

Linguistic skills in the academic field

Profiles of acquisition, assessment and use of English by scientific researchers in Argentina¹

Oswaldo Gallardo*

<https://orcid.org/0000-0003-0662-2196>

Introduction: English skills in a changing academic field

Several studies highlight the centrality that internationalization has acquired in the public agenda of research and higher education, and how the programmes, the funding, and the debates around this phenomenon in Argentina and Latin America have multiplied (Didou Aupetit and Gérard, 2009; De Filippo, Barrere and Gómez, 2010; Gaillard and Arvanitis, 2013; Vessuri, 2008). This article deals with a specific dimension of these processes, the acquiring and practice of the specific linguistics abilities in the context of a national academic field crossed by the global, national, and local logics. The aim is to address the processes of acquiring these abilities and their use in the field, particularly the ones concerning English though other languages will be mentioned as well within a context of a mostly Spanish speaking country.

* Universidad Nacional de Cuyo, Mendoza, Argentina.

1. This article is based on results of author's PhD thesis ("Una mirada relacional sobre el Conicet. Internacionalización, capital idiomático y cultura evaluativa en el campo científico-universitario argentino, 2003-2015"), approved in September 2019 in the Latin American Social Studies Program of the National University of Córdoba, Argentina. For this article, funding was provided by Conicet doctoral grant and additional research projects: Neies-Mercosur Educativo 03/15; "Gender asymmetries in academic publishing and its impact in career-building (Argentina-Brazil)", The Women and Science Chair, a Paris Dauphine-PSL University Chair and its Foundation, en asociación con Fondation l'Oréal, La Poste, Generali France, Safran y Talan.

The idiomatic problem in the academic practices has received more attention from the point of view of the so-called supremacy of the English language in the international academic system than from the view of the construction of a linguistic capital in the researchers in such system. This has been organized, over the last century, based on an unequal structure of production and circulation of knowledge as from the distinction between mainstream and peripheric science. Though its origins were clearly local, the mainstream style of production (language, writing style, that is, the American paper) became the global pattern for measuring quality in science (Beigel and Salatino, 2015; Ortiz, 2009; Packer and Meneghini, 2007). In the same way as the imperialisms of the universal (Bourdieu and Wacquant, 2005), the language of the science was imposed symbolically together with the exaltation of that form of recognition as the only one valid worldwide.

The mainstream indexation bases – headed by *Web of Science* and *Scopus* – certified this centrality of the English, with relative independence from the country where journals and authors come from. By mid-2022, in Scopus, there are 176,676 indexed articles in journals with at least one author affiliated to an Argentinian institution within the period 2001-2020. An 85.4% was published in English, 16.6% in Spanish and 0.6% in Portuguese². For the same period, out of the 32,358,070 published articles worldwide, 88.8% are in English, 1.2% in Spanish, and 0.6% in Portuguese.

There is a similar panorama in Web of Science. For the first two decades of the current century, the total amount of articles from Argentinian authors is 142,230. An 86.9% was published in English, 12.4% in Spanish and 1.1% in Portuguese. To a global extent (total amount of 27,231,230 articles), the percentages are, respectively, 95.7%, 0.8%, and 0.4%. That is to say that, globally, the weight of English is still undisputed in the indexation bases of the mainstream circuit, and the publishing of Argentinian author also reflect that tendency.

The Latin American data bases indicate a much stronger presence of Spanish and Portuguese, though English is far from being a marginal language. The combined registers of SciELO and Redalyc (Oliva project, cf. Beigel *et al.*, 2022) show that there are 41,957 articles by Argentinian institutional affiliated authors for the 2001-2009 period. An 85.5% of these publications were written in English, 14% in Spanish and 1.3% in Portuguese. The percentages for the total amount of publications in this period are, respectively, 44.5%, 24.1% and 31.1%.

In other words, the horizon of English as *lingua franca* for scientific communication is adjusted when we look beyond the mainstream databases strongly biased

2. The sum of the values is over 100% since Scopus takes into account more than one language per article in some cases. Search performed by the author.

towards English. But the idiomatic balance of the “real” scientific production has not been yet established nor there are current tools to conduct a reliable study, in which Oliva is a limited approximation.

In this context, it is relevant to ask oneself about the incidence of English and the strategies for acquiring linguistic abilities in a peripheric field where the protagonists’ native language is, in every case, Spanish. It is, therefore, appropriate to ask oneself how hyper central English is in the scientific production of these researchers, what their abilities are and how they use them and, finally, what place languages take in the construction of the academic capital.

This linguistic capital, as part of the cultural capital, is shaped by its constitutive elements (abilities in foreign languages) as well as their processes of acquisition. The ways in which this incorporated cultural capital is acquired impose marks of origin that will be determinant for their use in the cultural field (Bourdieu, 2012). Even though there are few cases mentioned in which a language – other than Spanish – is learned within the family, this last plays a meaningful role in the early learning of languages. Empirical observation shows that a large number of researchers started this process during their childhood or adolescence by parental decision. This early learning can be traced back to the parental disposition in starting an early investment in the learning of their children, especially English. Therefore, it is this cultural capital together with the inherited dispositions that oppose, by their conditions of origin, to the learning that Bourdieu calls methodical and late and that can appear as an answer to the demands of the scientific field.

Evidently, not only the family cultural capital nor the academic field structure explain the composition of the linguistic capital. Gerhards brings forward other social variables that have an influence over the distribution of what he calls international linguistic capital (competences in languages other than the mother tongue) (Gerhards, 2012, 2014) Three factors may have an impact over the possibilities of learning a foreign language: the opportunities to learn it (the most important factor related to the compulsive teaching of English in the educational system); the learning motivations (the prestige of the language, instrumental motivation-linked to the need of publishing in English for instance- integral motivation, linked with a positive value of the “culture” linked to a language); and the cost (that rises according to age and decreases according to an increase in the educational level). Other social factors can also have an impact at macro and individual level. Amongst the first can be considered the population of a country (that could indicate the position occupied by the official language in the idiomatic market) and the government investment and modernization of the educational system. Within the second, generation, social class, educational level and linguistic distance between English and the mother language

are mentioned (Gerhards, 2014). This theoretical framework provides the basis for analysing the influence of the generation membership, social origin, and scientific discipline over the distribution of the linguistic capital among researchers.

Understanding the impact of the increasing influence of English in the global academic world over specific contexts in which the actors are not English native speakers, has been the aim of numerous studies by Mary J. Curry and Theresa Lillis (Curry, 2006; Lillis and Curry, 2006, 2010). A relevant finding made by these authors is that, when publishing in English, the non-anglophone academics find more significant to work together with *literacy brokers* than to use their own linguistic abilities in English. These brokers are specialists in the language, specialist colleagues in the discipline with experience in publishing in journals in English, and even English-speaking friends or family (Lillis and Curry, 2010). It seems clear, thus, that linguistic abilities must be analysed in terms of their use, that is, in the frame of the tendencies and transformations of the structure and the logics of evaluation and circulation that characterize the Argentinian academic field.

