

## THE ACT OF PEDALING AND COGNITIVE FLEXIBILITY IN THE CLASSROOM: CURRICULAR TRANSVERSALITY IN ENVIRONMENT, HEALTH AND CULTURAL PLURALITY

O ATO DE PEDALAR E A FLEXIBILIDADE COGNITIVA EM SALA DE AULA:  
TRANSVERSALIDADE CURRICULAR EM MEIO AMBIENTE, SAÚDE E PLURALIDADE  
CULTURAL

EL ACTO DE PEDALIZACIÓN Y FLEXIBILIDAD COGNITIVA EN EL AULA:  
TRANSVERSALIDAD CURRICULAR EN MEDIO AMBIENTE, SALUD Y PLURALIDAD  
CULTURAL

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### Abstract

The act of cycling in the city and the coexistence of different modes in the city in school activities can sensitize as a cultural activity that provides urban mobility, sport and leisure, with benefits associated with health, environment, economy, enhancing education as a practice freedom in traffic, mostly motorized, and the exercise of active citizenship. Having as reference the dialogical-problematizing education and the theory of cognitive flexibility, we analyzed an educational activity with the theme “Cycling in the city” developed with 16 teachers in initial training from mini-cases problematized according to the assumptions of these theories. We conclude that the activity potentiated the development of the participants' cognitive flexibility, with a potential transfer of knowledge to the school context, especially on health and environment issues from the perspective of education as a practice of freedom.

**Keywords:** Cycling in the city; Cognitive Flexibility; Health; Environment; Cultural plurality.

### Resumo

O ato de pedalar na cidade e a convivência dos diversos modais na cidade em atividades escolares pode sensibilizar/conscientizar como uma atividade cultural que propicia mobilidade urbana, esporte e lazer, com benefícios associados à saúde, meio ambiente, economia, potencializando a educação como prática da liberdade no âmbito do trânsito, majoritariamente motorizado, e ao exercício da cidadania ativa. Tendo como referência a educação dialógico-problematizadora e a teoria da flexibilidade cognitiva, analisamos uma atividade educacional com o tema “Pedalar na cidade” desenvolvida com 16 professores em formação inicial a partir de mini-casos problematizados segundo os pressupostos dessas teorias. Concluímos que a atividade potencializou o desenvolvimento da flexibilidade cognitiva dos participantes, com

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potencial transferência de conhecimento para o contexto escolar, em especial nas temáticas saúde e meio ambiente na perspectiva da educação como prática da liberdade.

**Palavras-chave:** Pedalar na cidade; Flexibilidade Cognitiva; Saúde; Meio ambiente; Pluralidade cultural.

### Resumen

El acto de andar en bicicleta en la ciudad y la coexistencia de los diversos modos en la ciudad en actividades escolares puede crear conciencia como una actividad cultural que proporciona movilidad urbana, deporte y ocio, con beneficios asociados con la salud, medio ambiente, economía, amplificando la educación como práctica de la libertad en el tráfico, mayormente motorizada, y el ejercicio de la ciudadanía activa. Teniendo como referencia la educación dialógica-problematizadora y la teoría de la flexibilidad cognitiva, analizamos una actividad educativa con el tema "Ciclismo en la ciudad" desarrollada con 16 maestros en capacitación inicial a partir de mini-casos problematizados según los supuestos de estas teorías. Concluimos que la actividad potenció el desarrollo de la flexibilidad cognitiva de los participantes, con una posible transferencia de conocimiento al contexto escolar, especialmente en los temas de salud y medio ambiente desde la perspectiva de la educación como práctica de libertad.

**Palabras clave:** Ciclismo en la ciudad; Flexibilidad Cognitiva; Salud; Medio ambiente; Pluralidad cultural.

### Introduction

Cycling in the city is also a physical activity with important individual and social benefits. Currently, it appears that this is expanding in scale as the conditions of health, mobility, economy and environment are a constant challenge in the implementation of public policies and sustainable development of cities.

