Site Visit Summary

Superintendents’ Network Site Visit
Sergeant Bluff-Luton Community School District
Sergeant Bluff-Luton High School

708 Warrior Road
Sergeant Bluff, Iowa 51054
712-943-5561

March 17, 2015

Higher Order Thinking Skills
(HOT)
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PARTICIPANTS

Superintendents in Attendance
Rod Earleywine, Sergeant Bluff Luton CSD - Host
Nick Ouellette, Odebolt-Arthur, Battle Creek-Ida Grove CSD

Sergeant Bluff Luton Middle School
Jason Klingensmith, High School Principal
Bill McKelvey, Middle School Principal
Brad McCauley, Curriculum Director

Northwest AEA
Tim Grieves, Chief Administrator, Facilitator
Sherri Wing, Administrative Assistant

School Administrators of Iowa
Dave Markward

We Missed
Russ Adams, MOC Floyd CSD
Chad Janzen, Rock Valley CSD
Donita Joens, River Valley CSD
Brian Johnson, Schleswig CSD
Steve Barber, George-Little Rock CSD
PROBLEM OF PRACTICE

• What evidence do you see of teachers designing the lesson to give the student an opportunity to engage in meaningful intellectual work? More specifically, authentic intellectual work involves application of knowledge and skills, rather than just routine use of facts and procedures.

• What evidence do you see of students involved in Higher Order Thinking Skills (HOT) applying, analyzing, evaluating, or creating information in a content area?

DISTRICT PROFESSIONAL DEVELOPMENT BACKGROUND

Authentic Intellectual Work (AIW) focuses academic instruction on student construction of knowledge, conceptual understanding, and elaborated communication to answer questions resembling the complex intellectual challenges of work, civic participation, and managing personal affairs in the contemporary world. In contrast, conventional schoolwork is dominated by reproduction of knowledge, covering vast amounts of information with only superficial understanding, and students answering questions they rarely face outside the school.

AIW teams develop a common framework and language for evaluating the intellectual quality of instruction, assessment and student work. Teams focus on teachers’ professional practice to help students develop higher order thinking, demonstrate complex understanding of significant concepts, and engage in work that has meaning and value beyond school.

The high school students received Professional Development training on Higher Order Level Thinking Skills during the 2013-2014. This training allowed students to recognize what they should be experiencing in their classrooms and what they should expect from their teachers. To further emphasize Higher Order Thinking Skills during the 2014-2015 school year students were involved in an “Academic Advisory Challenge”. Each Wednesday students were involved in a 30 min. Higher Order Thinking (HOT) activity while competing against each other in various academic challenges. Activities included writing, culinary arts, engineering etc. Winning Advisory teams were provided with t-shirts and Pizza Ranch Buffet certificates at an “Academic Pep Rally” at the end of the competitions.
### DEFINITIONS

<table>
<thead>
<tr>
<th>Remember</th>
<th>Understand</th>
<th>Apply</th>
<th>Analyze</th>
<th>Evaluate</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td>recognizing</td>
<td>interpreting</td>
<td>executing</td>
<td>differentiating</td>
<td>checking</td>
<td>generating</td>
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<tr>
<td>(identifying)</td>
<td>(clarifying, paraphrasing,</td>
<td>(carrying out)</td>
<td>(discriminating,</td>
<td>(coordinating,</td>
<td>(hypothesizing)</td>
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<tr>
<td>recalling</td>
<td>representing, translating)</td>
<td>implementing</td>
<td>distinguishing,</td>
<td>detecting,</td>
<td>planning</td>
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<tr>
<td>(retrieving)</td>
<td></td>
<td>(using)</td>
<td>focusing, selecting)</td>
<td>monitoring,</td>
<td>(designing)</td>
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<td>testing</td>
<td>producing</td>
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<td>(construct)</td>
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Table 1. The cognitive processes dimension — categories, cognitive processes (and alternative names)
- **Remembering**: Recalling relevant knowledge from long-term memory.
- **Understanding**: Making sense of what you have learnt.
- **Applying**: Use the knowledge gained in new ways.
- **Analysing**: Breaking the concept into parts and understand how each part is related to one another.
- **Evaluating**: Making judgements based on a set of guidelines.
- **Creating**: Putting information together in an innovative way.
DISTRICT DATA

Sergeant Bluff-Luton High School is currently in year 4 of our 1:1 computer initiative. All of our high school students have a PC assigned to them and they are expected to take the computer with them to each and every class. Along with the 1:1 initiative all of our teachers and students received new curriculum resources (e-textbooks) during the 2010-2011 school year. The e-texts are either loaded onto the student’s hard drives or can access the e-texts via the web thus connectivity is a must in order to access the e-textbook.

