

Multilinguismo em Economias do Conhecimento: Diálogos e Interseções com o Cenário Cientométrico

Sonia M.R.Vasconcelos

Programa de Educação, Gestão e Difusão em Biociências/ Instituto de Bioquímica
Médica/ Universidade Federal do Rio de Janeiro (UFRJ)

“Knowledge-Based Societies”

“The term ‘knowledge society’, which the academic Peter Drucker used for the first time in 1969, came into its own in the 1990s, in particular with the detailed studies by researchers such as Robin Mansell and Nico Stehr... the idea emerged in the late 1960s and early 1970s, at about the same time as the notion of “learning societies” and lifelong education for all...”

(Towards Knowledge Societies, World Report, UNESCO, 2005)

“Knowledge accumulation and application has become one of the major factors in economic development and is increasingly at the core of a country’s competitive advantage in the global economy.” (Constructing Knowledge Societies: New Challenges for Tertiary Education, World Bank Report, 2002)

“Knowledge-Based Societies”



Quatro Pilares

(The World Bank)

Regime institucional e econômico

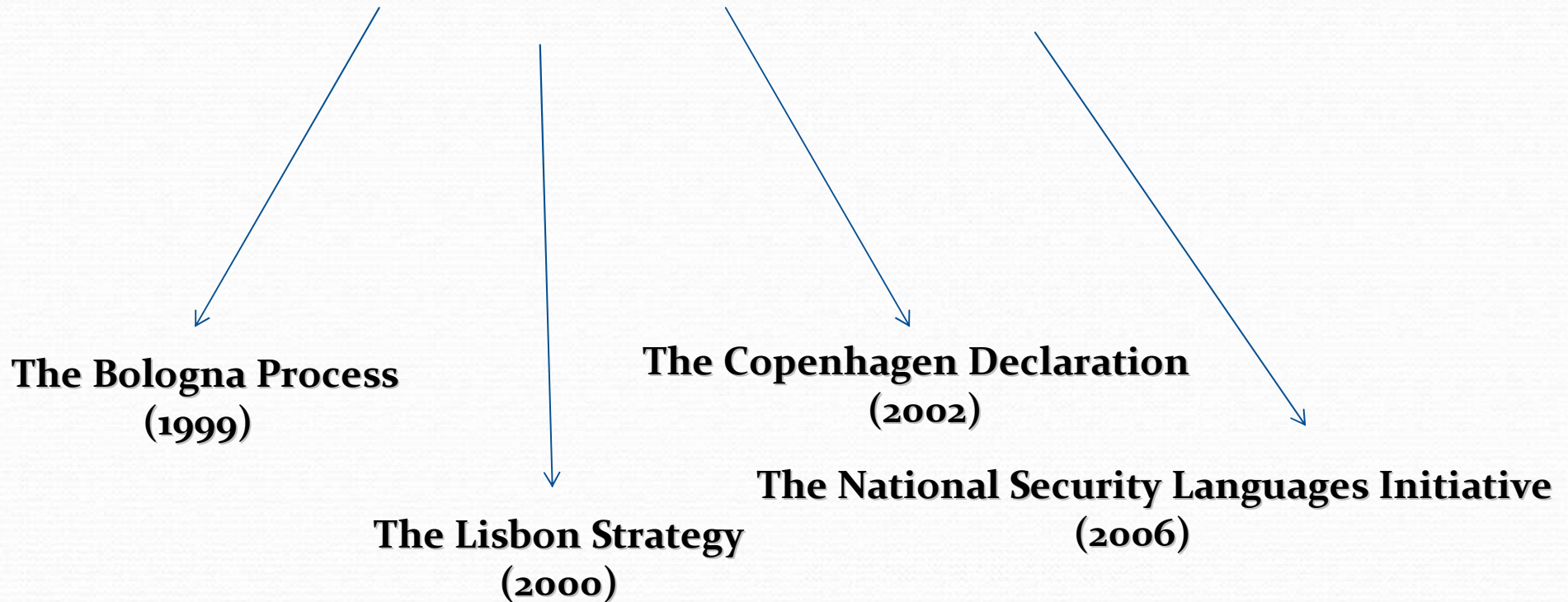
Uma infraestrutura de informação efetiva

