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Synthesizing Synthesis: a Unique Step beyond Summary

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SYNTHESIZING SYNTHESIS:
A UNIQUE STEP BEYOND SUMMARY

By

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An Honors Project Submitted in Partial Fulfillment
of the Requirements for Honors

in

The Department of Elementary Education
The Feinstein School of Education & Human Development
Rhode Island College

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❖ **Introduction:**

When I enrolled at Rhode Island College in the fall of 2005, I knew that I wanted to challenge myself by enrolling in the college's honors program. The honors program is divided into several parts: general education honors, junior level honors and then finally departmental/college honors. I spent my first two years at Rhode Island College (RIC) completing seven general education honors courses, and my last two academic years at RIC completing several junior level courses. Upon completing my junior level courses I decided to undertake a senior honors project in my field of elementary education.

I was first introduced to the senior honors project in my junior level honors courses. These classes required that you go to various on-campus and off campus events, as well as meeting several professionals that came and lectured about their lives work and researching techniques during our class. It was fascinating to learn about what other professors at Rhode Island College are interested in and have worked on for their own personal research. As a senior, honors students are encouraged to research their own topic of interest that relates to their major and then write a thesis.

After changing my topic a few times, the topic I finally chose to research and learn more about was synthesis. I was originally introduced to the term synthesis in my reading one practicum in the fall of 2007. I quickly became fascinated by the process of synthesis and how it is implemented in the elementary school classroom. With the help of Dr. Barton, my reading one professor and advisor of my honors independent study project, I began learning more.

At first, mostly everything I read or came across involving synthesis discussed higher order thinking strategy and reading comprehension. The more I read and thought

about what synthesis really is the more I came to advocate that everyone has the ability to synthesize, and it is not only a process that occurs in the classroom.

This is a topic of particular interest to me, because as a future educator I want my students to be able to synthesize not only in the classroom, but in their everyday lives. I believe that being able to synthesize information is important in being able to create your own focused understanding of text and everyday situations. Synthesis goes beyond summarizing and retells it involves your own personal connection. I want my future students to make personal connections in order to retain information better and share their individual opinions.

I am interested in learning more about synthesis and developing creative ways to use it in the classroom. I want to learn more about the topic, how it is used, and who uses it. With the help of my research and final project, I would like to create new and creative ways to carry out synthesis in classroom instruction, and everyday life. These techniques would be beneficial to me as a future educator and they would be something I would want to share with other educators.

Another reason why I am interested in completing this project that is not related to synthesis or my future as an educator is that this project gives me a “taste” of what it is like to be a graduate student. Although, my thesis will not be nearly as extensive as a dissertation it is fairly similar. Overall, my senior honors project is a great learning experience for me, and my final project will not only be beneficial to me, but to other educators and thinkers as well.

❖ **Conceptual Background (Literature Review):**

What is synthesis exactly? There are several definitions and understandings of synthesis. According to Keene and Zimmermann, “Synthesis is the process of ordering, recalling, retelling, and recreating into a coherent whole the information with which our minds are bombarded everyday” (Keene & Zimmermann, 1997).

I would argue that this is my favorite definition of synthesis so far, because it does not limit synthesis to just being a reading comprehension strategy. I personally think of synthesis as a way of thinking or an essential thinking strategy that allows thinkers to gather information, and construct their own explanations of newly gathered information by using their personal insight, prior knowledge and several other factors.

From what I have learned, synthesis is most well known as a reading comprehension strategy that incorporates the essential comprehension strategies. “Synthesis draws upon making connections, questioning, visualizing, inferring, and determining importance”(Wisconsin Literacy Education and Reading Network Source, 2006). This strategy allows a reader to take in what they have just read, pause, make a generalization, create an interpretation, draw a conclusion, and then develop an explanation. The reader pauses periodically, reflects, and then tries to understand the meaning of the text using their prior background knowledge and prior schemas. After pausing, pondering, and the inclusion of their own insight the reader will hopefully come to understand the meaning of what they have just read.