As an example, we cite Vitória da Conquista, in Bahia, which implemented its first cycle paths in 2004 prospecting the first political actions in the perspective of sustainable mobility (PASSOS, 2017). The significant expansion of its bike lanes reflected the social inequality in the occupation of urban space and the priority given to motorized vehicles, especially automobiles<sup>4</sup>. A simple bike ride across the four corners of the city shows that its cycle paths and lanes are not always interconnected, especially in the center and in the most popular neighborhoods. The expansion of interconnected cycle

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<sup>4</sup> Ten years later, the city had over 25 km of cycle paths, according to informations from its prefecture (<https://www.pmvc.ba.gov.br/vitoria-da-conquista-tem-mais-de-25-km-de-ciclovi-as-e-ciclofaixas/>) that, more recently, in the period 2017-2020, has been ampliating the cycle paths in the region of biggest purchasing power (<https://www.pmvc.ba.gov.br/prefeitura-avanca-em-obras-na-avenida-olivia-flores/>).

paths would be of great value for the mobility of the inhabitants of the periphery, given that these are the most affected in terms of public transport difficulties in the municipality (PEREIRA; PEREIRA, 2017).

Nevertheless, aspects like this reveal the urgent necessity for schools not only to teach traffic education that, in the limit, subjects cyclists to drivers, but also to problematize sustainable mobility with Education as a Practice of Freedom (EPL) (FREIRE, 1967) as reference in the curricular transversality of the Environment, Health and Cultural Plurality as an exercise of law and active citizenship.

In this article, we analyse an educational activity themed “Cycling in the city”, developed by teachers in training from the graduation course in Physical Education from the Programa Nacional de Formação de Professores (PARFOR), at Universidade Estadual do Sudoeste da Bahia (UESB), Campus Vitória da Conquista, based at the Cognitive Flexibility Theory (CFT) of Spiro et al. (1988). We seeked answering the following question: *what is the potential of a teaching situation involving the act of cycling in the city, to sensitize physical education teachers to transpose learned knowledge into the school context with a focus on transversal themes, environment, health and cultural plurality?*

### **Cycling in the city: interface environment, health, cultural plurality**

Research made by NGO Transporte Ativo and by Laboratório de Mobilidade Sustentável (LABMOB) with 7644 cyclists in 25 cities sized small, medium and big from the five different geographic regions of the country, revealed that the profile of the Brazilian cyclist is composed of those who use the bicycle for work (76%), leisure (62%), shopping (56%), school / college (25%); 83% of interviewed use the bicycle at least 5 days a week, 59% use it as a means of transport for more than 5 years and 55% of them take between 10 and 30 minutes on their most frequent trips (LABMOB, 2018). Also according to the authors, among the motivations to start cycling, speed / practicality (38%), health (26%) and cost (22%) were highlighted; and the motivations for cycling more would be infrastructure (48%), traffic safety (30%), public safety (9%) and signaling (6%).

The positive factors of these data contrast with the environmental impacts of global greenhouse gases emissions in the transport sector. The positive factors of these data contrast with the environmental impacts of global emissions of greenhouse gases in the transport sector. Report made by 40 international organizations (SLOCAT, 2018) attests that passenger cars accounted, on average, for 45% of these emissions in 2015, followed by trucks (21%), ships and planes (11%), buses and micro - buses (5%), tricycles and motorcycles (4%) and trains (3%). The document also highlights that Brazil presented a 38% growth in emissions of carbon dioxide (CO<sub>2</sub>) per capita in the period 2000-2015 in this sector, a percentage well above the 23% corresponding to the Latin American average.

According to Carvalho (2011), individual transport, which accounts for about 35% of motorized trips in large urban centers is, on average, responsible for almost 60% of carbon dioxide emissions, while public collective transport accounts for about 25% of total CO<sub>2</sub> emissions (even considering a bus trip as being twice the distance traveled by a car). This is because the per capita CO<sub>2</sub> emission of the car is about eight times higher than that of the bus.

The regular use of bicycles as a means of transport has the potential to positively impact the urban transport system and other advantages. LABMOB and Aliança Bike conducted a survey seeking to map and monetize the economic complex of the bicycle in five dimensions, of which we will highlight three (LABMOB, ALIANÇA BIKE, 2018).

In the Productive Chain dimension, Brazil produced over 5 million bicycles, with revenues of R\$ 728 billion and remuneration of R\$ 14 million in jobs in the manufacturing sector in 2015. In 2017, the export of parts and accessories corresponded to US\$ 1,400 million, and in 2016 the increase in the number of establishments and jobs in the wholesale sector generated revenue of R\$ 15 million.