População com altos níveis de educação e várias competências

Um sistema de inovação eficiente

População com altos níveis de educação e várias competências

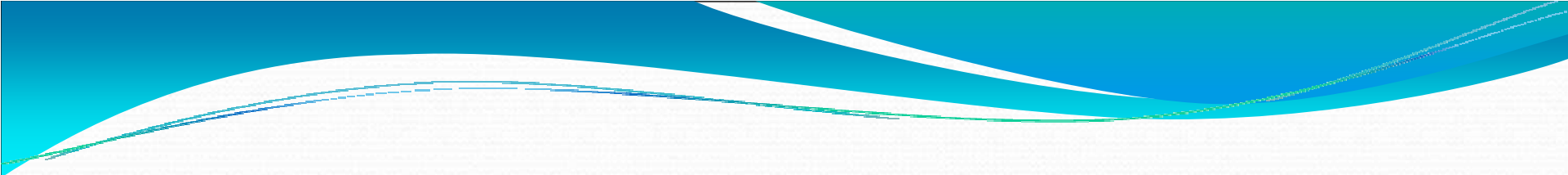
Em termos de educação e treinamento nas “knowledge-based societies”, o acúmulo de vantagem competitiva tem sido cada vez mais associado com o desenvolvimento de “core competencies”, que incluem proficiência em línguas estrangeiras.



...desenvolvimento de “**core competencies**”, que incluem proficiência em línguas estrangeiras (*proficiency in foreign languages*)...



English Proficiency???
[no caso de países não-nativos da língua inglesa???]



“De acordo com Hingel, em 2002 o *European Council in Barcelona* recomendou o ensino de pelo menos 2 línguas estrangeiras, o mais cedo possível, na UE e estabeleceu a necessidade do indicador de competência linguística, que foi reiterado pela Comissão Europeia em 2005.”

“De acordo com Spencer (2008), nos últimos 5 anos, o número de cursos de nível superior ministrados em língua inglesa em universidades europeias já triplicou. Citando um estudo da *Academic Cooperation Association* em Brussels, a autora reporta que há cerca de 2.400 programas, especialmente em engenharia a nível de mestrado, oferecidos em língua inglesa em 27 países da UE, incluindo aqueles que não tem o inglês como língua nativa. Os países que lideram estes programas são Holanda, Alemanha, Finlândia e Suécia. “

(Vasconcelos, S.M.R. “Ciência no Brasil: Uma Abordagem Cientométrica e Linguística”, 2008)

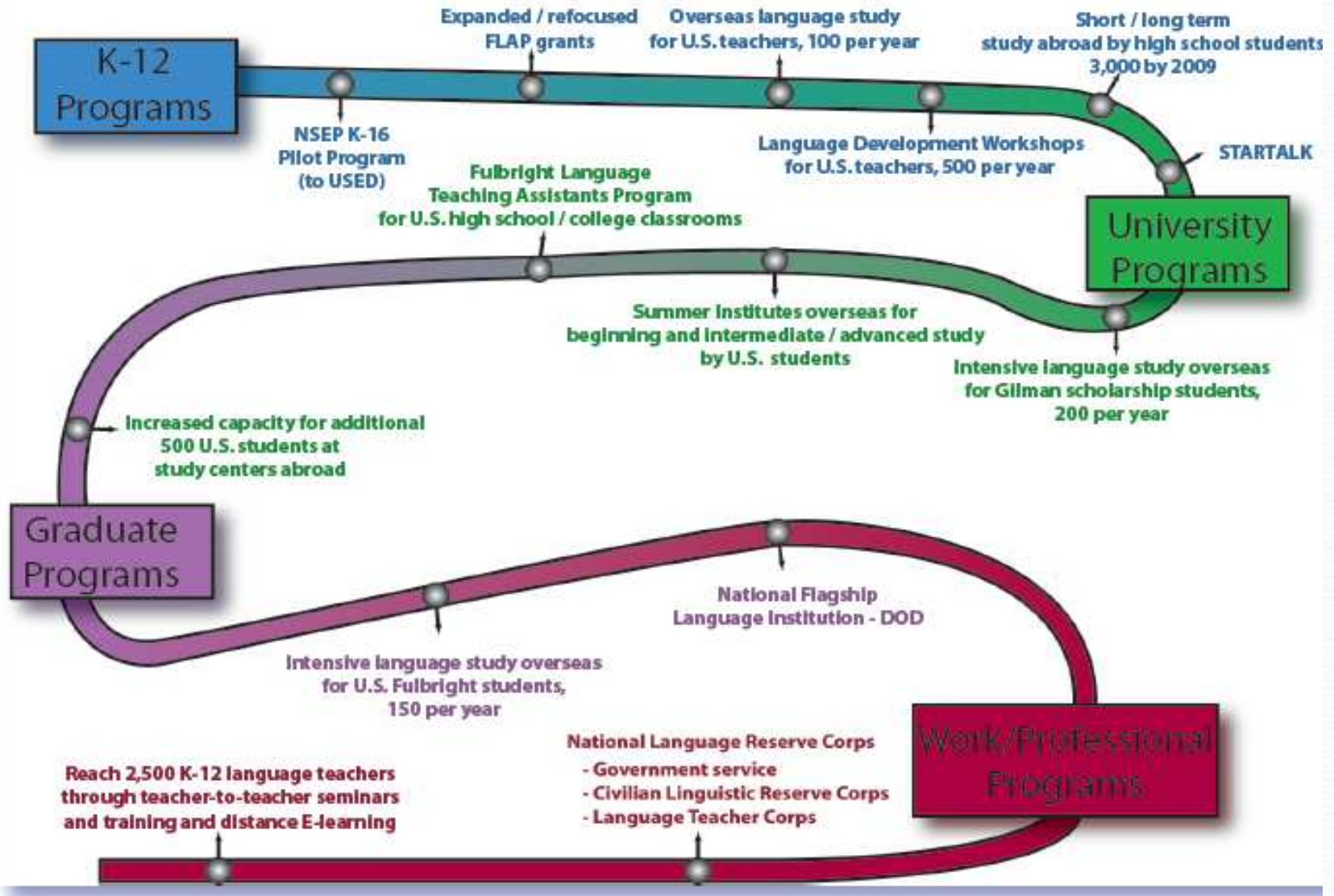
The Committee for Economic Development (CED)'s report (2006), *Education for Global Leadership: The Importance of International Studies and Foreign Language Education for U.S. Economic and National Security*- “..the United States already faces intense global competition, and new competitors are emerging... knowledge of foreign languages and cultures is an economic necessity... Expand the training pipeline at every level of education to address the paucity of Americans fluent in foreign languages...”