Synthesis and summary seem to go hand-in hand, because although synthesis includes more than summary it relies heavily on the strategy of summarizing. Therefore, students’ summarizing skills should be practiced frequently, so that students can start to

synthesize with ease. In order, to have students practice summarizing they should be required to do “retells;” these “retells” can be either straight forward or creative. A “retell” does not mean to simply regurgitate a storyline or fact word for word, but yet instead a “retell” should be to the point, and highlight the main ideas about what was just comprehended, whether be a storyline, facts or a conversation that just took place.

Students need to learn how to summarize main points. Through “retells” you can see where students might go wrong and where they might need to pay more attention when they comprehend. This way you can introduce students with ways to put what they have read or heard into their own words. This is a very key point, and once students are able to retell using their own words, they will find synthesizing much easier to do.

Students can retell information orally, expressively or in a written form. This might seem hard for them at first, but over time it will become easier. Synthesis involves a summary as well as the reader’s perspectives, so the better the students are at summarizing the easier time they will have with synthesizing.

Synthesis is a great strategy to introduce to advanced students and to all students, early on. On the hierarchy of thought processes and strategies synthesis would be at the top or considered one of the harder strategies to master. I disagree with this argument, because I think that everyone has the ability to synthesize and synthesis should not be a strategy that is just taught to advanced students. If you are able to summarize and have your own personal thoughts about an idea you can synthesize. A lot of times “thinkers” synthesize information and are just not aware of the fact.

As a matter of fact, once students reach college or even high school, essays are no longer just summaries and retells. Instead, teachers are looking for personal

interpretations, opinions and analysis of ideas to show that you know and understand the meaning of the context. You can think of these types of assignments as forms of synthesizing. If children are expected and taught to synthesize earlier on, their future academic work will be easier, and they will have already practiced forming their own interpretations, voices, opinions and summarizing skills.

Throughout my project I will argue that synthesis can be applied to anything, not just reading, and it is great way to focus information and retell something with your insights attached. Through the use of prior knowledge and schemas students should be able to synthesize anything that is given to them. For instance, students can easily synthesize their daily schedule or a conversation that they have had with someone. Synthesis, even though it is often associated with reading can be applied to anything that requires personal connections and summarization.

There are several ways to teach students how to synthesize, but the best ways are to be creative and to always be thinking of new ways to introduce it. I mainly want students to realize that synthesis can be fun, and whether you know it or not you do it all the time and it is a great way to keep your thoughts focused.

I have found that comprehension strategies almost seem to work in a building block fashion, where synthesis is at the top of the stack. “Synthesis incorporates all of the other reading and comprehensions strategies such as summarizing, making connections, questioning, visualizing, inferring, and determining importance”(Wisconsin Literacy Education and Reading Network Source, 2006). Although it incorporates many of the strategies and appears at the top, I would argue it is not hard to do. Synthesis

allows the reader to involve more of their own personal interpretations and take more “outside” information into their conclusions/explanations.

Although, I originally thought it was hard to say that synthesis is distinct and its own “thing,” because it does in fact build upon other strategies. With the model I have created I have realized that synthesis is different and distinct, because it is all about the reader/thinker. A summary usually tells nothing more than what a story is about, but a synthesized explanation includes personal reasoning that can be linked to personal experience therefore shaping the conclusion to be the readers own.

If I had to pick one reason why synthesis is unique I would say it is, because it shows a person’s uniqueness and own understanding of a concept. Synthesis truly allows the thinker to voice their own opinions. I think synthesis is a good strategy to use, because more often than not we have something to say, but are not sure how to express it. Synthesized summaries allow readers to express their individual viewpoints.

Since synthesis is more creative and more personal than summaries, retells and inferring strategies I would argue that synthesizing makes class work seem more interesting and less like busy work too. Since the reader also has to include all of their own personal feelings, experiences other generalized thoughts one could argue that synthesis is a better way to test someone’s knowledge. Simple summaries usually just reiterate the events/main points of stories and information and they do not necessarily get connected to anything and little reasoning is given. Synthesis connects summary, personal connections and creativity. It is a thinking strategy that helps to show how everyone’s thinking is unique. Unique thinking is very important in the classroom, so synthesis is a very important strategy to learn and use.