In preparation for our 1:1 initiative our staff was given a tablet PC beginning with the 2006-2007 school year. Along with the tablet PC, classrooms were equipped with a wireless projector. This allowed our teachers to be mobile with their PC’s. As a result of this infusion of technology student engagement and participation increased throughout the district.

Beginning with the 2008-2009 school year our high school teachers began to receive professional development concerning implementing and teaching in a 1:1 environment. Our high school staff members were also allowed to visit schools that had implemented a 1:1 initiative and attend other professional development activities and conferences that pertained to 1:1 computing.

AIW

Beginning with the 2010-2011 school year the Sergeant Bluff-Luton High School began investigating the AIW Framework (Authentic Intellectual Work). We started with a lead team of eight teachers who attended a two day kick-off training and worked throughout the 2010-2011 school year in learning as well as understanding how to use the AIW framework. In the 2011-2012 school year two more teachers joined the lead team of teachers in learning the AIW model. It was decided by the lead team during the 2011-12 school year to move forward implementing these strategies building wide with all staff in the 2012-13 school year. As of September of 2012-13 the entire staff has been trained on the AIW framework and are meeting within Professional Learning Communities utilizing the framework to enhance the learning of all students within their classrooms.
<table>
<thead>
<tr>
<th><strong>Create</strong></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Generate/Hypothesize</td>
<td>Planning/Design</td>
</tr>
<tr>
<td>Produce/construct</td>
<td>Putting information together in an innovating way.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Evaluate</strong></th>
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</thead>
<tbody>
<tr>
<td>Checking/coordinating, detecting, monitoring, testing.</td>
<td>Making judgments based on a set of guidelines.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Analyze</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiating/discriminating, distinguishing, focusing, selecting.</td>
<td>Organizing/arranging, integrating, explaining, structuring. Breaking a concept into parts and understanding how each is related to each other.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Apply</strong></th>
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</thead>
<tbody>
<tr>
<td>Executing/carrying out. Implementing/using. Use the knowledge gained in new ways.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th><strong>Understand</strong></th>
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<table>
<thead>
<tr>
<th><strong>Remember</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognize/identify. Recalling/retrieving. Recalling relevant knowledge form long term memory.</td>
<td></td>
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# OBSERVATION SCHEDULE

<table>
<thead>
<tr>
<th>B Day</th>
<th>Session #1</th>
<th>Session #2</th>
<th>Session #3</th>
<th>Session #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Period 1 (1st half)</td>
<td>Period 1 (2nd half)</td>
<td>Period 2 (1st half)</td>
<td>Period 2 (2nd half)</td>
</tr>
<tr>
<td>Team #1</td>
<td>Lit &amp; Comp I</td>
<td>Alg. II</td>
<td>Intro. To Engineering</td>
<td>Spanish IV</td>
</tr>
<tr>
<td></td>
<td>Mrs. Streck (room 121)</td>
<td>Mrs. Baxter (room 112)</td>
<td>Mr. Mc Ghee (room 321)</td>
<td>Mrs. Zarbano (Room 230)</td>
</tr>
<tr>
<td>Team #2</td>
<td>Read &amp; Write I</td>
<td>U.S. History</td>
<td>Biology</td>
<td>Adv. Comp. Apps.</td>
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<tr>
<td></td>
<td>Mr. Smith (room 130)</td>
<td>Mr. Hutchinson (room 129)</td>
<td>Mr. Friedman (room 131)</td>
<td>Mr. Hansen (room 213)</td>
</tr>
<tr>
<td>Team #3</td>
<td>Geometry</td>
<td>Chemistry</td>
<td>Geometry</td>
<td>PE</td>
</tr>
<tr>
<td></td>
<td>Mrs. Nielsen (room 116)</td>
<td>Mr. Zahner (room 229)</td>
<td>Mr. Vander Schaaf (room 104)</td>
<td>Mr. Huffman/ Mrs. Nelson (Gym)</td>
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<tr>
<td>Team #4</td>
<td>General Health</td>
<td>Psychology</td>
<td>Lit. &amp; Comp. III</td>
<td>Brit. Lit &amp;Comp IV</td>
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<tr>
<td></td>
<td>Mr. Hardy (room 216)</td>
<td>Mr. Nelson (room 125)</td>
<td>Mrs. Hazel (room 124)</td>
<td>Mrs. Blake (room 123)</td>
</tr>
</tbody>
</table>
DEBRIEFING