The academic field in Argentina is distinguished by a deep structural heterogeneity (Beigel *et al.*, 2018). At its heart, institutions with different trajectories and evaluative cultures coexist. Between 2003 and 2015 the field underwent a deep process of expansion of its research capacities that represented a recovery respect from the marginality -mostly due to budget- forced on research and higher education during the auge of the neoliberal policies in the region during the 1990s. Between 2016 and 2019, a contraction within the change of government was experienced (Macri 2015-2019), but the production of knowledge continued intensely concentrated in the public area.

The National Council of Scientific and Technical Research (Conicet) is one of the main institutions that are part of this framing. Created by the mid XX century following the French CNRS model, it is the main institution that provides full-time research positions in the country. It is a decentralized organization run by the national State, which is its main source for funding. As a public institution, even though it depends on the Ministry of Science, Technology, and Innovation, it holds an important degree of functional autonomy.

On the other hand, 63 public national universities depend on the State but also hold high degrees of autonomy, even instituted at a constitutional rank. They present a quite varied panorama in terms of their antiquity, size, colleges/courses of studies, evaluative logics, and relation with Conicet and other academic institutions. There are also a handful of provincial universities and a large number of private universities which are mainly – and sometimes solely – oriented to teaching, specifically to liberal professions. Different from central countries, the development of research

activities is not a characteristic of the private system, except for specific fields. Private investment in research and development is also marginal in the case for Argentina, being the national State, the most outstanding funder of R&D activities.

The centrality of Conicet in this field sits in the Scientific Researcher Career, that consists in full time positions devoted to research accessible through competition. In these competitions, the number of indexed scientific publications in the mainstream circuit is assessed. Only the Social Sciences and Humanities consider the Latin American indexation circuit. However, neither for Conicet nor for universities, there is a sole system for classifying and assessing journals as it happens in Brazil or Colombia.

The available empiric studies allow to state that Conicet is breached by an evaluative culture based on the indexation of the scientific publications as its main way to weigh the background for entry and promotion within the institution. The evaluative and circulation culture is strongly defined more by the indexation than by the originality of the publications (Beigel, 2014; Beigel and Salatino, 2015), a criterion that admits some disciplinary adaptations. In the Social and Humanities Sciences, publishing in Spanish, regional and even national indexation together with the production of books are also well regarded. In the other disciplines, however, only *papers* are acknowledged, mainly in English and in mainstream journals.

In terms of scientific disciplines, the institution is organized in four large areas: Engineering and Agricultural Sciences (EAS), Biology and Health Sciences (BHS), Natural and Exact Sciences (NES) and Social Sciences and Humanities (SSH). According to Conicet, the first major area comprises mainly applied research developments and, to a lesser extent, experimental development and basic research linked to technological problems, and it includes six disciplinary committees³. Biology and Health Sciences⁴ have been linked to the history of Conicet itself since it was founded by the Nobel Prize for Medicine Bernardo Houssay, first Chairman of the Council from 1958 to his death in 1971. Traditionally very important to Conicet, Exact and Natural Sciences include a variety of disciplines⁵, with an emphasis in basic research. Finally, Social Sciences and Humanities the area that comprises more disciplinary committees⁶.

3. Agricultural Sciences; Civil, Mechanic, and Electric and related Engineering; Habitat, Environmental Sciences and Sustainability; IT and Communication; Process Engineering, Industrial Products and Biotechnology; Technological and Social Development and Complex Projects.

4. The disciplinary committees for this area are Medical Science, Biology, Biochemistry and Molecular Biology, Veterinary.

5. Disciplinary committees: Earth, Water and Atmosphere Sciences; Mathematics; Physics; Astronomy; Chemistry.

6. Disciplinary committees: Law, Political Sciences, and International Relations; Literature, Linguistics

Methodology and sources

The same survey as in the rest of the *dossier*⁷ has been used (survey on the linguistics abilities and internationalization, Ecapin, by its acronym in Spanish) for this article. It has been self-administered by Conicet researchers from October 31, 2016, to March 12, 2017. 2,390 valid answers were obtained, corresponding to a 23.8% of the 10,036 active researchers by December 2016.

The hereby analysed survey is not based on a probabilistic sample but on the population of researchers that agreed to completing it (see Beigel, Piovani and Almeida, in this number). Though this population cannot be considered as representative of the whole universe, in strict statistics terms, for the Argentinian case it is possible to state that it is structured in an analogical way to that universe. The distributions by discipline, gender, age range, Conicet category and provincial workplaces correspond, reasonably, with the active researchers in 2016 (see tables 1 and 2).

TABLE 1
Researchers that answered the survey and Conicet total bi scientific field (%)

SCIENTIFIC FIELD	SURVEY	CONICET RESEARCHERS
Biological and Health Sciences	29	30
Social and Humanities Sciences	25	22
Agricultural and Engineering Sciences	21	25
Exact and Natural Sciences	25	23
Total	100	100

Source: Own elaboration (Ecapin Survey) y *Conicet en Cifras*. Conicet 2017, accessed 12/03/2017, <<https://cifras.conicet.gov.ar/publica/>>.

TABLE 2
Researchers that answered the survey and Conicet total, by gender (%)

GENDER	SURVEY	CONICET RESEARCHERS
Female	55	53
Male	45	47
Total	100	100

Source: Own elaboration (Ecapin Survey) y *Conicet en Cifras*. Conicet 2017, accessed 12/03/2017, <<https://cifras.conicet.gov.ar/publica/>>.

and Semiotics; Philosophy; History, Geography, Social and Cultural Anthropology; Sociology, Social Communication and Demography; Economics, Management Sciences and Public Administration; Psychology and Education Sciences; Archaeology and Biological Anthropology.

7. The survey was part of a comparative study about the knowledge and the usage of foreign languages by academics in Argentina, Chile, and Brazil. It was funded by the Pict projects 2013-1442, PIP-Conicet 2014-0157 and Neies-Mercosur Educational 03/15.

For this article, a complementary source was used as well, derived from the author's PhD thesis. The Curriculum Vitae (CVs) of the active Conicet researchers in 2015 were analysed and information on linguistics abilities/competences of 4,638 researchers was obtained (59% of the total). The five languages that were identified as the main ones – English, French, Italian, German, and Portuguese – were analysed in three levels: self-perceived skills, informed formative training, and international exams passing. Other sixty-seven languages were mentioned (at least 13 of which are dead languages for the linguistic, historical, and anthropological interest).