Through my research of synthesis I came across a great visual model of synthesis from a website, www.busyteacherscafe.com. I really enjoyed this model (See Appendix #1), but I felt as though it was not complete, and a little hard to understand. One major issue I had with this model was the fact that it was literally a “one way street.” The process of synthesizing only moved in one direction and there was no evidence to show that it is indeed a cycle. After looking over this model and thinking more about what synthesis means to me I created my own model of synthesis (See Appendix #2).

My model of synthesis is similar to the model that I found, but I think of it as a cycle. My model is read from the bottom upwards, but once you have reached the top tier you are not necessarily finished. It is possible to start over with the same information and cycle back to the bottom tier and synthesize the same idea once again.

My model has six major successive components. These components are as followed:

- Catalytic Information
- Pause
- Generalize
- Applications
- New Focused Interpretations
- Conclusions/Explanations

In my model synthesis relies on catalytic information that starts the whole process. Then the thinker is expected to pause and take in the information they have just gathered. After this the thinker needs to generalize what they have just read. This is where the thinker can connect personal experience, prior knowledge, others viewpoints

and etc... to what they have just read. This requires them to be creative and think about the story in a different way. Everyone thinks differently so the generalizing part is where you really get to show how you think and “categorize” information. If I had to pick one reason why synthesis is unique I would say it is, because it shows a person’s uniqueness and own understanding of a concept.

I will demonstrate how to synthesize using my progression through the elementary education program here at Rhode Island College. I will mainly be describing my initial feelings about the elementary education program before actually applying. The majority of my experiences will relate to how I was feeling as a freshman and sophomore. During this time I was learning how to apply to elementary education program and set a distinct career path of classes. This is personal life experience that is not directly related to a text or the classroom. Using my personal experience will help me demonstrate the point that synthesis is not just a reading comprehension strategy, but it is indeed a thinking strategy that can be applied to life.

My visual model starts off with a very large box entitled, “Catalytic Information.” Catalytic Information refers to any type of information that you have previously learned, just learned or want to learn that has jump started your curiosity. This information can come from anything. For example the information could be: a fact, a story, conversation, lecture, and a thought. Basically anything can fall into the category of catalytic information; therefore it is represented as a large and broad area of the model.

My personal example of “Catalytic Information” would be entering Rhode Island College as a freshman and receiving many handouts, a course bulletin and guides that would help me plan my next four years in school. When I received those folders,

bulletins and handouts, I was completely baffled. There was a lot of terminology and ideas written on the papers that I did not fully understand. I knew that in order to become a future teacher I would need to take certain classes that related to my major. I remember looking through my folders that included the list of classes I would need to take in order to graduate and I had so many questions. I was left to ponder:

-What do I need to be taking now?

-How can I take all of these classes in four years?

-How does the elementary education program work with the special education program?

-Who do I go to if I need help, since I do not have an advisor?

-etc....

After you have acquired this information, as a reader and thinker you are required to briefly pause. This leads to the next step in my model, which is “Pause.” While you are pausing you are thinking about what you have just learned or thought about. You could be simply pausing to check your understanding or pausing, because you have become interested in learning more. While you are pausing you are trying to get to the next step which would be generalizing.

Here is how pausing relates to my personal experience. After I looked over my sheet that listed the classes I had to take, my future requirements, and so on I had to pause for a minute. I needed to pause in order to logically take in the vast amounts of information that were given to me. Instead of instantly becoming too overwhelmed, I paused and logically thought through how I could take all the classes listed, and when I could possibly start applying to the elementary education program. Without pausing I

might have jumped into setting up my classes and applying too early. This could have led me to picking the wrong classes and incorrectly submitting my application.

The next and one of the most important steps in my model is titled, “Generalize.” The generalizing piece of my model involves what you do to understand the newly acquired information. In order to better understand what you have just learned and acquired you need to be able to think of what you have learned in comparison to your prior knowledge, other’s viewpoints, cultural environment, emotional reaction, likes/dislikes, genre expectations and time frame, as well as un-explained territory. All of these areas play a major role in how you interpret the catalytic information. For instance, what you already know allows you to access previously established schema.

These factors aid thinkers in eventually creating their own understanding of the new information they have acquired which then helps thinkers be able to retell the newly learned information in their own words. The generalize piece of the model is the second largest piece of my model, because it involves so many factors. The generalize piece of my model is what makes the retelling of information synthesized rather than just summarized. The generalize portion of the model deals with all the interpersonal and outside forces that forms ones understanding.

