

## Proposal

### Professional Development Cluster for Delaware Educators

**A Professional Development Cluster is a focused group of professional development activities that leads to the acquisition of new knowledge and skills that are measurable and observable.**

Title of Cluster: LoTi Classroom Teacher

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Vendor (if different from Sponsoring Agency):

National Business Education Alliance

**Abstract:** The abstract will be published for Delaware educators as a description of the approved cluster. The abstract must clearly state the topic of the cluster; for whom it is intended (responses to questions 1-4 of the proposal); and the expectations of participants (responses to questions 9 and 10 of the proposal).

The LoTi Classroom Teacher Cluster is an online course designed for classroom-based educators to improve and refine the manner in which learning technologies are used to promote student engagement and achievement. The online course explores the concepts of higher order thinking skills, differentiation, collaboration, and the use of technology to build effective communities of inquiry that help students develop 21st Century Skills as articulated by The Partnership for 21st Century. These include specific learning and thinking skills (i.e., Communication Skills, Creativity and Innovation Skills, Collaboration Skills, Contextual Learning Skills, Information and Media Literacy Skills). – Appendix H

The LoTi Framework (refer to Appendix G), developed in 1994, has become a focal point for creating dialogue about the use of higher order thinking skills coupled with efficient technology use to increase student engagement and academic achievement in the classroom. Success in the 21st Century workplace demands that students develop foundational literacy and thinking skills that promote self-directed problem-solving and decision-making as well as possess the ability to self-assess the products they create to document their learning.

Part of the preparation for implementing a 21st Century inquiry-based classroom is personal reflection on one's own beliefs about the teaching/learning process. The proposed LoTi Classroom Teacher Cluster provides an opportunity for participants to engage in structured reflection within a networked environment involving other educators implementing similar instructional strategies. Cluster participants will be able to design instructional units representing the higher levels of technology implementation as well as catalogue specific resources that support this advanced use of technology. Throughout this cluster, participants will be engaged in a case study process involving a targeted group of students. This case study approach will enable participants to conduct a personal reflective study of their classroom in an attempt to determine those factors (e.g., student engagement, differentiated instruction, technology use) that influence student success. The cluster activities, personal reflections, student interviews, and implementation strategies will help each participant examine specific practices and the ways they affect current instructional practices and student outcomes.

Each LoTi Classroom Teacher Cluster will have cohorts of 20-25 participants engaged in a 90 hour program covering three (3) 30 hour Units including Unit 1: LoTi (Levels of Technology Implementation) Foundations and Classroom Pedagogy, Unit 2: LoTi Level 3 Implementation, and Unit 3: LoTi 4+ Implementation. Each cohort will begin with a webinar meeting (an online group meeting facilitated by an instruction via the internet) followed by the online course. This timeframe will allow participants to follow a specific group of students throughout the Cluster implementation process. New cohorts will begin each quarter (November 1, 2006; February 1, 2007, and April 1, 2007).

**1. Which of the categories below describe this professional development cluster? (Check all that apply. Indicate the best descriptor by marking it with an asterisk.)**

- |   |     |                                     |
|---|-----|-------------------------------------|
| <input type="checkbox"/> Content Knowledge  | } - | Both Content Knowledge and Pedagogy |
| <input checked="" type="checkbox"/> Pedagogy  |     |                                     |
| <input type="checkbox"/> Leadership Skills (Ex. Group Process, School Leadership, Professional Development)   |     |                                     |
| <input checked="" type="checkbox"/> Teaching and Administrator Skills (Ex. Assessment, Curriculum Development, Community and Family Outreach, Technology) |     |                                     |
| <input type="checkbox"/> Other (please explain in detail)   |     |                                     |

**2. For which group(s) of Delaware educators is this cluster designed? (Check – explain.)**

Teacher     Specialist     Administrator     Other (Specify)

**3. Which set(s) of standards is this cluster designed to support? (Check – explain.)**

Clusters may include, but are not limited to, the Delaware State Board of Education or Delaware Professional Standards Board standards in:

<input type="checkbox"/> English Language Arts	<input type="checkbox"/> Visual and Performing Arts	<b>OR</b>
<input type="checkbox"/> Science	<input type="checkbox"/> AgriScience	<input checked="" type="checkbox"/> Professional
<input type="checkbox"/> Mathematics	<input type="checkbox"/> World Languages	Teaching
		Standards
<input type="checkbox"/> Social Studies	<input type="checkbox"/> Business, Finance and Marketing	
<input type="checkbox"/> Health and PE	<input type="checkbox"/> Technology Education	
<input type="checkbox"/> Administrator		
<input type="checkbox"/> Family and Consumer Sciences		

**OR**

Equivalent standards in LoTi (Levels of Technology Implementation) Framework – **Appendix G (Attach copy)**

Developed by Dr. Christopher Moersch

**4. Please list any prerequisites required of participants in this cluster.**

Participants need a basic knowledge of how to navigate the Internet and use of word processing skills; they also must have access to a computer, email, the Internet, and a class of students.

**5. Number of times the cluster will be offered each year: 5**

**6. Projected number of participants during each delivery: 20-25**

**7. Under what conditions, if any, may this cluster be replicated by other providers?**

**If the cluster may not be replicated, please provide information about how interested parties may arrange to have the cluster delivered on-site by the sponsoring organization.**

This cluster may not be replicated by other providers without the express written consent of the National Business Education Alliance (NBEA).

The Review Committee will use the following scoring guides in evaluating responses to questions 8-13. Responses to questions 8, 11, 12 and 13 must each rate as “2” or better for a proposed cluster to qualify for approval. **Please study the scoring guides and address the key ideas in your responses.** A total score of 13.0 or higher is required for approval of a proposed cluster.

**8. Standards-Based**

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
No teaching, content, and/or administrative standards are referenced or used in the development of the cluster plan	Teaching, content, and/or administrative standards are referenced by number, but there is only a weak linkage between these standards and the content addressed in the cluster plan	Teaching, content, and/or administrative standards are referenced and explained. There is a partial linkage between the standards and the content of the cluster plan.	Teaching, content, and/or administrative standards are clearly referenced and explained. There is complete linkage between those referenced standards and the content of the cluster plan.

- a. List the specific standards (Content, Teaching, Administrator) that are the foundation for this cluster. A combination of the above standards may be used, if applicable.

The Delaware Professional Teaching Standards as drafted in 1997, list 12 specific standards that are then broken down into component skills. This course addresses these standards in a reflective environment that encourages participants to build working relationships with their colleagues in the course. Specifically, the following standards are addressed:

#1- Content will be explored through the use of the Internet and Problem Based Learning (PBL) to make their content more relevant for students and to connect their content to the real world.

#2- Human Development and Learning will be addressed through articles and case studies as participants interview students as well as develop and implement classroom investigations using technology.

#3- Diverse Learners will be a focal point throughout the cluster as it is throughout the LoTi Framework. The readiness level, learning style, interests, cultural experiences, and special needs of students will be considered and integrated throughout the lesson planning process.

#5- Learning Environment will be investigated as participants build target technology instructional units (LoTi 4 and higher) that engage students and promote communities of learning within the classroom and between their classroom and the global community.

#7 Instructional Strategies will be applied as participants conduct action research investigating the impact of complex thinking skills, higher order questioning strategies, and authentic assessment opportunities on student achievement.

#11 Educational Technology will be implemented as participants design and evaluate lesson plans and instructional units at LoTi Level 3 and 4+.

- b. What are the objectives of this cluster? How will this cluster support educators in meeting the identified standards? Indicate the specific linkages between the identified standards and the activities in this cluster.

The objectives of this cluster are three-fold:

1. Deliver instruction at higher LoTi levels which promote higher order thinking skills and effective use
2. Transform the participant's current instructional practices toward a learner-centered approach.
3. Increase the academic growth of a selected cadre of students

Participants will follow and document the academic growth of a small cadre of students throughout the cluster as they construct and implement different instructional strategies using the available technology assets in their respective classrooms. For teachers who cannot follow one group over the 30 week cluster, there are opportunities to continue the project with new students. Academic growth will be measured by standardized test results, passing grades, attendance, alternative assessments, traditional classroom assessments, and ultimately attitude toward learning.

## 9. Activities

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
Very little active participation is evident. There are no activities that help translate knowledge into practice.	Some active participation is evident in the design. There are a small number of activities that help translate knowledge into practice.	There are numerous opportunities for active participation and engagement of participants. There are some activities that help translate knowledge into practice.	The majority of activities use active participation and engagement of participants. There is participant choice in the kinds of activities engaged in during the course of the cluster. There are numerous opportunities that help translate knowledge into practice.

Describe the activities participants will engage in during this program. Attach the schedule of sessions / activities and the overall calendar or timeline, using the form provided as **Appendix A**. Indicate the number of hours and type of activity for each session/activity.

- a. What tangible products or evidence of work will be produced by participants?

Throughout the LoTi Classroom Teacher Cluster the participants will explore the LoTi Framework as a pedagogical bridge that links together the many factors impacting student success in the classroom (e.g., higher order thinking, collaboration, engagement, use of technology). Each of the three units of study comprising the LoTi Classroom Teacher Cluster includes 4 blocks of activities that culminate in a unit portfolio submission. Each portfolio submission will include specific artifacts that embed targeted concepts and processes for that unit as well as trace the academic achievement of a small cadre of students. The portfolio entries will either follow the same group of students throughout the 30 week program or may include a different group of 3-5 students in each unit to accommodate teachers who change student groups from one grading period to another. Provided below is a summary of the three units of study comprising the LoTi Classroom Teacher Cluster.

