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ARTIGOS

Studies on *shadow education*: research excerpts [1, 2, 3]

A literatura sobre shadow education: recortes de pesquisa

Literatura sobre shadow education: recortes de investigación

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Abstract
The article focuses on excerpts from a literature research on shadow education, exploring studies that represent each sub-theme and its main conclusions. Our analysis indicates that the concern with the production of educational inequalities permeates the research about shadow education, considering that these activities tend to promote an increase in educational distances among students placed different positions in the social space. It is also noteworthy that the competitive environment for relatively favorable school or university positions seems to foment the demand for supplementary educational activities in different contexts, and that the increase in the number of these kinds of activities tends to affect the practices of teachers and students in the regular education.
Keywords: shadow education, supplementary education, educational inequalities

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Resumo

O artigo trata de recortes de pesquisa da literatura sobre shadow education (ensino suplementar), explorando estudos que representam cada recorte e suas principais conclusões. A análise das pesquisas indica que a preocupação com a produção de desigualdades educacionais permeia a literatura sobre shadow education, tendo em vista que essas atividades tendem a promover o aumento de distâncias educacionais entre estudantes que ocupam posições diferentes no espaço social. Destaca-se, também, que o ambiente de competição por posições escolares/universitárias relativamente favoráveis parece fomentar a demanda por atividades de ensino suplementar em diferentes contextos e que a proliferação de atividades de ensino suplementar tende a afetar as práticas de professores e alunos no ensino regular.

Palavras-chave: *shadow education, ensino suplementar, desigualdades educacionais*

Resumen

El artículo aborda extractos de una búsqueda bibliográfica sobre shadow education, explorando estudios que representan cada extracto y sus principales conclusiones. Este análisis indica que la preocupación por la producción de desigualdades educativas está por toda la literatura sobre shadow education, considerando que estas actividades tienden a promover un aumento en las distancias educativas entre los estudiantes que ocupan diferentes posiciones en el espacio social. Además, el entorno competitivo para puestos escolares o universitarios relativamente favorables parece fomentar la demanda de actividades de educación complementaria, y que el aumento en el número de actividades de educación complementaria tiende a afectar las prácticas de docentes y estudiantes en educación regular.

Palabras clave: *shadow education, educación suplementaria, desigualdades educativas*

Introduction

Studies produced in different areas of knowledge have indicated the intensification, in the last decades, of the participation of children and young people in educational activities outside the time (and often the space) of regular education. Called in English as *shadow education* or *private tuition* and *mercado das explicações* in Portugal, the participation in extracurricular classes or courses (or activities of supplementary education) have only recently been the object of systematic investigation, though it is an old practice (Bray, 2007; Hussein, 1987).

Considering the extent of the ensemble of extracurricular experiences that can be understood as supplementary education, the studies on the theme normally restrict their analysis

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to the paid classes or courses that keep some relation to the subjects of regular education and are attended by children or young people who are still K-12 education or that had recently left this educational level (Bray, 2007; Bray & Kwok, 2003). The metaphor of the shadow offers a good synthesis of the scope of studies on the theme:

> "The metaphor of a shadow is appropriate in several ways. First, private supplementary tutoring only exists because the mainstream education exists; second, as the size and shape of the mainstream system change, so do the size and shape of supplementary tutoring; third, in almost all societies much more public attention focuses on the mainstream than on its shadow; and fourth, the features of the shadow system are much less distinct than those of the mainstream system" (Bray, 2007, p. 17)

Though we can question the existence of a unidirectional cause and effect between regular education and supplementary education, the metaphor continues to be useful by highlighting that the research on *shadow education* deals essentially with activities regarding extracurricular experiences of teaching-learning that correspond to the regular education. Therefore, the experiences with supplementary activities attended after joining higher education are normally out of the scope of the studies on *shadow education*, as well as the courses attended during K-12 education that do not refer to regular education subjects. Thus, even if there are exceptions[4], the studies normally exclude from their analyses the participation of students in classes or courses of music, dance, sports, and others.

Considering the expansion of the activities in supplementary education in different contexts, as well as the proliferation of studies in the theme, this article aims to contribute to the discussion presenting the approaches/themes of research that are recurrent in the literature on *shadow education*, exploring works that investigate these themes, and highlight their main conclusions.

In line with this proposal, the next sections of the article approach the following research themes: 1) studies aiming to characterize the socioeconomic profile of students that participate in the activities of supplementary education; 2) studies dealing with the relation between *shadow education* and students' performance in tests; 3) studies trying to understand the reasons that lead students/families to demand activities of supplementary education; and 4) studies analyzing the

[4] Liu and Bray (2017), for example, include in their analysis supplementary activities unrelated to those developed in regular schools.

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relations between regular and supplementary education [5]. Before approaching these aspects of the literature on *shadow education*, some general considerations on the theme are presented in the next section.