Since I was a freshman without an official advisor and no friends or relatives who were already enrolled in the program, I did all the things I could possibly do to gather information and understand what I was I was expected to do in order to become a teacher. I began asking other students in my class what classes they were taking, what order they were taking them in and so on. I remember finding out random tidbits about the program all the time. For instance, I learned not to go to OASIS for help, but rather to go upstairs

in the Horace Mann Building and ask a secretary in the elementary education program for help. I learned which classes I needed to take as prerequisites by asking other students, and carefully reading through the course bulletin.

Fellow classmates and professors helped me make judgments about which classes I should take, when, with which professors, and in what order. The more I learned from conversing with other students and hearing their past and present experiences the more prepared I felt. Although, I still was struggling with applying to the program, I felt as though I had better background knowledge.

After the new information has been generalized it is then time to apply that generalized knowledge. The next category in my model is called "Application." The application piece of my model is when you actually take the new information that has been matched up with your generalized factors to then start applying your understanding and meaning to better help you understand the new information.

For example, I would think of the generalize portion of the model as the broad knowledge base that you access in order to try and pair the new information up with something you already know, it is your "personal touch." When I think of the application section of the model I think of it as though you have already chosen how the new information fits into one of the generalize factors and now you are beginning to intertwine the new catalytic information with your "personal touch," which is the generalize piece. When you begin applying your personal thoughts to the information you are beginning to form a newly focused interpretation.

I began to apply (application) what I had just generalized when I finally started to make my own plans and decisions. I started to make decisions about which classes I

should be taking on my own based on the advice of other students/professors, and the course bulletin. I started writing down my own future class schedules, and I started working on my program application. The advice other students gave me, and the rubric helped me figure what to write in the admissions essay. I started planning when to take my PPSTs exam (when I first received my application folder I had no idea what they were) and I eventually signed up for a testing appointment. At this time I was taking all the generalized information that I made personal and actually starting applying it to the application process.

The next step in my model is “New Focused Interpretations.” This part of the model is when you make your own interpretations of the new catalytic information. This is when you can start to distinguish your interpretation from the interpretations of others. In other words, this is when your retell truly becomes your own words. At this point in time you should be able to clearly understand your feelings and interpretation so that you can then finalize your ideas into your own conclusion.

During the “New Focused Interpretations” phase I started to make meaning of the entire process as a whole. At this time I had used all the information I had learned to submit my application and pick my next semesters classes. At this time I had my own understanding of the program based on my own experience of applying to the program, and choosing classes.

The last step of my model is the “Conclusions/Explanation” phase. At this time the thinker should be able have a definite conclusion and be able to explain the catalytic information in their own words. When thinkers come to a conclusion/explanation they

should be able to summarize the main points, show understanding/comprehension as well as tie their own personal intake to the information.

My examples for the “Conclusion/Explanation” piece would be that after applying and being accepted to the program I now have my own advice and experience to share with upcoming students about applying to the elementary education program. I know when to apply, how to apply, and who to talk to if you need help. At this time I know the terminology used within the application folder, I know what the PPST exam is and how to prepare for it, I also have a better idea of which classes to take when. At one point all of these things were new to me, and now they are familiar to me and I can apply them to my own life.

Once you reach the top of my model it does not necessarily mean you are finished synthesizing. At this time point in time thinkers are able to jump back into the model at any point if their conclusions have changed or if they want to go through the process again using the same catalytic information. I find that my model of synthesis can work in a cycle, and it is never ending. Your conclusions should lead you to new catalytic information and therefore you start through the process again.

Since I have been admitted to the program, I am finished trying to understand the application process. I can always think back to the process and try to clarify aspects that still seem a little unclear to me. I can easily synthesize the process again, if I think about what I could have done differently. My new catalytic information could now be that I have been accepted to the elementary education program, how can apply to the special education program? Is the process the same, and what do I need to apply? I have this application folder, but what should I do?

❖ **Method:**

My honors project consists of this overall major question:

- How do you go about working synthesis into your lesson meaningfully if you have time/curriculum restrictions?

