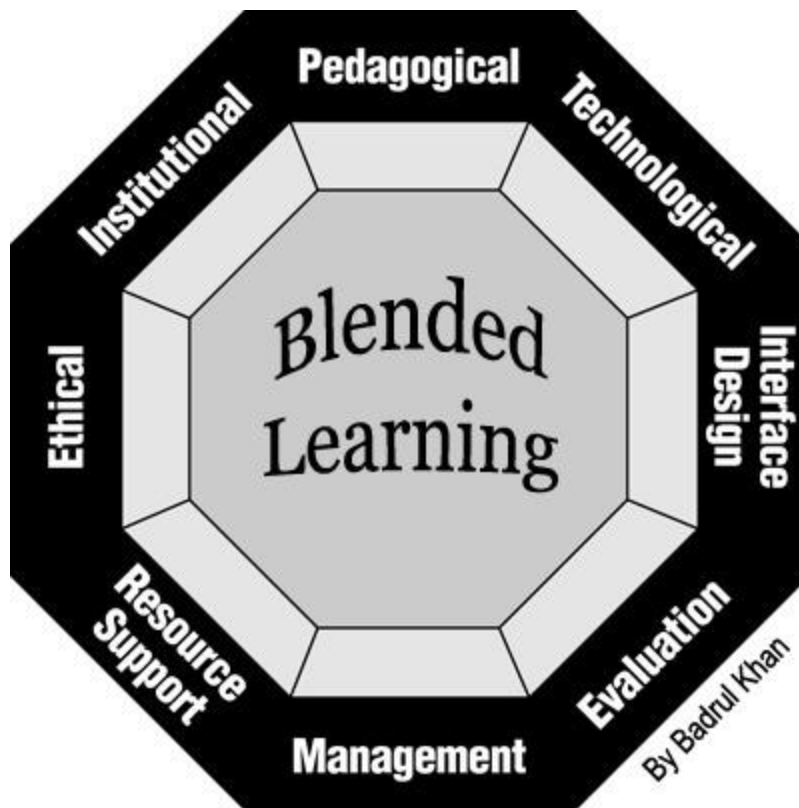


Blending Math, Science and Language in the 21st Century





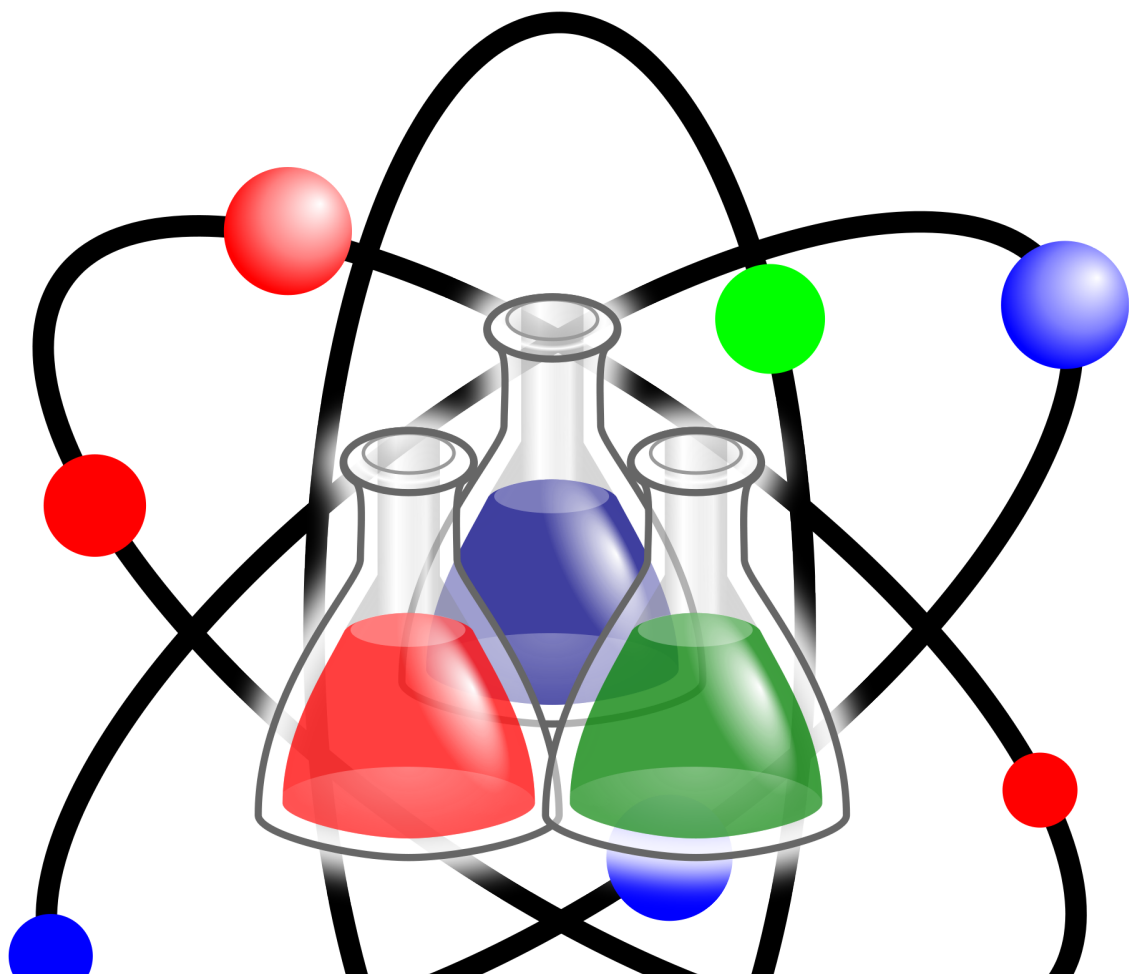
Columbus State College

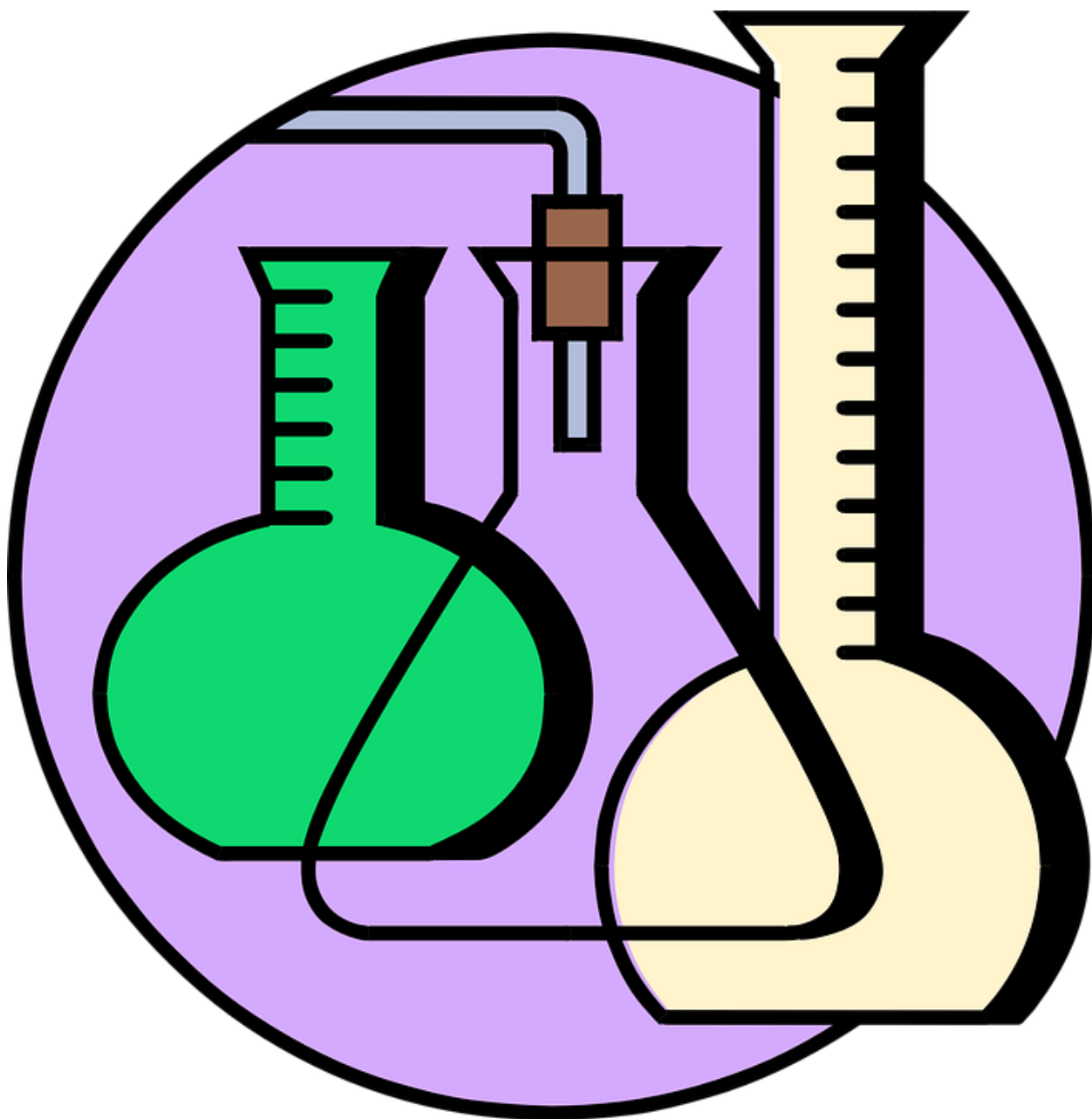
2018-2019 Catalog Search

Associate of Science Degree

Description

The Associate of Science, Integrated Science Education transfer major is intended to provide the first two years of a bachelor's degree for students that plan to complete a teacher licensure program for teaching biology, chemistry, earth/environmental science and physics in grades 7-12. Both Standards and Assessments are needed for learning.





“Report Cards are designed to give parents, communities, educators and policymakers information about the performance of districts and schools – to celebrate success and identify areas for improvement. This information identifies schools to receive intensive supports, drives local conversations on continuous improvement, and provides transparent reporting on the performance of students in foundational skills and knowledge and other important outcomes such as graduation and college and career readiness. The goal is to ensure equitable outcomes and high expectations for all of Ohio’s students.” (Ohio School Report Cards, <https://reportcard.education.ohio.gov/home>).

The presentation of the assignment which will contain the following information from Quality Matters and iNAOC, (along with Sloan-C, OLC, Standard C. Strategies).

Quality Matters Rubrics and Standards

Community colleges like Columbus State College that qualify with receive a QM certification for quality course designs. QM members using this rubric include individual faculty and instructional design that meet accreditation standards. Four-year Accredited community colleges and universities. FROM THIS POINT OF VIEW QM OFFERS THE BEST QUALITY COURSE DESIGNS; however, iNACOL and Standard C Strategies Are All Beneficial to Blended Learning.

The concept of alignments is unique to the QM rubric. Critical course components - Learning Objectives (Competencies), Assessments and Measurements (3.1), Instructional Materials (4.1), Learning Activities, Learner Interactions (5.1) and Course Technology (6.1) - work together to ensure students achieve desired learning outcomes.

First drafts often are very broad. Competencies and Standards should just focus on blending. The Foundation will include other competencies for teaching Technical Skills and Data Practice,

Instructional Strategies, Management of Blended Learning Experience, and Instructional Tools.

Appendices provide Exemplars for each Standard; as well as, more detail about each indicator possibly including Competency/Standard.