Unit 1	Unit 2	Unit 3
LoTi Foundations and Pedagogy	LoTi Implementation 3+	LoTi Implementation 4+
Timeline: 30 hours 6 hours per block	Timeline: 30 hours 6 hours per block	Timeline: 30 hours 6 hours per block

<b>Teacher Case Study:</b> Study of Operational Strategies as a Teacher	<b>Teacher Case Study:</b> Reflect on exploration of tools in this section	<b>Teacher Case Study:</b> Reflect on educational strategies
<b>Student Case Study:</b> Do a student case study	<b>Student Case Study:</b> How implementation of certain strategies has affected the students	<b>Student Case Study:</b> Questions to be determined
<b>Unit Blocks</b>		
1. Factors Influencing Student Success	6. Technology Tools	11. Collaborative Learning Environments
2. Learning Modalities/Differentiation	7. Few Computer Classroom	12. Essential vs. Engaging Questions and Focus Strategies
3. High Level Thinking Processes	8. Performance-Based Assessment Using My Projects	13. EBAM Model Using My Projects
4. LoTi Framework	9. Critique, Implementation, and Reflection of PBA	14., Critique, Implementation and Reflection of EBAM
5. Portfolio Preparation and Submission	10. Portfolio Preparation and Submission	15. Portfolio Preparation and Submission

### **(30 Hours) Unit One: LoTi Foundations and Pedagogy**

The first portfolio submission will contain an artifact from each of the Implementation Tasks from each block. The participants may also self-select an additional artifact for their portfolio submission accompanied by a brief explanation as to why they chose that item.

**Unit One: Teacher Case Study:** Cluster participants will begin the unit by examining their operational strategies as a teacher including strategies for differentiation and higher order thinking processes. They will create a case study addressing the following items:

- What is the learning modality most often addressed during their instructional day?
- What is the participant's own learning modality?
- What are their fundamental beliefs about what works when instructing their students?
- Is there a discrepancy between their beliefs and their implementation strategies in the classroom?
- Describe the Implementation Connections from each block (i.e., Connecting to the Delaware Standards, the LoTi Framework, Differentiation, Higher Order Thinking processes) and their effect on classroom pedagogy. Have there been any changes since their beginning profile statement of what they believe works in education?

**Unit One: Student Case Study:** Cluster participants will collectively generate specific questions they feel are necessary to accurately identify their cadre of students before the interviews/ case studies are completed. As a group they will brainstorm exactly what they need to know about a student in order to understand the current academic standing of these students. Some areas to be considered include:

- Attendance Rate
- Report Card Grades
- Socio Economic Status
- Standardized Test Scores

- Behavior Issues
- Student Interview Questions
  - How do you think standardized testing changes your experiences at school?
  - Do you want to know how your school compares to others in the state or nation on standardized tests?
  - Do you like to work in partners or groups? Why or why not?

**(30 Hours) Unit Two: LoTi Implementation (LoTi 3+)**

The portfolio will contain an artifact from each of the Implementation Tasks from each block. The participants may also self-select an additional artifact for the portfolio submission accompanied by a brief explanation as to why they chose that item.

**Unit Two: Teacher Case Study:** The participants will reflect on their exploration of the next set of tools (i.e., Performance-based Assessment, Few Computer Classroom, Technology Tools, LoTi 3 Implementation) to determine if a change in planning has changed the learning environment in their classroom and/ or the retention of the course content over previous years. Some key questions to be considered include:

- How does my content connect with other subject areas?
- How can high quality performance-based assessments coupled using limited digital assets improve the learning environment of the classroom?
- How have I shared the decision making about the learning environment with my students?

**Unit Two: Student Case Study:** Cluster participants will explore how the implementation of specific strategies (e.g., Few Computer Classroom, Performance-based Assessments, LoTi 3 Implementation) has affected the students in the areas that were previously considered. This time they will be observing the student(s) and looking for questioning strategies and AYP indicators. Collectively, the Cluster participants will brainstorm specific questions that address the following:

- Have benchmark tests been given? If so what were the results?
- What parts of the differentiation plan have been tried? What were the results?
- In a classroom discussion, which questioning strategies are part of discussion?
- Are other factors contributing or diminishing the ability of the student(s) to be successful?

**(30 Hours) Unit Three: LoTi Implementation (LoTi 4+)**

The portfolio will contain an artifact from each of the Implementation Tasks from each block. The participants may also self-select an additional artifact for the portfolio submission accompanied by a brief explanation as to why they chose that item.

**Unit Three: Teacher Case Study:** In the 1930's and 1940's John Dewey wrote about how the reflective process actually shaped the education it surrounded. The learning was one part, but the careful reflection about the experience was also a critical part of the learning. It is one thing for teachers to hear that engaged learning improves the retention rate of information. It is quite another for teachers to carefully track the progress of students as different strategies are implemented. The final case study is an opportunity for Cluster participants to reflect over what they believed about education

strategies that worked at the beginning of the year, the experiences they had over the implementation cycle, and what they believe about those items proposed as “best practices” after the 30-week exploration.

The participants will also reflect on their exploration of the final set of tools (i.e., Collaborative Learning Environments, Focus Strategies, LoTi 4 Implementation) to determine if a change in planning has changed the learning environment in their classroom and/ or the retention of the course content.

**Unit Three: Student Case Study:** Considering carefully the questions raised throughout the year and during the final reflection, the Cluster collectively will brainstorm questions that address the following:

- Have benchmark tests or state mandated tests been given? If so what were the results?
- What further parts of the differentiation plan have been tried? What were the results?
- In a classroom implementation, do the students show an increased inclination to ask questions and take an active role in developing the learning process? (A video of the class discussing what they have learned this year will be used to document results.)
- Are other factors contributing or diminishing the ability of the student(s) to be successful?
- What recommendations do you have for these students for the next year?

- b. As a guide, a 2 % cluster will include a minimum of 90 hours of activity. A 4% cluster would include a minimum of 180 hours of activity. A 6 % cluster would include a minimum of 270 hours of activity. With this in mind, estimate the total hours expected for:

Instruction in knowledge and skills:   24  

Participants' application of knowledge and skills:   24  

Participants' reflection and adjustment after application   36  

Other (classroom implementation):   12  

Total   96  

Each Cluster Unit will include four (4) instructional blocks encompassing 6.4 hours of activities per block (readings/posting = 2 hours; writing/reflective posting = 1 hour; classroom planning = 2 hours; implementation = 1 hour, post implementation reflection = 1/2) as well as a culminating portfolio submission block (6.4 hours) – See Appendix I

## 10. Impact on Cluster Participants

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
Evaluation focuses only on demonstration of knowledge (i.e. paper and pencil tests, papers)	Evaluation focuses on changes in participant knowledge—pre-post-exams, essays, or activities.	Evaluation focuses on changes in participant knowledge and the use of new skills and strategies by participants (for example, implementation logs)	Changes in participants' knowledge, implementation of new skills and strategies, and conceptual understanding are evaluated. Student learning activities, papers, and projects are used to demonstrate impact on student learning.

Identify which components of the cluster will be evaluated. **Attach examples of the evaluation rubrics that will be used to evaluate participants' performance.**

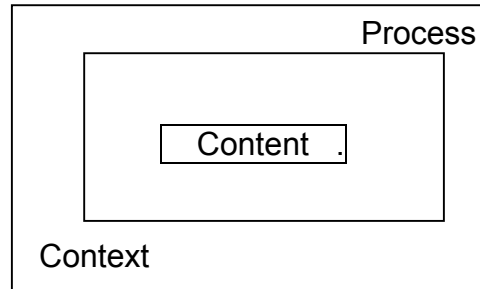
The items that will be evaluated are listed specifically throughout Appendix A Task List. All Online Activities will be assessed using Appendix B: Online Activity Rubric. All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric. All Implementation Artifacts will be assessed using Rubrics contained within the LoTi Connection

## 11. Professional Development Principles and Standards (NSDC Standards)

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
Principles of adult learning are not evident in the design of the cluster. Collegial interaction among participants is not evident.	Some of the principles of adult learning are evident. Collegial interaction among participants is seldom used in the design of the cluster.	Most of the principles of adult learning are evident in the design of the cluster. Collegial interaction among participants is commonly used in the design of the cluster.	The principles of adult learning are clearly used in the design of the cluster. Collegial interaction among participants is integrated throughout the design of the cluster

Explain how this cluster’s design incorporates the principles of the National Staff Development Council’s standards for staff development that improves the learning of all students. See standards below. Additional information about these standards and their use is available at [www.nsd.org](http://www.nsd.org).

This class will be structured to address many of the National Staff Development Council’s Standards for Staff Development. The NSDC’s standards are structured in a nested organizer with content surrounded by process which is again surrounded by context.



**Context:**

**Learning Community:** For adult learners, it is critical that their learning takes place within a community of learners who share their concerns and responsibility. Through online discussion and shared expertise each of the individuals can grow from the strength of the group.

**Resources:** After surveying over 500,000 teachers nationwide the NBEA can quantify that one of the major concerns of teachers in implementing technology and other best practices is finding the resources they need to be truly successful. Each block of this course includes a section that exposes the teachers to new resources as well as strategies for finding their own resources in the future.

**Process:**

**Data-Driven:** Throughout the year participants will be required to delve into their data to make decisions about the classroom instruction. Specific student problem areas will be explored, and the growth in those areas will be monitored over the year.

**Research-based:** Too often teachers are exposed to a distilled set of code words about best practices without the opportunity to explore and read the supporting research. This course will have participants reading and discussing several articles supporting the use of technology, engaged classrooms, and higher-order thinking skills

**12. Research-Based Focus on Best Practices**

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
No support is provided to demonstrate that the skills and	Some general research has been cited to support the development of the	Specific research and references have been cited for a majority—but not	Clear, specific, and valid research and references have been cited that

knowledge have been identified as best practice in the field	skills and knowledge. The citations are general and not specific.	all—of the skills and knowledge contained in the cluster content.	demonstrate that all of the skills and knowledge have been identified as best practice in the field
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Cite the research, theory, or best practice used in the design of this cluster and indicate specific linkages to the activities in the cluster. Explain how the research, theory, or best practice cited above will be applied to the cluster design. Describe how the cluster has the potential to support participants' improved practice or acquisition of new knowledge.

### **Unit One: LoTi Foundations and Pedagogy**

#### **Block 1: Factors Influencing Student Success/ Set-Up Student Case Study**

Finding(s): Higher student achievement gains were found in classrooms using technology in conjunction with inquiry-based teaching that emphasized collaborative learning methods, critical-thinking and problem-solving skills.

Source(s)

eMINTS National Center. (2005, September 15). Fact sheet.

Columbia,MO:Author. Available: <http://www.emints.org/about/emintsfactsheet.pdf>

Perez-Prado, A., & Thirunarayanan, M. (2002). A qualitative comparison of online and classroom-based sections of a course: Exploring student perspectives. *Education Media International*, 39(2), 195-202.

#### **Block 2: Learning Modalities/Differentiation**

Finding(s):

Motivation and homework were found to have a significant effect on the achievement of eighth graders.

