

Final Synthesis Paper

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## Introduction

Teaching has many different aspects to it and there are many different strategies that can be done with these different aspects. Throughout the time spent in the course, there were many different types of strategies teachers could use for curriculum, instructing and assessing students from multiple types of learning styles and abilities in the most effective way possible. There were multiple themes that were also covered during the whole of the course. These groups of themes are what was most of what was learned fell into.

The first theme that was discussed was how to be an effective teacher. When looking back the lessons that were taught during this unit were based towards making sure what an effective teacher was and some ways of achieving that goal. One of the themes that was said to be one of the most important that was taught was regards to understanding your students. There were many different strategies that were shown for getting to know students and building a healthy relationship with them. Teachers must be able to understand goals, standards and objectives and how they correlate to one another. This is what was taught during the first theme of the class.

During this part of the semester the focus started to shift towards what needs to be done for the classroom and actual teaching skills. The first theme that was covered was unit and lesson planning. In this lesson, different strategies were shown how to make effective lessons and unit plans. Then to build off of what those effective lesson plans, using technology was integrated into those lesson plans. Question strategies was the sixth theme that was covered in this course. Being able to have driving questions that allowed for discussions to happen was the objective for this theme. Learning different teaching strategies for indirect and direct instruction was the final theme for the instructional part of the course. Lastly, assessing students

effectively in a summative and formative setting was the last thing that was covered for the course. Using the strategies from the many themes were covered in the course lead to many helpful tools that could be used in future teaching careers.

### The Effective Teacher

Teaching can be a very difficult task to give a person. These people are put in charge of anywhere between 20 and 150 kids and they are expected to open their minds to a world of information and make sure they are able to retain all this information. Being an effective teacher is the goal of any educator and sometimes obtain the goal is the hardest part of being a teacher. Teaching students is the absolute dream of mine and I want to be as effective as a teacher as I could be. Through what I have learned through the entirety of this class will help reach that goal. Teacher must be able to have different instructional variety when it comes to teaching. I will be able to different types of instructional strategies that will fit with learning styles. Students will also be able to have choices on how they will be able to participate in the classroom. There are many strategies that I have learned that I will use in my classroom to make sure that I will be the effective teacher I desire to be.

### Understanding Your Students

The students need to be the main goal of any teachers career. Students need to be able know that you care about not just them academically but also personally. The best way to do this is by understanding who your students are and by getting them as people. In my classroom I will make sure that I will learn as much as I can about my students. When you look in Appendix A you will see a scavenger hunt that students will use to for me to get to know them but learning new facts about them but also so students can know each other. I believe that this is a good

strategy because it is way for me to see what students have done ro what they are interested in. This is a good segway into find things that are of common interest and have something to start building the foundation of the relationship between student and teacher. It will also be a good way for students to find what they have in common with each other. With foundation being built it will be easy for me to get to know my students. I will let students know that I am always available with they need any help with school or life problems that they come in contact with. I want them to know that our relationship is built off of trust and care and that I am there for them to succeed.

### Goals, Standards, and Objectives

Goals, Standards, and Objective what so important to what a teacher is actually teaching. This is what drive the content that the state say what students should be able to do and what they should know. Teacher needs to have goals for their students. This is like a plan for what they should know by what time of the year. Teachers base those goals off of the standards that are given. These standards are what the students should know effectively at the end of the year. Teacher will then base their objective for what they think students should know from teach standard. This is what drives the content in a classroom. When I get into my classroom I will make sure that I lay out my goals for each students in that class. This goals will be met by students hitting the objectives that I have based off of the standard for the state that I am in. I will make sure that I keep students on the path for this goal so that I am not short cutting them on the education they rightfully deserve.

### Unit and Lesson Planning

Organization is one of the most important skills a teacher can have. Making sure that you what what you're going to teach in a plan is one organizational skills you need to master. The best way to do this is by having unit and lesson plans. These are plans what what activities and content you will be teaching in the classroom. Unit plans used to make sure that their is an understable plan for what content will be taught and the lesson plans will be for the lessons that will be taught in the unit. In Appendix A there is a lesson plan that shows what students will be doing in a classroom for that lesson. I will be sure to make lesson plans for teach of the activities that I will be suing. This is done that I can keep a good timing in transitions within the activity and to make sure the overall lesson falls in line with the standard I am teaching too. The unit plan will make sure that all my lessons are planned out in advance. I will also make sure that these unit plans are done so that there is enough time to go through each important subject throughout the school years. The organization from lesson and unit plans will make the years of teaching go by smoothly, or as smoothly a teaching can go.