Comments

Create

• Students were working on a persuasive research paper on a controversial issue
• Student will write a paper explaining they good and bad creations of Haber – due in LA class for chemistry unit
• Planning to write a research paper and creating bibliography note cards from research
• Assignment – select a product – create a presentation on its life cycle – 5 steps of the life cycle – 3-5 minutes – 3 sources
• Students were tasked to create a presentation by designing and sharing a product life cycle

Evaluate

• When generating notecards, students must make judgements based on guidelines
• Students made judgements based on the provided examples – involved how rules matters (or not) with the problem
• How to “test for” their project after preparing the steps needed
• Students had to determine why their sponge either shot out of the tube or did not, based on experiment

Analyze

• Students needed to make a hydrogen/oxygen mix to shoot a sponge by measuring amounts of each chemical
• You will be writing a research paper
• A student explained anxiety disorder and how anxiety disorder affects her life
• Students had to differentiate between different mental disorders by analyzing the disorders
• Activity required students to distinguish between print news and TV coverage – what is more entertaining
• Students determined if 2 triangles were similar. Every student at white board and had to use 3 proofs to decide if triangles were similar
• Students worked from given or discovered information to devise an answer/solution
• Two students had an elaborate conversation about a particular question on their history test
• Student and teacher gave at least 4 exchanges in explaining why student chose an answer, student explained steps after teacher questioned
• Explain the drawbacks of social norms – change over time
• We will look at Charles Manson to figure out which disorder he has
• Students were using the Spanish language to ask question to find an answer to a problem. The must break the language down to understand
Apply

- Students needed to mix H₂O and O₂O to shoot a sponge
- Students played with a partner and practiced the skills of serving and volleying
- Students used the Spanish language to communicate
- All students speaking Spanish throughout the entire time
- Students used proof of SAS to determine similar triangles – had to explain to teacher why they chose the proof
- Teacher gave example of a similar polygon as one on desktop photo – similar if had to stretch it to fit the screen
- Students were introduced to new vocabulary and had to use the meaning to interpret the passage
- Students had to apply previously learned concepts to create a layout to match the one in the book
- Students used their computers to locate countries to fill out a World War II map
- Carrying out assigned task of creating bibliography cards to certain specifications
- Students were using a book to follow step-by-step directions to enhance written presentations
- Follow step-by-step instructions to create document
- Students had to construct a model
- Create a model out of materials to demonstrate a gene turning on and off, followed directions to complete
- Students filled out a combination worksheet/lab sheet and constructed a model for “lac operon”
- Students and teachers used elaborate conversation to arrive at a conclusion

Understand

- Clean up Excel spreadsheet using steps from book
- Teacher asked student to explain a text passage in their own words
- Summarize on your notecard
- Paraphrase your notecards
- Students used notes to answer questions that were paraphrasing, summarizing and comparing/contrasting
- Compare newspaper to television
- You will be comparing two different countries
- Find the most important information for comparison
- Responding to classification questions on lab project
- Teacher explained that nitrogen and ammonia are used for fertilizer, but also for bombs – connected it to CF Industries
- Lot of lower order thinking questions to this group. Did partner activity for discussion (30 seconds), very much teacher led
• Students were questioned with rhetorical questions regarding their understanding topic at hand
• Students were reviewing assignment to check for understanding
• Students were asked to conclude what was the author’s main point
• Students drafted a main idea after reading a portion of an article on the delivery of news
• What is another product in a lifecycle? Trees/lumber
• Teacher demonstrated how to hit the ball and return it
• What does the EPA do? Regulate environment
• What is a resource we take for granted? Water
• After taking extensive notes, students answered six essay questions using their notes to help formulate answers
• Students matched terms to definitions
• Teacher gave a multiple sample test question and students had to decide answer
• Why EPA won’t allow furniture to be burned? Air pollution/chemicals in the wood

