

Brazil Grand Challenges Scholar Program Workshop

Brainstorming Session: Implementing GCSP in Brazil

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The five GCSP student competencies

- ❖ **Talent Competency:** Mentored research or creative experience on a Grand Challenge-like topic
- ❖ **Multicultural Competency:** understanding different cultures, preferably through multicultural experiences, to ensure cultural acceptance of proposed engineering solutions
- ❖ **Multidisciplinary Competency:** Understanding multidisciplinary of engineering systems solutions developed through personal engagement and team work
- ❖ **Viable Business/Entrepreneurship Competency:** Understanding, preferably developed through experience, of the necessity of viable business model for solution implementation
- ❖ **Social Consciousness Competency:** Understanding that the engineering solutions should primarily serve people and society reflecting social consciousness





Obstacles & Barriers

Teacher Training at the Higher Education Level

High School graduate





Teacher Training

Engineering Instructor \neq Instructor of Engineering

Not addressed at RES CNE/CES 11/2002

The new National Curricular Guidelines address the following:

Art 14º – Faculty → aligned with the pedagogical project of the program

1 - Maintain a permanent Training and Development Program for its faculty → appreciation of the teaching activity, greater involvement of teachers with the pedagogical project of the program and its improvement ... through the conceptual and pedagogical domain, which includes active learning strategies and methods, based on interdisciplinary practices, in order to make a greater commitment to the development of the desired skills in the future engineers.

2 - The HEI should define indicators of evaluation and appreciation of the teaching work in the activities developed in the program.





High School graduate

High School graduate deserves more attention

Not addressed at RES CNE/CES 11/2002

The new National Curricular Guidelines address the following:

Art 7º - Reception and leveling → decrease retention and drop-out rates

1 – Needs of basic knowledge

2 - Pedagogical and psycho-pedagogical preparation

3 - Orientation for the freshmen aiming to improve their conditions of permanence in the Higher Education environment





High School graduate

1. Problems start at elementary school with Mathematics:
 - from 1st to 4th year, graduates in pedagogy teach Math 😞
 - from 5th to 9th year, Biology graduates can teach Math 😞
2. In high school, potential talents are already lost 😞
3. Elementary and high school teachers need permanent teacher training - Science and Mathematics Master's Programs may be a solution

Conclusion: government, regional industry and multinational corporations need to join forces to improve the quality of Elementary and High schools in Brazil.





“Education isn’t a social concern; it’s a major economic issue. If our students can’t compete today, how will our companies compete tomorrow?”

John Akers, former Chairman of IBM

“A country’s competitiveness starts not on the factory floor or in the engineering lab. It starts in the classroom.”

Lee Iacocca, former CEO of Chrysler Corporation

Thank you ☺



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