(http://www.ced.org/docs/summary/summary_foreignlanguages.pdf)



Logo depois, em 2006... Estabelecimento da “National Security Language Initiative”

National Security Language Initiative



(<http://www.ed.gov/about/inits/ed/competitiveness/nsli/nslibrochure.pdf>)

In *English Next*, David Graddol suggests that we are on the threshold of a new era in which English proficiency would no longer be a competitive advantage for native-English speaking (NES) countries.



“The competitive advantage which English has historically provided its acquirers (personally, organisationally, and nationally) will ebb away as English becomes a near-universal basic skill. The need to maintain the advantage by moving beyond English will be felt more acutely.” (*English Next*, 2006)

“English has provided a significant competitive advantage to its speakers over the last few decades. But countries, such as India, which have capitalised on their English language skills, are already discovering that they need more languages... The slogan ‘**English is not enough**’ applies as strongly to native speakers of English as for those who speak it as a second language.” (English Next, 2006)



Is the “**English is Not Enough**” trend taken for granted in Science & Technology?



**Como estas questões dialogam com o
cenário **cientométrico**???**

Recent scientometric (Man et al, 2004; Vasconcelos et al, 2008) and econometric studies (Bauwens et al, 2007) suggest a linguistic gap in European and Latin American science & technology (S&T).



✓ **Correlação entre a proficiência em língua inglesa, número de publicações em periódicos internacionais e outros indicadores de resultados em Ciência & Tecnologia (C&T) .**

✓ **Competência em “scientific English” pode conferir vantagem competitiva no cenário acadêmico.**