Foreign languages for argentinian researchers

The skills in languages other than Spanish relate mostly to English, followed by French, Portuguese, German, and Italian. Practically, all researchers that claim to have knowledge of a foreign language included English (only sixty-five out of 4,638 do not state this in their CVs) and 37% mentions only English. The concentration of these five languages is complemented with other forty-four that some researchers claim to know at some degree. Seven of them are dead languages known by ninety-two researchers. Most of these cases correspond to Latin and Classic Greek (learned during their graduate education or, more rarely, during secondary school). In a minimum ratio, languages of interest for the historical research are to be found (Acadian, Classic Armenian, Classic Egyptian and its variations, Sanskrit and Classic Hebrew). It is not accidental then that 67% of the researchers with some knowledge of these languages belong to the Social and Humanity Sciences. The synthesis of the mentioned information is shown in Table 3.

TABLE 3
Researchers that claim to know languages other than Spanish, by main languages (%) (N = 4,638)

LANGUAGE	CASES	%
English	4573	98,6%
French	1761	38%
Portuguese	1121	24%
Italian	1017	22%
German	713	15%
Other	235	5%
Dead languages	91	2%

Source: Own elaboration (CV survey).

The STEM disciplines⁸ tend to focus on English not only as the language for publishing and communication but also as the only language different from Spanish that researchers know or, at least, include in their CVs. Table 4 shows that half the researchers in Biology and Health Sciences (BHS) and Engineering and Agricultural Sciences (EAS) know/understand a single foreign language and that up to 82% know even two. The ratios are slightly smaller in the case of Natural and Exact Sciences (NES), and very inferior in Social and Humanity Sciences (SSH), where more than half claims to know three or more languages. When abilities in a single language exist, they are in English for SSH in 92% of the cases whereas for the other areas the number climbs up to 98%.

TABLE 4
Number of foreign languages mentioned in CVs by area [%] (N = 4.638)

LANGUAGES	BHS	EAS	NES	SSH
1	48%	44%	36%	19%
2	34%	34%	38%	29%
Subtotal 1+2	82%	78%	74%	48%
3	13%	15%	17,5%	29%
4	4.4%	5%	6.5%	15%
5	0.5%	1.5%	1.6%	6%
6 to 9	0.1%	0.5%	0.4%	2%
Total	100%	100%	100%	10%

Source: Own elaboration (CV survey).

Knowledge in French was claimed by 38% of the researchers, in Portuguese by 24%, in Italian by 22% and in German by 15%. Table 5 presents this data discriminated by disciplinary area. The first set of rows indicates the percentage within the population that included information about their linguistic capital in their CVs, discriminated in by the five most important languages. The second part shows the percentages within each one of those specific cuts concerning the passing of at least one international exam⁹.

8. Stem refers to Science, Technology, Engineering and Mathematics. Here it is used to refer to researchers that are not in the Social and Humanities Sciences area.
9. Exams or certificates (such as First, Toefl, Delf, Celpe, European Common Frame for Languages) issued by international institutions were considered as well as the language exams required by foreign universities to take a course there. Sufficiency exams in graduate and post-graduate programmes in Argentina were excluded since they lack validation for foreign universities.

TABLE 5

Researchers that claim to know all five main languages in their cvs, and ratio within these that claims having passes exams, by area (N = 4.638)

INDICATOR	LANGUAGE	EAS	BHS	NES	SSH
States skills in the language	English	99.5%	99.3%	99.5%	97.7%
	French	31%	30%	35%	60%
	Portuguese	21%	17%	18%	45%
	German	12%	11%	21%	19%
	Italian	21%	15%	23%	30%
At least passing one international exam	English	15%	18%	12%	16%
	French	4.2%	4,3%	2.6%	3.5%
	Portuguese	1.3%	1,6%	-	1.1%
	German	15%	17%	10%	13%
	Italian	1.7%	1,3%	0.4%	0.3%

Fuente: Own elaboration (CV survey).

It can be observed that the ratio of researchers that claim to know English is near 100% in all areas, but for French, Portuguese and Italian the corresponding to SSH is significantly larger than in the other areas. German is the exception since it is in NES where more researchers claim to know it.

No disciplinary area appears to be associated with a higher intensity to the passing of international exams, the percentages are relatively low for all the areas and languages. Data appears to indicate that this external validation practice of the linguistic capital is not widespread among Conicet researchers.

It is also to be noted that the low ratio of researchers having passed international exams of Portuguese and Italian. Brazil and Italy are important destinations for development and mobility of Conicet researchers, particularly the first one. France is also a particularly important destination, but its national language does not present much higher values. The number of researchers passing exams for German, however, is close to English, in proportion.

Let us consider the results of the survey now. In order to weigh the skills in English, a scale of assessment was included for the researchers to self-classify themselves (advanced, intermediate, basic, none) according to the four usual linguistics abilities or skills for international exams (reading comprehension, listening, speaking, and writing).

The reading comprehension skill is categorized as advanced in most cases (86% of those who were surveyed). The remaining behave similarly among themselves. An advanced listening skill was indicated by the 54%, a writing skill by 53% and

speaking by 44%. At the other end of the scale – the categorization for “basic” – was barely above a 1% for the reading comprehension and around 10% for the other skills. These ratios do not allow greater variations among the different areas, though the higher percentages correspond to BHS and the lower to SSH and EAS.

The concentration of skills concerning reading is reflected in the other languages depicted in the survey as well. It was requested to point the self-perceived skills in languages-other than English and Spanish- being Portuguese, French, Italian and German the most important. Table 6 systematizes the collected information, highlighting that reading comprehension and, partially, listening outrun the other skills in the number of researchers that pointed them out. That is to say, reading and comprehending a speech in another language are more spread skills than being able to speak or even write using it.

TABLE 6
Researchers with knowledge of a language other than English by ability and language [%] (N = 2.390)

LANGUAGE	CASES	READING COMPREHENSION	LISTENING SKILLS	SPEAKING SKILLS	WRITING SKILLS
Portuguese	1350	92%	76%	37%	18%
French	1175	94%	60%	45%	67%
Italian	571	94%	88%	66%	35%
German	490	81%	60%	52%	33%

Source: Own elaboration (Ecapin Survey).

The case of Portuguese is remarkable since speaking and writing were pointed out in low ratios, as if the ones who know this language tend only to read it and understand it when listening to it. This suggests that a substantial portion of the researchers with skills in Portuguese ascribe these from a colloquial learning that allow them, for instance, to develop the ability to understand an article in Portuguese in practice but barely to be able to write one. A language apparently as unfamiliar as German (for Argentina) presents a less unbalanced distribution of the four skills. Possibly, this is due to the fact that in order to have some knowledge in German, it is required to pursue a formal learning that includes each of the four skills in some degree.