#### Technology Integration in Instruction

In today's day and age students are completely surrounded by technology. They have phones, tablets, computers, and video games. They know more about this high level technology than any adult ever will. Teacher need to be able to use technology in the classroom. Students are also in a world where a lot of their careers will be based off of technology. Students need to be able to learn how to effectively use it and problem solve with technology. These are skills that they could possible use in the life after school. Appendix A shows how a lesson plan could have technology integrated into it. Students will be able to use the a simulator to do a dissection. This can be good for students who do not feel comfortable or are not able to participate because of a

health related factor. Students will also be able to use their computer in my classroom to make presentation and create models for labs and projects that are scientifically backed. There is so many opportunities for students to use technology in a positive way in the classroom. It can be used as a tool that will and is changing the world of education.

### Question Strategies

Questions are a very important tool in a classroom. This is what drive students to want to know more information. Discussion and actions are derived from asking questions and questioning why things are the way they are. Teacher need to be able to ask the write question for their classes. The questions that a teacher asks will be what forces students to really think, which in tern make them learn more. In Appendix A you will see seven questions that are based around the purposes of asking questions. The questions that I will ask in my classroom will be a lot about how science can be related to what is going on in their world. These question will connect what is being taught to something students are familiar with and feel comfortable with. This will make it easier for them to learn and understand the content that is being taught. Questions are the building block for learning and teachers need able to ask the questions that point students in the right direction.

### Teaching Strategies for Direct and Indirect Instruction

There are many different ways to teach students. Sometimes it has to be the boring lecture style and then it can be the fun, do-it-yourself interactive style of learning. Both are very important in the success of students. Direct instructions is how you get the content to the students. It is having a power point up and giving the information for a textbook so that students can use it. The indirect instruction is when students take the information from the lecture and add

to it. This is where students go out into their own world and teach themselves based off of what you have taught them. Direct and Indirect instruction go hand in hand in education. One if the foundation that you pore for the students to build their house of knowledge on. Appendix A will have an example of both a Direct and Indirect lesson plan. In my classroom room I will start a unit off with a lecture on something like ecosystems and ecology. I will do then allow students to make a project where they have to create their own ecosystem to fit in with a surrounding environment. They will then have to pitch this is idea to a fake board of directors for a company that helps build ecosystem in area that need them the most. It is a great way for students to connect the information that I taught them with skills and content that they teach themselves to make a professional project. You can see how important these to instructional strategies are for students.

### Assessing Learners

This has to be one of the most important strategies teacher have to masters. When assessing a students, this shows what students will know from what you have taught them. This proves that students are being taught correctly towards the standards that we mention before hand. Assessments need to be able to prove students know everything and are not just memorizing and throwing the information out. In Appendix A you will see a test that is used to assess students knowledge. The test has many different types of questions to it. It has questions that show student can memorize information but it also have some that show students can apply what they learned as well. This application and understanding is what proves students are knowledgeable towards what the standard calls for. There are also different ways to assess

students knowledge. In my classroom is will have students apply what they have learned using projects or activities that show they know what they need to know.

### Conclusion

The different strategies that I learned about during this course, I know will help me becoming the best teacher I can be. I have a great foundation from this course and I know that as a grow and learn as an educator I will be able to perfect these strategies. When that time comes I know that I am an effective teacher and I really am helping students learn to the best of their abilities. In my future classroom I can see how it will be set up that will be optimal for students learning. The first thing that I will do is make sure the the desk are in groups of for. This will make it easier for me to group students up and keep papers organized when they hand them in because they will already be in small piles. I will like to have posters hanging up on the walls that have information like the different taxonomic groups and scientific method. I will also want students projects and artwork on my wall. It shows that I really do enjoy what they make and that I am proud of what they do in my classroom. The agenda for the week and day will be posted as well. This is students know what is going on and they can be prepared for future assignments and so that I can't hear "Oh, I didn't know what we were doing today." Thinking about what my future classroom will look like makes me so excited to actually start to teach.



## Appendix A

## Get to Know You Scavenger Hunt

Directions: Find someone in your class that is described by each item found in the boxes below. Put their name in the box that describes them. For each box a different person must be selected.

|   |  |  |  |
|---|--|--|--|
| <b>I play a sport.</b><br>Name _____                    | <b>I play video games.</b><br>Name _____                 | <b>I went on a long trip recently.</b><br>Name _____ | <b>I have a cat as a pet.</b><br>Name _____        |
| <b>I went to a warm place over the summer.</b><br>_____ | <b>Vanilla is my favorite Ice Cream Flavor.</b><br>_____ | <b>I know someone who went to NYC.</b><br>_____      | <b>My favorite clothing is Jeans.</b><br>_____     |
| <b>I like Rock Music.</b><br>_____                      | <b>I like Cartoons.</b><br>_____                         | <b>I like Rap Music.</b><br>_____                    | <b>I have a pet fish.</b><br>_____                 |
| <b>I have a big skateboard.</b><br>_____                | <b>I can play an instrument.</b><br>_____                | <b>I can touch my tongue to my nose.</b><br>_____    | <b>I go on the Internet often.</b><br>_____        |
| <b>I can say the alphabet backwards.</b><br>_____       | <b>I can say something in another language.</b><br>_____ | <b>I have a basketball hoop.</b><br>_____            | <b>I have a hole in my shoes at home.</b><br>_____ |

