events”. The discussion about PROINFO will be discussed based on Bowe, Ball and Gold's (1992) approach to the policy cycle, when they analyze the construction and production of policies in contexts that permeate the interests and conflicts of different groups. We understand that educational policies are not merely implemented but put into action by subjects who have their own convictions and interests. Under the light of Ball, Maguire, Braun's theory of action (2016), we propose to understand the PROINFO policy implemented by teachers in the context of school practice.

After this brief introduction, we developed the rest of the text in three more sections. Initially, we will present the institutional design of PROINFO guided by its official texts.

Then, we will develop an analysis of the construction of the proposal of this policy, taking as a guideline the policy cycle during its three contexts: context of influence, context of political text production and the context of practice. At this point, we will treat the program as a policy designed by demands, discourses, meanings, interpretations and actions that unfold in different spaces and times. In the third section, we will bring to the scene PROINFO as a policy acted upon by teachers who assume, spontaneously and simultaneously, various roles – be it translators, interpreters and/or policy makers in the school space. Finally, in the final considerations, we will make a brief synthesis of the main aspects discussed in this study about PROINFO in its constitution process as an educational policy.

Representation of PROINFO in its official texts

Launched in Brazil through ordinance n. 522, of 9 April 1997, initially called the National Program for Informatics in Education (PROINFO), this educational policy was developed by the Department of Distance Education (SEED) in collaboration with states and municipalities. The initiative is a pioneer in the distribution of computers in public schools in the country. Its initial proposal was based on:

Art. 1 The National Program for Informatics in Education – Proinfo is created, with the purpose of disseminating the pedagogical use of computer and telecommunications technologies in public elementary and high schools belonging to the state and municipal networks (BRASIL, 1997 n/p, our translation).

From the program onwards, computer labs were installed in public schools, based on justifications such as: enabling changes in the development of research and in the construction of knowledge; new ways of thinking, working, experiencing and living with the current world, which “would greatly change educational institutions and other corporations”, justifying further in the sense that “the changes that technological evolution has caused in labor relations have a new positioning of education is required”, aiming to “prepare the individual for a new social management of knowledge, supported by a digital model explored in an interactive way” (BRASIL, 1997, p. 2, our translation).

According to the document that established its guidelines, PROINFO's objectives are:

Improve the quality of the teaching-learning process through equal access to technological tools that make information available and manage information;
Enable the creation of a new cognitive ecology in school environments through the appropriate incorporation of new information technologies by schools, bringing school culture closer to extra-school culture;

Provide an education aimed at scientific and technological development to develop intuition, creativity, agility of reasoning associated with the handling of technology and greater technical knowledge;
Educating for global citizenship in a technologically developed society, capable of communicating, living and dialoguing in an interactive and interdependent world (BRASIL, 1997, p. 3, our translation).

It is worth emphasizing that, in 2007, the ordinance responsible for instituting the program was transformed into Decree n. 6,300 of 12 December 2007. In this way, PROINFO undergoes reformulations and its nomenclature is modified, being designated, from that moment on, National Program of Educational Technology, keeping, however, with its initial acronym, PROINFO. In its new institutional and organizational design, pursuant to art. 2, “ProInfo will fulfill its purposes and objectives in collaboration between the Union, the States, the Federal District and the Municipalities, upon adhesion” (BRASIL, 2007, our translation).

In this sense, the Union's participation is established by the Ministry of Education (MEC) and the National Education Development Fund (FNDE), responsible for installing the technological environments, in addition to coordinating, monitoring and evaluating the program. In collaboration with the respective agencies, the states and municipalities participate through their secretariats and through the co-participation of the association of state secretaries, the National Council of State Secretaries of Education (CONSED), as well as the municipal secretaries, Union of Municipal Education Directors (UNDIME) (ESTEVÃO; PASSOS, 2015).

To carry out the aforementioned actions in the units - states and municipalities -, the Educational Technology Centers (NTE) and the Municipal Technology Centers (NTM) were created, where education professionals and specialists in hardware and software responsible for the formation of educators to work use of ICTs (CORDEIRO; BONILLA, 2018).

The formation of teachers and managers to use the new technological resources takes place through the National Program for Continuing Education in Educational Technology, Proinfo Integrado, created in 2008. The Ministry of Education's home page informs that:

The program offers training focused on the didactic-pedagogical use of Information and Communication Technologies (ICT) in daily school life, articulated with the distribution of technological equipment in schools and the offer of multimedia and digital content and resources offered by the Teacher's Portal, on TV School and School DVD, by the Public Domain and by the International Bank of Educational Objects (our translation).

To this end, the following courses are offered ⁴: **Introduction to Digital Education (60h); Technologies in Education**: teaching and learning with ICTs (60h); Project Preparation (40h); Learning Networks (40h).