In the survey, it was not requested to assess the skills in languages other than English but the collected information in the CVs can be managed so as to reinforce the preceding interpretation. To that end, the self-perception of researchers that claimed abilities both in English and French, English and Portuguese or in the three languages (2,234 cases) was explored comparatively. Among these, only the cases in which the self-categorization for the language, recoded to the Advanced, Intermedi-

ate and Basic scale, when possible, have been considered. Thus, 1,048 researchers were kept for whom the general self-perception about English and French could be compared. Within such delimitations, in 59% of the cases the self-categorization in English is higher than in French, equivalent in a 34% and only a 7% is higher in French than in English. The most common combination is Advanced English-Basic French, reaching by itself 30% of the subjects.

In the case of English and Portuguese, data for 693 researchers was obtained. In the same way as for French, the most common modality is “Advanced English-Basic Portuguese” (28%). The qualification for the level of English is higher than the one for Portuguese in 60% of the cases, 33% are equivalent, and by 7% higher in Portuguese than in the British language, practically the same distribution observed for French.

Finally, 349 cases share a self-perception for French and Portuguese. Among those, 50% corresponds to the same categorization, French overcomes Portuguese by 27% and the inverse relation occurs in 23% of the cases.

Acquisition of skills in English

It has been possible to establish three modalities for constructing skills in foreign languages. On one hand, the informal acquisition, non-institutionalized, by direct contact with native speakers of the language. It is included the acquisition of one or more native languages within the family, such as in the case of recent migrants or families that keep using the language inherited from the previous generations (which in Argentina, could be the case of Italian and Iberic languages other than Spanish or Portuguese). The acquisition by means of immersion in a linguistic context different from the birthplace is also included, given by several reasons such as stays abroad during childhood or adolescence (associated to work relocation of any of the parents), the course of full or partial studies in non-Spanish-speaking countries, research, or work stays, among other possibilities. While the acquisition within the family can only be started during childhood, the one made by means of immersion can begin at any point of the trajectory.

A second way is the actual learning -different from acquisition (Krashe, 2009) that is made through formal or institutionalized stages. In these cases, the learning can correspond with attending educational institutions, bilingual or not, or language teaching institutions. There are plenty of these and classifying them is not simple. Essentially, they are university language institutions, Foreign States endorsed institutions (such as the Goethe Institute or the French Alliance) and private institutions. The starting point for the learning in “language institutions” can correspond with any

moment during the trajectory though it is quite common that it occurs in parallel to some of the formal educational stages. This institutionally acknowledged language goes together with passing international exams that are, occasionally, a requirement to develop activities at English-speaking universities.

The third way is designated here as non-formal, in which the learning is also systematized but non-institutionalized and corresponds with autonomous learning and private tutoring classes. The starting point of this type of learning is not contingent upon any specific point of the trajectory and can encompass extended time periods.

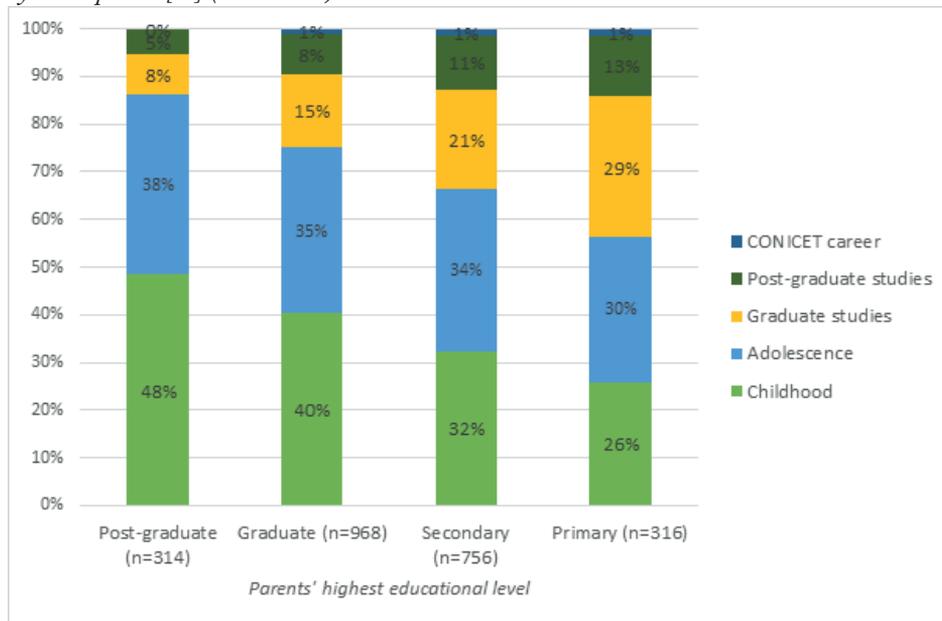
These ideal types of methods of constructing linguistics abilities appear strongly intermingled in the individual trajectories, as it was possible to rebuild based on the survey. They are no unmistaken, their possible meaning for a social and scientific trajectory is strongly conditioned by the time they appear during a determined trajectory. In addition, all of them can occur in both the country of birth and abroad, except for the immersive learning that occurs in a different idiomatic context. Finally, the learning modalities and the moment this begins are closely linked with the social origin of the researchers.

The most common way of English acquisition is the formal one for the Argentinian case. According to the survey, 92% of researchers pointed out one of these specific modalities as a learning stage. The most important is attending courses or institutions, indicated by 82% of the researchers. On the other hand, learning in a non-bilingual school context was mentioned by 21% and in a bilingual one by 10%. Autonomous learning was mentioned by 33% of the surveyed. A 34% of those experienced some of the stages of informal learning (32%, immersion in an English-speaking context and 4% within the family). Clearly, multiple combinations occur in different modalities, although attending language institutes as a unique learning stage is emphasised (33% of the analysed population). This mode combined with the learning by immersion represents 12% and with autonomous learning, 10%.

The moment when English acquisition begins focuses mainly during the first decades of life. The ones who started acquiring the language during their childhood represent 37% of the cases, followed by the ones who did it during their adolescence by a 34%. Although most of the cases occur in such segments, it is still relevant that 18% of the researchers declare that the first instant for studying English is their graduate studies, 10% post-graduate studies and even 1% during their Conicet career.

Among the reasons mentioned to start and continue studying English, there is a combination of multiple options. Individually, the most important are personal interest (53%), the need for reading in English (48%) and publishing articles (42%). The family demand was mentioned by a 36% and the mandatory certification of a language during post-graduate studies, by a 32%. Establishing communication

FIGURE 1
Researchers according to the beginning of learning English and highest educational level completed by either parent [%] (N = 2.354).



Source: Own elaboration (Ecapin Survey). Note: Primary includes 29 cases for incomplete primary level. Including only the cases with data for both variables.

with colleagues abroad (32%) also appeared as a necessity and as a requirement for mobility purposes in an English-speaking context. Far behind, the demands during graduate studies (24%), secondary school (24%) and primary school (11%) were also brought up.

It is possible to synthesize social origin with the ways in which English is learned as well as with the acknowledged motivations for such process. Those researchers with a family origin connected with the scientific field¹⁰ started their learning process during their childhood or adolescence in 79% of the cases. In the case of mother/father occupations, those ratios decrease moderately to a 70%¹¹ and 60%¹².