Source(s):

Bruce, F. A., Jr., & Singh, K. (1996). Academic achievement: A model of school learning for eighth grade students. *Research in Middle Level Education*, 19(3), 95-111.

#### **Block 3: High Level Thinking Processes (Bloom, Erickson, complex thinking strategies, questioning strategies)**

Finding(s):

Computer technology can help support learning and is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry "by engaging students in authentic, complex tasks within collaborative learning contexts.

Source(s):

Roschelle, J.M. Pea, R.D., Hoadley, C.M., Gordin, D.N. and Means, B.M. (2000).

Changing how and what children learn in school with computer-based technologies. *The Future of Children*, 10:2, 76-101

#### Block 4: LoTi Framework

##### Finding(s):

It is not the computer use itself that has a positive or negative effect on achievement of students, but the way in which computers are used.

##### Sources:

Papanastasiou, E., Zemblyas, M., & Vrasidas, C. (2003). Can computer use hurt science achievement? *Journal of Science Education and Technology*, 12 (3), 325-332.

#### Block 5: Portfolio Submission

### **Unit 2: LoTi Implementation of LoTi 3+ Lessons**

#### LoTi Implementation (LoTi 3)

#### Block 6: Technology Tools

##### Finding(s):

Students with access to any of a number of technologies (such as computer assisted instruction, integrated learning systems, simulations and software that teaches higher order thinking, collaborative networked technologies, or design and programming technologies) show positive gains in achievement on researcher constructed tests, standardized tests, and national tests.

##### Source(s):

Schacter, J. (1999, June). The impact of education technology on student achievement: What the most current research has to say. Santa Monica, CA: Milken Exchange on Education Technology.

#### Block 7: Few Computer Classroom

##### Finding(s)

Technology can enhance both what and how children learn when used in conjunction with: (1) active engagement, (2) participation in groups, (3) frequent interaction and feedback, and (4) connections to real-world contexts.

##### Source(s)

Roschelle, J.M. Pea, R.D., Hoadley, C.M., Gordin, D.N. and Means, B.M. (2000). Changing how and what children learn in school with computer-based technologies. *The Future of Children*, 10:2, 76-101

#### Block 8: Performance-based Assessment using My Projects

##### Finding(s):

Computer technology can help support learning and is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry "by engaging students in authentic, complex tasks within collaborative learning contexts.

##### Source(s):

Roschelle, J.M. Pea, R.D., Hoadley, C.M., Gordin, D.N. and Means, B.M. (2000). Changing how and what children learn in school with computer-based technologies. *The Future of Children*, 10:2, 76-101

### Block 9: Critique, Implementation, and Reflection of PBA

#### Finding(s):

It is not the computer use itself that has a positive or negative effect on achievement of students, but the way in which computers are used.

#### Sources:

Papanastasiou, E., Zemblyas, M., & Vrasidas, C. (2003). Can computer use hurt science achievement? *Journal of Science Education and Technology*, 12 (3), 325-332.

### Block 10: Portfolio Submission

### **Unit 3: LoTi Implementation of LoTi 4+ Lessons**

#### Block 11: Collaborative Learning Environments

##### Finding(s):

Cooperative learning has its greatest effects on student learning when groups are recognized or rewarded based on individual learning of their members.

Research has found greater achievement gains for cooperative methods using group goals and individual accountability than for those that do not

##### Source(s)

Slavin, R.E.(1995). *Research on Cooperative Learning and Achievement: What We Know, What We Need to Know*. Center for Research on the Education of Students Placed at Risk. Johns Hopkins University. October, 1995.

#### Block 12: Essential vs. Engaging Questions & Focus Strategies

##### Finding(s):

Higher student achievement gains were found in classrooms using technology in conjunction with inquiry-based teaching that emphasized collaborative learning methods, critical-thinking and problem-solving skills.

##### Source(s)

eMINTS National Center. (2005, September 15). Fact sheet.

Columbia,MO:Author.\_Available:

<http://www.emints.org/about/emintsfactsheet.pdf> Perez-Prado, A., & Thirunarayanan, M. (2002). A qualitative comparison of online and classroom-based sections of a course: Exploring student perspectives. *Education Media International*, 39(2), 195-202.

#### Block 13: EBAM Model using My Projects

##### Finding(s):

Computer technology can help support learning and is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry "by engaging students in authentic, complex tasks within collaborative learning contexts.

##### Source(s):

Roschelle, J.M. Pea, R.D., Hoadley, C.M., Gordin, D.N. and Means, B.M. (2000).

Changing how and what children learn in school with computer-based technologies. *The Future of Children*, 10:2, 76-101

## Block 14: Critique, Implementation, and Reflection of EBAM

### Finding(s)

Technology can enhance both what and how children learn when used in conjunction with: (1) active engagement, (2) participation in groups, (3) frequent interaction and feedback, and (4) connections to real-world contexts.

### Source(s)

Roschelle, J.M. Pea, R.D., Hoadley, C.M., Gordin, D.N. and Means, B.M. (2000). Changing how and what children learn in school with computer-based technologies. *The Future of Children*, 10:2, 76-101

### Finding(s):

Higher student achievement gains were found in classrooms using technology in conjunction with inquiry-based teaching that emphasized collaborative learning methods, critical-thinking and problem-solving skills.

### Source(s)

eMINTS National Center. (2005, September 15). Fact sheet.

Columbia,MO:Author. Available: <http://www.emints.org/about/emintsfactsheet.pdf>

Perez-Prado, A., & Thirunarayanan, M. (2002). A qualitative comparison of online and classroom-based sections of a course: Exploring student perspectives. *Education Media International*, 39(2), 195-202.

## Block 15: Portfolio Submission

### 13. Impact on K-12 Student Learning

1: Lack of Use	2: Beginning Use	3: Basic Implementation	4: Skillful Implementation
There is no evidence that the cluster will impact student behavior, attitudes, or learning. Participants are not required to provide any student impact data.	There is some general evidence that the cluster will impact student behavior, attitudes, or learning. Participants are required to provide minimal level of student impact data.	There is specific evidence that the cluster will impact student behavior, attitudes, and/or learning. At least half of the material participants are required to provide addresses student impact data.	There is strong and compelling evidence that the cluster will impact student behavior, attitudes, and/or learning. Participants are required to provide student impact data.

During participation in this cluster, what evidence will participants gather or analyze of the impacts made on the learning environment in their classrooms and/or schools?

Throughout this cluster there is a constant return to the reflective side of teaching. The participants will interview students, collect data, share student artifacts from the implementation of strategies being discussed, and describe the events occurring within the classroom that affect instruction and AYP success. The teacher and student case studies will be direct evidence of the impact this cluster is having on the learning

environment. By gathering both qualitative and quantitative data three times within a school year, participants will have opportunities to look at what is and what is not working and with which students so that strategies can be adjusted or continued while they are still within the supportive environment of the cluster.

#### 14. Grading Policy

Participants will be scored based on their performance in each of the three units comprising the LoTi Classroom Teacher Cluster. Successful completion of the Cluster will be based on the following guidelines:

Unit	Title	Maximum Points	Minimum Passing Points
1	LoTi Foundations and Pedagogy		
	i. Web-Conference (Appendix F)	6	4
	ii. Online Activity (Appendix B)	9	6
	iii. Implementation Portfolio (Appendix C)	<u>18</u>	<u>12</u>
	Total	33	22
2	LoTi Foundations and Pedagogy		
	i. Online Activity (Appendix B)	9	6
	ii. Implementation Portfolio (Appendix C)	18	12
	iii. LoTi Instructional Plan (Appendix D)	<u>60</u>	<u>45</u>
	Total	87	63
3	LoTi Foundations and Pedagogy		
	i. Web-Conference (Appendix F)	6	4
	ii. Online Activity (Appendix B)	9	6
	iii. Implementation Portfolio (Appendix C)	18	12
	iii. EBAM Unit (Appendix E)	<u>60</u>	<u>45</u>
	Total	93	67

Proposed by: \_\_\_\_\_  
(Signature)

Date: \_\_\_\_\_

Submit completed proposal electronically to:

Delaware Professional Standards Board  
Professional Development and Associated Compensation Committee  
The Townsend Building, P.O. Box 1402  
Dover, Delaware 19903-1402  
pcarlson@doe.k12.de.us

## Appendix A: Task List

<b>Unit 1 LoTi Foundations and Pedagogy</b>		
<b>Topic</b>	<b>Activities</b>	<b>Assessment Criteria</b>
<b>Opening – Embarking on a Journey</b>	<p><b>Opening Web-Conference:</b> Cluster participants will participate in a 2 hour web-conference orientation session addressing the following items:</p> <ul style="list-style-type: none"> <li>i. Overview of syllabus</li> <li>ii. Expectations of cluster</li> <li>iii. How to get additional support</li> <li>iv. Questions &amp; Answers</li> </ul>	Opening web-conference will be assessed using Appendix F: Online Activity Rubric
<b>Block 1: Factors Influencing Student Success</b>	<p><b>Content Focus: Factors Influencing Student Success</b></p> <p><b>Connection to Vocabulary:</b> NCLB, AYP, Delaware Teaching Standards, Delaware Content Standards, The Millennial Student</p> <p><b>Reading Assignment (s):</b> Dept of Education Report on NCLB  <a href="http://www.ed.gov/nclb/overview/importance/difference/delaware.pdf">http://www.ed.gov/nclb/overview/importance/difference/delaware.pdf</a>, Delaware Teaching Standards  <a href="http://www.ed.gov/nclb/overview/importance/difference/delaware.pdf">http://www.ed.gov/nclb/overview/importance/difference/delaware.pdf</a></p> <p><b>Collaborative Connection:</b> Building a community of learners by creating the online profile and joining the discussion threads about the two reading assignments.</p> <p><b>Resource Exploration:</b> Cluster participants will create their own bookmark account to begin marking the resources they find online. Their first task is to explore what resources are available for their content area from the state and national organizations.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Log onto the LoTi Moodle and create a participant profile</li> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions</li> </ul>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p>

