EFFECTIVE STRATEGIES FOR IMPLEMENTING E-LEARNING ON REMOTE SENSING TECHNOLOGY

Objective

This poster presents and discusses trends and best-practices in e-learning for Remote Sensing technology transfer, based on the experience of seven introductory distance courses that have been implemented by INPE (Brazilian Institute for Space Research) in the past three years.

Courses Program

1. How to use TelEduc and prepare a research or education project proposal
2. Basic environmental science concepts
3. Remote sensing principles
4. Image Interpretation
5. Image processing
6. Examples of remote sensing applications
7. Proposal preparation advisement through distant student help
8. Final evaluation and course assessment

Target Audience

College Professors, Technicians and Researchers from environmental institutions in Brazil and Latin America.

Selection Criteria

Students residing far from INPE headquarters (in São José dos Campos, São Paulo, Brazil) in states with difficult access to information.

Methodology

Instructional materials sent by mail; student dedication of eight hours per week; mandatory classes, activities, and supplementary readings; weekly chats (1 hour) with instructors; tight assignment schedule; individualized feedback on graded exercises.

Effective Strategies

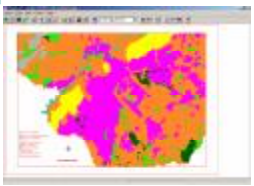
- Robust and reliable distance education managing system
- Quality of Materials (with frequent improvements and updates)
- Communication + Interaction

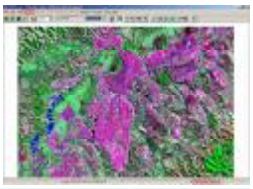
TelEduc Support

Free software from the University of Campinas (UNICAMP). Interface providing easy interaction among students with different backgrounds and creating a collaborative learning environment. The provided tools for instance exercises, chats, forum, students' profiles helped interaction among students and the monitoring of learner's progress.

Quality materials provided to students

- Instructional materials: interactive educational CD-ROM, books, Tutorials
- Software: SPRING (http://www.dpi.inpe.br/spring)
- Images: CBERS, LANDSAT, MOSAICO LANDSAT





Communication and Interaction

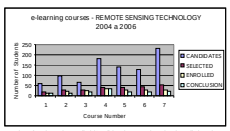
Synchronous and asynchronous interaction and support given to students by each instructor: CHAT and Internal Mail

Results

Widespread participation of students from all regions of Brazil and some countries in Latin America and abroad.

Students backgrounds: Engineering – Civil, Agronomic, Agriculture, Environmental and Fishing – Geography, Biology, Architecture, Chemistry, Physics and Geology.

Most students had good performance in the tasks proposed and were able to learn most of the concepts, principles and processes associated with this technology that were presented to them.



Number of students that applied (Candidates), were selected and enrolled, and successfully completed each course.

Conclusions

Tutorial updates and evaluation strategies are important components of technology transfer through e-learning.

Also important is the constant course improvement, such as, new strategies (Hybrid Courses) and the development of new instructional material

Explore additional tools that frequently become available through new versions of TelEduc.

Course singularity: a lot of hands-on activities related to Image Processing promotes student-teacher and student-student interaction. Personal tutoring can be satisfactorily fulfilled with e-learning.

The outcome of these courses has been positive and our group intends to keep improving and encouraging the creation of more advanced distance courses such as remote sensing applied to Watershed Monitoring, Agriculture, and Urban Studies.

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