In the Public Policies dimension, it is estimated that the public authorities invested R\$ 1.2 billion in the implementation of 3008.5 km of cycling routes in the 27 capitals, with emphasis on São Paulo and Rio de Janeiro, which together represent 45% of the total invested in Brazil. The Brazilian Public Shared Bicycles System, in turn, indicates that 13 of the 27 Brazilian capitals already have their own systems, with emphasis on the Northeast and Southeast. In the Benefits dimension, they argue

that the use of bicycles could avoid a total emission rate of 1.9 billion tons of carbon dioxide for private cars and 17.4 million for buses in the diesel fleet per year, considering studies on the theme Climate and Energy.

Another important aspect that we must consider is the impact of regular physical activity on health. Physical activity is defined as any movement produced by muscles that expends energy above resting levels, and can be classified into domains such as commuting, leisure, work or domestic activities (CASPERSEN, 1985) and all forms of physical activity can bring benefits to health, provided that they are performed regularly and with adequate duration and intensity (WHO, 2018).

According to the World Health Organization (WHO), regular physical activity can reduce the risks of developing chronic noncommunicable diseases (NCDs) such as coronary heart disease, stroke, type II diabetes, high blood pressure, colon cancer, breast cancer and depression, in addition to helping prevent overweight and obesity and contributing to mental health, improving quality of life and well-being (WHO, 2018). For WHO, people who are insufficiently active are 20 to 30% more likely to die from any cause than those who are physically active (WHO, 2011). Thus, it recommends that the adult population, between 18 and 64 years old, accumulate a minimum of 150 minutes of moderate physical activity per week (WHO, 2010) aiming to reduce the impacts of these diseases both in the number of deaths and morbidities, as well as in costs for health, pension and productive systems.

Data from 2013 estimated that the annual global cost of physical inactivity was US\$ 54 billion in direct health care, with an additional US\$ 14 billion attributed to lost productivity. Even excluding the costs associated with mental health and musculoskeletal conditions, inactivity is responsible for 1 to 3% of national health care costs (WHO, 2018). Data from the study carried out by Lee *et al* (2012) estimate that if global physical inactivity were reduced by 10%, more than 533,000 deaths would be avoided per year, and if reduced by 25%, the number of deaths avoided would exceed 1 million in the same period.

O The Global Action Plan for Physical Activity 2018–2030, prepared by the WHO, reports that worldwide, 1 in 4 adults and 3 in 4 adolescents (11 to 17 years) do not currently comply with the global recommendations for physical activity. As

countries develop economically, levels of inactivity increase, reaching some 70% in some countries. This, due to changes in transport patterns, increased use of technology and urbanization (WHO, 2018).

In view of the above and also considering the review study carried out by Carvalho and Freitas (2012), in which most of the articles surveyed consider health as a certain gain in the use of bicycles as a means of transport, cycling in the city presents itself as an activity which, inserted into daily life, is capable of bringing significant health benefits and meeting the recommendations of the aforementioned Global Action Plan for Physical Activity 2018-2030 which aims to reduce physical inactivity in the general population by 10% by 2025 and by 15% by 2030.

The bicycle is undoubtedly a vehicle of essential daily use for those who depend on it, or for those who choose this form of non-motorized locomotion. The main argument in favor of cycling in the city on a daily basis, mainly for trips of up to 5 km, round trip, daily, whether for work, school, universities, shopping, among other daily human activities, is to make more sustainable and plural urban mobility. This is because the motorized monoculture, be it individual or collective transport, almost excludes the urban cycling mode, even with a large number of workers who make this mode of transportation their main way of coming and going, even due to the lack of public transport that reach the peripheries (PEREIRA; PEREIRA, 2017).

We basically understand sustainable cultural actions as all human interaction with the world, in the perspective of preserving the environment, not having a marked impact on natural resources (Ministério do Meio Ambiente, [s.d.]; ENVIRONMENTAL SCIENCE, [s.d.]; WIKIPEDIA CONTRIBUTORS (SUSTAINABILITY), 2020). However, it is essential to understand our cultural plurality in the scope of commuting in the city: we human beings are pedestrians most of the time, if we want to make short or medium routes in this way or by bicycle, we encounter the infrastructure and safety conditions implemented for the motorized culture, especially the automobile. Integrating buses, subways, trains in larger commutes to bicycles means that we can cycle regularly on a daily basis with an urban bicycle, as a strategy for cultural change.