Figure 1 summarizes the same analysis from the perspective of educational and cultural capital inherited. It allows to visualize that the highest educational level

10. In cases in which either mother or father can be classified as scientific or professional intellectuals, according to the categories proposed by the ILO in 2008 (see <http://www.ilo.org/public/spanish/bureau/stat/isco/>).
11. Directors and managers occupational groups; Technician and middle level professionals; administrative support personnel; military occupations (see <http://www.ilo.org/public/spanish/bureau/stat/isco/>).
12. Services and salespeople occupational groups; farmers and agricultural qualified workers; officers, operators and crafters; installing and machinery operators; basic occupations, housewives (see <http://www.ilo.org/public/spanish/bureau/stat/isco/>).

completed (by either parent) is correlated with the starting point of the English learning process. The family background that includes post graduate studies correspond to a 48% of the cases of learning English during childhood. These percentages drop progressively to a 26% for parents that only completed primary school. In the opposite end of each bar, the beginning of the English learning process after adolescence rises from a 14% to a 44% between the first and last-mentioned groups. The intermediate segment – expressed by the ones that started their studies during their adolescence- represents, however, approximately a third for each group defined by the educational level of their parents.

The reasons mentioned for beginning and continuing the English learning process seem to be related with social origin as well. Table 7 indicates the percentage of researchers in the survey that selected each of the proposed reasons for starting to learn English, discriminated by the highest educational level reached by either parent. Learning the language as a “family demand” was indicated by 47% of those who have at least one parent who completed a post graduate level. From that point, the ratio decreases to a 22% corresponding to homes with a primary level alone. The same descending sequence is verified by the two following explanations, this is, the demands of primary and secondary school. This aims to the higher educational family capital, the more recognition of the parental influence on the strategy for acquiring the language.

TABLE 7
Researchers by reasons for learning English, percentages by highest educational level of either parent

REASON	POST-GRADUATE	HIGHER	SECONDARY	PRIMARY
Family demand	46%	40%	29%	22%
Primary school education	16%	11%	11%	5%
Secondary school education	29%	22%	21%	17%
Graduate studies	20%	21%	27%	29%
Post-graduate studies	26%	29%	33%	38%
Contact with peers	29%	31%	28%	36%
Bibliography reading	38%	45%	49%	56%
Writing of publications	34%	39%	43%	47%
Mobility goals	28%	28%	28%	34%
Personal reasons	54%	53%	53%	51%

Source: Own elaboration (Ecapin Survey). Note: Primary includes 29 cases for incomplete primary level. Including only the cases with data for both variables.

When there is a recognition of the reasons already involved in the academic career, the sequence becomes ascendent. This leads to think that the effects of the cultural family capital are reversed. Family or primary and secondary school demand were noted in a higher ratio by the ones that come from homes with either parent who completed a postgraduate or university educational level. Except for the case of personal interest, all other reasons (in which family influence disappears and only academic reasons remain) were marked to a larger extent by researchers coming from homes with a lesser educational capital (up to secondary and, above all, primary school level).

Implementing the linguistic capital

English, as the language for publishing, holds a central position in the strategies for constructing academic capital by Conicet researchers. Among the “five relevant publications” selected for the ones contesting for a category promotion, 83% of the publications were written in English (Beigel, 2017). In another study it was determined that when considering the total number of publications (articles, books and chapters of books), 80% of those correspond solely to articles in English by Natural and Exact Sciences (NES) and Biological and Health Sciences (BHS) researchers. Among the Engineering and Agricultural Sciences (EAS) area, the proportion rises above a 70%. Only in the Social Sciences and Humanities (SSH) area, English has a reduced participation (less than 10% of the total productions of articles in that language) (Beigel and Gallardo, 2021).

Considering this panorama, the Ecapi survey asked about an appreciation of English in the various aspects of the scientific work. Once more, significant differences were produced along the scientific areas, being more evident the peculiarities of the SSH researchers. Table 8 presents the percentages of the individuals that regarded English as “very important” in four proposed dimensions of the academic activity: reading and consulting bibliography, communication with colleagues abroad and scientific publication in Argentina and abroad. Each of these appreciations was asked based on two approaches, one oriented to the particular trajectory of each researcher, and the second to the opinion on the disciplinary field group they are part of. Due to the proximity of the values for BHS, EAS and NES, those are presented as an average of the values for each area. The most significant interpretation is that, in every case, the percentage for SSH is remarkably smaller than for the rest of the disciplinary area.

TABLE 8

Researchers that regard English as “very important” in their individual trajectory and in their discipline of performance [%], (N = 2.390)

DIMENSIONS OF THE ACADEMIC TASKS	Individual Trajectory CSH	Individual Trajectory STEM	Discipline of Performance CSH	Discipline of Performance STEM
Bibliography and background reading	83%	94%	66%	91%
Communication with peers abroad	56%	80%	57%	87%
Publishing in Argentina	12%	21%	9%	19%
Publishing abroad	61%	96%	55%	89%

Source: Own elaboration (Ecapin Survey). The values for CAIM, CBS and CEN correspond to an average of the three areas.

The Social Sciences and Humanities (SSH) are, therefore, a space in which English is regarded as a central linguistic resource but not as central as in the other areas. There are other languages with some positive appreciation in the SSH as well. According to the survey, 19% of researchers has published in French and another 16% expects to do so in the future. Portuguese presents similar ratios in a 21% and 20% respectively. The values are sensibly reduced for German, in which 9% of the SSH researchers has published at least once, whereas the same percentage expresses their will to do so in the future.

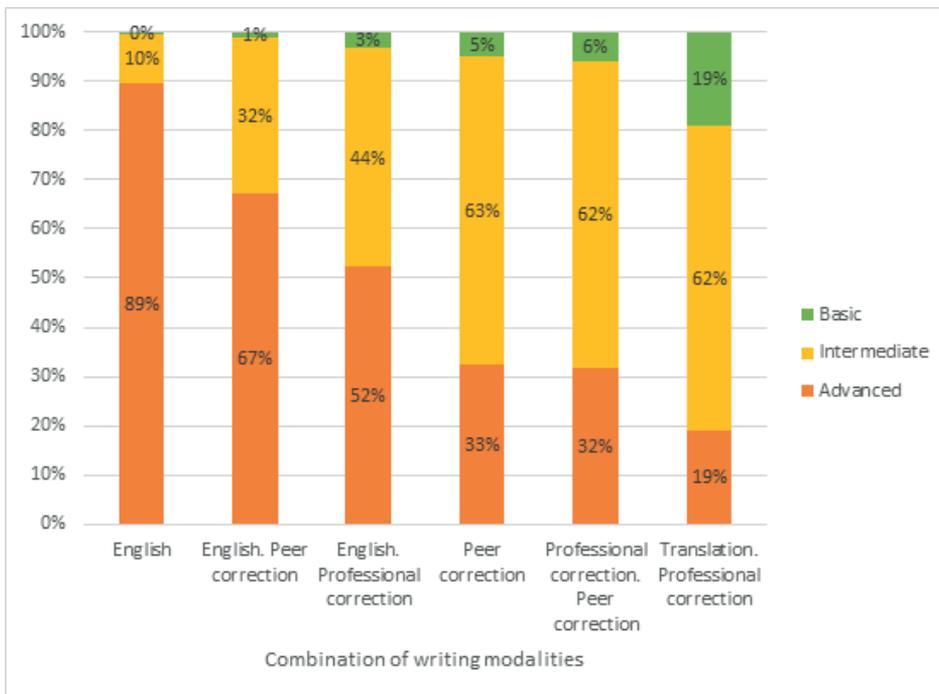
For average in the other areas, only 2.9% have published in French and barely a 3.9% have expressed the intention of substantiating a publication in the future. For Portuguese, the values are slightly higher as long as a 5% of researchers have published in this language, while a 6% might be concerned in doing it. At last, only a 1.7% have published in German and a 3.9% would like to.

