

**DOSSIÊ BRASIL-FINLÂNDIA: TENDÊNCIAS, PERSPECTIVAS E  
DESAFIOS PARA A EDUCAÇÃO DO SÉCULO XXI**

**DOSSIER BRASIL-FINLANDIA: TENDENCIAS, PERSPECTIVAS Y  
DESAFÍOS PARA LA EDUCACIÓN DEL SIGLO XXI**

**BRAZIL-FINLAND DOSSIER: TRENDS, PERSPECTIVES AND  
CHALLENGES OF THE EDUCATION FOR THE 21<sup>ST</sup> CENTURY**

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**RESUMO:** O Dossiê Brasil-Finlândia, edição especial bilíngue (português e inglês) da Revista Ibero-Americana de Estudos em Educação (RIAAE), traz como tema central a Educação para o Século XXI, abordando cinco eixos interligados de interesse: Comunidades de Aprendizagem, inovação curricular, internacionalização da educação, Aprendizagem Baseada em Projetos/Problemas (ABP ou PBL, do inglês) e tecnologias educacionais com abordagem centrada no estudante. A proposta é divulgar estudos e experiências de professores-pesquisadores, considerando suas práticas como geradoras de dados que mereçam investigação, associadas às pesquisas nacionais e internacionais, em especial entre Brasil e Finlândia. Os estudos realizados em diversas regiões do Brasil e/ou na Finlândia trazem contribuições relevantes para auxiliar programas colaborativos de pesquisa e ações na Educação para o Século XXI.

**PALAVRAS-CHAVE:** Educação para o Século XXI. Brasil. Finlândia.

**RESUMEN:** *El Dossier Brasil-Finlandia, edición especial bilingüe (portugués e inglés) de la Revista Iberoamericana de Estudios en Educación (RIAAE), tiene como tema principal la Educación para el Siglo XXI, abordando cinco ejes interconectados de interés: Comunidades de Aprendizaje, innovación curricular, internacionalización de la educación, Aprendizajes Basados en Proyectos/Problemas (ABP o PBL, del inglés) y tecnologías educacionales con abordaje centrado en el estudiante. La propuesta es divulgar los estudios y experiencias de los profesores/investigadores, considerando sus prácticas como generadoras de datos que merezcan investigación, asociadas a las búsquedas nacionales e internacionales, en especial entre Brasil y Finlandia. Los estudios desarrollados en diversas regiones de Brasil y o en Finlandia muestran*

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*contribuciones relevantes para apoyar a los programas colaborativos de investigación y acciones en la Educación para el Siglo XXI.*

**PALABRAS CLAVE:** *Educación para el Siglo XXI. Brasil. Finlandia.*

**ABSTRACT:** *Brazil-Finland Dossier, a bilingual (Portuguese and English) edition of Revista Ibero-Americana de Estudos em Educação (RIAEE), brings the Education for the 21<sup>st</sup> Century to discussion, focusing on five interconnected subjects of interest: Learning Communities, curriculum innovation, internationalization of education, Project-Based Learning/Problem-Based Learning (PBL) and educational technologies within a student-centered approach. Its aim is to present teacher-researchers' studies and experiences, taking their teaching practices as data-generating that are relevant to investigations, associated with national and international research, especially between Brazil and Finland. Studies carried out in various regions of Brazil and/or Finland bring relevant contributions to support collaborative research programs and actions in Education for the 21<sup>st</sup> Century.*

**KEYWORDS:** *Education for the 21<sup>st</sup> Century. Brazil. Finland.*

## **Introduction**

*Revista Ibero-Americana de Estudos em Educação* (RIAEE), an Ibero-American Journal of Studies in Education, in a collaborative project with the Finnish Universities Häme University of Applied Science (HAMK) and Tampere University of Applied Science (TAMK), presents “Brazil-Finland Dossier: Education for the 21<sup>st</sup> Century”.

Given the material, historical and cultural characteristics of these two countries, why bring Finland into the debate about Brazilian Education?

Brazil is a country of continental proportions, with a territorial area of almost 8.516.000 km<sup>2</sup> and with more than 208 million inhabitants. Finland has a land area of 338,145 km<sup>2</sup> and a little more than 5.5 million inhabitants, in other words, 2.65% of the Brazilian population.

Apart from demography and geography, other differences in economics and politics are settled. Such differences are relevant and central when we analyze the educational systems, projects focused on pedagogical action and teaching practices in the two countries. It is relevant to highlight Finland's position in the world' educational scenario: it is an international benchmark of excellence in the Programme of International

Student Assessment (PISA)<sup>4</sup> results, always featuring the top positions of the global education ranking.