Standards in iNACOL

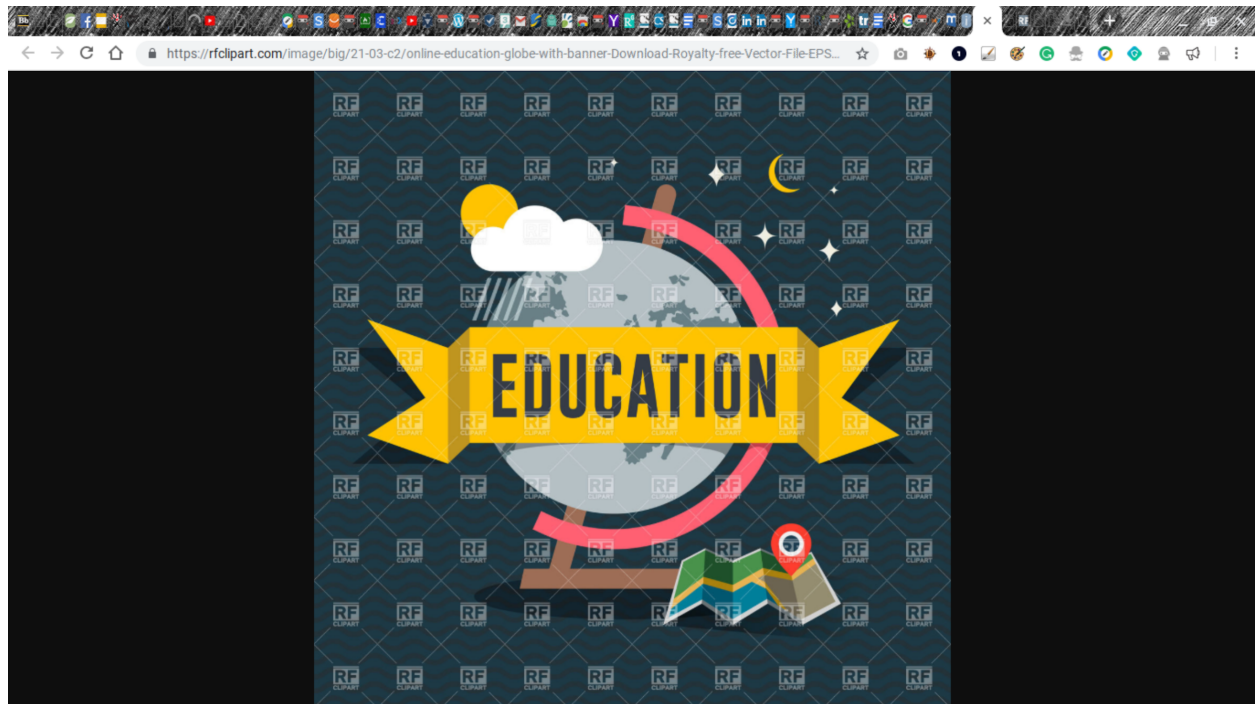
Teacher knows primary concepts & structures of effective online instructor is able to to create learning experience to enable student success; understands and and is able to use arrange of technology, both existing and emerging, that effectively support student learning and engagement in the online environment.

Standard C Strategies

Plans designed and incorporated strategies to encourage active learning application, interaction, participation and collaboration.



Standard C Strategies



Admission Requirements (see below)

Students may begin this degree during any semester upon admission to the college. Eligibility for specific courses will be determined by evaluation of ACT or SAT scores, previous cccccc credits, and Columbus State placement testing results (if required). Course descriptions and prerequisites are outlined in the Columbus State catalog. Degree Requirements - (Associate of Science - Integrated Science Education):

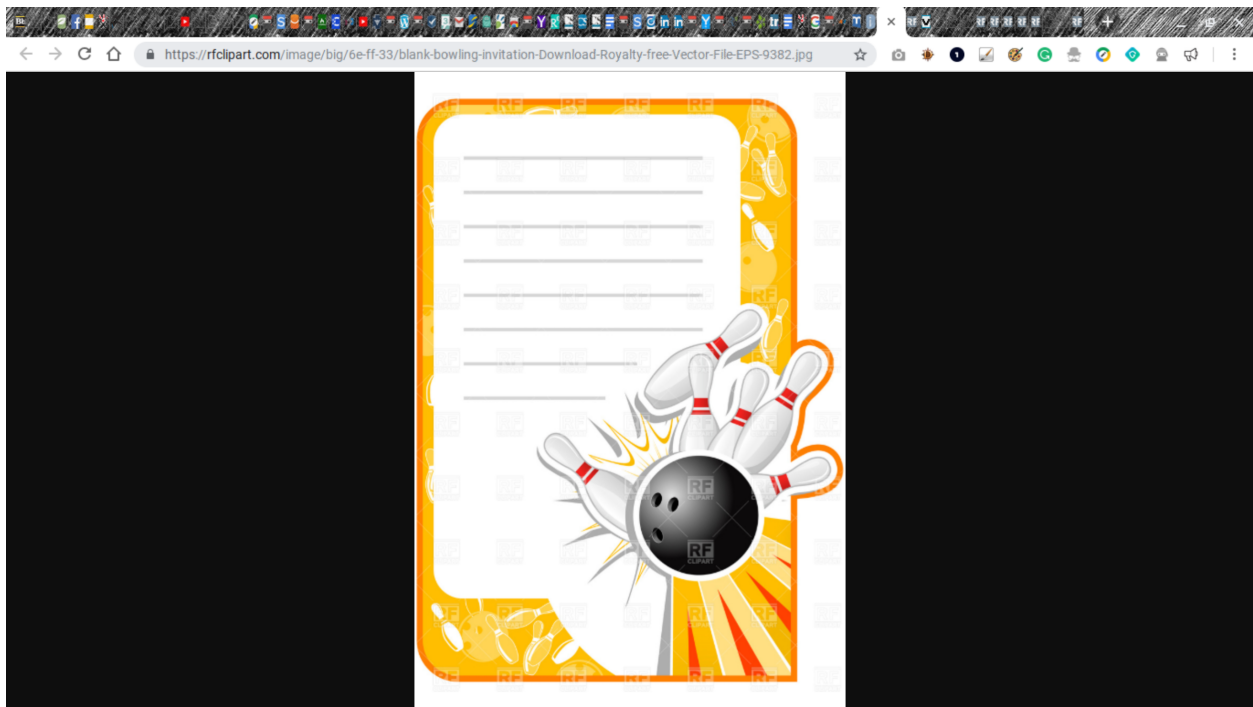
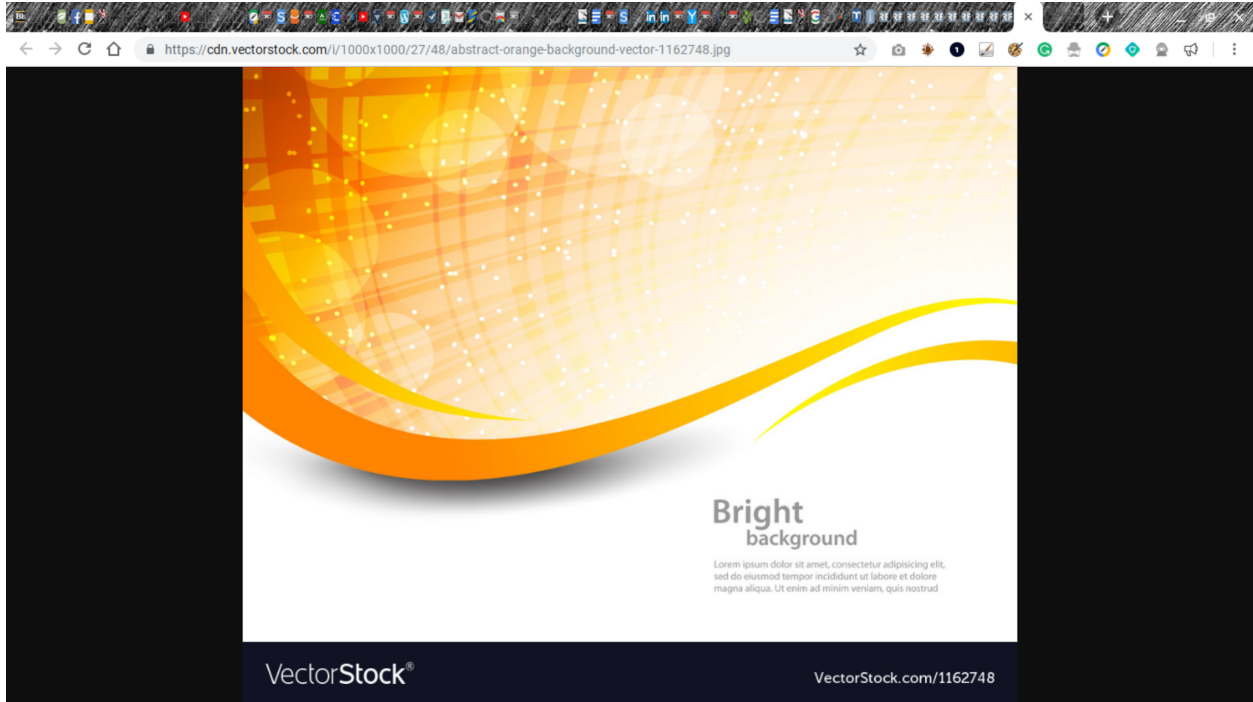
First Semester