In addition to my overall question, I had three other questions that I wanted to answer throughout my research and completion of my senior honors project. (See Appendix #3 for the questions.)

Setting:

Overall, researching synthesis is something I have chosen to do as part of my senior honors project here at Rhode Island College. I have been working on this project since the fall of 2007. At this time I was enrolled in the courses (Honors 351, and Honors 365) I needed to take in order to complete a project. During these courses I learned how to research, and learned about several RIC academics and other professionals' individual research methods and topics of interest. During this time I was working on figuring out a topic that I would be interested in studying that related to education.

I originally wanted to focus my studies on learning more about "focus," and ways to keep a child's focus. I chose this topic, based on a practicum experience I had, had. At this same time I was learning about synthesis in my reading practicum and I had a change of heart, and I have been working on learning more about the process of synthesis ever since.

I have several good reasons for wanting to complete an honors project. I decided to go through the researching process in order to better prepare myself for graduate school, to graduate with college/departmental honors, and I also want to generate tips for myself as a future educator and other teachers. I also want to be able to share my research with the community of Rhode Island, my colleagues, family and so on. Since I

have learned so much about synthesis in the past year, it would be a shame if I did not share my findings and thoughts with others who can benefit from the use of the synthesis strategy in their daily lives to organize their thoughts, etc...

Procedure:

In order to answer my overall question, I had to not only research the topic synthesis; I also wanted to interview academics and professionals. Instead of interviewing participants, and trying to record oral conversations, I decided it would be easier to conduct interviews and record data through email. I decided that I wanted to gather the thoughts/views of professors from RIC in the education program, RIC professors in other fields, art teachers and non-academic professionals. I wanted to interview a wide variety of people, because I want to prove that synthesis is not only a skill that can be applied in the classroom.

I originally emailed sixteen participants with my survey. These sixteen participants were chosen by Dr. Barton and I, based on who we thought would be interested in the topic enough to provide their thoughts in a timely manner. We also chose these sixteen participants, because they come from a diverse background of careers and fields both academic and non-academic. Out of the sixteen people who received a survey, eleven people replied. Eight of the participants who replied are professors at Rhode Island College, and the other three participants were professionals in others areas.

Overall Question:

- How do you go about working synthesis into your lesson meaningfully if you have time/curriculum restrictions?

How things work:

- What are academics and professionals' definition of the concept synthesis?

- Is application a necessary step that needs to occur before new focused interpretations can be made?

Application:

- How can you design and apply concrete applications of real life synthesis that do not occur in the classroom?

My “How Things Work” questions that were reworded and sent to my participants:

- What are academics and professionals’ definition of the concept synthesis?
- Do academics/professionals believe that application a necessary step that needs to occur before new focused interpretations can be made?

Questions asked in the email surveys:

- 1.) What do you think synthesis is?
- 2.) How do you use/do it in your field and life?

(See Appendix #4, for a copy of the full email sent.)

I sent each person the same email with the same two questions in August 2008:

-What do you think synthesis is?

-How do you use/do it in your field and life?

I basically asked the participants to define their definition of synthesis as well as give me an example of how they use synthesis in their everyday life and in their career. I choose these specific people, based on professors I knew and professors Dr. Barton recommended to me. I interviewed people from various backgrounds such as education, music, nursing, business, art, English, and accounting. My overall goal was to gather their thoughts, and then compare them to my thoughts and to each other’s thoughts.

When I made my questions and gathered my answers I had these two things in mind. With each question I posed I wondered about the thoughts/answers I wanted to

receive from my participants, and what I hoped to understand better based on their thoughts/answers (results).

When it came to question one, (What do you think synthesis is?) I was hoping to get a definition from each participant about what they personally thought synthesis was. I was expecting to receive similar sounding definitions. I was expecting participants to claim that synthesis is a high order thinking strategy that is most well known in reading and comprehension. I received a mixed amount of definitions that included answers such as high order thinking skills, and the process of putting smaller pieces together to form a larger whole. I was expecting to have some participants state that they did not know what synthesis was, because I feel as though it is sometimes a term that is often overlooked. In this case everyone responded with definitions that varied in length.