General remarks on shadow education

In general, the studies on *shadow education*, which have multiplied since the 1990s, have focused on the characterization of supplementary education practices from the perspective of *offer* or *demand,* according to the *types* of extracurricular activities attended by them (or the *subjects* more demanded), according to the *ways of participation* in these activities and the *scale* and the *intensity* of frequency to the activities of supplementary education in each context/country (Bray, 2007, 2011; Bray & Lykins, 2012). Besides this, some studies divide the activities of supplementary education between activities focused on preventing or remedying school difficulties in regular education or activities of educational "enrichment", which are added to the educational experiences of regular education (tutoring classes to students with learning difficulties are examples of the first case, and preparatory classes or courses to be admitted in higher education illustrate the second situation).

Most studies on *shadow education* focus on studying the theme through the lenses of the *demand*, almost always getting information on the participation of supplementary activities through the application of questionnaires (related or not with large-scale assessments). This option is normally associated with the difficulty to obtain information on the participation of supplementary activities, as the informal work situations are common among private teachers,

[5] The studies presented in this article are part of a bibliographic research conducted between 2018 and 2020, as part of a PhD research on supplementary education in Brazil. The initial bibliographical survey, in 2018, used the descriptor terms *shadow education, private tuition*, *mercado das explicações*, *ensino suplementar*, and *educação sombra*. To the initial search, based on the *Banco de Teses da Coordenação de Pessoal de Nível Superior – Capes*, Google Scholar, and the database of *Universidade de São Paulo*, we added other references, considering new publications, bibliographical references presented in the initial survey, and other databases (Journal Storage – jstor, Scientific Electronic Library Online – SciELO, ResearchGate). Until 2020, the bibliographic survey resulted in approximately 130 works, however, without encompassing all the studies on *shadow education*. In this sense, the article does not aim to offer a synthesis of the studies on *shadow education*, nor on the different research themes approached in the literature. The intention is mainly to present research perspectives that seem recurrent in the literature about *shadow education*, offering a panoramic view on the subject. Therefore, we selected studies/authors that are frequently cited, but also studies conducted in different contexts/countries and in different times.

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which hinders the access to precise information on the offer of private classes (Bray, 2013, p. 413).

Based on information on the demand for supplementary activities, the studies on the theme indicate that the *types* of supplementary activity varied depending on the context. In any case, despite the differences related to each country and educational system the mentions to preparatory courses for higher education admission, language courses, and tutoring classes are recurrent. Studies undertook in different contexts point out that the supplementary classes in mathematics are the most demanded ones (Baker, Akiba, Le Tendre, & Wiseman, 2001; Bray, 2007, pp. 34-36; Chan & Bray, 2014, p. 6; Costa, Ventura, Neto-Mendes, & Martins, 2013).

In addition to the variability of the types of supplementary courses, Bray (2007) indicates that there is a certain diversity on the *ways of participation* in these activities: they can be offered individually or in groups (small or large), in-person or at a distance (by correspondence or by internet), at the students' or teachers' houses, in the school where they attend regular classes or educational centers that offer these types of activities.

On the *scale* and *intensity* of the participation of students in activities of supplementary education, three cases are normally cited as examples of the high prevalence of these activities and the great intensity of frequency to the courses (measured by the number of weekly or monthly hours dedicated to extracurricular activities): Japan, South Korean, and Hong Kong. Though the studies on the theme point a global tendency of growth in the participation of children and young people in these activities (Bray, 2013, 2015; Zhang & Bray, 2020), these three cases continue to be important examples of dissemination of activities of supplementary education, with percentages of participation in supplementary cases reaching 88% among Japanese students who intended to enroll in higher education at the end of the 1980s (Stevenson & Baker, 1992), 70% of participation in extracurricular courses amidst K-12 students in South Korea in 2011 (Choi & Park, 2016), and 70% among high-schoolers in Hong Kong (Bray & Kwok, 2003).

Besides the intensity of educational competition (which tends to be greater in contexts where educational advantages are related to professional advantages and life conditions), which lead students/families to seek these activities as a way to acquire educational advantages, the centrality of evaluation processes based in tests and cultural aspects are characteristics that explain the high prevalence of participation in supplementary courses in these contexts (Bray,

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2007, pp. 29-59; Bray, 2009, p. 77; Bray & Kwok, 2003, p. 618; Chan & Rao, 2009; Choi, 2012, p. 2; Lee, Lee, & Jang, 2010, p. 98; Stevenson & Baker, 1992). In the case of South Korea, we should highlight that the combination of high competition for places in higher education/universities of high prestige in an educational system that tends to restrict the educational differences in K-12 lead students and families to seek supplementary activities as a way to create educational differences: it seems that *shadow education*, in this context, acts as a way to bypass educational equalization promoted by the regular educational system in K-12 education (about this, see Kim & Lee, 2010).

Regardless of the characteristics of participation in supplementary activities in each context, the studies on the theme normally have as a central concern the consequences that the proliferation of these activities can have in creating educational inequalities, which is almost always translated into two questions: 1) who are the students that participate or not in these activities?; and 2) is the participation in these activities reflected in greater chances of a good performance in the exams that mediate students' progresses between the cycles, phases, or educational levels?