	<p>created by other Cluster participants. Be ready to use these terms in discussion.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Read the Assignments listed in Block 1 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Create your online bookmarks account in the LoTi Lounge. Find two specific resources that provide resources for your content area. In the annotation include a reference to the specific Delaware Standard addressed by that resource.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Join the discussion about Instructional Strategies and Frameworks. What have you tried? What works and doesn't work for you in the classroom? Why do think that is so?</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Create a profile of 3-5 at-risk students who will become the reference point throughout the Unit One implementation section. You may use these students throughout all three units or you may switch students throughout the cluster if that works best with your scheduling. The profile will become the basis for your Student Case Study submission at the end of <b>Unit One: LoTi Foundations and Pedagogy</b>. The profile should include a brief academic description of each of the students. Why are they at risk? Are there factors that go beyond their academics that influence their success? What type of instruction would best help these students succeed? The description should range between 100-200 words for each student.</li> </ul>	
<p><b>Block 2: Learning Modalities/ Differentiation</b></p>	<p><b>Content Focus: Learning Modalities/ Differentiation</b>  <b>Connection to Vocabulary:</b> verbal/linguistic, naturalist, bodily/ kinesthetic, intrapersonal, interpersonal, others  <b>Reading Assignment(s):</b>  Teaching with the Multiple Intelligences, and Funderstanding entries for Learning Styles and Multiple Intelligences  <a href="http://www.funderstanding.com">http://www.funderstanding.com</a>  <b>Collaborative Connection:</b> Cluster participants</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be</p>

	<p>will go online and complete a series of learning style assessments to determine their dominant style of learning. Afterwards, they will (1) analyze their upcoming lessons to determine what learning styles are being addressed, (2) conduct a classroom observation of a fellow staff member with a different learning style noting if instructional practices differ based on the teacher's dominant intelligence, and (3) plan at least two activities that would be compatible with a learning style different from their own. The other participants in the cluster can serve as a resource in developing these activities.</p> <p><b>Resource Exploration:</b> The Internet is a treasure trove of products created by students. Multimedia projects including PowerPoint files, movies, songs, and student-created websites give teachers and students ideas for products to implement in the classroom. The task for this block is for Cluster participants to find at least one project that fits each of the multiple intelligences that can be added to their personal bookmarks.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Read the Assignments listed in Block 2 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Log on to your LoTi Connection account and use the LoTi Resources section to explore links about Multiple Intelligences and Learning Styles. Complete a minimum of two learning style surveys to find out more about your learning style. Have your students (either all students or only the 3-5 students included in the profile from Block 1) take the same surveys to learn more about their learning styles.</li> <li><input type="checkbox"/> <b>Implementation Artifact:</b> Cluster participants will rework a current lesson so that it addresses either a learning style or multiple intelligence that extends beyond</li> </ul>	<p>assessed using Appendix C: Implementation on Portfolio Rubric</p> <p>All Implementation on Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
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	<p>their traditional comfort zone. The complete lesson as well as any modifications/adjustments will be posted to a discussion forum.</p>	
<p><b>Block 3: High Level Thinking Processes</b></p>	<p><b>Connection to Vocabulary:</b> Bloom's Taxonomy, Erickson Structure of Knowledge, Questioning Strategies, Complex Thinking Strategies</p> <p><b>Reading Assignment(s):</b> Selected articles about Bloom's Taxonomy FILLING THE TOOL BOX: Classroom Strategies to Engender Student Questioning <a href="http://www.fno.org/toolbox.html">http://www.fno.org/toolbox.html</a></p> <p><b>Collaborative Connection:</b> Participants will take the Bloom's Taxonomy Assessment online</p> <p><b>Resource Exploration:</b> Participants will explore the resources for Bloom's Taxonomy and High Level Thinking Processes found in the Resource section of the LoTi Connection</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Read the Assignments listed in Block 3 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Participants will discuss their results of the online assessment relating to Bloom's Taxonomy</li> <li><input type="checkbox"/> <b>Implementation Artifact:</b> Participants will post a description of a classroom lesson including an inventory of the levels of questions asked by themselves and their students during the course of the lesson.</li> </ul>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p> <p>All Implementation Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
<p><b>Block 4: LoTi Framework</b></p>	<p><b>Content Focus: LoTi Framework</b></p> <p><b>Connection to Vocabulary:</b> LoTi Framework, DETAILS for the 21<sup>st</sup> Century, 21<sup>st</sup></p> <p><b>Reading Assignment(s):</b> LoTi Framework <a href="http://www.loticonnection.com/lotilevels.html">http://www.loticonnection.com/lotilevels.html</a> Computer Skills Growth Chart <a href="http://www.dcet.k12.de.us/instructional/skills/index.html">http://www.dcet.k12.de.us/instructional/skills/index.html</a></p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p>

	<p><b>Collaborative Connection:</b> Using a Pair- Share technique partner with a member of the class to independently view video of classroom instruction, web projects, and student products to approximate and document the LoTi of the learning experience</p> <p><b>Resource Exploration:</b> Teachers will complete the LoTi Survey and while the specifics will remain anonymous, teachers will add a generic description of their LoTi and DETAILS data to their personal profile.</p> <p>* Teachers will view an online video of Dr. Moersch discussing the items or “look-fors” he considers when assigning a LoTi Level to any learning experience.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><b>Online Activity:</b> Read the Assignments listed in Block 4 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Pair-Share to determine LoTi levels of selected classroom learning experiences</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Cluster participants will add a description of their current LoTi and DETAILS data to their personal profile as well as describe the areas they should work on to elevate their level of technology implementation in the classroom.</li> <li><input type="checkbox"/> <b>Implementation Artifact:</b> Participants will submit a LoTi analysis and reflection of their lesson plans or instructional units used during a specific marking period based on the criteria embedded in the LoTi Framework. The reflection will discuss opportunities where the lesson(s) or instructional unit(s) could have incorporated (1) higher order thinking processes; (2) differentiation strategies based on students’ interests, readiness, and learning profiles; and (3) and effective and efficient technology use.</li> </ul>	<p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p> <p>All Implementation on Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
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<p><b>Block 5:</b></p> <p><b>Culmination of Unit One: LoTi Foundations and Pedagogy</b></p> <p><b>Portfolio Submission</b></p>	<p><b>Application to the Classroom:</b>  In this section Cluster participants will gather specific test data for individual students they can work with throughout the Cluster process. If they are in the classroom, they will focus on specific students in their class. If they are not assigned to a classroom, they will need to find a teacher who would feel comfortable with them making observations of students in their classroom. The participants in the class will need to do the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Secure permission from teacher and/ or administrator to focus on three at-risk students.</li> <li><input type="checkbox"/> Locate the test data for those students.</li> <li><input type="checkbox"/> Interview the teacher, counselor, and any other relevant professionals who interact with these students.</li> <li><input type="checkbox"/> Interview the students. (IF POSSIBLE AND APPROPRIATE ONLY) Whether an individual interview is possible or not, the teacher must find a student or class at their grade level to have a conversation with about standardized testing, learning styles, use of technology, and cooperative learning. Collectively, the Cluster participants will brainstorm interview questions such as, How do you think standardized testing changes your experiences at school? Do you want to know how your school compares to others in the state or nation on standardized tests? Do you work best alone, with partners or in a group situation? Why or why not?</li> </ul> <p>The goal of the interviews is to discover patterns in terms of what is and what is not working for these students in the classroom.</p> <p><b>Unit One: LoTi Foundations and Pedagogy Implementation Portfolio</b>  The portfolio will contain each of the Implementation Artifacts and each of the Portfolio Requirements from each of the Implementation Tasks from each block.</p> <p><b>Educator Reflection:</b> The participants' discussions will often focus on themselves as instructors. From the many forum discussions</p>	<p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p>
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	<p>participants will create a case study of themselves.</p> <ul style="list-style-type: none"> <li>➤ What is the learning modality most often addressed during their instructional day?</li> <li>➤ What is the participant's own learning modality?</li> <li>➤ What are their fundamental beliefs about what works when instructing their students?</li> <li>➤ Is there a discrepancy between their belief system and their implementation in the classroom?</li> </ul> <p><b>Student Case Studies:</b> The student case studies will yield a detailed profile of each student including the following:</p> <ul style="list-style-type: none"> <li>➤ Attendance Rate</li> <li>➤ Report Card Grades</li> <li>➤ Socio Economic Status</li> <li>➤ Standardized Test Score Results</li> <li>➤ Behavior Issues (if any)</li> <li>➤ Student Interview Questions <ul style="list-style-type: none"> <li>○ How do you think standardized testing changes your experiences at school?</li> <li>○ Do you want to know how your school compares to others in the state or nation on standardized tests?</li> <li>○ Do you like to work alone, with partners or in groups? Why or why not?</li> </ul> </li> </ul>	
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**Unit 2: LoTi Implementation of LoTi 3+ Lessons**

<p><b>Block 6: Technology Tools</b></p>	<p><b>Content Focus: Technology Tools</b>  <b>Connection to Vocabulary:</b> Graphic Organizers, Interactive Tools, Data Collection and Analysis Tools  <b>Reading Assignment:</b>  Cluster participants will find their own article about the implementation of a specific technology tool for classroom use. Once their article is posted, they will respond to their own article as well as at least two other articles submitted by Cluster participants.  <b>Collaborative Connection:</b> Cluster participants will locate and implement a minimum of two learning technology tools for their students within their classroom. (either with all students</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementati</p>
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	<p>or with a selected population) Participants will discuss that implementation of these learning technology tools within a forum for the Cluster.</p> <p><b>Resource Exploration:</b> Participants will log into their LoTi Lounge account and add a minimum of two technology tool links that are not already in the LoTi Lounge database. The entries must include an annotation that explains how each technology tool would be used with specific content and at a specific grade level.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><b>Online Activity:</b> Post an article about the implementation of technology tools, read two other posted articles and join the online discussion forum for each item.</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Student work samples and annotated notes about the implementation of the technology tools chosen by the participant.</li> <li><input type="checkbox"/> <b>Implementation Artifact:</b> Participant summary of the implementation of the two learning technologies.</li> </ul>	<p>on Portfolio Rubric</p> <p>All Implementation Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
<p><b>Block 7: The Few Computer Classroom</b></p>	<p><b>Content Focus: The Few Computer Classroom</b></p> <p><b>Connection to Vocabulary:</b> learning stations, reaction time, survey tools, performance tasks, cooperative learning, WebQuest</p> <p><b>Reading Assignment:</b></p> <ul style="list-style-type: none"> <li>➤ LoTi Newsletter on the Few Computer Classroom</li> <li>➤ Choose the Right Graph</li> </ul> <p><b>Collaborative Connection:</b> Participants will discuss the classroom management perspective of utilizing computers in the few computer classroom.</p> <p><b>Resource Exploration:</b> There are many lessons on the Marco Polo website that include opportunities for the few computer classroom experience. Participants will explore specific websites for their subject area/grade level that</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p> <p>All</p>