It should be noted that PROINFO, in our view, has consistent and advanced bases in terms of its organization. This aspect can also be attributed to the commitment to the elaboration of their goals and guidelines by different government instances when articulating their engineering, considering important characteristics in human formation amidst a scenario that calls us to mutual and continuous interaction with ICTs.

In the direction taken so far, we seek to understand the functionality of the program from the documents that institutionalize it. However, our theoretical basis supports a study of policies in dialogue with different contexts and subjects, as policies are not restricted to official texts. From this perspective, we will develop the following section.

Networks of meanings about PROINFO from the continuous cycle of policies

The path to understanding policy must not start from a linear, static and superficial perspective. Ball (1993; 2016) allows us to analyze the trajectory of educational policies, such as PROINFO, beyond the actions and norms of the State, through a critical view of its initial formulation until its implementation in the school space.

In the “policy cycle” approach of Bowe, Ball and Gold (1992), the micropolitical processes and the actions of professionals who deal with policies at the local level are presented and point to the need for articulation between the macro and micro processes in the analysis of policies. In an interview given in September 2007 at the Annual Meeting of the British Educational Research Association (BERA) – “British Association for Educational Research” – held at the Institute of Education at the University of London, Stephen Ball points out: the “policy cycle does not it is intended to be a description of policies, it is a way of thinking about policies and knowing how they are done” (MAINARDES; MARCONDES, 2009, p. 301). The term “cycle” is used intending to break with the idea of verticalization and allows considering how policies are interpreted, re-signified and acted on in different contexts (MAINARDES, 2006).

In the work “*Reforming Education and Changing Schools: Case Studies in Policy Sociology*” (1992), the contexts of analysis of the trajectory of politics are portrayed: “context of influence”, “context of production of the political text” and “context of practice”. In this

⁴ The courses are offered through the Collaborative Learning Environment (e-ProInfo), a digital platform that allows public school teachers to take courses with other teachers.

fabric, such contexts are interconnected and none of them stand out from the other, there is no linearity. Therefore, it becomes a process based on cycles and involves discourses, disputes, interpretations, performances, sometimes openly; other times, in a muted way.

In light of the caveats, based on Bowe, Ball and Gold (1992), we will present the configurations of the respective contexts intertwined with the trajectory of PROINFO's educational technology policy.

The context of influence is defined as follows:

The first context, the influence context, is where public policy usually starts. It is here that political discourses are constructed [...]. Private arenas of influence are based on social networks within and around political parties, within and around government, and throughout the legislative process. Here, key political concepts are established (e.g., market forces, national curriculum, exclusion, budgetary devolution), they acquire currency and credibility, and provide a discourse and lexicon for policy initiation. (BOWE; BALL; GOLD, 1992, p. 19-20, our translation).

According to the authors' conception, in the context of influence, interest groups compete for space to define policy objectives, guidelines and strategies. Political discourses, consequently, often become divergent and even misaligned. This context is conducive to the propagation of ideas, of discourses that circulate in search of legitimacy. In the meantime, there is a dispute between interest groups to make their projects hegemonic, so the political discourses unfold amidst struggles and clashes with the aim of defining the engineering of policies.

In the case of PROINFO, in our understanding, the participating instances in its field of fluid ideas - such as the World Bank (program sponsor), the Transnational company Microsoft Windows, the Ministry of Education, the National Fund for Development of Basic Education, the State and Municipal Education Secretariats, educators and specialists in information technology and telecommunications, as well as universities and popular groups – strongly influence its institutional design.

Still for the purpose of illustration, we mention another aspect related to PROINFO when approaching the context of influence. The acquisition of computers compatible with IBM/Microsoft, with its hardware and software standard, in addition to characterizing the educational system through its interfaces, influences thousands of students, teachers and society in general to maintain the same consumption pattern of this product, since, considering that the subjects' immersion in the computer world was permeated by the aforementioned system, it is expected that they will become consumers of the American

company's hardware and software on their personal computers, for example (CASTRO, 2011).

The context of influence, symbiotically, is related to the second, called the context of text production, "while the context of influence is often related to narrower interests and dogmatic ideologies" [...] (MAINARDES, 2006, p. 52, our translation). The context of text production, in this sense, is configured as:

[...] Political texts are usually articulated in the language of the most general public interest. Political texts, therefore, represent politics. These representations can take various forms: official legal texts and political texts, formal or informal comments on official texts, official pronouncements, videos, etc. Such texts are not necessarily internally coherent and clear, and they can also be contradictory. They may use key terms differently. The policy is not made and finalized at the legislative moment and the texts need to be read in relation to the specific time and place of their production. Political texts are the result of disputes and agreements, as groups that operate within the different places of text production compete to control the representations of politics (BOWE; BALL; GOLD, 1992, p. 21, our translation).