That is, if the socially-privileged students, who already tend to have the best conditions to reach relatively positive educational results (Alves & Franco, 2008; Coleman et al., 1966; Hanushek, 1997; Simielli, 2015), are those who most frequently attend these activities and if students' participation in these courses increases the changes to obtain positive results, it is possible that these activities would be acting as a way to increase educational inequalities between students from different social conditions, what could have consequences to maintain or increase social inequalities (mainly in contexts where educational advantages act was an important path to access professional and social positions relatively satisfying).

It is worth highlighting that, though present in Brazil, the characteristics that tend to stimulate educational competition associated to the participation of children and young people in supplementary education activities, as the strong relationship between education and future professional and social positions (Ribeiro, 2014; Souza, Ribeiro, & Carvalhaes, 2010; Teixeira & Menezes-Filho, 2012) and the centrality of assessments and students' selection that can advance between phases and educational levels, there are few studies on the theme in the country[6]. Even

[6] Southgate (2009), based on the data of PISA 2003, ranks Brazil as a country of high percentage usage of *shadow education* (p. 146). The research points out that 49% of Brazilian students report having participated of these

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if there are studies generally indicating that the preparatory courses for university admission exams, the language courses, and private classes stand out in the Brazilian context (Castro, 2013; Costa et al., 2013; Galvão, 2020; Gomes, Vargas, Paiva, Rodrígues, & Schneider, 2010; Gouveia & Neto-Mendes, 2014), there is a lack of studies based on large samples that explore regional patterns of participation in different *types* and *forms* of supplementary activities. Besides this, in the Brazilian case, perhaps it would be important to carry out exploratory studies dedicated to measure the participation of children and young people in a broader array of supplementary activities (other than the activities directly related to the curriculum of regular education, such as classes of piano, guitar, soccer, tennis, ballet, swimming, computer, choir, drawing, theater, karate, *capoeira*, Olympic gymnastics, etc.), which contextualize the Brazilian situation regarding the theme, identifying the meaning that different activities assume in our context and evaluate the effects of these activities on educational and social inequalities. Works on the mapping of supplementary courses, dedicated to the study of companies of supplementary education in the country also seem necessary[7].

Finally, we should say that the number of studies on the theme seems to have increased with the spread of the participation in supplementary activities in each context[8]. In this sense, together with the tendency of high incidence in these activities, the development of studies on *shadow education* has been very frequent in Asian countries. Following the increase of the dissemination of these activities in different countries/regions (Portugal, Germany, Ireland,

activities, a value close to that of South Korea (55%). Regarding the work hours dedicated to extra school activities, Brazilian students declare they spent, on average, approximately 2 hours per week in courses offered out-of-school hours, a number higher than those of Hong Kong students (1.39 hours per week), but lower than South Koreans (4.62 hours per week) (pp. 99-100).

[7] Kumon, for example, is a company which offers supplementary activities in Brazil. Created in Japan in the mid-1950s, the company had, in April 2020, with franchises in more than 50 countries attending approximately 4 million students, mainly in courses of languages and mathematics. In Brazil, the company had more than 1.500 units in October 2020. (https://www.kumongroup.com/eng/about/index.html?ID=eng_world and https://www.kumon.com.br/busca-de-unidades, accessed October 14, 2020)

[8] In this article, we cannot present all the factors that may be associated to the growth of the market of supplementary activities in different contexts. Thus, beyond the educational competition, the expansion of educational offer by the private sector, with the growth of big companies connected to educational services (in regular and supplementary education), seem to be one of the sources of the global expansion of these activities (Aurini & Davies, 2004; Zhang & Bray, 2020, p. 12). Besides this, we can suggest that as supplementary education activities allows the formation of unique combinations to "consume" educational goods- depending on the possibilities, dispositions, and preferences of each student- fits well with the context of high modernity, in which individuals *must make choices* on the lifestyles to be followed (about this, see Giddens, 2002, pp. 79-85), choices which will contribute to the construction of individuals' identities. That is, in the context of high modernity, this type of personalized (and commodified) educational experience might be valued as one of the ways through which individuals can construct their identities.

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United States, Eastern Europe, Middle East, and others), the studies about *shadow education* have multiplied in different context, something that will probably intensify, together with the predictions of expansion of the activities of supplementary education in the world (Bray, 2015, p.9).

Considering the evolution of studies in time, we can say that, in a first research movement, the studies try to measure this market, identifying the socioeconomic characteristics of those who attend *shadow education* and those who do not. Sometimes, together with this first movements, studies are developed to understand the effect of participation in these activities on the performance of students in evaluations and the reasons that lead students and their families of each context to demand these activities. Finally, another set of studies on *shadow education* tends to focus on understanding the effects of these activities on school routines in regular education and on social and educational inequalities that can follow it (on the evolution of studies about *shadow education*, see Zhang & Bray, 2020). These research movements will be explored in the next sections.