It is also possible to analyse the specific modalities of writing in English. Taking into consideration the ones who have published in this language, a 4% have done it in a sole author mode, a 31% have only published in co-authorship; and the rest (65%) have done it in both modalities.

The most signalled writing modalities for those who have published at least once as sole author are writing in English (73%), writing in English and the request for peer correction (35%) or by skilled professionals on the subject (38%). Writing in Spanish and subsequent translation was mentioned only by 5% of the researchers.

Figure 2 shows the main combinations of the writing modalities according to the survey results (corresponding to a 99% of the cases), highlighting that, from left to right, the ratio of researchers that categorize themselves as having “advanced” skills for writing in English decreases as the “intermediate” and “basic” perceptions increase.

FIGURE 2
 Combination of writing modalities in English for sole author publications, according to self-perception of the ability for writing in English [%].



Source: Own elaboration (Ecapin Survey). Meaning of the labels: English (only writes in English), Peer correction (writes in English and requests peer correction), Professional correction (writes in English and request correction by a specialist), Translation (writes in Spanish and requests for translation).

Moving onto the right column, writing modalities that are far beyond the individual writing can be seen (the first one represents those who only pointed out that type of writing) and the intervention of “literacy brokers” becomes more crucial. The first column indicates that 89% of those who indicate writing in English as the only mode, categorize themselves as having an advanced skill in writing in this language.

The second column adds sending the manuscript for peer correction of the individual writing. It can be speculated that a text in English sent to a colleague is, from the author’s point of view, less likely to corrections than one sent to a professional which probably demands more working time. In other words, as long as it is recognised that it is more necessary to polish the original writing, it will be more likely to consult a paid professional specific to the area for performing this task and, therefore, it will be necessary to invest personal or institutional economic resources.

In the fourth and fifth columns, in which the writing mode without revision has disappeared and the “advanced” self-perception decreases to 30%, sending the manuscript to be edited/corrected by peers and professionals appears as a sign of personal

expertise that provides less certainty about the acceptance of the manuscript by the editorial team of the publication. Even when the last column represents only 4% of the cases, is relevant since the “advanced” self-perception is less than 20% and the modalities that probably leave less traces of the original writing appear (correction by professionals and translation)

The structure of linguistics abilities, influenced by social origin, does not seem to be related with the distribution of the writing modalities in English. There is not, for instance, a tendency in the ones that early started to study the language to write by themselves at some extent. There is, on the other hand, an evident relation with the disciplinary areas where researchers as well as their publications enrol. The combinations that were described as the most autonomous (writing in English and correction by peers) are generalized among NES researchers (61% of the cases). In EAS, they represent the 53% and in BHS, 45%. In SSH, they decrease even more to a 30% and the most usual mode is writing in English and writing in English and requesting for correction by a professional, with 42% of the cases. Ultimately, researchers in other areas seem to have more expertise in writing their sole author articles in English than the ones in the Social Sciences and Humanities area. Two effects can be described/identified. Undoubtedly, one is that the publication in English is almost the only recognized and practiced possibility by STEM disciplines that have an influence over the willingness of the researchers to acquire English as central tool and make a skilled use of it. Thus, eventually, everybody learns to write in English in an economical way in order to publish their works in that language. The specific circulation culture of each disciplinary area seems to establish some sort of rate of conversion of the linguistic capital into an academic one.

When analysing the writing modalities of the publications in English as co-authors, the results are similar to the ones already analysed. From the 2,141 researchers that are part of this group, the most noted modalities are writing in English with the co-authors group (63%), individual writing in English (41%), writing in English as co-author and correction by a professional (2%), revision of the manuscript written by other co-authors (17%), individual writing in English and correction by a professional (14%), writing in English with an English-speaking assemble of peers (8%) and requesting for translation of the text, either as co-author (5%) or individual (4%). Combined, the modalities that imply writing solely in English without later correction represent 63% of the cases, 17% of those with the intervention of a professional (for correcting or translating), while the remaining 20% corresponds with those who point out autonomous modalities as well as the intervention of a third party.

Significant differences are observed along the disciplines. While the types of autonomous mode (without later intervention of professionals or peers) add up in

NES, EAS and BHS between 77% and 62%, in SSH it only reaches a 36%. There are three disciplines within NES that outstand because of the high occurrence of this type of writing modalities in English. They are Mathematics (100%), Astronomy (95%) and Physics (90%), among which the request for revision of English by peers or professionals is almost absent, which might be associated with the formality of papers in these disciplines. On the other end, the ones that present the lowest levels of this “autonomous” writing are all social sciences such as Social and Cultural Anthropology (24%), History (25%) and Archaeology (27%).

It is worth mentioning a relevant detail: the ratio of researchers that mention individual writing in English as their sole mode is nearly constant in all disciplinary groups (around a 10%), which can be leading to a core of authors that take responsibility for their writing. The relation between the self-perception of the ability of writing on English and the writing modalities is almost identical to the shown in figure 2. In the same way, a relation between the writing options and social origin have not been observed.

The population that has not published in English (138 individuals) was consulted in another part of the survey about their reasons for not doing so. They listed not having the skills needed (41 cases), being it irrelevant for the performed discipline (30) or a simple lack of interest on the matter (25); they disagree with publishing in English (10) or do not consider it relevant for their career (6). A group of 90 researchers expressed an intention to publish in English eventually. Not publishing in English and, even more, explicitly rejecting to do it are exceptionally infrequent cases in the studied population.

As this was a semi-structured question it was also possible to retrieve some of the specific reasons provided in the survey. For a group, this is a specific time of their career in which they have not published in English yet: “It is being considered”, “I am in the process of publishing in English, it is something I want to achieve during my first year as researcher”, “I have prepared presentations in English and I am currently writing articles for publishing”, “I have only published reviews, I am currently about to submit two articles in English. I have not done before because I did not feel confident, but I do now”.