	<p>offer opportunities for data collection and graphical analysis in the few or one computer classroom.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><b>Online Activity:</b> Read the Assignments listed in Block 6 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Discussion of classroom management issues within the few computer classroom.</li> <li><input type="checkbox"/> <b>Implementation Artifact:</b> Log on to your LoTi Lounge account to post a lesson plan based on the few computer classroom model.</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Participants will add a reflection about the few computer classroom to the Cluster Discussion Forum.</li> </ul>	<p>Implementation Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
<p><b>Block 8: Performance-based Assessment using My Projects</b></p>	<p><b>Content focus: Performance-based Assessment using My Projects</b></p> <p><b>Connection to Vocabulary:</b> Performance vs. Problem based assessment, Portfolio Assessment, Rubric Assessment</p> <p><b>Reading Assignment:</b> LoTi Newsletters on Using and Creating Rubrics; LoTi Newsletter on Creating Performance-based Tasks; LoTi Lesson Plan/Instructional Unit Rubric</p> <p><b>Collaborative Connection:</b> Cluster participants will become familiar with the LoTi Lesson Plan Rubric by selecting a common web-based project and critiquing the web-based project based on the ten dimensions embedded in the rubric. Afterwards, participants will share their results based on the LoTi Lesson Plan/Instructional Unit Rubric with other Cluster participants via a forum discussion. Participants will next reach a consensus about the elements comprising a performance-based assessment (i.e., content, process, product) via a discussion forum.</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementation Portfolio Rubric</p> <p>All Implementation Artifacts will be assessed using one or more of the</p>

	<p>forum.</p> <p><b>Resource Exploration:</b> Teachers will explore websites containing exemplary performance-based assessments from the MarcoPolo Internet for the Classroom website as well as websites for constructing valid and reliable rubrics. Cluster participants will specifically look for lessons and internet-based resources that support their curriculum based on the Delaware Content Standards.</p> <p><b>Evidence of Accomplishment:</b></p> <p><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</p> <p><b>Online Activity:</b> Read the Assignments listed in Block 7 and join the online discussion for each item.</p> <p><input type="checkbox"/> <b>Implementation Artifact:</b> Participants will submit one completed online performance based assessment for their content area/grade level within the Access My Projects section of the LoTi Lounge. The Access My Projects lets participants design lesson plans and instructional units and submit them for peer review. The performance-based assessment must meet the criteria set forth in the LoTi Lesson Plan/Instructional Units Rubric as well as meet the criteria of a LoTi 3 learning experience.</p>	<p>dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>
<p><b>Block 9:</b></p> <p><b>Implementation, Critique, and Reflection of the Performance Based Assessment designed in Block 8</b></p>	<p><b>Content Focus:</b> Classroom implementation of the Performance-based Assessment (PBA) unit designed in the last block.</p> <p><b>Connection to Vocabulary:</b> N/A</p> <p><b>Reading Assignments:</b> N/A</p> <p><b>Collaborative Connection:</b> Participants will discuss their implementation of their performance-based assessment within the forum environment of the Cluster</p> <p><b>Resource Exploration:</b> Cluster participants will continue to explore websites that offer suggestions for conducting self-reflections and critiques of specific performance-based</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using</p>

	<p>critiques of specific performance-based assessments beyond those provided by the LoTi Lesson Plan Rubric.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Participate in the discussion forum throughout the performance-based assessment implementation process.</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Participants will include student samples and their own reflections and critiques of the performance-based assessment as implemented in their portfolio for Unit Two.</li> </ul>	<p>Appendix C: Implementation Portfolio Rubric</p> <p>All Implementation Artifacts will be assessed using Rubrics contained within the LoTi Connection</p>
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<p><b>Block 10:</b></p> <p><b>Culmination of Unit Two: LoTi Implementation (LoTi 3+)</b></p> <p><b>Portfolio Submission</b></p>	<p>Cluster participants will either complete a reflection of their students from Unit One or perform a self-reflection of a new cadre of students. In this portfolio entry, Cluster participants will observe student responses and reactions to the use of technology tools and high quality performance assessments as they relate to specific AYP indicators.</p> <p><b>Unit Two Implementation Portfolio</b> The portfolio will contain the Implementation Artifact and Portfolio Requirements from each block. Cluster participants will self-select artifacts for inclusion in their portfolio submission as well as a rationale or explanation for their inclusion.</p> <p><b>Teacher Case Study:</b> Cluster participants will reflect on their exploration of the Unit Two set of tools and strategies (e.g., technology tools, high quality performance assessments) to determine if changes in instructional approaches and planning (moving from a LoTi 0-2 to LoTi 3) has changed their classroom learning environment and/ or the retention of the course content by students over previous years. Some of the other questions they will consider include:</p> <ul style="list-style-type: none"> <li>➤ How does my content connect with other subject areas or disciplines?</li> <li>➤ How can student’s questioning strategies and collaboration improve the environment of the classroom?</li> <li>➤ How have I shared the decision making about the learning environment with my students?</li> </ul> <p><b>Student Case Study:</b> Cluster participants will either return to their case study students or choose a new cadre of students to explore how the implementation of specific strategies (e.g., technology tools, high quality performance assessments, benchmark assessments) has impacted student achievement in the areas previously considered. Cluster participants will observe their cadre of student(s) to ascertain how performance-based assessment might have changed their relationship or attitude toward the content being studied as well as AYP indicators. Cluster participants will also</p>	
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	<p>brainstorm specific questions relating to the essential questions dominating Unit Two including:</p> <ul style="list-style-type: none"> <li>➤ Have benchmark tests been given? If so what were the results?</li> <li>➤ What parts of the differentiation planning from Unit One have been implemented? What were the results?</li> <li>➤ Are other factors contributing or diminishing the ability of the student(s) to be successful?</li> </ul>	
<b>Unit Three: LoTi Implementation (LoTi 4+)</b>		
<p><b>Block 11: Collaborative Learning Environments</b></p>	<p><b>Content Focus: Collaborative Learning Environments</b>  <b>Connection to Vocabulary:</b> Constructivism, Cooperative Learning, Zone of Proximal Development, blog, wiki,  <b>Reading Assignment:</b>  Vygotsky's Zone of Proximal Development (waiting for permission to link to article online)  <a href="http://chd.gse.gmu.edu/immersion/knowledgebase/theorists/constructivism/vygotsky.htm">http://chd.gse.gmu.edu/immersion/knowledgebase/theorists/constructivism/vygotsky.htm</a>  Weblogg-ed A Web Log about using blogs in education. <a href="http://www.weblogg-ed.com/Digital%20Natives,%20Digital%20Immigrants">http://www.weblogg-ed.com/Digital Natives, Digital Immigrants</a>  <a href="http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf">http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf</a>  <b>Collaborative Connection:</b> Cluster participants will take part in a learning-in-action scavenger hunt. For five days including at least one weekend day, they will keep a notebook with them and record every time they see someone teaching another person a concept or skill outside of the standard didactic classroom. (e.g., unjamming the copy machine, clarifying something from the news, giving directions). The online discussion will be about the similarities and differences of these moments from the standard classroom environment and will focus on the teachable moment and learning from others.  <b>Resource Exploration:</b> Cluster participants will</p>	<p>All Online Activities will be assessed using Appendix B: Online Activity Rubric</p> <p>All Portfolio Requirements will be assessed using Appendix C: Implementation on Portfolio Rubric</p>

	<p>explore free tools for collaboration available to their students, will post to a forum discussing potential problems and concerns with those tools, and will investigate which of the tools have been approved in their district.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Read the Assignments listed in Block 11 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Forum Discussion about the Learning-in- Action Scavenger Hunt</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Participants will describe the free tools they discovered and the potential for using these tools in their classroom.</li> </ul>	
<p><b>Block 12: Essential vs. Engaging Questions and Focus Strategies</b></p>	<p><b>Content Focus:</b> Essential vs. Engaging Questions and Focus Strategies</p> <p><b>Connection to Vocabulary:</b> Essential Questions, Engaging Questions, Focus Strategies, Graphic Organizers</p> <p><b>Reading Assignment:</b></p> <ul style="list-style-type: none"> <li>* From Trivial Pursuit to Essential Questions and Standards-Based Learning <a href="http://www.fno.org/feb01/pl.html">http://www.fno.org/feb01/pl.html</a></li> <li>* LoTi Newsletter on Essential Questions</li> <li>* LoTi Newsletter about Focus Activities</li> </ul> <p><b>Collaborative Connection:</b> Teachers will collaborate with other Cluster participants to construct a Question Web for different Focus Strategies introduced in Block 12 including discrepant events (e.g., video samples), simulations (e.g., Marble Mania <a href="http://www.sciencenetlinks.com/interactives/marble/marblemania.html">http://www.sciencenetlinks.com/interactives/marble/marblemania.html</a>), surveys (e.g., Survey Monkey (<a href="http://www.surveymonkey.com">http://www.surveymonkey.com</a>), and staged scenarios. Then individually Cluster participants will build a Question web for a topic they are teaching in the next three weeks by brainstorming possible student questions (referred to as Engaging Questions) that could</p>	