Entendendo que a mediação tecnológica é essencial, uma bicicleta urbana básica deve ter as seguintes características: Pneus (mais grossos e resistentes evitam

furos); Segurança (trancas e cadeados, apenas para a não dobrável); Tamanho das Rodas (26” ou de 700mm e 20” para bicicletas dobráveis); Quadro (alumínio não tem corrosão e são bem mais leves do que os de ferro); Transmissão (sistema de marchas e propulsão, 21 e 7 para as dobráveis); Pedais (plástico é resistente e leve); Selim (urbanos são maiores e compostos de espuma ou gel, com molas para aumentar o conforto); Guidão (altos, curvos e mais largos, deixam a pedalada mais confortável e segura) – pedal, selim e guidão são os três contatos com bicicleta; Freios (modelos V-brake, pois a velocidade é baixa); Paralamas (garante que se chegue limpo e seco), Bagageiros (permitem transportar pequenas cargas como mochilas, pastas e sacolas de compras...); Pedal de descanso (permite estacionar sem precisar encostar em nada), Faróis, Retrovisores, Campainha Trim e Refletores (sinalizadores traseiros, na cor vermelha, piscando ou não e os faróis brancos na dianteira, ajudam muito a ser percebido pelos motoristas e percebê-los). Além disso, Capacetes urbanos (nas cidades o uso de capacetes é fundamental, embora não obrigatório). Ressaltamos que, bicicletas urbanas como as representadas nas figuras 1 e 2 são menos sofisticadas, priorizam a segurança e durabilidade.



**Image 1:** Urban bike with the best cost-benefit ratio in the country.



**Image 2:** Foldable urban bike with the best cost-benefit ratio in the country.

Essential to cycling daily in the city with sustainability, especially for the worker-student cyclist, is to have personal and social responsibility. Therefore, we suggest reading the online book *Escola de Bicicleta*, existing since 2004 (ESCOLA DE BICICLETA, [s.d.]), which parameterizes the learning of pedaling in the city, in particular, the problematic reading of chapter 4 *Pedalar no Trânsito*.

Also essential for the everyday urban cyclist, there are three options for cyclist traffic: the cycle lane, which is a lane for the exclusive use of cyclists and

bounded by painting on the floor; the cycle path, an exclusive lane for cyclists to use with physical separation from the car lane, and the sharrow, demarcated on the same motorized traffic lane, as shown in Image 3 below:



**Image 3:** Representation of the cycle lane, cycle path and sharrow. (DETRAN RJ, 2016).

Another essential component of the cultural component of urban mobility cycling in the city, in addition to those previously discussed (specificity of the urban bicycle and cycling routes), is the parking of this non-motorized and sustainable vehicle, that is, the public bicycle rack. In order to contextualize this aspect in Bahia, we highlight the equipment installed in a maritime container module, on the occasion of the two-year celebration of the Movimento Salvador Vai de Bike, with 44 spaces spread over two floors and operating seven days a week, from 6 am to 0 am, free of charge. Staff are on site to assist cyclists. To use it is necessary to register, presentation of document with photo, social security number and be with the bicycle present for registration. The city informed that, after a period of observation, other places may receive other bicycle racks (PREFEITURA DE SALVADOR, [s.d.]).

### **CFT: cases, mini-cases and the development of cognitive flexibility**

A Teoria da Flexibilidade Cognitiva (TFC) é uma teoria de base construtivista desenvolvida por Spiro et al. (1987) no final dos anos oitenta, ao investigarem porque estudantes de medicina tinham dificuldades em empregar os conhecimentos apreendidos no curso em situações reais da atuação profissional. Para os autores essa dificuldade está associada à aprendizagem de conhecimentos em situações



tão estruturadas e simplificadas que a transferência para situações reais, nas quais o conhecimento é complexo e pouco estruturado, torna-se um desafio. Este enfrentamento será mais efetivo se os estudantes forem ensinados aplicando o conhecimento anterior em novos contextos de forma flexível ao mesmo tempo que os reestruturam. The Cognitive Flexibility Theory (CFT) is a constructivist based theory developed by Spiro et al. (1987) in the late eighties, when investigating why medical students had difficulties in using the knowledge learned in the course in real situations of professional practice. For the authors, this difficulty is associated with learning knowledge in situations so structured and simplified that the transfer to real situations, in which knowledge is complex and poorly structured, becomes a challenge. This confrontation will be more effective if students are taught by applying previous knowledge in new contexts in a flexible way while restructuring them.