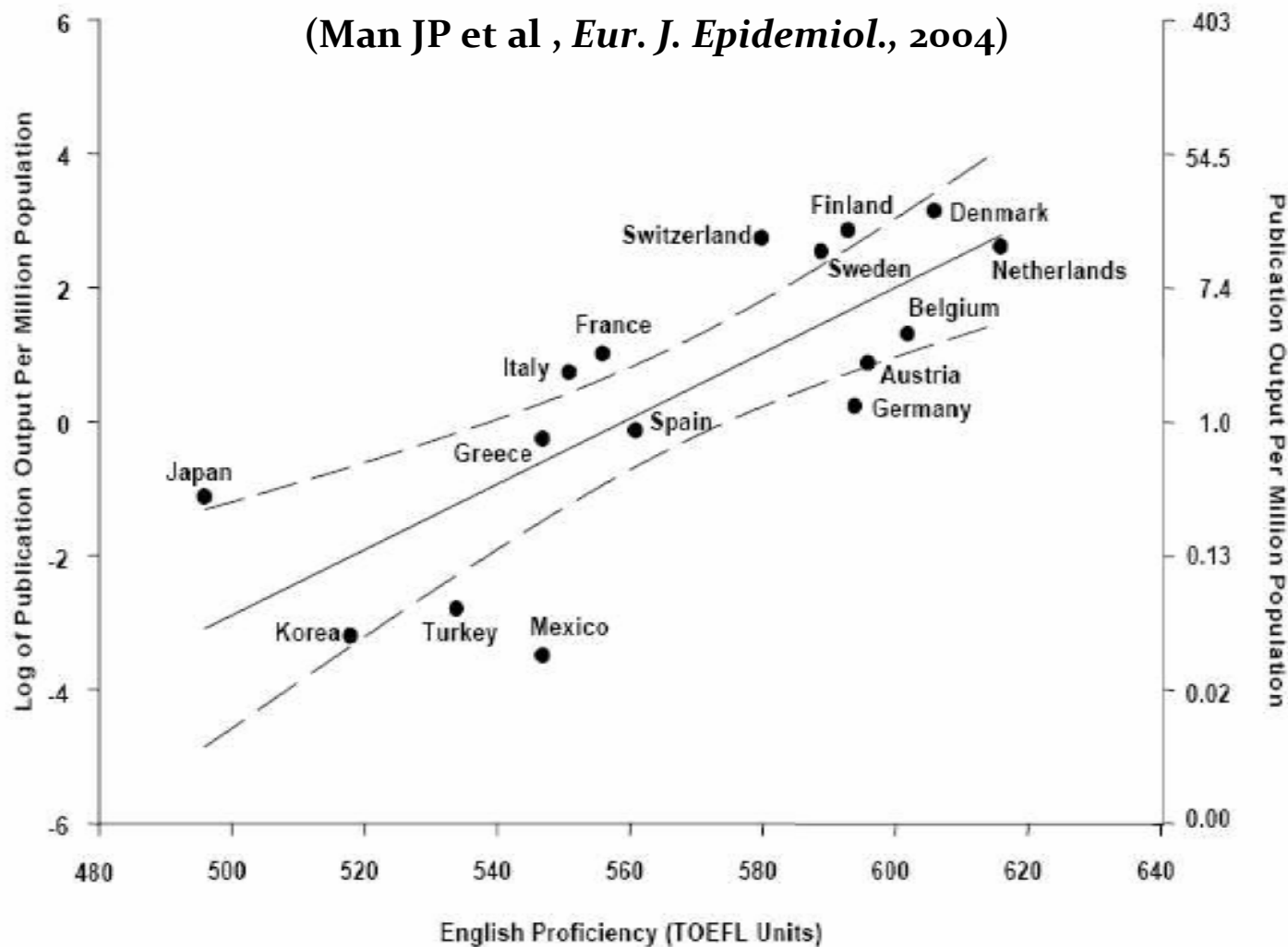


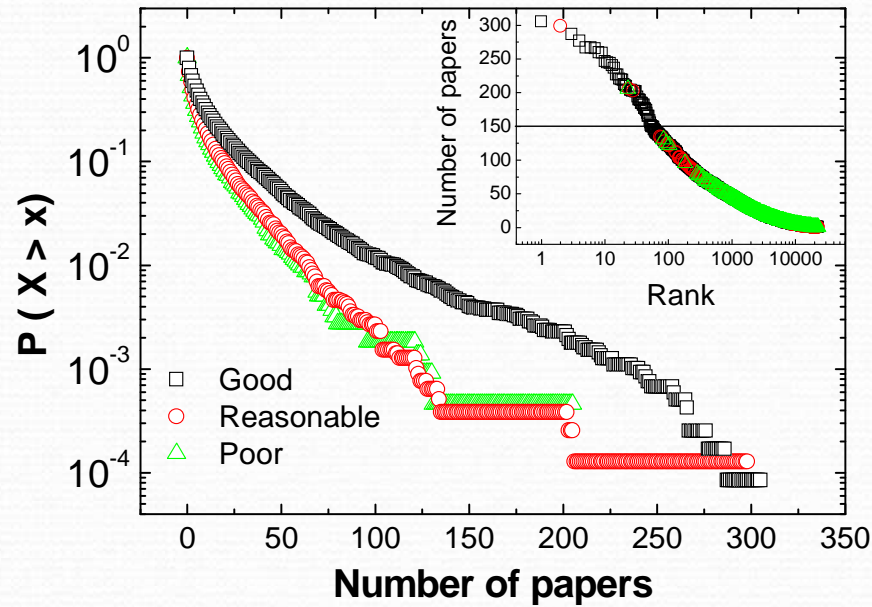
Figure 2. The relationship between English proficiency and standardized publication rate in the five highest ranked general medical journals, dotted lines represent 95% Co Li; $R = 0.77$; $p = 0.01$.