	<p>potentially be asked by their class after implementing one or more Focus Strategies. Cluster participants will catalog these student-based questions according to their type (e.g., organizing questions, hypothesizing questions, classification questions, strategic questions). Cluster participants can use Inspiration, an online graphic organizer, or any graphic organizer tool available to them.</p> <p><b>Resource Exploration:</b> Participants will add to their LoTi Lounge bookmarks by delving into sites about Focus Strategies and questioning techniques.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Read the Assignments listed in Block 12 and join the online discussion for each item.</li> <li><input type="checkbox"/> <b>Online Activity:</b> Participants will post their Question Webs to their Moodle account.</li> </ul>	
<p><b>Block 13: EBAM Model Using My Projects</b></p>	<p><b>Connection to Vocabulary:</b> EBAM (Experiential-based Action Model)</p> <p><b>Reading Assignment:</b></p> <ul style="list-style-type: none"> <li>* EBAM article</li> <li>* "Getting Kids to Do Something!" <a href="http://www.educationworld.com/a_curr/curr385.shtml">http://www.educationworld.com/a_curr/curr385.shtml</a></li> </ul> <p><b>Collaborative Connection:</b> Cluster participants will collaborate with each other in the design of effective EBAM units that meet all of the stated requirements.</p> <p><b>Resource Exploration:</b> Participants will explore a collection of approved EBAM units.</p> <p><b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Create at least one new definition from the vocabulary list and comment on at least two other definitions created by other Cluster participants. Be ready to use these terms in discussion.</li> </ul> <p><b>Online Activity:</b> Read the Assignments listed in Block 13 and join the online</p>	<p>All Implementation Artifacts will be assessed using one or more of the dimensions embedded in the LoTi Lesson Plan/Instructional Units Rubric contained in Appendix D</p>

	<p>discussion for each item.</p> <p><input type="checkbox"/> <b>Implementation Artifact:</b> Participants will create and post an EBAM unit for a specific grade level and/or content area to the My Projects section of the LoTi Lounge. With permission and a reasonable connection between teaching assignments, this project can be written in pairs.</p>	
<p><b>Block 14: Implementation, Critique, and Reflection of the EBAM unit designed in Block 13</b></p>	<p><b>Content Focus:</b> Classroom implementation of the EBAM unit designed in Block 14.  <b>Connection to Vocabulary:</b> N/A  <b>Reading Assignments:</b> N/A  <b>Collaborative Connection:</b> Participants will discuss their process within the forum environment of the Cluster as they implement the EBAM.  <b>Resource Exploration:</b> N/A  <b>Evidence of Accomplishment:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Online Activity:</b> Participate in the discussion forum throughout the EBAM implementation</li> <li><input type="checkbox"/> <b>Portfolio Requirement:</b> Participants will include student work samples and their own reflections and critiques of their EBAM unit as implemented in their portfolio for Unit Three.</li> </ul>	
<p><b>Block 15: Culmination of Unit Three: LoTi Implementation using EBAM (LoTi 4+)  Portfolio Submission</b></p>	<p>This block culminates the LoTi Classroom Teacher Cluster experience by focusing on the student reactions to Collaborative Learning Environments, Essential and Engaging Questions, Focus Strategies, and EBAM and their resulting academic achievement based on the AYP Indicators.</p> <p><b>Teacher Case Study:</b> Cluster participants will reflect on their exploration of the unit three set of tools (i.e., Collaborative Learning Environments, Essential and Engaging Questions, Focus Strategies, EBAM) to determine if a change in planning has changed the environment in their classroom and/ or the retention of the course content over previous years. Some additional questions they will consider include:</p> <ul style="list-style-type: none"> <li>➤ How does my content connect with the world outside my classroom?</li> </ul>	

	<ul style="list-style-type: none"> <li>➤ How can student’s questioning strategies and collaboration improve the learning environment of the classroom?</li> <li>➤ How have I shared the decision making process about the learning environment with my students?</li> </ul> <p><b>Student Case Study:</b> Cluster participants will either return to their case study students or choose a new group of students to explore how the implementation of specific strategies (i.e., Collaborative Learning Environments, Essential and Engaging Questions, Focus Strategies, EBAM) has affected the students in the areas that were previously considered. This time they will be observing the student(s) and investigating how performance-based assessment might have changed their relationship or attitude toward the content being studied as well as AYP indicators. Collectively, Cluster participants will again brainstorm specific questions that target student achievement in the classroom such as:</p> <ul style="list-style-type: none"> <li>➤ Have benchmark or statewide tests been given? If so are the results available? What are the results?</li> <li>➤ What components of the LoTi instructional planning process from Units 1, 2, and 3 have been implemented? What were the results?</li> <li>➤ During classroom implementation, do the students show an increased inclination to ask questions and take an active role in developing the learning process? (A companion video of the class discussing what they have learned this year will be instituted to address these questions)</li> <li>➤ Are other factors contributing or diminishing the ability of the student(s) to be successful academically?</li> </ul>	
<p><b>Closing – Celebration of Learning</b></p>	<p><b>Closing Web-Conference:</b> Cluster participants will participate in a 2 hour web-conference reflection session addressing the following items:</p> <ol style="list-style-type: none"> <li>i. Personal reflections</li> <li>ii. Instructor’s feedback</li> </ol>	<p>Opening web-conference will be assessed using Appendix F:</p>

	iii. Celebration of Learning iv. Cluster evaluation	Online Activity Rubric
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## Appendix B: Online Activity Rubric



Rubric Made Using:  
RubiStar ( <http://rubistar.4teachers.org> )

### Collaborative Work Skills : Online Discussion for Teachers

Teacher Name: **LoTi Evaluator**

Student Name: \_\_\_\_\_

CATEGORY	3	2	1	0
<b>Preparedness</b>	Participant is engaged in the class discussion at least three times a week and often references the reading materials and comments of others in a specific and thoughtful way.	Participant is engaged in the class discussion at least once a week and occasionally references the reading materials and comments of others in a specific and thoughtful way.	Participant is engaged in the class discussion at least once a week, but rarely references the reading materials and comments of others in a specific and thoughtful way.	Either does not engage in the class discussion at least once a week, OR does not reference the reading materials and comments of others in a specific and thoughtful way.
<b>Discussion &amp; Brainstorming</b>	Contributes many useful ideas that demonstrate connections between the assignment and the class which required thoughtful efforts.	Contributes limited ideas that demonstrate connections between the assignment and the class which demonstrated thoughtful efforts.	Contributes an idea that demonstrates a connection between the assignment and the class but required little thoughtful effort.	Contributes no ideas that demonstrate connections between the assignment and the class and/ or showed little or no effort in composing the thread.

<b>Attitude in Submissions</b>	Postings and replies are professional in nature and support the learning environment by being related to the thread and using positive language.	Postings and replies are professional in nature and while supportive of the learning environment may occasionally be tangential to the discussion in a distractionary manner.	Postings and replies show a lack of professionalism through frequent mechanical errors, distracting the flow of conversation, or communicating in a critical manner.	Postings and replies show a disregard for clear communication or the need to be supportive to classmates.
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## Appendix C: Implementation Portfolio



Rubric Made Using:  
**RubiStar ( <http://rubistar.4teachers.org> )**

### LoTi Classroom Teacher Implementation Portfolio

Teacher Name: **LoTi Evaluator**

Student Name: \_\_\_\_\_

CATEGORY	3	2	1	0
<b>Artifacts address teaching standards</b>	All artifacts and work samples are related to one or more national or state teaching standard and show a connection to the state standards for the content area.	Most artifacts and work samples are related to one or more national or state teaching standard and most show a connection to the state standards for the content area.	Some artifacts and work samples are related to one or more national or state teaching standard and may or may not show a connection to the state standards for the content area.	Artifacts and work samples do not relate to one or more national or state teaching standard and/ or do not show a connection to the state standards for the content area.
<b>Reflection</b>	It evident that the participant has reflected on their classroom practices and the effects those practices have on students with an attitude of self-analysis and future changes.	It is apparent that the participant has reflected on their classroom practices and the effects those practices have on students. However the attitude of self-analysis and future change is not certain.	While the teacher has spent time on reflection, there may or may not be a connection between the teacher's practices and the effect those practices have on students.	The participant has either shown no strategy of reflection OR used the time of reflection to participate in blaming or other behavior that could be a detriment to real improvement.
<b>Sources</b>	All sources (information and graphics) are accurately documented in the desired format.	All sources (information and graphics) are accurately documented, but a few are not in the desired format.	All sources (information and graphics) are accurately documented, but many are not in the desired format.	Some sources are not accurately documented.
<b>Quality of Information</b>	Information clearly relates to the main topic. It includes several supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.

<b>Organization</b>	Information is very organized with well-constructed paragraphs and subheadings.	Information is organized with well-constructed paragraphs.	Information is organized, but paragraphs are not well-constructed.	The information appears to be disorganized. 8)
<b>Mechanics</b>	Writing style is fluent and professional. Grammar and spelling are nearly perfect.	Writing style is clear and concise. There are some visible mistakes in grammar and spelling.	Writing style is forced at times, and does not display best professional efforts. There are very visible mistakes in grammar and spelling.	There is not enough writing to be judged, the writing is in a style that is distracting from the content, or there are too many errors in grammar and spelling to even consider the paper.

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**Appendix D**  
**LoTi Lesson Plan/Instructional Unit Rubric**

Teacher Name:    School:

Evaluator:

Dimension	Pts. Possible
<b>Validity</b>	
<b>The assessment measures what is intended to be measured in the content standard. Students could pass this task by truly knowing and being able to do what is asked for in the content standard</b>	
The rubric clearly relates to the specific content standard being covered and includes all of the skills needed to complete a quality product	<b>6</b>
The rubric clearly relates to the culminating activity/ task and includes most of the skills needed to complete a quality product	<b>5</b>
The rubric relates mostly to the culminating activity/ task and includes most of the skills needed to complete a quality product.	<b>4</b>
The rubric relates somewhat to the culminating activity/ task and includes some of the skills needed to complete a quality product.	<b>3</b>
The rubric relates somewhat to the culminating activity/ task, but does not include the skills needed to complete a quality product.	<b>2</b>
Rubric is included but does not relate to the targeted culminating activity/ task.	<b>1</b>
No rubric provided	<b>0</b>
<b>Comments:</b>	
<b>Reliability</b>	
<b>The assessment is likely to elicit consistent scores over time. The scores on the task will reflect true achievement of the content standard not variance in testing conditions.</b>	
The criteria are explained clearly with measurable expectations. Criteria are consistent across all dimensions, and lend themselves to self-monitoring	<b>6</b>
The criteria between performance levels (e.g., A, B, C) are very clear and mostly consistent. The criteria lend themselves to self-monitoring.	<b>5</b>
The criteria between performance levels (e.g., A, B, C) are mostly clear and mostly consistent. The criteria lend themselves mostly to self-monitoring.	<b>4</b>
The criteria between performance levels (e.g., A, B, C) are somewhat clear, but still lack consistency. The criteria lend themselves somewhat to self-monitoring.	<b>3</b>
The criteria between performance levels (e.g., A, B, C) are vague and inconsistent. The criteria do not lend themselves to self-monitoring	<b>2</b>
The criteria are included, but does not relate to the targeted culminating task/ activity	<b>1</b>
No rubric provided	<b>0</b>
<b>Comments:</b>	
<b>Authenticity</b>	
<b>The task reflects what people might actually do in the real world- real life issues, themes, problems.</b>	
The culminating task is relevant to students and involves creating a product that has a purpose beyond the classroom that directly impacts the students.	<b>6</b>