Remember
• Population of the US? 320 million/Population of the world? 7 billion
• Students taking essay test/recalling names and facts
• Answering multiple choice questions on quiz – recalling information
• What percent of Americans have a psychiatric disorder?
• Students used Google searched to find a map which they used to label paper/pencil map
• Students were recalling information they received from a reading they completed for an assignment
• Asked students recall questions about article they read
• Students completing worksheet matching vocabulary to definition
• Activated prior knowledge with cross-curricular with internet when addressing “ammonia” – made statement about CF, WWI, WWII, etc., to make the connection
• Where do people with psychiatric disorders get help? Clinics, hospitals, at home
• After reading and highlighting an article on news delivery, students shared important points with classmates
• Working at board on problems individually – teacher moved around to answer questions
• Students copying Google maps of allies in WW II, colored with pencils
• Made several references to previous units to activate prior knowledge/made connections to prior knowledge with today’s lesson
• Students took notes about characteristics of similar polygons – students at their seat
• Teacher gave students definitions and characteristics of shapes and students took notes
Trends

Create
- Generating outcomes
- Creating presentations

Evaluate
- Making judgements
- Making predictions

Analyze
- Worked from given or discussion information, or sent out to discover it
  - Devising an answer to a given prompt or probe
- Students to students, or student with teacher, having elaborate conversation

Apply
- Following directions
- Explaining
- Implementing

Understand
- Teacher demonstrating
- Question response
- Comparing
- Summarizing/paraphrasing

Remember
- Factual information
- Test/quiz – recalling
- Defining characteristics

What evidence do you see of teachers designing the lesson to give the student an opportunity to engage in meaningful intellectual work? More specifically, authentic intellectual work involves application of knowledge and skills, rather than just routine use of facts and procedures.

- 50% - 60% of the time Tim’s group saw this
- Nick’s group didn’t see designed plans for HOT- more step by step, although prior knowledge was needed to move forward
- After 3 rote tasks, the students create their own – Microsoft
- Social studies was mostly Understand and Remember
- Biology – had opportunity to create, but everything was written out step by step again
- No evidence of a basis where plans were designed was seen during the visit
• Most classes were Apply, Understand & Remember
• Rod & Jason – teaching basic research strategies/organization
• Learning to re-write and not plagiarize
• Intro to design was sit and get – the assignments was to present on a product life cycle (unseen)
• Psychology was more Understanding and Applying, some Analyzing. Funneling up from reading summarization, and then interpreting video clips (future).
• Spanish – all Spanish speaking

NEXT LEVEL OF WORK

Statements
• Constant conversation with building principals, when we go to classrooms, it’s not a matter that things are good, how you tweak it to go to the next level. Not a major change, but something to move it forward.
• Rubrics can also be a tool to help move the bar.
• Have a learning target present “you’ll understand the difference between turning genes on and turning genes off.”
• Identify the teachable moments / analyze what happened, why didn’t the project work?
• Consider using more wait time.
• Help the kids understand the “why.”

Reflective Questions
• Students will respond when asked a question, “I’ll just Google it.” How do you create questions that you can’t Google the answer?
• What do you think would happen to student learning if the students had an opportunity to evaluate and retest?
• What prevents us from trying repeatedly until the project is successful?
• When what you expect doesn’t happen in class, what process to you have to review/student analyze/class analyze the scenario.
• What would a process look like in our classroom when things don’t go as anticipated?
• How do you go through the process of getting students to understand, apply and create?
• How do you drill deeper with minimum amount of time?
CONNECTIONS TO YOUR OWN WORK

• Move teachers to deeper questioning, the opportunities are there.
• Didn’t know about the next level of work portion of the visit – will consider including that in the future.
• Time on task and classroom management – all four classrooms were well structured. Need to get better at stating the objective – why are we doing this? We need to have kids answer, not just why are we doing this, but how can we apply the lesson to value beyond school?
• Enjoy getting in the classrooms to see what’s going on; I want to try to do this a little more on my own. Spend time talking to the teachers, they’re the ones doing the work.
• I like getting the classrooms. I think the kids are engaged and are learning.