In some other cases, however, opinions arise from different researchers consistent with evaluative cultures in which English is not central: “I consider Spanish a prestigious scientific language and publishing quality works using it promotes its learning by colleagues abroad”, “The main interchange is with Spanish, Portuguese, and French-speaking colleagues”, “In my field (which is mostly local/provincial) it has not been essential. An important aspect is the fact that publishing in English demands a greater effort with uncertainty whether the number of readers will

increase”, “It is relevant but not as much for the perspectives I work with, instead French is fundamental in the first place and Portuguese in the second; on the other hand, in terms of research issues (history of debates and policies about language in Argentina) I am usually asked for contributions from Spanish-speaking countries and in Argentina”, “I have published in French, the reference language in my field”, “Most of the international journals specialized in Latin American History publish in Spanish; I have also published a lot in French”, “My subjects make more relevant publishing in Spanish and Portuguese; I am much more familiar with other languages and it may be because of that and an insufficient writing in English that come to play”, “I rather publish in languages in which I am read by people from countries where I have an active chance to create bonds with for me and my fellows”, “I publish in German because of my study field”.

Conclusions

The analysis of the available data allows to characterize Argentinian researchers as knowers of a wide range of languages other than Spanish. The acquisition of such skills occurs at distinct levels, in various times of their trajectories and due to a variety of reasons. It is clear, nevertheless, the prevalence of English above other languages. Although the survey that was used as the main source was focused particularly on the English language, the comparison with other languages is always seen as less favourable for those, a fact that is also validated by the analysis of the CVs. At the same time, it is also clear that English is, besides Spanish, the main language used in specific academic tasks. Except for Social Sciences and Humanities researchers, it is also the almost exclusive vehicle for publishing in scientific journals.

It has been possible to characterize the learning modalities of the skills in English, among which there is a predominance of the formal over the informal, and over the processes of acquisition (Krashen, 2009). It could also be established the multiplicity of representations in which researchers justify learning English, emphasizing those linked to the academic professional performance. However, it could also be established the moderate effect/incidence of an inherited cultural capital-measured through the highest educational level reached by any of the parents-over the starting point of learning English.

Possibly, the main contribution of the conducted analysis lies in the relative independence between the trajectory of the English acquisition and the conditions for its use in a social space with such specific procedures as those of the academic field. The centrality of English is highly assessed by Social Sciences and Humanities researchers, concerning their own trajectory as well as the disciplinary corpus in

which they perform. This assessment, however, is higher in all the analysed dimensions among those who are part of other disciplinary areas.

In the context of an institution as homogeneous as Conicet, the acquisition of an advanced level of English skills is indisputable. The differential can be found when the question over the greater or lesser autonomy that such skills provide when writing in English appears. On one hand, there is a body of researchers that seem to take responsibility in writing in English both individual and collective publications and that claim requiring hardly another type of mode. However, whereas there is a decrease in the self-perception of the ability for writing in English, there is an increase in the participation of the literary brokers (Lillis and Curry, 2010), this is, of agents that reinforce or review the language adequacy of manuscript. In this way, everyone reaches the possibility of successfully publishing in English, even when they individually do not possess the ability or disposition for doing so.

Thus, multiple factors at different scales have an impact over the process of constructing skills in foreign languages, as proposed by Gerhards so as to understand the international linguistic capital (Gerhards, 2014). In the context of a highly formalized field such as the academic, however, such abilities are strongly crossed by the conditions for their implementation. They can be invoked/invoiced as a form of academic capital as long as they adapt to the demands of the field in which such capital is efficient. Particularly, the differentiated centrality of English in each specific disciplinary space has an influence. In this way, the Social and Humanity Sciences researchers – provided with a more diverse linguistic capital – present a lesser willingness to use it for their scientific publications, while Spanish is still the main communication vehicle.

Finally, it is necessary to reflect upon the representativity of the conclusions reached for the whole of the Argentinian scientific field. The heterogeneity of the evaluative cultures themselves advise/warn that it is necessary to examine empirically the academic practices of the group of researchers that are not part of Conicet. There are not enough available studies to characterize the language balance of the publications of these researchers, but it is highly likely that they present a lesser weigh than English. That said, as it has been revealed throughout this article, this might not keep a unidirectional relation with the skills in languages other than Spanish, their acquisition trajectory, or their academic use apart from publishing. That is why it would be relevant to explore the construction and implementation of those skills in contexts that do not demand a type of publishing and internationalization so homogeneous as in the hereby analysed institution.

References

- BEIGEL, Fernanda. (2017), "Científicos periféricos, entre Ariel y Calibán. Saberes institucionales y circuitos de consagración en Argentina: Las publicaciones de los investigadores del Conicet". *Dados*, 60 (3): 825-65. Disponible en <https://doi.org/10.1590/001152582017136>.
- BEIGEL, Fernanda. (2014), "Publishing from the Periphery: Structural Heterogeneity and Segmented Circuits. The Evaluation of Scientific Publications for Tenure in Argentina's Conicet". *Current Sociology*, 62 (5): 743-65. Disponible em <https://doi.org/10.1177/0011392114533977>.
- BEIGEL, Fernanda & GALLARDO, Osvaldo. (febrero de 2021), "Productividad, bibliodiversidad y bilingüismo en un corpus completo de producciones científicas". *Revista Iberoamericana de Ciencia, Tecnología y Sociedad. Revista CTS*, 46 (16): 41-7. Disponible em <http://www.revistacts.net/contenido/numero-46/productividad-bibliodiversidad-y-bilinguismo-en-un-corpus-completo-de-producciones-cientificas/>.
- BEIGEL, Fernanda; GALLARDO, Osvaldo & BEKERMANN, Fabiana. (2018), "Institutional expansion and scientific development in the periphery: The structural heterogeneity of Argentina's academic field". *Minerva*, 56 (3): 305-331. Disponible en <http://rdcu.be/EuXI>, DOI: 10.1007/s11024-017-9340-2.
- BEIGEL, Fernanda; PACKER, Abel Laerte; GALLARDO, Osvaldo & SALATINO, Maximiliano. (2022), "Oliva: Una mirada transversal a la producción científica indexada en América Latina. Diversidad disciplinar, colaboración institucional y multilingüismo en Scielo y Redalyc". *Scielo Preprints*. DOI: <https://doi.org/10.1590/ScieloPreprints.2653> (en prensa en *Dados, Revista de Ciências Sociais*).
- BEIGEL, Fernanda & SALATINO, Maximiliano. (2015), "Circuitos segmentados de consagración académica: las revistas de Ciencias Sociales y Humanidades en la Argentina". *Información, Cultura y Sociedad*, 32: 11-35. Disponible en <http://revistascientificas.filo.uba.ar/index.php/ICS/article/view/1342>.
- BOURDIEU, Pierre. (2012), *La distinción. Criterio y bases sociales del gusto*. Buenos Aires, Taurus.
- BOURDIEU, Pierre & WACQUANT, Loïc. (2005), "Sobre las astucias de la razón imperialista". In: WACQUANT, Loïc (ed.). *El misterio del ministerio. Pierre Bourdieu y la política democrática*. Barcelona, Gedisa.
- CURRY, Mary Jane. (August 2006), "Reframing notions of competence in scholarly writing: from individual to networked activity". *Revista Canaria de Estudios Ingleses*, 53: 63-78. Disponible en <http://riull.ull.es/xmlui/handle/915/17285>.
- DIDOU AUPETIT, Sylvie, & GÉRARD, Etienne, eds. (2009), *Fuga de cerebros, movilidad académica, redes científicas. Perspectivas latinoamericanas*. México, Iesalc-Cinvestav-IRD. Disponible en <https://unesdoc.unesco.org/ark:/48223/pf0000186433>.
- DE FILIPPO, Daniela, BARRERE, Rodolfo & GÓMEZ, Isabel. (2010), "Características e impacto