The culminating task is relevant to students and involves creating a product that relates to real world situations. However, the product does not provide application beyond the classroom	<b>5</b>
The culminating task provides real world relevance for students in the context or situation but does not apply the learning to a real world situation	<b>4</b>
The culminating task has limited real world relevance for students without allowing them to apply the learning to a real world situation.	<b>3</b>
The culminating task does not provide any real world application to students or is merely a group of connected activities	<b>2</b>
The lesson activities fall short of having a culminating task and do not connect to each other in a meaningful way	<b>1</b>
The culminating task is either missing or too vague to determine relevance	<b>0</b>
<b>Comments:</b>	

<b>Challenge</b>	
<b>The task asks students to show their “know how” on something important and challenging, not just their knowledge.</b>	
Students develop the focus of the task by building on their own experiences to determine the problem and to look for possible solutions.	<b>6</b>
Students play a role in developing the task as they have the opportunity to help define the situation as well as the product or solution.	<b>5</b>
Students apply what they know to a teacher-generated situation that involves open-ended opportunities for solving a problem or creating a product.	<b>4</b>
Students apply what they know to a teacher-generated situation that involves limited opportunities or options for solving a problem.	<b>3</b>
Students demonstrate what they know only (knowledge level) to a teacher or learner-generated situation. This level includes activities that involve merely reporting what they have learned.	<b>2</b>
Students are presented with a vaguely defined culminating task that does not provide any challenge for them	<b>1</b>
Students are not provided with a culminating activity/task or the culminating activity/task is unrelated to the content under investigation.	<b>0</b>
<b>Comments:</b>	

<b>Clarity of Task and Assessment Criteria</b>	
<b>It is clear from reading the task that the student will know exactly what they are to do to complete it, including required products and scoring criteria.</b>	
The culminating task is clearly defined; the assessment criteria are given so that students understand the expectation of excellence throughout the process.	<b>6</b>
The culminating task is clearly defined, and most of the surrounding activities or supporting materials used to assess the process/ product are fully developed.	<b>5</b>
The culminating task is clearly defined, but the surrounding activities or supporting materials used to assess the process/ product lack development	<b>4</b>
The culminating activity is mostly clear, but the surrounding activities or supporting materials used to assess the process/ product lack development	<b>3</b>
The culminating activity is somewhat clear but does not include any assessment criteria	<b>2</b>
The culminating activity is unclear or is an isolated set of activities. It is also missing any form of assessment criteria	<b>1</b>
The culminating activity is not defined nor are there any assessment criteria.	<b>0</b>

<b>Comments:</b>	
<b>Important Content</b>	
<b>The task incorporates the content standard and the big ideas and essential concepts of the discipline</b>	
The culminating task is directly related to a well- defined and articulated set of content standards and essential concepts.	<b>6</b>
The culminating task is mostly related to a well-defined and articulated set of content standards and essential concepts	<b>5</b>
The culminating task is somewhat related to a well-defined and articulated set of content standards and essential concepts.	<b>4</b>
The culminating task is somewhat related to a set of loosely defined content standards and essential concepts.	<b>3</b>
The culminating task is unrelated to the content standards, big ideas, and essential concepts. The content standards themselves are over-generalized	<b>2</b>
The culminating task is unrelated to the content standards and essential concepts. The content standards, themselves, are unclear.	<b>1</b>
The culminating task and/or the content standards are missing	<b>0</b>
<b>Comments:</b>	

<b>Feasibility</b>	
<b>The task is worthy of the time and effort required to complete it.</b>	
The amount of time devoted to completing the task is very consistent with the complexity of the task or the embedded content standards	<b>6</b>
The amount of time devoted to completing the task is mostly consistent with the complexity of the task or the embedded content standards	<b>5</b>
The amount of time devoted to completing the task is somewhat consistent with the complexity of the task or the embedded content standards.	<b>4</b>
The amount of time devoted to completing the task is not consistent with the complexity of the task or the embedded content standards.	<b>3</b>
The task involves too narrow of a content focus to merit much time or energy to complete it	<b>2</b>
The task is counterproductive to students learning the content under investigation.	<b>1</b>
The task is missing or is not defined.	<b>0</b>
<b>Comments:</b>	

<b>High Level Processes</b>	
<b>The task requires complex thinking skills (critical/ creative thinking, decision- making, problem solving).</b>	
Students are operating at the synthesis/ evaluation levels involving one or more complex thinking strategies (e.g., problem-solving, decision-making, scientific inquiry) involving integrated concepts and big ideas.	<b>6</b>
Students are operating at the synthesis/ evaluation levels involving one or more complex thinking strategies (e.g., problem-solving, decision-making, scientific inquiry) involving isolated content	<b>5</b>
Students are operating at the analysis level relating to isolated content that has no application beyond completing the task.	<b>4</b>
Students are operating exclusively at the application level in completing the task.	<b>3</b>
Students are operating exclusively at the knowledge/ comprehension levels in completing the task.	<b>2</b>

The task is too vague to determine any requirements for complex thinking skills or strategies.	<b>1</b>
The task is missing or undefined.	<b>0</b>
<b>Comments:</b>	

<b>Differentiated Instruction</b> <b>Instruction is tailored to the learning readiness, cultural background, interests, talents, and learning profile of the students</b>	
Differentiation is clearly articulated and involves significant adjustments or alterations to the culminating task and surrounding activities based on the interests, readiness, and learner profiles of the students.	<b>6</b>
Differentiation is clearly articulated and involves moderate adjustments or alterations to the culminating task and/or surrounding activities.	<b>5</b>
Differentiation is mostly articulated and involves minimal adjustments or alterations to the culminating task and/or surrounding activities.	<b>4</b>
Differentiation is somewhat articulated but does not involve any real adjustments or alterations to the culminating task and/or surrounding activities.	<b>3</b>
Differentiation is mentioned, but is not included in the culminating task and/or surrounding activities.	<b>2</b>
Differentiation is mentioned vaguely and is completely unrelated to the task.	<b>1</b>
No evidence of differentiation	<b>0</b>
<b>Comments:</b>	

<b>Technology Use</b> <b>Technology (computers, handhelds, software applications, peripherals, Internet) is used in a seamless fashion to promote student learning.</b>	
Technology use is directly connected and needed for task completion involving a broad variety of applications.	<b>6</b>
Technology use is mostly connected to task completion involving a diversified choice of two or more applications (e.g., spreadsheets, multimedia, Internet)	<b>5</b>
Technology use is somewhat connected to task completion involving a very narrow choice of applications (e.g., tutorial programs, word processing)	<b>4</b>
Technology use is used as a supplement to the completion of the task.	<b>3</b>
Technology use appears to be an add-on and is not needed for task completion.	<b>2</b>
Technology use is unrelated to the completion of the task.	<b>1</b>
No evidence of technology use	<b>0</b>
<b>Comments:</b>	

General Comments:

## Appendix E EBAM Rubric

EBAM Stage	Pts. Possibl e
<b>FOCUS</b>	
<b>The Focus stage lets students make a personal connection between themselves and the problem or challenge embedded in the culminating performance task.</b>	
All Focus activities elicit higher cognitive student questions and make a personal connection between students and the investigated problem.	<b>6</b>
Most Focus activities elicit higher cognitive student questions and make a personal connection between students and the investigated problem.	<b>5</b>
Some Focus activities elicit higher cognitive student questions and make a personal connection between students and the investigated problem.	<b>4</b>
The Focus activities primarily elicit lower cognitive student questions, but do make a personal connection between students and the investigated problem.	<b>3</b>
The Focus activities do not elicit any real student questions nor make any personal connection between students and the investigated problem.	<b>2</b>
The Focus activities are unrelated to the	<b>1</b>
No Focus activities included in the EBAM unit.	<b>0</b>
<b>Comments:</b>	
<b>CURRENT CONDITIONS</b>	
<b>The Current Conditions stage helps students determine the magnitude of the problem embedded in the culminating task.</b>	
All Current Conditions activities help students determine the magnitude of the investigated problem; introduction of new content is connected to culminating task.	<b>6</b>
Most Current Conditions activities help students determine the magnitude of the investigated problem; introduction of new content is connected to culminating task.	<b>5</b>
Some Current Conditions activities help students determine the magnitude of the investigated problem; introduction of new content is connected to culminating task.	<b>4</b>
Current Conditions activities help students determine the magnitude of the investigated problem, but do not connect new content to the culminating task.	<b>3</b>
Current Conditions activities do not help students determine the magnitude of the investigated problem nor connect new content directly to the culminating task.	<b>2</b>
Current Conditions activities are unrelated to the investigated problem or challenge embedded in the culminating task.	<b>1</b>
No Current Conditions activities included in the EBAM unit.	<b>0</b>
<b>Comments:</b>	
<b>PERSONAL INVOLVEMENT</b>	
The Personal Involvement stage helps students seek viable solutions to the problem or challenge embedded in the culminating performance task.	
All Personal Involvement activities help students use complex thinking strategies to explore solutions to the investigated problem.	<b>6</b>
Most Personal Involvement activities help students use complex thinking strategies to explore solutions to the investigated problem.	<b>5</b>
Some Personal Involvement activities help students use complex thinking strategies to explore solutions to the investigated problem.	<b>4</b>