Socioeconomic characterization of *shadow education* partakers

Generally concerned to understand if supplementary educational activities have been working as a way to guarantee educational advantages to a part of, already, privileged students, the studies that explore the characteristics of students/families that access supplementary courses tend to be divided into two groups. A group of descriptive analyses on the participation percentage in different types of supplementary activities, according to the indicators of students' social conditions (for example, family income or parents' educational level). Another group that estimates the association between variables indicating students' socioeconomic characteristics and the relation among factors, such as family income, parents' educational level, race, and the probability of participating in the courses analyzed).

In a descriptive study, Bray e Kwok (2003) investigated the socioeconomic patterns of participation in supplementary activities in Hong Kong. Based on a sample of students from 6 middle and high schools, the authors found that approximately 50% of them participated in some activity of supplementary education when the research was conducted. Furthermore, the

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higher the percentage, the greater the proximity with the end of high school (in the last two years of this educational phase, the participation in courses was of approximately 70%). Besides this, the authors point out that, among high schoolers, the participation in supplementary activities are concentrated in great preparatory centers/classes to be admitted in higher education, mathematics and English as the most sought after subjects (p. 615).

On students' socioeconomic profile, the study indicates that the frequency of supplementary activities increase with the income and the years of study of students' parents (the percentage of participation in courses almost doubles, when comparing parents with less and more years of study). On top of that, the authors highlight that the participation in supplementary activities is concentrated between the students that attend the best schools and present the best educational results. In this sense, these activities are sought less with the aim to solve school difficulties and more to increase the educational advantages of students who already accumulate a higher school capital. On the atmosphere of competition, the authors indicate that:

> the families of students who are top in their classes may insist that those students receive tutoring in order to remain top in the class, while the families of students who are near the top insist that those students receive tutoring so that they can reach the top (Bray & Kwok, 2003, p. 617).

Similar patterns are seen in another descriptive research, conducted by Gomes et al. (2010), in the Brazilian context. The study based in a sample of 358 high schoolers in two schools in Brasília (a public and a private one) indicates that the supplementary schools of English and subjects, such as Mathematics and Physics, in general, had the highest demand, and the main motivation of students was the preparation for higher education admission and not the need to solve difficulties in regular education (pp. 8-11). Regarding students' socioeconomic profile, the authors recorded that the frequency to activities in supplementary education is relatively higher among female students, and that the percentage of participation in these activities is higher among students from the private school (52% against 22% from the public school), a distribution related to the mothers' number of years of study in each school (75.4% of the mothers in the public school had, at most, complete K-12 education, while 78.8% of the mothers in the private school had graduated higher education)(pp. 7-12).

Stevenson and Baker (1992) conducted the first study on the estimation of factors associated with the participation in activities of supplementary education. Based on a

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representative sample of students at the final years of public and private high school in the Japanese context in the beginning of the 1980s, the research explores how students' socioeconomic characteristics affect the participation chances in different types of supplementary courses (p. 1644).

Indicating that, in the analyzed context, the access to high-prestige universities was associated with professional advantages and a certain social prestige, the authors point out that a relatively equalitarian K-12 education was followed by an extremely hierarchical higher education, with an access meditated essentially by tests. The expression "four pass, five fail" (p. 1642), referring to the number of sleep hours from those approved and those who fail their exams, captures the atmosphere of competition that leads Japanese students to seek supplementary courses as a way to prepare themselves for Higher Education admission processes.

Among the results found, the study indicates that the higher levels of family income and parental years of study were associated with the increase in the probability of participating in the courses considered. Besides this, male students, students with a better history of school performance, and those who lived in urban regions have a greater probability of taking part in these courses (Stevenson & Baker, 1992, pp. 1647-1652).

Southgate (2009) conducts another research of this type, based on the data of *Programme for International Student Assessment*- PISA of 2003. Though varying depending on the country considered, the results indicated that parental educational level is a strong predictor of students' participation in activities of supplementary education, mainly in countries in which a high proportion of families partake in this type of activity (p. 135). Besides this, the influence of the possession of cultural resources, materialized mainly in the form of books, stands out on the probability of parents to demand activities of supplementary education for their children (p. 144). Finally, the research indicate that, in most countries considered, the probability of the participation of female students is higher compared to male students in private supplementary education (p. 131), thus suggesting that *shadow education* could establish a way to decrease educational inequalities related to gender, at least in the context where female students are discriminated against in regular education.

Also highlighting the potential of *shadow education* to increase educational gaps between students in different positions in the social space, Buchmann, Condron, and Roscigno (2010),

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based on a sample with 8,820 American students in the senior year of high school who intended to take part or had taken part of the *Scholastic Aptitude Test* – SAT, perceived that the chances of participating in different forms of SAT preparation were distinctly affected by variables representative of students' socioeconomic characteristics: higher levels of family income increase the probability of participation in private in-person courses and classes with private teachers (forms relatively more expense of SAT preparation), but did not affect the chances to study through the purchase of books, videos, and software, or the participation in preparatory courses offered by their own regular school; having parents who had graduated higher education or above did not increase the chances to participate in any type of SAT preparation compared to students whose parents studied until maximum high school; female students had a higher probability of participating in any of the preparation formats considered; and the students that are encouraged by parents to prepare for the SAT have a higher probability of participating in the activities analyzed by the research (pp. 441-449).