ENGL1100 - Composition I or **ENGL1101** - Composition 1W: Composition Workshop3.0

CHEM1171 - General Chemistry I Teams Test Graded by Mean, Median, or Mode

COLS1100 - First Year Experience Seminar

Calculus I - Teams work together to solve problems within timeframe





Second Semester

CHEM1172 - General Chemistry II

BIO1113 - Biological Sciences I

or XXXX-XXXX other Intermediate Composition course *

MATH1151 - Calculus I5

PSY1100 - Introduction to Psychology

XXXX-XXXX Historical Study course *

SOC1101 - Introduction to Sociology

Historical Study and Sociological Demographics Reflected by Teams in Pie Chart

Study

Fourth Semester

BIO1114 - Biological Sciences II

MATH1152 - Calculus II

PHIL1130 - Ethics3.0

or XXXX-XXXX other Cultures & Ideas course *

SOC1101 - Introduction to Sociology



Fifth Semester

GEOL1121 - Physical Geology

or XXXX-XXXX other Natural Science course, with lab *

Bio 1127 - Introduction to Environmental Science

Due to the Blended Courses, iNACOL provides the most effective assessments for Columbus State's new Associate Degree. Standards addressing blending courses have been the focus of teachers using this approach.

iNACOL allows personalized instruction in blended learning courses. **iNACOL** provides “**educator competencies**” as listed in the above **YouTube** video that are crucial to evaluating programs like Columbus State’s new blended degree, providing teachers with the protocols and instructional tools needed to support the blended instruction model offered to students with multiple interests, academic ecumen, and interest in learning multiple academic offerings blended into a promising and innovative offering for students instructors.

(<https://www.youtube.com/watch?v=oyYtsdBTj94>, 2014-6-2019)

However, the Quality Matters Rubric and OLC (Online Learning Consortium (developed for community colleges) are also relevant to assessment with appropriate standards and support for these learning institutions. However, the most pertinent assessments for blended learning is cited in The Eight General Standards as shown in **iNACOL’s** Specific Review Standards for Education Competencies for Blending are indicated in the Rubric Animations:

The Eight General Standards of This Rubric Are

- 1. Course Overview and Introduction**
- 2. Learning Objective (Competencies)**
- 3. Assessment and Measurement**
- 4. Instructional Materials**
- 5. Learning Activities & Learned Interaction**
- 6. Course Technology**
- 7. Learner Support**
- 8. Accessibility & Usability**

The rubric is subject to revisions based on insights of learning offline while engaged in experiments/discussions/creating scholarly thesis, as well as online presentations.



This tongue-in-cheek story actually happened in Toledo, Ohio, where this author lived for twenty-five years. A few years after leaving, algal blooms contaminated the city's water for an entire weekend, then returned two years later and contaminated the river in downtown Toledo. This author created this curricula about the algae that include a possible solution for stopping the algae from polluting the Great Lakes Area.

Blending literature with art and science (unable to post the writer's zombie drawing)

THIS CURRICULUM IS AVAILABLE ON TES.COM, AN INTERNATIONAL CURRICULA COMPOSITORY BASED IN NEW YORK. IT WAS RECOGNIZED AS A TOP TIER COURSE (Chapman, 2011).



"When We Couldn't Drink the Water:"A Shared Learning Experience Blending SubjectsCombiningDisciplines: Science (Biology, Chemistry, Physics, etc.), Language (scientific vocabulary), mathematics (basic operations, as well as the exponential spread of the algal blooms), Reading and Research, and Art, Engineering, and History

TEACHERS: This article provides background information and instruction designed to help students discuss their experiences during the Toledo water crisis and learn about what happened and why during a case study project.

Introduction:

What Happened August 2, 2014 in Toledo, Ohio

Use these videos to introduce this project and provide information about the 2014 water crisis and how it was reported in the media. After watching the video, ask students to discuss what they saw and heard, pose questions for further investigation, and make claims or suppositions about what was and was not done to prevent the water crisis. (Mention mayor's failure to heed warnings to shore up infrastructure to prevent contamination of city's water supply.