Lesson Plan

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|---|---|
| <p><b>Grade: High School 9<sup>th</sup>-10<sup>th</sup> grade</b></p>   | <p><b>Subject: Life Science/ Biology</b></p>  |
| <p><b>Materials: Poster paper, drawing supplies</b></p>   | <p><b>Technology Needed: Computer</b></p>   |
| <p><b>Instructional Strategies:</b></p> <ul style="list-style-type: none"> <li>ø Direct instruction</li> <li>ø <b>Guided practice</b></li> <li>ø Socratic Seminar</li> <li>ø Learning Centers</li> <li>ø Lecture</li> <li>ø Technology integration</li> <li>ø Other (list)</li> </ul> | <p><b>Guided Practices and Concrete Application:</b></p> <ul style="list-style-type: none"> <li>ø Peer teaching/collaboration/cooperative learning</li> <li>ø <b>Visuals/Graphic organizers</b></li> <li>ø PBL</li> <li>ø Discussion/Debate</li> <li>ø <b>Modeling</b></li> </ul>   |
| <p><b>Standard(s) HS-LS1-5: Use a model to illustrate how photosynthesis transform light energy into stored chemical energy.</b></p>  | <p><b>Differentiation: Can choose the model</b></p> <p><b>Below Proficiency:</b><br/>Using model that is provided, create made off of the likelihood of the model provided.</p> <p><b>Above Proficiency:</b><br/>Students will create their own model without any reference.</p> <p><b>Approaching/Emerging Proficiency:</b><br/>Students have opportunity to use computers to help find a model to reference for their own model</p> |

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| <p><b>Objective(s):</b> The learners will be able to explain how plants covert light energy using a model that was provided, created or found to other students in small groups.</p> <p><b>Bloom’s Taxonomy Cognitive Level:</b> Creating</p> | <p><b>Modalities/Learning Preferences:</b> Visual/spatial, Interpersonal, Naturalist</p>  |
| <p><b>Classroom Management- (grouping(s), movement/transitions, etc.):</b> Group of 3-4, work in desk clumps that were set prior to class, material set for students.</p>   | <p><b>Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.):</b> Students need to stay on task, materials should be used appropriately.</p>   |
| <p><b>Minutes</b></p>   | <p><b>Procedures</b></p>  |
| <p><b>5 min</b></p>   | <p><b>Set-up/Prep:</b><br/>Computers ready, poster paper and art supplies, textbook on desk</p>   |
| <p><b>15 min</b></p>  | <p><b>Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)</b><br/>Have students find what desk clump they are in, go over photosynthesis in lecture (finish it)</p>   |
| <p><b>5 min</b></p>   | <p><b>Explain: (concepts, procedures, vocabulary, etc.)</b><br/>Explain to students that they will be making a model of how photosynthesis transforms light energy in stored chemical energy. They can choose what model they want to make. They can have a model that they can reference off of or they can create their own model. They will then present it.</p> |
| <p><b>20 min</b></p>  | <p><b>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</b><br/>The students will be creating their model and practicing presenting their model.</p>  |
| <p><b>5 min</b></p>   | <p><b>Review (wrap up and transition to next activity):</b><br/>Explain how presentations will work in the next lecture and how groups will rotate to present.</p>  |

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| <p><b>Formative Assessment: (linked to objectives)</b><br/>Progress monitoring throughout lesson- clarifying questions, check-in strategies, etc.<br/>After 15 minutes, ask to see how they are doing or if they have started making their model.</p> <p><b>Consideration for Back-up Plan:</b><br/>If they haven't started making model allow for some time in the next class to have more preparation for the presentation</p> | <p><b>Summative Assessment (linked back to objectives)</b><br/>End of lesson:<br/>The final presentation to small groups</p> <p>If applicable- overall unit, chapter, concept, etc.:<br/>Unit over photosynthesis</p> |
| <p><b>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</b></p>   |   |