Through gathering all of my participants' definitions I was hoping to understand what various academics and professionals think about synthesis. I now feel as though I have learned that many academics and professionals have the same if not similar definitions of synthesis that I have. This makes me wonder more about my second question, because I wonder if they also agree that synthesis is more than just a reading comprehension strategy. Although, I was interested in gathering definitions I was really interested in seeing how academics and professionals apply their definitions.

When it came to question two, (How you use/do it in your field and life?), I was expecting to get many responses that stated, "I do not use synthesis, or I am not sure how I use synthesis in my everyday life and career field." There was only one participant that answered this way. Not everyone provided both a life, and field/career example, but everyone provided at least one or two examples of how they use synthesis. I actually did

not expect to receive as many detailed responses on this particular question, because it is a question that I often struggle with answering myself.

From this question I was hoping to understand how professional and academics use synthesis throughout their day and when they are working. I hoped to learn alternative ways that I could use to teach synthesis for academic and personal use. From the information I gathered I learned how to incorporate synthesis into the business, education, nursing, mathematics and art fields. For me this was my favorite part of reading my surveys, because it helped lead to answering my next question.

My next question is what I refer to as my “application” question. My application question is:

- How can you design and apply concrete applications of real life synthesis that do not occur in the classroom?

This question is designed to be mainly answered by my “non-academic professionals.” I specifically asked my musician/accountant, and two art teachers to participate in my project, because I wanted to design and create ways to use synthesis in real life as well as in the classroom. These three participants received the same questions as the academics in the education field, and academics in the non-education fields.

These three participants’ examples of both everyday life synthesis and synthesis in their fields helped me to think about how I can synthesize outside of the classroom.

❖ **Data Analysis & Results:**

My honors project focuses on several aspects of synthesis, but my overall question is, “How do you go about working synthesis into your lesson meaningfully if you have time/curriculum restrictions?” In order to answer this question I wanted to know what academics and professionals thought about synthesis.

Out of the sixteen participants that were suggested I received feedback from eleven participants of different educational and career backgrounds. I received feedback from participants who have backgrounds in education (majors including math, art, social studies), business, art, music, nursing, accounting, and English. I decided to research how participants from the educational field and how participants from non-education fields thoughts and ideas compared and contrasted. It was interesting to see that every participant who provided feedback had heard of synthesis before, although not every participant agreed that they use synthesis in their career and everyday life.

Definitions of the Concepts:

The survey was conducted via email, because it was very easy to record information this way. After looking over all the answers I received I noticed that many of the same terms kept reappearing. Throughout all of the definitions I collected I noticed that many defined synthesis using the same terminology and concepts despite their professional background.

Terms that I saw frequently included: highest level of thinking/cognition, Bloom's Taxonomy, constructing new meaning, puzzle pieces, parts to whole, bigger picture, transferring knowledge, application, bringing together disparate pieces of information so that something more complex appears, gelling, and creating meaning that is more than a sum of its parts.

The most (highly) frequent concepts were whole, parts, and connecting disparate pieces of information. From what I read I really did not see a huge difference in definitions across the different fields. I did find that they all used synthesis differently in their lives and fields.

When compared to my model, the participants and I used some of the same terminology. For example, I saw a direct comparison for the term “application.” I referred to information as “Catalytic Information,” and most others used the terms parts, pieces, and disparate information. Although I agree with their definitions and use of terms, I like how my definition tells you that the information gets you thinking and interested (catalytic).

I found that everyone seemed to leave out the pausing phase of my model. I think that they might actually pause, but since I argue that you should complete a short pause, it is possible they did not think pausing was relevant. I am curious as to why no one mentioned the term pause. I think the pause is a very important step, because it helps keep thinkers from becoming too overwhelmed and absorbed too quickly.

I think that none of the participants mentioned the pause step of the model, because it is not something they think about. I think the pause step just occurs naturally when you take in new information. My guess is that the participants might consider the pause minuscule/unimportant or natural so they do not think about including it as a critical step in the synthesizing process. I also think the participants might have overlooked the pause step, because it is something that is not mentioned often. The pause step was not a part of the original model of synthesis that I found. The pause step was not the only step the participants failed to mention as a critical part of the synthesizing process.