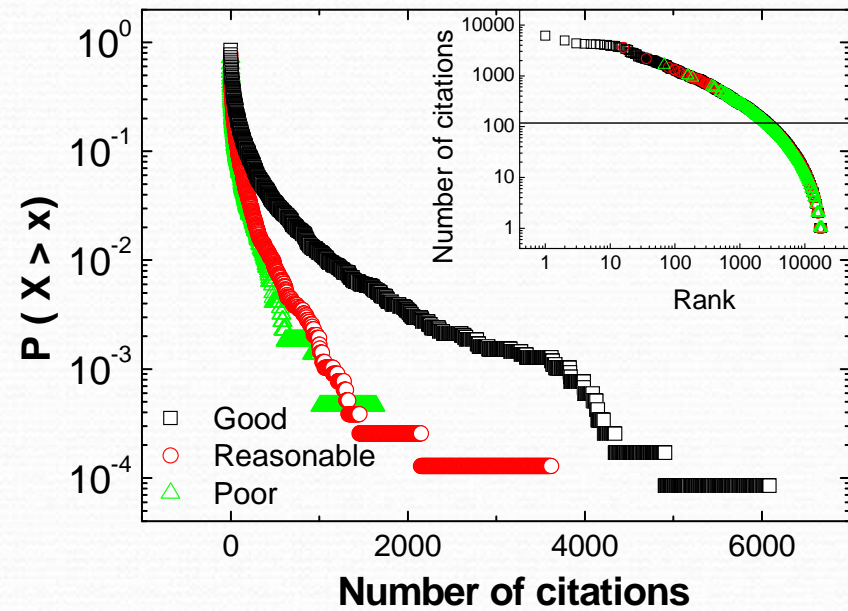
(Bauwens et al, *ECORE Discussion Paper*, 2007)

*“The country-specific factor-augmenting productivity term depends on per capita GDP as well as on two non-economic variables, i.e. **English proficiency** and colonial ties with the UK. These three variables also contribute to explain the differences across countries. This was expected for per capita GDP. **English proficiency** explains, at least partially, the good performance of English-speaking countries as well as that of a few other countries in which the population has a very good knowledge of **English**.”*

(Vasconcelos SMR, Sorenson M, Leta J, *Embo Rep*, 2008)



Complementary cumulative distribution function of researchers with different writing competences, good (black squares), reasonable (red circles) and poor (green triangles), according to number of papers.



Complementary cumulative distribution function of researchers with different writing competences, good (black squares), reasonable (red circles) and poor (green triangles), according to number of citations.

A maioria dos países da América Latina levarão um certo tempo para atingirem um desempenho linguístico (em língua inglesa) similar àquele de países desenvolvidos no “English-only research setting”...

A lingua franca da ciência não é dominada por uma fração importante de pesquisadores de tais países. Esta situação muda em curto prazo?

- **Poucas políticas educacionais para desenvolver a competência linguística dos pesquisadores .**
- **Financiamento escasso para serviços de edição de linguagem de manuscritos.**

Going against the grain???

“English is not enough” parece adquirir característica singular no cenário de S&T...

References:

- Bauwens L, Mion G, Thisse JF (2007). The Resistible Decline of European Science. CORE Discussion Paper from the Belgian Program on Interuniversity Poles of Attraction, Dec 2007. Available at <http://www.core.ucl.ac.be/econometrics/Bauwens/papers/CORE-DP2007-92.pdf>
- Graddol D (2006). English Next. *British Council*.
- Man JP et al (2004). Why do Some Countries Publish More than others? An International Comparison of Research Funding, English Proficiency and Publication Output in Highly Ranked General Medical Journals. *Eur. J. Epidemiol.* , 19, 811–817.
- UNESCO (2005). Toward Knowledge Societies. World Report. Available at www.unesco.org/en/worldreport
- Vasconcelos SMR, Sorenson M, Leta J (2008a). A New Input Indicator for the Assessment of Science and Technology Research? *Scientometrics (in press)*.
- Vasconcelos SMR, Sorenson M, Leta J (2008b). Researchers' writing competence: a bottleneck in the publication of Latin-American science? *Embo Rep.* , 9,8.
- Vasconcelos (2008). *Ciência no Brasil: Uma Abordagem Cientométrica e Linguística (Tese de Doutorado)*.
- World Bank (2002). Constructing Knowledge Societies: New Challenges for Tertiary Education. A Report by the Education Group Human Development Network. Available at www1.worldbank.org/education/pdf/Tertiary%20Education%20Paper%204-10.pdf

Sonia M.R.Vasconcelos, EBBC/CRICS 2008

(Part of this discussion was previously presented at iPED2008, Coventry, UK)