The study also highlights the results regarding the probability of participating in SAT preparation activities considering students' race: the probability of participating in practically all courses (especially the most expensive ones) was prominently higher among black students when compared with white ones. Considering this results, the authors suggest that the higher probability of black students to take part in more expensive (and possibly better) forms of SAT preparation might be a reaction to the racial/ethnical stratification that the SAT normally imposes in the researched context (Buchmann et al., 2010, p. 448). In this sense, though the courses considered might be acting as instruments to potentialize educational differences between students with different levels of income, they can be contributing to reduce the educational differences between white and black students.

As we can notice, though the characterization of the public who attends activities of supplementary education point out to a variety of senses and intensities in the relations between the participation in these activities and the indicative variables of students' social conditions, the main tendency seen by this type of research indicates that the activities of supplementary education have been used by students from higher income families and/or whose parents have more years of formal education. In line with this propensity, the participation tends to be higher among students that can attend better regular schools and that tend to present better educational results. In this sense, the participation in classes or supplementary courses seem to build an additional pathway of educational difference, guaranteeing additional educational advantages to

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already privileged students. Even if, in some cases the activities of *shadow education*, might contribute to a certain educational equalization (as the tutoring classes that certainly help students with school difficulties to better understand something they could not learn at school, or in contexts in which these activities work as a way to face school inequalities of gender or race), this equalization is only a possibility for the students/families that have the means to perceive these activities as necessary and that can afford them.

Finally, we should say that the studies on the socioeconomic characteristics of the public who attends *shadow education* activities are generally focused on drawing participation patterns in courses, by establishing relationships between the variable, which might not capture the nuances on the differences of quality among the courses attended or on the differences of social meanings to participate in each type of course in each context. Even though it is a difficult information to raise, this type of data would allow a better understanding on the social differences in attending courses that are apparently similar (for example, it is highly likely that language courses of different prices and quality are attended by students of different social conditions), as well a better understating on the social roles that attending different types of supplementary activities might play between students/families that have different positions in the social space.

Shadow education and performance

Perhaps, even before questioning about who attends (or not) supplementary courses, we should pose the following question: do these activities, in fact, affect learning, school results, or students' educational trajectory? Even if it did not, the inequality of access to these educational and socialization experiences would be a question in itself. Nevertheless, though the studies that analyze the relationship between participation in supplementary education activities and student performance in tests show different results. A significant part of studies on the theme (mainly the most rigorous ones) indicate that, at least, students' performance in tests is influenced by the participation in supplementary courses, which often translates into better opportunities to access relatively better schools/higher education institutions (Bray, 2014; Dang & Rogers, 2008, pp. 169-179).

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Beyond the fact that the diversity of results is associated to the specificity of each research context, the reasons for the variation of conclusions on the relation between the participation in supplementary activities and students' performance in tests are frequently related to the difficulty to isolate the effect of supplementary preparatory courses from other factors that affect performance. For example, how can we know that the performance in an admission exam for university is due to the attendance on preparatory classes or because of the students' disposition to study? Did the student have a good performance because s/he attended a preparatory course because s/he was already more engaged in the activities of regular school and would have good results, regardless of the preparatory course? To what measure is the performance observed as the result of the preparatory course or the consequence of a set of practices put in motion by the student and his/her family, for example, parental follow-up on the study routine (such as the help with homework) or the daily access to books? As some of the information needed to answer these questions are not considered in part of the models that estimate the relationship between *shadow education* and performance, many studies on the theme produce estimates that can be, to a greater or lesser extent, biased. Thus, the diversity of information and techniques used in the studies produced in each context explains, in some way, the variation of results on the theme (Bray, 2014; Dang & Rogers, 2008).

In one of the studies that tried to use information and techniques to minimize the estimation bias, Choi and Park (2016) explored the effect of participation in supplementary activities in Mathematics on the test performance in this subject among South Korean students in the last year of middle school. They collected data for 3 years, allowing them to consider previous educational experiences and school results as control variables.

Comparing groups of students with similar socioeconomic and school characteristics, the research indicates that the effects of participation in supplementary Mathematics education are higher among students that, due to their socioeconomic and previous school experiences, had a lower probability to partake in these activities (pp. 29-30). Faced by these results, the authors suggest that the inclusion of supplementary activities as after-school classes within the public schools attended by students from lower socioeconomic strata could help reduce the educational differences in that context (Choi & Park, 2016, p. 31).

Different patterns of results are found by Loyalka and Zakharov (2016). Based on data about the participation of Russian senior students in supplementary activities of Mathematics

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and Russian, the authors perceived that the participation in courses offered in supplementary educational centers affect the test performance in Mathematics and Russian, but only among the students who have a history of high performance in school (p. 27). The authors suggest that the lack of effect in the participation of courses in the cases of students with a history of low performance in school can be associated to the difficulties that these students might have to identify the quality differences between the courses, leading them to attend inferior courses (p. 29).

