Promoting Scientific Literacy for ALL Students: A Framework for Including Students with Learning Disabilities in a Web-enhanced Biology Classroom

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Deriving the Framework

Examined classroom observational data

Developed research-based coding schemes

Identified emerging patterns

Created main constructs
Main Constructs

Curriculum and Instruction
- Inclusive Science Practices
- Curricular Customizations/Adaptations of Content to Materials
- Inquiry Supports
- Pedagogical Content Knowledge
- Assessment Tasks

Technology
- Technology Implementation
- Computers Systems at the School Level

Communication Issues
- Communication Among Stakeholders
- Teacher Collaboration
Curriculum and Instruction

Inclusive Science Practices

Cultures of the Classroom
- Laboratory roles and skills
- Social skills
- Strategic structuring
- Negotiating roles

Instruction
- Practice with basic skills/preskills
- Modeling
- Explicit instruction
- Reinforcement
- Dialogic interactions
- "Big ideas of science"

Supports to access content
- Assessing prior knowledge
- Strategic integration
- Didactic instruction
- Diverse application experiences

Curricular Customizations/Adaptations of Content to Materials
- Support materials
Curriculum and Instruction

Inquiry Supports
- Questioning
- Anchored Instruction
- Motivating Contexts
- Scaffolding
- Task Structuring
- Collaboration and Discourse

Assessment Tasks
- Progress Monitoring
- Interviewing
- Multiple Modalities
- Lab Practicals
- Collecting and Using Real-time Data
- Multiple Choice and Constructed Response Items

Curricular Customizations/Adaptations of Content to Materials
Technology

Computers Systems at the School Level
- Set Up and Maintenance
- Training/Professional Development
- Hardware and Software
- Teacher Comfort Level

Technology Implementation
- Available Technologies to Assist Learning
- Different Classroom Configurations
- Diverse Instructional Delivery Systems

Curricular Customizations/Adaptations of Content to Materials

Lehigh Exploring Life Workgroup
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Communication

Teacher Collaboration
- Co-planning
- Coteaching
- Time
- Roles and Responsibilities

Communication Among Stakeholders
- Special Education and Content Teachers
- Tech Coordinators and Classroom Teachers
- Parents and Content Teachers
- Administration and Classroom Teachers

Curricular Customizations/Adaptations of Content to Materials