The main concept of this theory is cognitive flexibility, the subject's ability to transfer the knowledge being learned to new complex and poorly structured situations (or problems), in which it applies and reorganizes its knowledge. The idea is “to allow students to be prepared to better apply the knowledge they acquire in formal education to new cases in the real world (...) Knowledge is built through its use” (BRAGA, 2019, p.33).

Didactically, we propose cases that present “concrete situations to which conceptual knowledge is applied, that is, the themes. Each case constitutes a complex and pluri significant unit that must be broken down into smaller units, the mini-cases” (CARVALHO, 2000, p. 174). The mini-cases are deconstructed into activities that make it possible to come and go in different ways (crossings) that interconnect in the apprehension of the knowledge on screen (SPIRO et al., 1988). Different perspectives contribute so that the student can “understand the mini-case in depth and then reconstruct it, thus acquiring a more complete understanding” (CARVALHO, 2000, p. 175).

Research involving this theory in the classroom is still incipient and, in general, developed with hypermedia resources in higher education (BRAGA, 2019), but some studies show excellent results in basic education. For a deeper understanding of teaching situations from different perspectives, we suggest working with the

Flexquest tool implemented by professor-researchers at Universidade Federal Rural de Pernambuco and basic education teachers (SILVA, SOUZA, LEÃO, 2015) and the work of Braga (2019) in Youth and Adult Education (EJA) with the theme “Production, distribution and consumption of electricity”.

## Methodology

The teaching situation was developed on 04/29/19 with a two-hour class load, with 16 PARFOR teachers in training in Physical Education, in the format of a pedagogical workshop, exploring videos published on the Internet, organized as mini-cases, according to Chart 1.

**Chart 1:** Videos explored in the teaching activity.

Mini-cases	Eletronic Address	Activity/goal
1- Cycling in Malmo	<a href="https://www.youtube.com/watch?v=FXZyF1ZXPiY">https://www.youtube.com/watch?v=FXZyF1ZXPiY</a>	To raise perceptions about pedaling, how they pedal, where they are pedaling.
2- Cycling in Copenhagen	<a href="https://www.youtube.com/watch?v=FaySp9i2zMA">https://www.youtube.com/watch?v=FaySp9i2zMA</a>	To problematize the themes of environment, health and cultural plurality present in the video.
3- Pedal por Recite	<a href="https://youtu.be/hUh_9nLO2wc">https://youtu.be/hUh_9nLO2wc</a>	To show the precarious conditions of infrastructure and safety for the act of cycling and the way the community has been organizing itself to demand actions from the government.
4- A pior cidade para pedalar (Manaus)	<a href="https://www.youtube.com/watch?v=OcQw3Hut0JU&amp;t=198s">https://www.youtube.com/watch?v=OcQw3Hut0JU&amp;t=198s</a>	To highlight the contradictions of the capitalist mode of production with regard to the largest volume of bicycle production in the country and the almost no local infrastructure for the act of cycling.
5- Cidade Bicicleta (Salvador)	<a href="https://www.youtube.com/watch?v=uupDaq1E13c&amp;feature=youtu.be">https://www.youtube.com/watch?v=uupDaq1E13c&amp;feature=youtu.be</a>	To highlight the difficulties and the need to include bicycles as a mode of urban transport.
6- How the Dutch got their cycle paths	<a href="https://www.youtube.com/watch?v=XuBdf9jYj7o&amp;t=63s">https://www.youtube.com/watch?v=XuBdf9jYj7o&amp;t=63s</a>	To highlight the transformations and changes in response to economic demands and the mobilizations of the population in favor of urban mobility through the bicycle.

**Source:** the authors

Each mini-case was presented and problematized in the dialogue with the participants, paying attention to the assumptions of the CFT, in particular, the crossing and the development of Cognitive Flexibility (SPIRO et al., 1988). The

guiding questions took into account the transversality of the themes presented in the videos and the interlocution of the videos with each other.

To conclude the activity and record of learning, we asked teachers in training, organized in pairs, to write physical education teaching activities in basic education involving the theme “cycling in the city”. We analyzed these activities in order to check if there are signs of potential knowledge transfer to the school context in the scope of the curricular transversality of the environment, health and cultural plurality.

## Results and discussion

Considering the set of eight proposed educational activities, we found that teachers in training drafted conceptual objectives related to cycling, health promotion and environmental issues:

“Identify the relations between cycling, the environment and urban mobility” (Pair A).