Concerned with the effects of *shadow edcuation* on educational inequalities, Choi (2012), based on longitudinal data on the performance, socioeconomic and school characteristics of South Korean from the 7th year of K-12 until their senior years, estimates the effect of attending supplementary activities of Mathematics and English on their performances in tests of these subjects.

The results indicate that the frequency in classes or supplementary courses positively affects students' performance in all the school years analyzed. The effect is greater during the final years of middle school, when compared to high school. Besides this, the study shows that the effects of studying by yourself become relevant, in comparison with the effects of supplementary education, as students advance in regular education. Despite this, the authors state that supplementary education and self-instruction positively affect one another, indicating that these two practices are complementary, regarding performance gains in tests (p. 21).

Contrary to the previous studies, Smyth (2009) does not perceive a statistically relevant relation between shadow *education* and performance, based on Irish senior high schoolers. Using variables that tend to minimize the bias of estimates, the study is based on information on students' performance in a national evaluation to select students for higher education and data on previous school performance, attitudes concerning studies, educational expectations, and students' socioeconomic characteristics. Despite the use of variables that might contribute to precisely measure the "liquid" effect of supplementary activities on performance, it is worth saying that the variable related to the participation of supplementary activities is strongly aggregate, not specifying the types of activities done or if the subjects of the classes or courses attended (pp. 8-9).

As indicated, the results point out that, in the context considered, they did not observe a relation between participation in supplementary courses or classes and students' performance

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in texts. Faced by this, the author suggests that the explanation for the demand for supplementary activities in the Irish context can be related to the atmosphere of competition around the tests that mediate students' progress between K-12 and higher education, what could lead to a pressure to additionally prepare themselves for tests, even if this does not have a practical effect over performance (Smyth, 2009, pp. 18-19).

While studies on the theme show some variation in the intensity of the relation between *shadow education* and performance – depending on the context considered, the choice of variables and techniques used in the estimates –, it seems that the participation in activities of supplementary education has affected students' performances in tests, based on information of the educational systems of different countries.

Considered together, the studies analyzed until this point seems to indicate that *shadow education* activities have established or tend to build a way to potentialize the educational differences between students of different social conditions, perhaps allowing social advantages to be transmitted through this extra school path for generations (even if other mechanisms, acting in the opposite direction, can act to limit the tendency to transmit social advantages from parents to children).

Reasons to participate in *shadow education*

As we can see, the motivation to participate in supplementary classes or courses is normally associated to a certain atmosphere of competition, frequently fomented by the existence of tests that measure students' progress in the educational system and by the relation, normally significantly, between school destinies and professional and social destinies (Bray, 2015; Choi, 2012; Guill & Lintorf, 2019; Smyth, 2009; Southgate, 2009; Stevenson & Baker, 1992). Costa et al. (2013) sum up this idea well:

> The increasing importance given to educational competition (particularly regarding the search for the best school results and the admission in universities and courses of more prestige), help to explain the growth in the number of business of tutoring around the world [...]. This growth is directly related with families' evident demand, whose expectations are to obtain the best school results for their children and reinforce their probability of success in higher education and professional life. (p. 213)

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Even though the relations between the social condition of students/family, education and professional and social destinies (and all the competition associated to these relations), which are not linear and vary depending on the context (Dubet et al., 2012), are recurrently seen as grounding the reasons to participate in supplementary classes and courses, the studies approaching the theme have indicated that students and families have various reasons to do so.

In a research aiming to understand the reasons that lead students' parents to seek supplementary activities for their children, Neto (2006) indicates that, beyond the reasons related to the admission exams for higher education and to face learning difficulties, parents' lack of time or knowledge, and the lack of support from school are also pointed as reasons to demand supplementary activity, based on the data collected among parents of K-12 students in the Portuguese context (pp. 176-194). Similar patterns of motivation to participate in supplementary courses, in Portugal, are seen by Silveirinha (2007, pp. 188-191) and Gouveia (2017, pp. 192-194), based this time on students' answers.

In a study that explores the theme on the context of Hong Kong, Bray and Kwok (2003) point out that the preparation for exams becomes the main reason to participate in supplementary courses as students get closer to the end of high school, but that, among younger students, there are other common reasons, such as to fulfill an obligation determined by the parents, the need to help with household chore, the difficulty to follow the subjects in regular school, and the wish to make new friends (p. 616).

Making new friends is also one of the reasons declared by Japanese students attending activities of supplementary education, a motivation overcome by the wish to meet their current friends, but not by the pleasure of learning, as pointed out by Entrich (2014, p. 45). Even if the students considered in the Japanese sample state as the main motivations the need to solve school difficulties and the wish to follow more easily their regular school activities, the fact that the wish to meet friends is listed in third place amidst the reasons to participate in supplementary activities suggest that these activities can go beyond the instrumental aspects normally attributed to them (though, surely, not excluding this role).