Technology Integration

|  |   |
|--|---|
| <p><b>Grade: High School 9<sup>th</sup>-10<sup>th</sup> grade</b></p>  | <p><b>Subject: Life Science/<br/>Biology</b></p>  |
| <p><b>Materials: Poster paper, drawing supplies, Computers</b></p>   | <p><b>Technology Needed:<br/>Computer</b></p>   |
| <p><b>Instructional Strategies:</b></p> <ul style="list-style-type: none"> <li>∅ Direct instruction</li> <li>∅ <b>Guided practice</b></li> <li>∅ Socratic Seminar</li> <li>∅ Learning Centers</li> <li>∅ Lecture</li> <li>∅ <b>Technology integration</b></li> <li>∅ Other (list)</li> </ul> | <p><b>Guided Practices and Concrete Application:</b></p> <ul style="list-style-type: none"> <li>∅ Peer teaching/collaboration / cooperative learning</li> <li>∅ <b>Visuals/Graphic organizers</b></li> <li>∅ PBL</li> <li>∅ Discussion/Debate</li> <li>∅ Modeling</li> </ul> <p>∅ Large group activity</p> <p>∅ Independent activity</p> <p>∅ <b>Pairing/collaboration</b></p> <p>∅ <b>Simulation/Scenarios</b></p> <p>∅ Other (list)</p> <p>∅ Explain : Using computer to have an online workflow dissection to look at the part</p> |

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| <p><b>Standard(s)</b> HS-LS1-5: Use a model to illustrate how photosynthesis transform light energy into stored chemical energy.</p>  | <p><b>Differentiation: Can choose the model</b><br/><b>Below Proficiency:</b><br/>Using model that is provided, create made off of the likelihood of the model provided. Uses computer dissection to help with what parts help with photosynthesis.</p>   |
| <p><b>Objective(s):</b> The learners will be able to explain how plants covert light energy using a model that was provided, created or found to other students in small groups.</p> <p><b>Bloom’s Taxonomy Cognitive Level:</b> Creating</p> | <p><b>Above Proficiency:</b><br/>Students will create their own model without any reference. Uses computer dissection to help with what parts help with photosynthesis.</p> <p><b>Approaching/Emerging Proficiency:</b><br/>Students have opportunity to use computers to help find a model to reference for their own model. Uses computer dissection to help with what parts help with photosynthesis.</p> <p><b>Modalities/Learning Preferences:</b> Visual/spatial, Interpersonal, Naturalist</p> |

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| <p><b>Classroom Management- (grouping(s), movement/transitions, etc.):</b> Group of 3-4, work in desk clumps that were set prior to class, material set for students. Using the website: <a href="http://www.glencoe.com/sites/common_assets/science/virtual_labs/L.S11/LS11.html">http://www.glencoe.com/sites/common_assets/science/virtual_labs/L.S11/LS11.html</a></p>   |   | <p><b>Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.):</b><br/>Students need to stay on task, materials should be used appropriately.</p>                            |
| <b>Minutes</b>   | <b>Procedures</b>   |  |
| <b>5 min</b>   | <b>Set-up/Prep:</b><br>Computers ready, poster paper and art supplies, textbook on desk   |  |
| <b>15 min</b>  | <b>Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)</b><br>Have students find what desk clump they are in, go over photosynthesis in lecture (finish it)   |  |
| <b>5 min</b>   | <b>Explain: (concepts, procedures, vocabulary, etc.)</b><br>Explain to students that they will be making a model of how photosynthesis transforms light energy in stored chemical energy. They can choose what model they want to make. They can have a model that they can reference off of or they can create their own model. They will then present it. They will so be instructed to use the online dissection to help with information. |  |
| <b>20 min</b>  | <b>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</b><br>The students will be creating their model and practicing presenting their model. Uses computer dissection to help with what parts help with photosynthesis.   |  |
| <b>5 min</b>   | <b>Review (wrap up and transition to next activity):</b><br>Explain how presentations will work in the next lecture and how groups will rotate to present.  |  |
| <p><b>Formative Assessment: (linked to objectives)</b><br/><b>Progress monitoring throughout lesson- clarifying questions, check-in strategies, etc.</b><br/>After 15 minutes, ask to see how they are doing or if they have started making their model.<br/><b>Consideration for Back-up Plan:</b><br/>If they haven't started making model allow for some time in the next class to have more preparation for the presentation</p> |   | <p><b>Summative Assessment (linked back to objectives)</b><br/><b>End of lesson:</b><br/>The final presentation to small groups.<br/><b>If applicable- overall unit, chapter, concept, etc.:</b><br/>Unit over photosynthesis.</p> |

**Reflection (What went well? What did the students learn? How do you know? What changes would you make?):**

Using the dissection is cleaner way of having a hands on interactions. It is a good way of getting out of the textbook because it can be very drab. Suggested that I need to monitor the use of the computers during the class for appropriate behavior. Also need to find an online dissection that goes over the plant parts in detail.