- de la producción científica en colaboración entre Argentina y España”. *Revista Iberoamericana de Ciencia, Tecnología y Sociedad*, 6 (16): 179-200. Disponible en <http://www.revistacts.net/contenido/numero-16/caracteristicas-e-impacto-de-la-produccion-cientifica-en-colaboracion-entre-argentina-y-espana/>.
- GAILLARD, Jacques & ARVANITIS, Rigas, eds. (2013), *Research collaborations between Europe and Latin America. Mapping and understanding partnership*. Paris, Éditions des Archives Contemporaines.
- GERHARDS, Jürgen. (2012), *From Babel to Brussels. European integration and the importance of transnational linguistic capital*. Berlín, Freie Universität Berlin.
- GERHARDS, Jürgen. (2014), “Transnational linguistic capital: Explaining English proficiency in 27 European countries”. *International Sociology*, 29 (1): 56-74. Available in <https://doi.org/10.1177/0268580913519461>.
- KRASHEN, Stephen D. (2009), *Principles and practice in second language acquisition*. Internet edition. Available in <http://www.sdkrashen.com/>.
- LILLIS, Theresa & CURRY, Mary Jane. (2006), “Professional academic writing by multilingual scholars”. *Written Communication*, 23 (1): 3-35. Available in <https://doi.org/10.1177%2F0741088305283754>.
- LILLIS, Theresa & CURRY, Mary Jane. (2010), *Academic writing in a global context. The politics and practices of publishing in English*. Londres, Routledge.
- ORTIZ, Renato. (2009), *La supremacía del inglés en las ciencias sociales*. Buenos Aires, Siglo Veintiuno Editores Argentina.
- PACKER, Abel Laerte & MENEGHINI, Rogerio. (2007), “Learning to communicate science in developing countries”. *Interciencia*, 32 (9): 643-47. Available in <https://www.redalyc.org/pdf/339/33932912.pdf>.
- VESSURI, Hebe. (2008), “Competición y colaboración en un contexto de multiplicación de ‘centros de atracción’ y ‘desiertos yermos’”. *Revista de la Educación Superior*, 37 (148): 123-39. Disponible en http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-27602008000400009&lng=es&nrm=iso.

Abstract

Linguistic skills in the academic field. Profiles of acquisition, assessment and use of English by scientific researchers in Argentina

The aim of this article is to discuss the process of acquisition and use of English by scientific researchers whose mother language is Spanish. The data has been generated by both a survey (N = 2.390) and analysis of curriculum vitae (N = 4.638) of researchers at Conicet (Argentina). Different English learning profiles have been identified indicating there is a connection between the acquisition trajectory and the social origin of researchers. However, the academic use of the language is highly determined by the field in which it is applied. Researchers of all scientific areas have advanced capacities in English. But these capacities are mostly applied by STEM researchers, particularly the writing skill.

Keywords: Linguistic skills; English learning; Conicet researchers (Argentina).

Resumo

As competências linguísticas em jogo no campo acadêmico. Perfis de aquisição, valoração e utilização do inglês por investigadores/as científicos/as da Argentina

O objetivo deste artigo é discutir o processo de aquisição e uso do inglês por pesquisadores científicos cuja língua materna é o espanhol. Os dados foram gerados por uma pesquisa (N = 2.390) e pela análise de currículos (N = 4.638) de pesquisadores do Conicet (Argentina). Diferentes perfis de aprendizagem de inglês foram identificados indicando que há uma conexão entre a trajetória de aquisição e a origem social dos pesquisadores. No entanto, o uso acadêmico da língua é altamente determinado pelo campo em que é aplicado. Pesquisadores de todas as áreas científicas possuem capacidades avançadas em inglês. Mas essas capacidades são aplicadas principalmente por pesquisadores STEM, particularmente a habilidade de escrita.

Palavras-chave: Competências linguísticas; Aprendizagem de inglês; Pesquisadores do Conicet (Argentina).

Resumen

Las competencias lingüísticas en juego en el campo académico. Perfiles de adquisición, valoración y utilización del inglés por investigadores/as científicos/as de Argentina

El objetivo del artículo es discutir el proceso de adquisición y utilización del idioma inglés por parte de investigadores e investigadoras cuya lengua materna es el español. El estudio empírico se basa en una encuesta (N = 2.390) y en el análisis de curriculum vitae (N = 4.638) de investigadores/as del Conicet (Argentina). Se identificaron distintos perfiles de capacidades en inglés, así como su vinculación con las trayectorias de adquisición y el origen social de los/as investigadores/as. Sin embargo, el uso académico de estas capacidades está claramente influenciado por el campo específico donde son puestas en práctica. Así, mientras los/as investigadores/as de todas las áreas disciplinares presentan capacidades avanzadas en inglés, éstas son aplicadas mayormente

por quienes se desempeñan en las ciencias naturales y aplicadas, en particular en lo que se refiere a la redacción de publicaciones científicas.

Palabras clave: Competencias lingüísticas; Aprendizaje del inglés; Investigadores del Conicet (Argentina).

Texto recebido em 13/07/2022 e aprovado em 19/08/2022.

DOI: 10.11606/0103-2070.ts.2022.200076

OSVALDO GALLARDO é professor e licenciado em História pela Universidade Nacional de Cuyo (Argentina). É doutor em Estudos Sociais da América Latina pela Universidade Nacional de Córdoba (Argentina). Atualmente é bolsista de pós-doutorado no Conicet e professor na Faculdade de Ciências Sociais da Universidade Nacional de Cuyo. Tem feito pesquisa em várias universidades argentinas e na USP, Unicamp e UFPB. E-mail: osvaldogallardo87@gmail.com.