NOTE: Toledo's mayor also opposed expenditures on infrastructure while President of City Council when previous mayor proposed putting the needed repairs in the new budget.)

[toledo ohio water contamination](#)



Watch "Water emergency for Toledo Ohio" on YouTube
<https://youtu.be/NbtbH53A1Gs>

Watch "Water warning in Toledo" on YouTube
<https://youtu.be/NHObDs0kxKY>

Watch "Judge Jeanine Pirro - Ohio Governor Declares State Of Emergency Amid Toledo Water Crisis" on YouTube
<https://youtu.be/rl9o46maBrQ>

Watch "Toledo Water Apocalypse - residents rush to buy bottled water - State of Emergency Declared" on YouTube
<https://youtu.be/Cm4XgtwRk2c>

Videos can be shown consecutively in one sitting or during several sittings and will be discussed in-depth.



Extended Introduction/Student Study:

1. Show a video during a week-long introduction to topic, discussing each, encouraging students to pose questions to investigate. Record discussion points and questions.
2. Divide students into groups and task each group with completing a graphic organizer, concept map, video, podcast etc. to record what was learned, what students would like to learn, and group reflections on each day's video.
3. After contacting parents at the start of the week to inform them about the following, ask students if starting Friday of introduction week how many could make it through the weekend

without using any water (including not doing laundry, using water for cooking, and taking a shower) and only drinking bottled water. Provide a couple of bottles of water to drink while at school the rest of the day.

4. Ask volunteers to try to get their entire family to participate in a study to experience how people in Toledo handled not having running water for a weekend. NOTE: the purpose of the study is to allow students to understand how one weekend without running water can be a crisis.

5. Have all participants in the weekend study to record how they (and their family, if participating) coped without using running water one weekend using video, audio, or written record of bottle water use, cooking and eating without water, and being unable to wash dishes or use dishwasher, do laundry, mop floors, etc.

6. Start the next week with reports from those that participated in the study reporting how being without running water for a weekend affected them and their families, if applicable.

7. Acting as "reporters," have other students participate in a videotaped "press conference" asking those who participated in the study questions about not using running water for an entire weekend.

8. Ask if any other students would like to conduct their own study.

9. Collect the artifacts from the study to use later in the project as first-hand accounts of the effects of lack of running water.

Introduce the project with a study of how not having drinking water for even a short period of time to engage students more intently in studying Toledo's water crisis and the potential dangers of contamination of the nation's water supply.



Project-Based Case Study: Analyzing a Crisis, its Causes and Impact on a Community, Suggested Prevention and Survival Strategies for Future Crises

<https://www.cnn.com/2014/08/02/us/toledo-water-warning/index.html>

Goal:

Analyze and reflect on topic researched using informational texts and create historical narration on scientific procedures during a crisis event and presenting claims regarding prevention and intervention using writing and organizational conventions,

CCSS.ELA-LITERACY.WHST.6-8.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.WHST.6-8.7

Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

CCSS.ELA-LITERACY.WHST.6-8.8

Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

Objective 1:

Students will research, analyze, and reflect on Toledo water crisis drawing information from news articles and videos.

CCSS.ELA-LITERACY.WHST.6-8.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

CCSS.ELA-LITERACY.WHST.6-8.2.A

Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.

CCSS.ELA-LITERACY.WHST.6-8.2.B

Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

Objective 2:

Students will write about topic of project, organize and format, using ideas, concepts, and information supported by relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples and creating graphics and multimedia to support understanding.

CCSS.ELA-LITERACY.WHST.6-8.1.A

Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

CCSS.ELA-LITERACY.WHST.6-8.1.B

Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

CCSS.ELA-LITERACY.WHST.6-8.1.C

Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.

Objective 3:

Students will introduce and distinguish claims regarding Toledo's water crisis and note differences in peers' claims, research data to support claims, and create a cohesive claim clarifying how claim relates to other claims, counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.6-8.2.C

Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

CCSS.ELA-LITERACY.WHST.6-8.2.D

Use precise language and domain-specific vocabulary to inform about or explain the topic.

CCSS.ELA-LITERACY.WHST.6-8.2.E

Establish and maintain a formal style and objective tone.

CCSS.ELA-LITERACY.WHST.6-8.2.F

Provide a concluding statement or section that follows from and supports the information or explanation presented.

CCSS.ELA-LITERACY.WHST.6-8.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.WHST.6-8.5

With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

CCSS.ELA-LITERACY.WHST.6-8.6

Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Objective 4:

Students will use writing conventions and selected technology in collaborative research reports that include a stated conclusion to the study that will be published online.

Keeping the above objectives in mind, provide groups with following instructions for each activity, as well as suggested list of apps and online sites such as Wikispaces to share information during bi-weekly class meetings.

While this curricula was created for students in grades 4-6, the science, math, toll on the city (the sequel to this is a lesson in civics that encouraged students in grades ten to thirteen to share their research regarding the algal blooms, offering a solution to the algal bloom invasion (and giving young activists a natural solution to the problem - returning beavers to the Great Lakes where their appetite would ingest the nitrites that create the algal bloom attack; nitrates were in the fertilizer used by farmers that found their way to the lakes could be barred.



PROJECT INSTRUCTIONS FOR GROUPS:

"What Are Algal Blooms and How Did They Get in Our Water?"



POSSIBLE SYMPTOMS



ABNORMAL LIVER
FUNCTION

DIARRHEA

VOMITING

NAUSEA

NUMBNESS

DIZZINESS



MONITORING IS BEING CONDUCTED AND WE WILL LET YOU KNOW WHEN THE SITUATION HAS BEEN RESOLVED



Animal manure, excess fertilizer applied to crops and fields, and soil erosion make agriculture one of the largest sources of nitrogen and phosphorus pollution in the country.



Storm water runoff picks up pollutants and carries them directly to lakes, rivers, streams, and oceans.



Harmful algal blooms are a major environmental problem in all 50 states in the U.S. and globally.



Don't wash your car on pavement or asphalt to minimize runoff.



Properly maintain your vehicle & dispose of oil & vehicle fluids properly

www.purinize.com



Choose Phosphate Free Detergents & Cleaners





1. GOOGLE "TOLEDO WATER CRISIS AUGUST 2014"

Driving Questions:

How many pages are there on this topic?

What are the main ideas?