Chan and Bray (2014) highlight, beyond satisfying the socialization needs that the interaction with teachers in supplementary courses can provide, students may attend this activities as a way to improve their self-esteem and self-confidence, as the additional support of supplementary education tends to contribute for them to feel safer regarding their studies.

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Reasons to participate in supplementary activities related to the improvement of students' self-esteem and self-confidence are also seen by Bray and Kwok (2003, p. 617).

Returning to the motivation related to educational competition, some studies indicate peer influence as a reason to participate in supplementary education activities (Bray & Kwok, 2003; Matsuoka, 2018; Smyth, 2009). In this case, given the competition atmosphere around the performance in tests that mediate students' progress in the educational system, peer pressure (among students or among parents) tends to motivate the participation in courses, which come to be understood as obligatory, considering the objective (of students and/or their parents) to not be left behind in this type of educational competition game. As indicated in the Irish case, peer influence/pressure would be the explanation to participate in courses, even when they have no effect on performance (Smyth, 2009).

Finally, we should notice that the studies on the reasons that make students and/or parents to demand supplementary education activities normally do not investigate motivations related to the social prestige that the participation in certain activities might play in each context. Though these courses might have consequences in terms of school return, it would be important to understand the representation of individuals about each type of supplementary activity in each context and how the participation in these activities adapts itself to the set of practices and positions in the social space, this would allow to understand the motivations associated to social prestige (considering that this type of motivation would hardly be seen in direct answers on the theme, as the admission of its role of social prestige would ruin the denied prestige)

Besides this, Castro's (2013) research with senior-year students in three high schools in Porto Alegre, Brazil, one state school, a municipal one, and a private one, with questionnaires applied in two classes of each school in 2013) show the potential of analysis on the theme under the perspective of distinction. When questioned about their reasons to attend a language course, students from the private school pointed out 11 reasons, the most frequent were "more knowledge", "learn a new language", "professional training", and "for pleasure". Amongst state school students, 80% indicated that the course was a way to train for work and 20% a preparation for the university admission exam. Among the students from the municipal school, 100% of the students indicated reasons related to their professional future (pp. 137-138). Cases, such as this, reveal a social belonging that needs to be explicated, the own motivation to

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participate in certain supplementary courses – which indicates, among other things, the possibility of not perceiving the course as a need – can act as an element of social distinction.

Relations between regular and supplementary education

Maybe the broadest category of studies I propose here are those about the relations between regular and supplementary education and the effects of the latter on the former, contradicting, in this case, the logic that engenders the metaphor of shadow.

Exploring the theme in the context of Kuwait, Hussein (1987) refers to supplementary education as a *hidden educational problem*. Highlighting that students who seek supplementary activities in Mathematics are more concerned with learning techniques to quickly solve exercises than with Mathematics itself. In fact, the author (who is a Mathematics teacher in regular school) states that the participation in complementary courses focused on test preparation, makes students lose interest in the activities developed in regular education, thus, it is common to see cases in which students attend the minimum number of classes allowed (p. 92).

This type of perception is well expressed by students of Hong Kong in a research conducted years later, which aimed to register students' perceptions in this context about regular and supplementary education:

> We don't listen to the teacher in [regular] class. We eat and drink, and sometimes daydream. The teacher doesn't care…. In tutorial class, I concentrate. Everybody does. What the [tutorial class] teachers say is useful. They are examination-oriented (interview, October 11, 2001)" (Fung, 2003, p. 188).

Similar effects of the supplementary education over regular one – or maybe the effects of the centrality of testing and educational competition over educational practices that end up divided into those concerned with a more general and broader development of the individuals and those restricted to a training to solve tests–, has been seen by different studies, often highlighting the superposition of supplementary education oven regular one, or the possibility of supplementary education to work out as a type of substitution to regular education (Aurini & Davies, 2004; Bray, 2013, p. 417; Bray, 2015, p. 6). In this case, Costa et al., (2009) alerts to the possibility of regular school becoming "[...] a mere agency of legitimation and certification of knowledge obtained on its margin" (p. 87).

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On the other hand, some studies indicate that the possibility of a more individualized educational care (especially in the case of private teacher, one-to-one, or who attend small groups of students), focusing on solving learning difficulties or helping students to feel more confident with their school activities, might contribute to a better progress of regular classes (Bray, 2007, p. 51; Silveirinha, 2007, pp. 213-214; Yung & Bray, 2017, p. 106).

Silveirinha (2007) also highlights the fatigue extra-school activities might cause among students (p. 213), which could affect their performance in regular school activities. The same problem (that is, the tiredness caused by this double shift) may affect teachers of regular school when they also work in supplementary education, which is sometimes necessary in contexts where teachers' incomes are low (Bray, 2015, p. 7; Buchmann, 1999, p. 108; Dang & Rogers, 2008, p. 182).

Out of all the consequences that supplementary practices might have over regular education, the most controversial one refers to the possibility of regular school teachers not fulfill the curriculum during their classes believing that supplementary education will cover the rest of the content or, in a more extreme case, teachers would not cover the foreseen content to create demand for supplementary activities in the out-of-school period (Biswal, 1999; Bray, 2007, p. 55; Bray, 2013, p. 415; Silova & Bray, 2006, p. 102; Yung & Bray, 2017, p. 106).