Personal Involvement activities do not use complex thinking strategies to explore solutions to the investigated problem.	3
Personal Involvement activities do not help students explore solutions to the investigated problem.	2
Personal Involvement activities are unrelated to the investigated problem or challenge embedded in the culminating task.	1
No Personal Involvement activities are included in the EBAM unit.	0
<b>Comments:</b>	
<b>TAKING ACTION</b>	
<b>The Taking Action stage enables students to execute and complete their plan of action embedded in the culminating performance task.</b>	
The proposed action plan is relevant and provides a plausible solution to the investigated problem.	6
The proposed action plan is relevant and mostly provides a plausible solution to the investigated problem.	5
The proposed action plan is relevant and somewhat provides a plausible solution to the investigated problem.	4
The proposed action plan is somewhat relevant, but does not provide a plausible solution to the investigated problem.	3
The proposed action plan is not relevant and does not provide a plausible solution to the investigated problem.	2
The proposed action plan is unrelated to the investigated problem or challenge embedded in the culminating task.	1
No proposed action plan is included in the EBAM unit.	0
<b>Comments:</b>	
<b>FEEDBACK</b>	
<b>The Feedback stage enables students and others to reflect on the entire process as well as the culminating task.</b>	
Feedback activities assess student understanding of all of the pertinent concepts and processes including the culminating product; assessments lend themselves to self-monitoring.	6
Feedback activities assess student understanding of most of the pertinent concepts and processes including the culminating product; assessments mostly lend themselves to self-monitoring.	5
Feedback activities assess student understanding of some of the pertinent concepts and processes including the culminating product; assessments somewhat lend themselves to self-monitoring.	4
Feedback activities assess student understanding of a few of the pertinent concepts and processes including the culminating product; assessments provide little self-monitoring.	3
Feedback activities do not assess student understanding of any of the pertinent concepts and processes excluding the culminating product; assessments do not lend themselves to self-monitoring.	2
Feedback activities do not assess student understanding of any of the pertinent concepts and processes including the culminating product	1
No Feedback activities included in the EBAM unit.	0
<b>Comments:</b>	

## Appendix F Web-Conferencing Rubric

CATEGORY	3	2	1	0
<b>Level of Engagement</b>	Participant proactively contributes to web-conference by offering ideas and asking questions more than once.	Participant proactively contributes to web-conference by offering ideas and asking questions once.	Participant rarely contributes to web-conference by offering ideas and asking questions.	Participant does not contribute to web-conference by offering ideas or asking questions.
<b>Assignments</b>	Participant completes all assignments and/or requests from instructor during web-conference	Participant is either missing part of an assignment and/or does not entirely perform a request from the instructor during the vweb-conference.	Participant is either missing an assignment and/or does not perform a request from the instructor during the web-conference.	Participant shows no effort to participate in any assignment or perform any request from the instructor during the web-conference.

## Appendix G: LoTi Framework

<u>Level</u>	<u>Category</u>	<u>Description</u>
0	Nonuse	A perceived lack of access to technology-based tools or a lack of time to pursue electronic technology implementation. Existing technology is predominately text-based (e.g., ditto sheets, chalkboard, overhead projector).
1	Awareness	The use of computers is generally one step removed from the classroom teacher (e.g., integrated learning system labs, special computer-based pullout programs, computer literacy classes, central word processing labs). Computer-based applications have little or no relevance to the individual teacher's instructional program.
2	Exploration	Technology-based tools serve as a supplement to the existing instructional program (e.g., tutorials, educational games, simulations). The electronic technology is employed either as extension activities or as enrichment exercises to the instructional program and/or generally reinforces lower cognitive skill development.
3	Infusion	Technology-based tools including databases, spreadsheets, graphing packages, probes, multimedia applications, desktop publishing, and telecommunications augment selected instructional events (e.g., science kit experiment using spreadsheets/graphs to analyze results, telecommunications activity involving data sharing among schools). The use of the technology reinforces higher cognitive skill development and complex thinking skills such as problem-solving, reasoning, decision-making, and scientific inquiry.
4A	Integration (Mechanical)	Technology-based tools are integrated in a mechanical manner that provides rich context for students' understanding of the pertinent concepts, themes, and processes. Heavy reliance is placed on prepackaged materials and outside resources (e.g., mentors, consultants) that aid the teacher in the daily operation of their instructional curriculum. Technology (e.g., multimedia, telecommunications, databases, spreadsheets, word processing) is perceived as a tool to identify and solve authentic problems relating to an overall theme/concept.
4B	Integration (Routine)	Teachers can readily create Level 4 (Integrated units) with little intervention from outside resources. Technology-based tools are easily integrated in a routine manner that provides rich context for students' understanding of the pertinent concepts, themes, and processes. Technology (e.g., multimedia, telecommunications, databases, spreadsheets, word processing) is perceived as a tool to identify and solve authentic problems relating to an overall theme/concept.

<u>Level</u>	<u>Category</u>	<u>Description</u>
5	Expansion	<p>Technology access is extended beyond the classroom.</p> <p>Classroom teachers actively elicit technology applications and networking from business enterprises, governmental agencies (e.g., contacting NASA to establish a link to an orbiting space shuttle via INTERNET), research institutions, and universities to expand student experiences directed at problem-solving, issues resolution, and student activism surrounding a major theme/concept.</p>
6	Refinement	<p>Technology is perceived as a process, product (e.g., invention, patent, new software design), and tool toward students solving authentic problems related to an identified “real-world” problem or issue. Technology, in this context, provides a seamless medium for information queries, problem-solving, and/or product development. Students have ready access to and a complete understanding of a vast array of technology-based tools to accomplish any particular task.</p>

## **Appendix H: 21st Century Skills**

### GLOBAL AWARENESS

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Students need a deeper understanding of the thinking, motivations, and actions of people from different cultures and countries in order to successfully navigate and respond to communities and workplaces extending beyond their neighborhoods. Key elements of Global Awareness include a student's ability to:

- Use 21st century skills to understand and address global issues
- Learn from and work collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts
- 
- Master non-English language skills as a tool for understanding other nations and cultures
- 

### CIVIC LITERACY

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Students need to understand, analyze, and participate in government and in community, both globally and locally, in order to shape the circumstances that impact their daily lives. Key elements of Civic Literacy include a student's ability to:

- Be an informed citizen to participate effectively in government
- 
- Exercise the rights and obligations of citizenship at local, state, national and global levels
- 
- Understand the local and global implications of civic decisions
- 
- Apply 21st century skills to make intelligent choices as a citizen

### FINANCIAL, ECONOMIC, AND BUSINESS LITERACY

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There is a growing demand on people to understand business processes, entrepreneurial spirit, and the economic forces that drive today's economy. Key elements of Financial, Economic, and Business Literacy include a student's ability to:

- Make appropriate personal economic choices
- 
- Understand the role of the economy and the role of business in the economy
-

- Apply appropriate 21st century skills to function as a productive contributor within an organizational setting
- 
- Integrate oneself within and adapting continually to our nation's evolving economic and business environment
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### LEARNING SKILLS: INFORMATION AND COMMUNICATION SKILLS

• Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Creativity and intellectual curiosity: Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- 
- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- 
- Communication skills: Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- 
- Self-direction: Monitoring one's own understanding and learning needs, locate inappropriate resources, transferring learning from one domain to another.

### LEARNING SKILLS: THINKING AND PROBLEM-SOLVING SKILLS

• Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Critical thinking and systems thinking: Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems.
- 
- Problem identification, formulation and solution: Ability to frame, analyze and solve problems.
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## LEARNING SKILLS: INTERPERSONAL AND SELF-DIRECTIONAL SKILLS

• Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Interpersonal and collaborative skills: Demonstrating teamwork and leadership; adapting to varied roles and responsibilities; working productively with others; exercising empathy; respecting diverse perspectives.
- 
- Self-direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.
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- Creativity and intellectual curiosity: Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- 
- Social responsibility: Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace and community contexts.
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- Accountability and adaptability: Exercising personal responsibility and flexibility in personal, workplace and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity.
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## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LITERACY

• Technology has become an essential tool for the realization of learning and thinking skills in today's knowledge economy. Key elements of ICT Literacy include use of ICT in service of:

- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- 
- Communication skills: Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- 
- Interpersonal and self-direction skills: Becoming more productive in accomplishing tasks and developing interest in improving own skills

- **Appendix I: Cluster Hours/Activities**

Orientation	Activities	Instruction in Knowledge and Skills	Application of Knowledge & Skills	Reflection and Adjustment after Application	Classroom Implementation	Total Block Hours	C
<b>Opening Session:</b> Embarking on a Journey	Elluminate session: <ul style="list-style-type: none"> <li>• Overview of syllabus</li> <li>• Expectations of cluster</li> <li>• Q&amp;A</li> </ul>	2.0				2.0	
Unit 1	Activities	Instruction in Knowledge and Skills	Application of Knowledge & Skills	Reflection and Adjustment after Application	Classroom Implementation	Total Block Hours	C
<b>Block 1:</b> Factoring Student Success	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 2:</b> Learning Modalities: Differentiation	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 3</b>	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 4</b>	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 5:</b> Culmination of Unit 1: LoTi Foundations and Pedagogy	Portfolio Preparation and Submission		5	1		6	

Unit 2	Activities	Instruction in Knowledge and Skills	Application of Knowledge & Skills	Reflection and Adjustment after Application	Classroom Implementation	Total Block Hours	C
<b>Block 6:</b> Technology Tools	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 7:</b> The Few Computer Classroom	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 8:</b> Performance-based Assessment	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	1.25	6.5	
<b>Block 9:</b> Performance-based Assessment Critique	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	1.25	6.5	
<b>Block 10:</b> Culmination of Unit 2: LoTi 3+ Implementation	Portfolio Preparation and Submission		5	1		6	

Unit 3	Activities	Instruction in Knowledge and Skills	Application of Knowledge & Skills	Reflection and Adjustment after Application	Classroom Implementation	Total Block Hours	C
<b>Block 11:</b> Collaborative Learning Environments	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 12:</b> Essential vs Engaging Questions/Focus Strategies	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	.75	6	
<b>Block 13: EBAM</b>	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	1.25	6.5	
<b>Block 14: EBAM Critique</b>	Readings/Posting, Writing/Reflecting Posting, Classroom Planning, Implementation, Post Implementation Reflection	3	1.25	1	1.25	6.5	
<b>Block 10:</b> Culmination of Unit 3: LoTi 4+ Implementation	Portfolio Preparation and Submission		5	1		6	
Reflection	Activities	Instruction in Knowledge and Skills	Application of Knowledge & Skills	Reflection and Adjustment after Application	Classroom Implementation	Total Block Hours	C
<b>Closing Session:</b> Celebration of Learning	Elluminate session: <ul style="list-style-type: none"> <li>• Overview of syllabus</li> <li>• Expectations of cluster</li> <li>• Q&amp;A</li> </ul>			2.0		2.0	