Discuss answers to the above questions and ask your own. Record information shared using your choice of tech tools.

Present your information as a concept map, graphic organizer, video, audio, PowerPoint to the class.



2. HEADLINES AND PHOTOS:

How Do These Headlines Affect Your Thoughts About What Happened?

- a. Working with your group, conduct Internet searches to find news stories, as well as images published during Toledo's Water Crisis.
- b. Discuss what you expect to learn from each article from reading the headlines. Record this information, along with the headline, as well as the date, author, and the source.
- c. Decide as a group who will read each article, then read articles and take notes.
- d. Report back to group first to examine whether expectations based on the headlines of articles were accurate. Then share notes from articles. Compile information from articles in a digital record.

According to the U.S.
Environmental Protection
Agency, 26 million people rely
on the Great Lakes for their
drinking water.

3. USING IMAGES, FIND PHOTOS THAT TELL A STORY

Use visuals and/or graphics starting with this photo to tell your story as a group.



3. IN OTHER NEWS...

Read these two articles and write down questions they raise and present to conclude study.

Algae Blooms in Northwest Ohio water, September 2013

<http://m.toledoblade.com/local/2013/09/15/Carroll-Township-s-scary-with-toxin-a-wake-up-call.html>

Still Buying Bottled Water

<http://m.motherjones.com/tom-philpott/2015/08/giant-toxic-algae-bloom-haunts-toledo>



<http://www.wxyz.com/news/university-of-michigan-predicts-severe-lake-erie-algal-bloom-season>

All images are from Google.images.com

Sometimes students get more involved if they're social mores are part of learning. The following short radio play combines **science** and **drama**.

Movies, comic books, and even a television show feature zombies. In the effort to motivate students, this author created a short radio play that includes the "literary" and scientific worlds.

Although it was not accepted by several theatre festivals (the science may have been above their heads unless they keep up with some of the pseudo-science mentioned in this short "drama."

The best way to present this "lesson" pseudo scientific experiments (which include the existence of zombies) is to allow students to produce a "radio drama" in which they get to dramatize and that exposes some unscientific beliefs held by many people demonstrating that simply just thinking rationally (even for geniuses) is scientific.

Zombie Apocalypse Brainiac Smorgasbord
Radio Play Script
By Geneva J. Chapman

Cast (In Order of Appearance)

Father

Mother

6-8 year old Son

9-12 year old Daughter

Zombie

Setting

An underground bunker with a walls that sound bounces off creating a slight echo effect when voices are raised, rock floor that makes scraping noises when metal dragged across it.

(Curtain opens as “radio play” begins)

Father

Organ meats are full of nutrients. Did you know that after they kill their prey, the first thing animals eat is the liver and kidneys?

Daughter

That's gross, Dad!

Mother

He's right about organ meat. They are dense sources of nutrients like B vitamins, iron, phosphorus, copper and magnesium, and are rich with the most important fat-soluble vitamins, A, D, E and K. Wish we had a way to refrigerate meat.

Pause as they contemplate how to get the protein they need.

Father

The heart is the most nutritious with high levels of protein, thiamine, folate, selenium, phosphorus, zinc, CoQ10 and several B vitamins. It's also rich in amino acids that boost metabolism. Collagen in the heart can produce elasticity slowing the aging process. Madame Marie Delphine LaLaurie ate the organs of her slaves for that very reason.

Daughter

I saw that in American Horror Story, the Coven. It was sick!

Mother

I agree. Cannibalism is disgusting.

Son

No, Mom. She means it was cool.

Father

If we had salt we could preserve it like our Native forefathers did.

Son

How'd they do that, Dad?

Father

Well, you know that salt is sodium and chloride.

Son and Daughter
(in unison as salt shaker effect starts)

NaCl!

They high five each other.

Son

That's table salt. You'd have to have a whole lot of salt shakers. (hears faint noise)

Mother

There's many different kinds of salt. There's Magnesium sulfate (Epsom salt), MgSO_4 - (salt shaker effect after each element is mentioned)

Daughter

Potassium iodide, KI -

Father

Copper sulfate, CuSO_4 -

Mother

Calcium chloride, CaCl_2 -

Father

Potassium permanganate, KMnO_4 -

Daughter

Sodium acetate, CH_3COONa and Calcium acetate, $(\text{CH}_3\text{COO})_2\text{Ca}$!

Father

Sodium nitrate, NaNO_3 and Potassium nitrate, KNO_3 !

He yells out his response and the kids and Mother pause and give him a look.

Mother

Aluminium nitrate or Aluminum nitrate (US) $\text{Al}(\text{NO}_3)_3$ AND Aluminium sulfate or -

Son

(interrupts to get their attention, yells and his voice echoes)

But we don't need salt! I know how to keep meat cold! (they all look at him) I can use some of the pots, some sand, and a big piece of cheesecloth. A teacher in Nigeria invented it. His name is Mohammed Bah Abba. You take a smaller pot and put it inside a larger pot. Then put wet sand in the space between them, wet the cheesecloth, and cover the top with it.

Daughter

How does that keep stuff cool?

Son

When the water evaporates, it pulls out the heat with it and that makes the inside cold.

Father

Great, Son! Where'd you learn that?

Son

Mr. W taught us about it in the African-American inventors program. We had to choose an African-American inventor to learn about and introduce to the group, so I chose Mr. Abba. Mr. W said it was all right that he isn't American because he is African. In 2004, he got a prize for his invention. A Rolex watch!

Father

Wow! That's some prize. While you're building us a fridge, I'll work on getting some heat in here before dark. It's going to be cold tonight! (Walking effect starts, then stops)

Son

Dad! We could make a solar tree and the zombies would think it was a real one!

Father

Great idea, son! Then we could charge our cell phones and heat water for cooking and washing our clothes (sniffing sound effect) and bodies. Phew! (Son laughs)

Mother

Save some flower pots for me! I'll get him to make us some flower pot heaters, too.

Son

Mom those things don't work. You'd have to have 100s to keep this space warm.

Daughter

And you don't want to breathe in the gases that would create.

Mother

Fine. No tealight heaters. I'll just help your dad turn the tree above us into a solar tree so we can store up some heat. Meanwhile, I'll help you with the flower pots. (Walking effect)

Father

O. K. I guess I'm going to see what we're having for dinner. Tomorrow I'll make a solar cooker so we can cook our food outside. I want to hold off using the car in case we have to make a run for it. When I bought the car hood grill I didn't bother to calculate how much battery power it takes to heat it up.