The conception described emphasizes the context of text production as representative of policies, through, for example, official legal texts, formal or informal comments and official pronouncements. Considering that politics is not limited to moments of decision of the legislature or the text, but that it permeates distinct phases in its production and interpretation, imbued with the interests of diverse groups, legal and political texts are the result of disputes and commitments, determining the limits of the discourse itself, not being independent of history, power and interests (BALL, 1993).

In our initial discussion, we chose to bring the PROINFO policy based on its official documents, through Ordinance n. 522 of 9 April 1997 (establishing PROINFO), and the document PROINFO Guidelines, of Decree n. 6,300 12 of December 2007, which reconfigures and launches other proposals, such as PROINFO Integrated. Such documents, in our understanding, are presented as a possibility of reading PROINFO in the context of text production.

The third context is called the practice context. In it, based on the readings carried out by the group, policies are subject to different interpretations. Thus, several individuals delineate the warp of actions, readings and interpretations of political texts. Thus, with Ball (2016, p. 14, our translation), we reinforce: "[...] these texts cannot simply be implemented. They have to be translated from text to action – put into practice – in relation to history and

context, with available resources". Knowing this, each space where politics needs to be reached has its own interests, demands and perspectives, which cannot be neglected.

When dealing with PROINFO, public schools and NTEs approach this context, as they are spaces where the program policy is executed/acted by their political actors (teachers, managers, computer specialists). Based on this statement, all subjects involved in the making of politics can carry out their own interpretations, whether accepting, rejecting, remaking or questioning guidelines, or raising possibilities and imposing ways of doing things.

The public school, through experiences and skills built over time, acquires a peculiar way of dealing with the demands of the educational process. From this perspective, the PROINFO proposal is put into action, hybridized to the interests, convictions, meanings and interpretations of the actors who will put the policy into action. Mainly supported and implied by Ball's theory of acting and his collaborators, this discussion will come into play in the following section.

The teacher in PROINFO policy: implementer or actor?

Based on the theory of action idealized by Ball and his collaborators in the work "How school do policy" (2012) - and, translated for Brazil, "*Como as Escolas fazem Políticas: atuação em escolas secundárias*" (2016) -, we will deal with PROINFO as a policy put into action (enactment) by teachers/actors in the school curriculum. Ball's idea of enactment refers to the sense of staging, that is, the way the political actor comes across the text, representing/acting it in different ways. In our discussion, we will use the term acting in place of the term enactment.

According to Bowe, Ball and Gold (1992, p. 22-23, our translation), the teaching role in policies occurs as follows:

[...] practitioners do not confront policy texts as naive readers, they come with stories, with experience, with their own values and purposes, they have an interest in the meaning of policy. Policies will be interpreted differently, as the stories, experiences, values, purposes and interests that make up the different arenas. The simple point is that policymakers cannot control the meanings of their texts. Portions of texts will be rejected, selected in an ignored way, deliberately misunderstood, responses may be frivolous, etc. Also, once again, interpretation is a matter of struggle. Different interpretations will compete, they refer to different interests, one or the other interpretation will predominate.

For the authors, policies come from meanings attributed by the political actor, who participate in its construction. In this process, policies are interpreted in different ways and

policymakers cannot control such interpretations. The attempt to guarantee the effects of the policy is almost always frustrated, as the act of reading policies is carried out by actors imbued with interests, experiences and values that have implications for their implementation (SOUSA, 2019). Therefore, the theory of the “policy cycle” provokes us to think critically about the process of constitution of policies, because, according to Sousa (2019), it is a process that does not end in the macro space, that is, when policies are transformed into texts, such as legislation, educational regulations, it also extends to the micro space, such as the classroom, a place where the teacher acts, interprets, reframes and translates policies.

As the PROINFO policy is staged within the public school, in the context of practice, the multiple conceptions of its actors about various aspects, such as teaching, learning, technologies in education, curriculum policies, hybridize and affect the performance of this policy. Therefore, PROINFO will be subject to being acted on in different ways, and there may be moments of conflicts, denials and negotiations in this dynamic process that is the performance of policies. For example: teacher A can use the computer as a mere tool for planning his classes; Teacher B, on the other hand, resists using it in his teaching practices and does not do it; Professor C considers this artifact as a potential for conducting dynamic and interactive classes, taking advantage of all the possibilities of use. Thus, we consider that these professors are interpreting, giving new meaning and acting, in some way, to the program's proposal.

In the readings of the PROINFO Guidelines document, we found some strategies to be considered in its execution, among which we highlight: subordinating the introduction of information technology in schools to educational objectives established by the competent sectors; to foster a change in culture in the public education system for 1st and 2nd grades, in order to make it capable of preparing citizens capable of interacting in an increasingly technologically developed society (BRASIL, 1997).