Several countries have been attempting to establish cooperation agreements with Finnish educational organizations aiming at developing professional development projects and research that may subsidize educational actions. Brazilian example is the VET Teachers for the Future, an in-service teacher education program, with a course offered in Finnish territory, which is a result of the partnership between the Ministry of Education - through the Secretariat of Professional and Technological Education (SETEC / MEC) - and HAMK and TAMK Universities of Applied Sciences. The participants, teachers from the Federal Network of Professional, Scientific and Technological Education – (RFEPCT in Portuguese), were chosen from the analysis of their applied research projects which were expected to contribute to the scientific, technological and innovation development in Brazil. The program was operated 3 times, in 2014, 2015 and 2016, totaling 107 participating teachers. In each edition there were two stages: the first, regarding a training course held in Finland; the second, concerned project development and was held in Brazil. A substantial amount of data was generated during the second stage, which is worth investigating.

The Finnish in-service teacher training program was conceived as a multidisciplinary course, focused on developing teaching-related skills and tailored to meet the RFEPCT group's reality. Competence-based teaching approach, student-centered approaches and learning for the world of work comprised the core themes. The program was also considered as a way of connecting Finnish and Brazilian companies, educational institutions and other organizations.

Researches and reports of teaching experiences from Brazilian and Finnish educators are presented in this journal. It is relevant to note that trends and innovations in the 21<sup>st</sup> Century Education have become increasingly global, which is a reflection of international agreements, guidelines established by multilateral organizations and the use of digital information and communication technologies, which promote a “break” of geographical and temporal borders, favoring dissemination of educational ideas and teaching practices.

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<sup>4</sup> The *Programme for International Student Assessment* (PISA) aims to evaluate educational systems, skills and knowledge of 15-year-old students. PISA has been held every three years since 2000 and it is coordinated by the Organization for Economic Cooperation and Development (OECD), which currently has 35 member countries.

Within this context, the special issue “Brazil-Finland Dossier” has been proposed and carried out, consolidating a space for debate on researches and reports of teaching practices of the two countries concerning the 21<sup>st</sup> Century Education, based on subjects such as:

1. Learning Communities in Education.
2. Curriculum innovation.
3. Internationalization of education.
4. Project-Based Learning / Problem-based Learning (PBL).
5. Educational technologies use from a student-centered perspective.

The result presented offers a rich source of analysis to support future actions and research that may subsidize Brazilian educational policies. It incites debates on guidelines that may help us overcome instabilities, in times of political uncertainties, inspires curricular reforms and kindles interests that lead us to the Education for the 21<sup>st</sup> Century, as an indispensable attribute for the exercise of human freedom (BIZELLI, 2013).

### **Education for the 21<sup>st</sup> Century**

With innovations in the digital information and communication technologies, new means of production were posed by the end of the 20<sup>th</sup> Century and beginning of the 21<sup>st</sup> Century, which have been rapidly changing, requiring skills that meet the world of work needs. The UNESCO Report on Education for the 21<sup>st</sup> Century - produced and coordinated by Jacques Delors by the end of the 20<sup>th</sup> Century - brought an important discussion on the role of the agents involved in the educational process, skills for the world of work in the new Century and the pillars of education: learning to know, learning to do, learning to live together and learning to be (DELORS, 1996).

Important international declarations have determined and influenced the development of global policies and guidelines for current educational practices (CHEDIAK et al, 2018). Contemporary trends in education are rooted in former centuries, in ideas such as those of Rousseau or in movements such as the Progressive Education. Nowadays, they become stronger not only because of a purely philosophical ideal, but for practical reasons, since its fundamentals are useful for the current model of economic organization. Sustainability becomes imperative in all domains and to make it a reality, one must invest in the development of skills related to problem solving, collaboration,

creativity, communication, autonomy, etc. These skills require from an individual, a protagonist role so that a sustainable learning condition can be created, which is a lifelong learning condition, to meet the needs of the world of work that are influenced by the rapid changes caused by digital technology's advances.

In the journal, the topics related to the Education for the 21<sup>st</sup> Century are presented as trends, which require research to understand their meaning or their capacity to produce innovations: best practices, new methods and new paths to an Education that, above all, may improve our human condition.

We then present a brief discussion on each topic, relating them to the studies in this issue. At the end, we discuss the nature and relevance of the reports of experiences and teaching practice as elements of analysis and investigation.

### **Learning Communities in Education**

The demand for sustainability in the teachers' professional learning and development generates new models of group work organization and operation, such as the Learning Communities or Professional Learning Communities.

Two papers are related to the Learning Communities in Education theme. In the paper "Self-paced and dialogical knowledge creation for promoting deep learning: the pilot case in Teacher Education", Aarnio e Ruhaalahti (2018) discuss the role of dialogue in the production of knowledge in a learning community, which is the key to the promotion of a deep learning. The notion of dialogue presented by the authors is not only taken as a speech act, but encompasses postures and behaviors, such as being participative, collaboratively engaged in building authentic knowledge, knowing how to listen and being open to changes, being truly present in the dialogue, being fair when it comes to one's turn of speaking etc. Such skills are not self-developed; they require pedagogical intentionality, modelling. According to the authors, "The research results clearly demonstrate that dialogical knowledge creation does not happen by itself, but requires pedagogical modelling and structuring (p. 294)".