Mother and children exchange looks, hoping Father won't cook and burn the meat as usual.

Daughter

But what about the zombies, Dad?

Father

Most of them wait until night to hunt.

Daughter

What if one decided to take a walk?

Father

(overlapping with Daughter)

They don't like sunlight.

Daughter

Remember that science project I told you about? Well, I put all my materials in my backpack because I thought we might need a generator.

Father

But we agreed to not bring gaseous mixtures down here because there's no ventilation.

Daughter

It doesn't run on gas.

Mother and son return with flower pots.

(walking effect)

Father

You've got to have gas to run a generator.

Mother

Remember she told us her science project is building a generator like the one the girls in Africa invented. It runs on urine.

Father

Ah, yes. I remember hearing about that. In order to create the generator they're probably using urea electrolysis to create hydrogen. Urea contains nitrogen, water, and hydrogen. Hydrogen is flammable and you must have oxygen to avoid danger.

Son

(sets assembled flower pot fridge down with a plop sound effect)
Too bad. Wait! I have a better idea. We can use my pizza box solar oven!

Father

We can't risk going out, Son.
Walking effect as he leaves to check traps.

Son

Why not? It takes eight minutes for sunlight to reach earth and three minutes to cook an egg. We'll be out there about fifteen minutes.

Daughter

Do you know how long it takes a zombie to eat your brain? (Slurping effect begins)

Son

Considering your brain mass and zombies' slow movements I'd say at least -

Mother

(Walking effect as she comes in with clanking tealights and flowerpot, slurping stops)
Your father said no. I didn't. Put the heater together and make sure you leave enough space between the tea lights so the hot oil won't flare up.

Daughter

And I'll get my generator so we can get the toaster oven working.

Walking effect as she goes over to bag, unzips it, and starts pulling out generator parts making metallic sounds.

Son

But Dad said- (Mother and Daughter making shushing sound)
My solar oven is better. It won't blow us up like the hydrogen in your stupid generator.

Daughter

So what? The tea lights could start an inferno and barbecue us all. Better than having zombies suck our brains out of our heads.

Mother

Thought you might need this.
Sound of liquid shaking in bottle as she gives her small bottle with yellow liquid

Father

(enter- heavy breathing effect)

I checked the traps! (Big thump indicating he's throwing a rabbit on the floor)
One of them caught this.

Zombie

(Loud scraping noise as he walks in slowly, dragging leg caught in trap)

I'm hungry.

Mother

(shrill scream)

Feed him the rabbit's brain!

Zombie

(picks up stuffed rabbit, looks it over, then drops it with a plop)

Too small! Need big brain. I'm hungry!

Daughter

All organ meats are good for you!

Father

(stalling for time)

Which one of us do you want?

Zombie

One with biggest brain.

Mother

My IQ is 130, but it's the lowest.

Zombie looks at Son.

Son

Don't look at me. Mine is just 135.

Daughter

Mine is 140. But it's not the highest.

Silence as they all look at Father

Father

O.k. You can have mine. My IQ is 160. On one condition. I need to cook this rabbit for my family so they won't starve after I'm gone. But you have to promise that after you eat my brain, you'll leave them alone. Promise.

Zombie

(puts hands behind back and crosses fingers as sound of bones creaking is heard)
Sure. (sarcastically) Scout's honor.

Father

Son, start Mom's solar heater so our guest can get warm.
Make sure the tealights are close together.

Son

(stuttering)
But -

Mother

(scolding)
Listen to your father.

Son

(knowingly)
Oh.

Daughter

(Liquid sound effect as she pours yellow liquid into generator)
Wouldn't there be more heat to keep 'our guest' warm if I just turned on the generator?
I don't think we'll need any oxygen.

Father

Why don't you kids put the heater on one side of our guest and the generator on the other side to keep him nice and warm.

Son and daughter position the heater and the generator with sounds of metal scraping (Zombie dragging foot and trap) and walking effect as kids move away joining their parents. Then all four move backwards with slow heavy stepping sound in unison into tunnel. Suddenly there's a loud explosion and a large flash of light with a crackling sound of fire roaring just as the zombie stands up and starts walking slowly toward them dragging his foot and making a clunky noise. He falls back with a loud thump as he hits the floor coughing with smoke all around him; then screams in agony while sounds of the cave falling and burying him as his hoarse voice gets fainter.

#####

Reflections on merging courses that link together like puzzle pieces to form something larger than that, increasing understanding and realization that how all of it is one none-ending organism. References for educators offering students a multi-discipline approach to learning include course materials that consist of peer reviewed articles, videos, etc. that are the foundation for online learning subject matter that constitute the framework for creating learning experiences that consist of more than a single discipline and might very well allow students to learn holistically instead of single layers of various courses that are disconnected. began evaluating last week using the Quality Matters and iNACOL evaluation criteria.

Imagine gathering various types of soil, vegetation, rocks, etc. while learning their scientific latin names, understanding how each natural species eats, drinks, re-produces, etc. or applying mathematics to the iambic pentameter in a rap or a Shakespearean sonnet, as well as listening for different “beats” other forms of literature reveal when students hear spoken word and/or spit rhymes schemes heard in hip-hop and rap “songs” that are rhythmic when spoken along with timeless poems.

Music, literature, computation, scientific research and study, etc. instead of separated like leaves from trees, squirrels from tails, the missing number in an equation from the other numbers, words from poems, paintings from canvases, bees from hives, etc. why not bring the natural together as they were before rivers were polluted, majestic trees were chopped down, air was full of chemicals, etc. **Merging disciplines** providing the overlap in the world of knowledge with each drop spilling over into one or more other areas to link the parts that match like puzzle pieces.

Looking from this author’s experience teaching and developing curricula teaching in Toledo and following the **State of Ohio’s Education Standards** as do the public schools (cited in the course about the algal blooms), encouraging students at grade-levels 7-12 to develop their own scientific studies showing how algal blooms would not exist if beavers lived in their natural habitat along waterways and making steps to make the nitrates in fertilizers banned due to the un-off into lakes and rivers from nearby farms.