In a study that further develops the theme, Jayachandran (2014) investigates if the offer of supplementary classes by regular school teachers to their own students affects the fulfillment of regular education in Nepal. Comparing public schools in which school teachers also work in supplementary education teaching their own students in the out-of-school period with schools that do not have these activities. The author indicates that the offer of supplementary education by school teachers imply a reduction in the coverage of the curriculum in the schools where this practice takes place. Besides this, her study points out that the grades of students who do not attend these extracurricular activities are negatively affected when compared to those who do (pp. 198-202).

The debate around the ethical questions involved in the offer of supplementary education by regular school teachers has, almost always, resulted in regulatory measures that prohibit regular school teachers to offer supplementary activities to their own students or to students from the schools they teach (this type of regulation was adopted by countries such as

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Japan, South Korean, Germany, France, and Portugal, among others) (Bray, 2007, p. 78; Bray, 2013, p. 415; Neto-Mendes et al., 2008; Pinto et al., 2014, p. 32; Silova & Bray, 2006, p. 29).

The interaction between regular and supplementary education has also been affected by other forms of regulation, including the prohibition of these activities. Faced by the potential of educational differentiation between students with different possibilities to access supplementary courses, the activity was prohibited in the 1980s in South Korea, but was later declared unconstitutional. The difficulty to inspect it prevented the prohibition from being, in fact, implemented (Lee et al., 2010). We also highlight the restriction of working hours in which specialized education centers can offer supplementary activities, as in the most recent South Korean regulation (Choi, 2012, p. 9), or the governmental support to these activities, as in the cases of Singapore and South Korea, aiming to enable the access of low-income students to these activities, what may end up contributing to the equalization of access to supplementary activities, as well as equalizing educational results between students from different social strata (Bray, 2003, pp. 50-51; Choi, 2012, p. 9; Hallak & Poisson, 2007, p. 269).

Nevertheless, considering the sense of competition that seems to permeate education in different contexts, lingers the doubt if regulation initiatives, mainly focused on reducing the negative effects of the supplementary activities over educational systems and inequalities, are enough to balance the problems created by them. That is, perhaps it would be necessary to take actions aiming to correct the negative effects created by supplementary education, but also the competition struggles that, instead of promoting different conditions, tend to perpetuate such conditions (Bourdieu, 2017, p. 158). In this sense, the expansion and decentralization of the offer of public free education (in K-12 and higher education), with access and progress mediated by mechanisms that are not only based in competition through tests, might contribute to a certain reduction in the competition within the educational systems in different contexts.

Final remarks

The article aimed to briefly discuss some recurrent approaches of recent studies in the literature about *shadow education*, exploring works that seem to represent well the types of research, according to their proposed delimitation. However, we should say that other research approaches, relatively recurrent, could also lead to other topics: the expansion of supplementary

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activities through the perspective of its offer (Aurini & Davies, 2004; Bray, 2007, p. 37-41), the cultural, social, and institutional facts that affect the participation in supplementary courses (Baker et al., 2001; Bray, 2007, pp. 69-73; Guill & Lintorf, 2019; Silova & Bray, 2006, p. 84) , or even the detailing of regulatory arrangements related to the market of supplementary education (Bray, 2003; Bray, 2009; Neto-Mendes et al., 2008) are themes that could maybe be approached in other works focused on the literature about *shadow education*.

As could be seen, the dissemination of supplementary activities has raised concerns related to educational stratification, as: 1) the access to these activities have been focused on relatively privileged students and 2) besides other advantages they might confer, in many cases, the activities of supplementary activities have positively affects the school results of those who attend them, helping students, who already tend to have better educational possibilities, to reinforce their chances for school success, mainly regarding the access to the most demanded universities or degrees.

Though there is a certain variety of reasons for students and families to demand activities of supplementary education, those related to gaining educational advantages seem predominant, a movement that tends to reinforce the legitimacy of competition fights that have permeated the educational systems in different contexts. In this sense, unless structural changes take place in the educational systems, we foresee the growth in the demand for activities of supplementary education or any other way of educational distinction that imply educational advantages (normally followed by the expectations of professional and social advantages), in line with the predictions of Bray (2015, p. 9).

Finally, it is worth mentioning that these themes are still little explored in the Brazilian context. Considering that, in Brazil, educational experiences normally have significant implications on individuals' future life conditions and that supplementary education is one amidst an ensemble of education experiences of some groups (Brandão & Lellis, 2003, pp. 519-520; Gomes et al., 2010; Nogueira, 2004, p. 136), it seems important to advance in the understanding of the dimension of participation of Brazilian students in supplementary education activities, the effects of these activities on school, educational, and professional trajectories, and the consequences of these activities on the teaching-learning dynamics of the regular educational system in the country. Bringing these questions to light might be an important step to better understand and fight against educational inequalities in our context.

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