Besides demonstrating several strategies to create dialogical environments, Aarnio e Ruhaalahti (2018) present a pedagogical model - DIANA *Dialogical Authentic NetLearning Activity*) - to build collaborative knowledge. When discussing the process of constructing dialogical knowledge, they consider virtual environment, pondering the technology potential to enhance collaborative knowledge production.

“Professional Learning Communities as a Leadership Strategy in the 21st Century School Management” refers to a research carried out in Finland with school principals, which aimed at investigating how a professional learning community is created and maintained. Chediak et al (2018) point out the possibilities of this model applied to school management to create sustainability in the teachers’ professional development, to meet this Century demands and establish an organizational environment favorable to collaboration among peers.

### **Curriculum innovation**

Contemporary demands have been requiring curricular innovation that contemplates students’ protagonism and promotes formative experiences which integrate the four pillars of learning, which are learning to know, learning to be, learning to live together and learning to do (DELORS, 1996).

Curricular innovation is discussed in three papers. "Leading research and development for educational innovations", by Ryymin et.al., addresses the theme concerning teacher education. "Challenges and contributions regarding integration of disciplines in the Vocational Education integrated to Upper Secondary Education at IFMS, Nova Andradina Campus ", by Vieira et al, reports on experiments related to integration of disciplines that may support curricular innovation. "Entrepreneurship Education: what can we learn from the Brazilian and the Finnish Examples?" by Laurikainen et.al., addresses the relationship between entrepreneurship education, global marketing, skills development and innovation.

Innovating in this case, thus, is related to teachers and students’ education curricula. Therefore, Ryymin et al (2018) present the development of educational innovations related to teacher training as examples of applied research activities of the School of Professional Teacher Education at Häme University of Applied Sciences (UAS) in Finland. The authors explain how teacher training is organized at the UAS, including the research conducted by the unit, whose department is Global Education Research and Development, and other educational research of global interest, considering pedagogical organization, methodology in digital or physical environments, skill-based approaches to the world of work and the development of lifelong learning.

Vieira et al (2018) discuss the challenges and contributions of curriculum innovation in Vocational Education, regarding students' point of view in relation to the proposal of integrating propaedeutic and technical disciplines. The experiment was implemented in an Upper Secondary Education course integrated to Vocational Education in Farming. The authors argue that the transdisciplinary work may broaden students' view on the studied phenomena. However, this exercise presents its challenges concerning the course syllabus and its contents, which are essential to the individual's vocational education, pointing to the necessity of further investigations.

In "Entrepreneurship Education: what can we learn from the Brazilian and the Finnish Examples?", Laurikainen et al (2018) discuss the importance of Entrepreneurship education to the development of an individual's personality dimensions. The study analyzes teaching practices regarding entrepreneurship education in Brazil and Finland at distinct levels, highlighting Brazilian and Finnish students' development of competences, its possibilities, as well as similarities and distinctions between the countries' pedagogical approaches.

### **Internationalization of Education**

Two papers are presented on this theme; " Language & culture in English as a Foreign Language teaching: a socio-cultural experience of some exchange students from Piauí Federal Institute", by Santos Costa (2018), addresses socio-cultural challenges faced by students in mobility program abroad. This is in particular the case of some students from the Federal Institute of Piauí (IFPI) who participated in the Science without Borders program. From the study, the author proposes an English as a Foreign Language pedagogical practice attentive to cultural aspects, a fundamental strategy for internationalization.

Vieira et al (2018), in the paper " Going international: the challenges for the Brazilian Federal Institutes of Education, Science and Technology", present a meta-analysis of several studies carried out in Higher Education in Brazil and investigate internationalization initiatives in two Federal Institutes (FIs). From this, the authors point out some considerations on the internationalization challenges for the FIs and discuss in a critical and relevant way in which internationalization takes place and how developed and emerging countries position themselves in the consumer vs. supplier relationship.



These studies provide some support to the comprehension of the internationalization process and its implications for school administrators and/or educators, since they define concepts, highlight foreign language teaching as an important element for going international and point to important measures throughout the process.

### **Project-based learning and Problem-based Learning**

Project-based teaching approaches are associated with Kilpatrick's ideas, John Dewey follower, formulated in 1918, by known as Project Method. The method emerged from the need to reform the American curriculum. Kilpatrick (2006) criticized the educational system from his time, which in his opinion overvalued theoretical knowledge acquisition without practical application. Therefore, the method proposes "learning by doing", by promoting hands-on sensory experiences.