Returning beavers into rivers, lakes, and rivers where, if nothing else, Toledo’s water crisis provides a cautionary tale for the many small cities, towns, and rural communities that may be faced with their own water crisis. On the other hand, the “radio” play set during the “Zombie Apocalypse” provided just a bit of scientific fact and a lot of de-bunking of so-called scientific remedies. Next, Captain Hoodie, (a comic book character in the making), a super-hero tech genius (dot.com) during the day.

At a higher level of instruction and scholarship, colleges and universities are venturing into the scientific realm that got the first human on the moon and invented the internet and the telephone, as well as its foster child, the cell phone), providing all with whom that science makes anything possible. If humans can get to moon, we should also be able to make it a second “new world” and possibly a new generation interested in pioneering and settling in a wild world where few will venture.

Having created her own blended learning as an undergraduate student majoring in Biology and minoring in English and Social Studies and who more recently blended

instruction helping gifted elementary students and adults with developmental disabilities start their own business, this teacher is glad. Although both businesses were temporary, some of the students in those classes are now entrepreneurs.

This educator embraces all of the standards that are being developed to create scholars, inventors, artists, and teachers. While Sloan-C has provided schools and educators with the protocols that create the standards, along with a few others labs and the multi-disciplinary blended courses that help those learning see a wider range of teaching and learning skills thanks to Sloan-C, QM, OLC, iNAOC, creating new ideas and innovations.

Assessing The Blended Course Design

o **Institutional Support:** Columbus State has embraced Blended Coursework

"Blended courses provided with effective assessments from iNACO are the best for CSC's innovative. Teachers planning to teach blended courses focusing on personalized instruction. These teachers with 'educator competencies, providing teachers with the

1. Protocols,
2. Instructional tools needed to support the blended instruction model offered to students with multiple interests,
3. academic acumen,
4. and an interest in learning arcadelo! offerings blended into a pto!idomg and innovative offering for students and instructors" i

o **Technology Support:** Columbus State Has Made Tech Tools Available for Blended Courses

It is imperative for students in blended courses to have access to the tech tools needed for a variety of scholarly endeavors, namely using electronic devices to create experimental activities, art and literature using tech tools to critique scenes from classic movies; as well as use electronic devices to capture natural environments to

use later to specify each animal, plant, waterway, mountains, etc., and perhaps a viral diary that can be used in experimentation, etc.

- o **Course Development & Instructional Design**: Exceptional Program Designs That Are Multidisciplinary

- o **Course Structure**: A Subject From Each Discipline is Included in Each Semester in Each Blended Course

The courses are combined with art, science, technology, math, as well as history, civics, and geography. Combining all three into a course for peers. For example, a project to plant trees in a decaying neighborhood or other area (perhaps a park), growing trees and other, take specimens to the laboratory to see what kind of vermin might be causing illnesses and destroying the flora, calculate the amount space that needs “rehabbing” and how much money is needed to re-vitalize the area by making a real effort while learning more about

1) the demographics of poverty and safety in urban and rural areas,

2) the potential for the renovation that might be possible in areas that have no safe places for children, and adolescents, and safety of poverty in urban and rural areas

3) concern about the percentages of people living in unhealthy, dangerous areas.

4) Taking a holistic approach using the blended disciplines in each semester by creating a synthesis of all of the courses that blend together to determine the demographics and needs for a specific area that could become scholarly articles published in peer reviewed journals.

5) The potential for academic excellence should be very high in schools that offer blended courses.

- o **Teaching and Learning**: Teachers Support the Blended Courses By Teaching Each of the Disciplines in Each Blended Course

This is a brilliant idea. It is imperative that a blended staff should have some knowledge of each of the courses in each group. Hopefully, this author might have an opportunity to provide some of the training in these disciplines for staff. Emphasis should be on formative assessment which, hopefully, will be used in blended education at Columbus State and other learning institutions considering and/or providing blended courses.

Formative assessment as learned in this course (as well as the scholarship provided by a previous instructor who literally wrote the book on the need for formatively assessing student learning) is essential to this form of instruction. While separately subjects like mathematics and some of the sciences are best taught summatively, in blended courses could use formative assessment when blending calculus and physics with other disciplines.

o **Social** and **Student Engagement**: Students Learn A Variety of Disciplines and Work Together To Make Sure that Each Learning Group Has at Least One Member

Due to the variety of disciplines students enrolled in Columbus State's blended courses will earn a degree that allows them to not only teach each of these courses but to also learn how to blend these courses using emerging tech tools, the variety of interests and critical issues in need of innovation and improvement in our public educational institutions.

As a teacher, this author uses holistic approaches to learning and has always used themes rather than subjects in teaching at all levels from elementary school to adult training courses for staff with no college instruction but were able to understand the protocols of behavioral science when it was taught using their own behavior as parents, pets, co-workers, etc.

Teaching individuals at their level is part of the blended courses, hopefully. One of the demographic groups in need of blended instruction are the intellectually challenged adults that are more and more becoming part of the working class and in need of training at their level. This author has worked with this demographic using a holistic or blended approach to learning rather than being taught "subjects."

Moving From Crayons Toward Critical Thinking is a book written about training non-degreed staff how to teach adults with developmental disabilities how to live and work in the living and working as adults. That Kindle book is this author's best seller due to the need of this kind of training across the country.

Finally, if those in this program become teachers of teachers, this course (and hopefully, the others for this certificate) provides all of the resources that teachers of teachers need in the twenty-first century.

Summary

Columbus State College has a great reputation as a community college that has a variety of courses and students. Always on the cutting edge when new innovations

appear, CSC offers quite a few very interesting programs. Creating blended courses according to COL Standards, these programs should be very successful, just as CSC's many other courses have been. The negatives that plague some community colleges as well as, a lack of either resources, enrollees, or qualified instructors are minimal.

Columbus State doesn't have any of the above but the university pays part-time staff very low wages for doing most of the brick and mortar jobs. However, that has less to do with academics than it does with a tight budget. As for, the type of learning atmosphere, credentials of its professional staff, and the readiness to venture into the world of innovations that we all will soon see in the near futures Columbus State meets all of the criteria in the rubric and is continuously innovating and reaching.

https://docs.google.com/presentation/d/1ctt_rTMtTeT7qEerxYwros-fuqPibrN3rTvCVmedQNE/edit#slide=id.p