Procedural objectives involving the ability to learn and practice the act of cycling r:

“(…) improving cardiorespiratory capacity, balance, motor, and muscle strengthening (…)” (Pair G).

And attitudinal with a focus on social interaction and interaction with the environment:

“Reflect and apply notions of citizenship” (Pair D).

“Develop in scholar community the sense of human/health/environment collaboration” (Pair C).

The health theme was present in all the elaborated proposals, which suggests the starting point for the analysis of cases from the area of study and work of physical education professionals, that is, the development of cognitive flexibility. In addition, during the class, highlights were presented in relation to the expansion of knowledge, with special interest in the WHO data and recommendations for health (WHO, 2010).

Of the eight proposals, two (Pairs A and B) focused on conceptual and attitudinal goals and did not set goals or propose activities aimed at learning the motor gesture and/or other physical skills required in the act of pedaling and also did not provide for activities in which it would be needed or necessary to ride a bicycle. The dissociation between the act of pedaling and the understanding of that act, indicated in concepts and attitudes developed at school based on what one should know and how to behave, reflects the individual character of banking education.

Most of the proposals articulated theoretical classes and/or lectures with practical classes, six of which specified the realization of a cycling route around the school or neighborhood. In some, this route would be strategic to observe the surroundings and the practice of cycling, considering the environment, health, economy, infrastructure and accessibility. This is an indication of knowledge transfer, as it favors the survey of situations of the scientific-technological daily life of educational subjects, which may come to be configured as cases and mini-cases representative of limit situations of concrete reality in the Freire perspective (FREIRE, 1987).

Of these six, we highlight two proposals (Pairs C and D) that developed objectives aimed at learning to pedal through workshops. Cycling requires learning and mastering specific motor gestures, developing strength, balance and body awareness that allows understanding of the body's control, its movement and interaction with the equipment and the environment.

As a historically and culturally developed human knowledge, knowing how to pedal is a condition for the possibility of choice, for the freedom to be able to use the bicycle according to its intentionality or need, that is, with means of transport, for sport or leisure, or others. Promoting active and sustainable transport / mobility therefore implies talking about the conditions for cycling, including procedural ones, problematizing them in the cultural and historical dimension of human-world relations (FREIRE, 1987).

In addition to these, two other proposals sought to rescue the use of bicycles in daily life, the habit of cycling and the spaces where this activity takes place. One proposes the presentation of videos with testimonials from residents and students who use the bicycle for work, leisure or athletic activities (Pair F); another, a cycling

tour around the school with stops at strategic points for students to observe other cyclists and the differences between walking or driving, for later discussion in the classroom (Pair E). Both were concerned with showing research data on the benefits to health, the economy and the environment.

The theme of cultural plurality was not addressed in any of the eight proposals, even with the data presented and the questions and highlights made during the class, requiring greater theoretical and practical depth when developing the workshop. However, we observed that the discussions proposed by the teachers around the act of cycling, if put into practice, may imply a second, more distant and refined look, composing mini-cases or cases representative of the conditions of safety and economic sustainability of urban cyclists, providing cultural action for freedom. For this, a possible didactic strategy would be to cross the mini-cases 3, 4, 5 and 6 highlighted in Chart 1, emphasizing the need to include bicycles as a mode of urban transport.

### **Final Considerations**

Cycling in the city is a physical activity that promotes active and sustainable transport. To problematize it according to the assumptions of the CFT and EPL in a teaching situation in the format of a two-hour-class workshop with teachers in initial training made it possible to ascertain its potentiality in the development of the cognitive flexibility of health and environment themes.

This article presented as a limitation the need to discuss collectively and collaboratively the proposals made by teachers in training in the perspective of implementing an educational action in schools. This viable-possible outcome requires from teachers the mobility and cognitive flexibility for new contexts, a key assumption of CFT.

Although this group is, for the most part, working in the classroom and also during the Supervised Internship period in the course, we informally verified that none of the participants developed any proposal elaborated from the perspective of the workshop. This leads us to questions: how to motivate for a teaching activity with supradisciplinary character, which requires the exercise of cognitive flexibility

and cultural action for freedom? Is this something not trivial and does it imply dimensioning limit situations and limit acts (FREIRE, 1987)? Regarding the planning of practices that do not contemplate learning to pedal, we still question: Isn't this a activity that is learned and not natural? Isn't it the school's job to teach cycling in the city? Is this not a possible content of school physical education?

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