Currently, we find several approaches related to the Project Method, such as Project-Based Learning and Problem-Based Learning. Four papers, in which teaching practices regarding the development of projects as an element of research, are presented.

"Applying Project-Based Learning (PBL) in the organic chemistry course while studying honey", by Lianda e Joyce (2018), describes the project development in a year 11 class of a Vocational Course in Chemistry integrated to Upper Secondary School. The authors point to some observed aspects throughout its application, such as students' motivation and the method efficacy.

In the study "A boogie-woogie out of a tambourine and a guitar: Project Based Learning applied in the Brazilian Vocational Education context", Gabardo (2018) shows the project application in Spanish Language classes. From the analysis of field diary, assessments and self-assessments carried out by the students, the author points to the method potential for helping students to develop 21<sup>st</sup> Century skills, emphasizing collaboration, autonomy, critical and systemic thinking skills.

Affeldt e Fernandez (2018), in "Problem-Based Learning: A Teaching and Learning Model for Organization Theory", discuss the construction, application and results of a teaching model whose foundations were based on Constructivism, placing students at the center of the learning process, where they can participate in authentic situations, solve problems and share experiences.



In “The importance of peer assessment & self-assessment in PBL applied to an Administration Course”, Uebe Mansur e Alves (2018) present self-assessment and peer-assessment application in a Project-Based Learning approach. The authors discuss the concepts of PBL and assessment, from the Active Method perspective, where student plays the protagonist role in the teaching and learning process.

### **Digital information and communication technologies applied to Education**

The discussion on the use of technologies in Education is nothing new. However, new digital technologies have been figuring as a trendy topic since the last decades from the 20<sup>th</sup> Century and they are still ongoing, due to the rapid changes and constant innovations in the area. Investigating teaching practice and the use of digital technologies becomes more and more relevant, so that we do not run the risk of merely “going with the flow”, without any further studies and reflection.

Four papers are presented on digital information and communication technologies theme. “Learning Material design for teaching Genetics while implementing Flipped Classroom” by Bissoli et al (2018), presents a research and process of creating learning materials for virtual learning environment, considering a flipped classroom approach. The authors reflect on the approach applicability and challenges that teachers may come across.

Santos (2018), in “Short films production in the classroom context: cinematographic language reading and fruition” describes some cinematographic language elements and analyzes the acquisition process of image reading skills from the students’ participation in a project of short film productions. His analysis is founded in Bourdieu’s theoretical concepts on *Habitus* and symbolic capital.

In “Initial considerations about a rhizomatic learning environment”, Zaduski et.al. (2018) propose the creation of a virtual learning webpage for teachers whose structure is rhizomatic, based on the open education foundations - aiming at creating a collaborative environment for sharing, constructing ideas and teaching practices for inclusive education.

Martins et al (2018), in “The use of mobile devices in the college classroom: Project Method and mobile technologies in Higher Education” analyze how mobile technologies may be articulated to the project-based teaching approaches in Higher Education.

The research was carried out in a Marketing course. The authors point to the need for reinventing teaching practices targeting a contemporary public, and state that the project-based teaching approaches are appropriate to the use of Active Methods and Mobile Learning.

### **Reports on experiences: teaching practice as element of research**

A rich source of data that can potentially be used for further research and analysis are reported in this journal. They are important recordings of contemporary teaching practices, as they demonstrate practical applications of approaches and methods regarding the 21<sup>st</sup> Century Education. The main subjects comprised in the reports are: assessment of teaching and learning processes, Project-based Learning, Problem-based Learning, integrated teaching and Curriculum, Active Methods, teacher education, collaboration and Inclusive Education.

The reports do not intend to be conclusive or create veracities; nevertheless, they show perspectives and aspirations for changes in Education, register contemporary teaching practices and demonstrate our place as educators and researchers within a broader historical process.

### **Final considerations**

Digital information and communication Technologies foster the creation of a global web in many aspects, whether economic, political or social nature. Trends in education become global. The Education for the 21<sup>st</sup> Century has become imperative in the national and international agenda. Documents, declarations and agreements promoted by international organisms incite the homogenization of actions and ideas to think about current and future Education.

It is in this context that we propose the special issue Brazil-Finland Dossier. What put these countries together is exactly the global web we mentioned, stimulated by the globalization and internationalization processes. Partnerships and agreements signed between Brazilian government and Finnish universities to promote professional development, research or student mobility create scenarios that require research.

The investigations on teaching practices record a historical moment of constant search for educational processes' improvements and become a relevant source for

contemporary and future studies and research that may identify the Brazilian Education in a global context.

Research and reports presented in this journal are not intended to sustain a single or better path to Education, nevertheless point to several possibilities of educational practices. In times of great social transformations, due to the advance of digital technologies and to the globalization and internationalization processes, such researches become relevant, since they comprise results of policies and international partnerships to support Public Education.

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