Such passages in this document, embedded in Ball's theory of action, reveal that the curricular guidelines and actions provided by the PROINFO policy are intertwined with the meanings, conditions, disputes and convictions where this policy will be achieved. Thus, introducing information technology, changing the culture of the education system, preparing citizens to act in the context of connectivity are strategies that will be developed through the teacher's action/staging in this policy, as in PROINFO, as in other policies the translation process by the teachers takes place. This translation “[...] is an interactive process of making institutional texts and putting these texts into action, literally 'acting' on politics” (BALL; MAGUIRE; BRAUN, 2016, p. 69). It is through the didactic-pedagogical conceptions, in the

planning and development of activities with PROINFO resources, that the teacher translates and acts such policy.

Therefore, thinking of PROINFO's proposal as a curriculum policy committed to the immersion of digital technologies in the public-school space causes us to investigate its proposal through lenses that encompass the intentions, choices, conceptions and conditions described in the text and discourse of the PROINFO, as well as in teaching activities. In this understanding, Bonilla (2002, p. 281, our translation) highlights:

Taking ICTs as a political factor, as a knowledge and action strategy, does mean inserting ICTs in the school context, but also realizing the conception and conditions that led to this insertion, as well as the choices and the set of measures that accompany it. Depending on these conceptions and measures, we will be able to open space for the structuring of other educational territories or strengthen the educational model already in place.

The teaching performance at PROINFO is enhanced by demands of interests and interpretations triggered in the school context. This means that the technologies offered by the program cannot be reduced to a technical factor, but rather as a political factor, perceived in the way in which they are offered, used and produced (BONILLA, 2002). About this idea, Lévy (1993, p. 188, our translation) highlights: “[...] the being of a proposition, an image, or a material device can only be determined by the use we make of it, by the interpretation given to it, by those who come in contact with him”. What determines the nature of ICTs are the uses made considering the meanings we attribute. Ball (2006, p. 26, our translation) warns: “policies usually do not tell us what to do, they create circumstances in which the spectrum of available options about what to do is reduced or modified or in which particular goals or effects are established [...]”.

Based on these assumptions, the availability of computers with internet access in public schools is not a guarantee of producing a culture of information and knowledge, digital inclusion, improvement in the process of knowledge construction, development of skills required in the current labor market, or, also, of an education that dialogues with the student's external experiences, as the PROINFO policy aims. The set of actions developed from this policy, through the actors' recreations and interpretations, is interdependent on the context in which it finds itself.

From this scenario, we also perceive the essence of PROINFO's policy, because, much more than providing access to digital technologies, the engineering of this program is, like other policies, determined by interpretations and the uses we make of what the program offers.

Rosa, H. V. (2017) emphasizes that technologies, when introduced in school, are accompanied by terms such as “didactic”, “pedagogical” or “educational” (textbook, educational tablet, educational software). However, for the author, this will not determine that these technologies are used in the school environment in a legitimate way, measuring what can or cannot be used in educational practices.

In general, from the PROINFO proposal, several possibilities for teaching activities germinate that have a strong impact on the teaching-learning processes. What teachers and other professionals think and believe has implications for the process of reframing this proposal in the context of practice. This understanding moves us away from conceptions that reduce policies to legal texts to be implemented in public schools by subjects who will reproduce the guidelines described there. However, we do not intend to reduce the political text drawn up by state bodies. Here, we are interested in clarifying that PROINFO is meant and, consequently, re-elaborated in various contexts. Therefore, the presence of digital technologies in education has been occurring in conjunction with the knowledge/doing of teachers who are putting this policy on the scene.

Final considerations

Driven by the policy cycle approach, as well as by Ball and his collaborators' theory of action, we seek, in this article, to analyze the PROINFO policy in different contexts, considering the articulations - disputes and clashes - for its idealization and development, through the performance of this program in public schools.

According to the analysis produced, we show PROINFO in a decentralized way, considering aspects that mark its process of idealization, formulation and resignification by political agents in different spaces and times.

Knowing that PROINFO is a policy arising from demands that have been expanding in the scenario of digital culture, its development is thought out and articulated aiming at the immersion and use of digital technologies in educational institutions. Like other policies, PROINFO is not exempt from debates, disputes and clashes, in different fields of power, which try to make its perspectives hegemonic. Amid this scenario, the political text is written and presented to political actors to be put into action in public schools, which give new meaning to politics contextually, that is, based on its dynamics.

However, the implementation of PROINFO, as a federal policy that benefits thousands of public schools across the country, will take place in a diversified manner in each school

reached. This is because the actors involved in its process of reframing, including teachers, managers and technicians from the NTE, impute their own meanings to this policy and this ends up interfering in the actions woven in the context of practice. In addition, each school has its own peculiar conditions, such as its position, its ideology, its social recognition, its own relationship with government bodies, and these factors affect how PROINFO's policy will be implemented.

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