None of the participants mentioned the term generalize in their definitions. The generalize piece is a very large piece of my model, so I was a little shocked when I saw little about generalizing. For me the toughest part of my model to explain is the point

between generalize and application. A few participants mentioned applying the information. I would argue that most participants also mentioned a conclusion. I would argue that instead of using the term conclusion they used seeing the “whole” or the whole picture.

Uses of Application:

The second question I asked was how they use synthesis in their field/career and everyday life. Most everyone said they use synthesis in their field either directly, or indirectly. When I use the term directly, I mean the thinker thinks about and is aware of the fact that they are synthesizing information as they work. When I use the term indirectly, I am referring to someone who is unaware of the fact that they are actually synthesizing information or they use a different term to describe the synthesizing process.

Out of the eleven participants who responded everyone responded with an example of how they use synthesis with in their field/career. One participant stated in their definition that synthesis is not a term they use, and they do not plan their lessons around it explicitly. This same participant then goes on to give an example of how they use synthesis in their field, so this would be an example of indirect usage. This participant believed that they do not synthesize, when in fact they actually gave an example of how they synthesize.

Not every participant gave an example of how they use synthesis in their everyday life. Out of the eleven participants, six gave an example of how they use synthesis in their everyday life. I think six participants, rather than more or less, gave an everyday life example, because it is harder to think of an everyday life example. I think it is harder to think of an everyday life example, because sometimes the things we do

everyday have become so routine, we no longer think of these tasks as a process. I also think that most of the participants probably consider their daily work (career field) as a major part of their everyday life. I know that I have a hard time trying to think of my life as separate from my educational life. I also think that only six of the eleven participants gave an example of everyday life synthesis, because it was the second question in my survey. They may have simply overlooked my request of both everyday life and career related examples.

Another reason why I believe the participants had a hard time thinking about synthesis in the context of their lives rather than career/field, because I think synthesis is a topic that most people do not think about daily. I believe that synthesis is well known in the educational field, especially in literature studies (reading) and educational studies, because it is often referred to as a reading comprehension strategy. I would argue if you do not get much exposure to these fields you might not know much about the process of synthesis. With this study, I am trying to prove that synthesis is more than just a reading comprehension strategy. I argue that it is a thinking strategy that should be taught to all thinkers so it can be thought about and used daily.

Application:

I find based on all my responses, “application” is indeed a necessary step in my model. In my model, the application piece is when you actually take the new information that has been matched up with your generalized factors to then start applying your understanding and meaning to better help you understand the new information. The application piece to me is a necessary in order to make your own explanation/conclusion. In order to have your own explanation/conclusion I believe that you must “try out” your

generalized thoughts by applying them to something. The application step helps you to better understand the conclusion you are working towards.

Out of all my participants only one person stated that they do not think directly about synthesis and they believe they do not use it in their career or daily. This person does not think synthesis applies to their life or career directly.

I received a variety of results and examples from all eleven of my participants. Here are just some examples of how the academics in the field of English use synthesis in their career. “Participant B” uses synthesis in her teaching, “when she asks her students to look at one text/idea in terms of another, or to link their own lived experience to the materials we are studying.” She states that “we are always bringing together disparate data to shape a concept, or a theory, or an explanation for a practice.”

“Participant D,” who is part of the education (social studies) department, helps her students understand that elementary students are able to synthesize if they are given the opportunity and time to practice. She argues that all RIC students who are preparing to teach synthesize as they progress through the education program here at the college. I would agree with “Participant D,” because I used my progression through the education program as my life example in this paper. “Participant E’s” response also agrees with both “Participant D,” and I, because she states that she helps her students learn how to synthesize when she gives them raw materials to create lessons. “Participant G” and “Participant H” use synthesis when they make connections between ideas and concepts and then apply these concepts to other contexts, such as theories.

I also collected data from academics that were not in the education field. “Participant A” uses synthesis in her graduate nursing program when she worked to

develop curricula for teaching nursing students, and Blooms Taxonomy became the framework for developing learning objectives and testing students. She thinks of synthesis as a higher order thinking skill.

“Participant C” teaches synthesis in his business (creativity) course, but he refers to synthesis as high-road and low-road transfer. He thinks of synthesis as the ability to “take concepts and abstract them to totally different domains and situations.” He also stated that he is the only person to his knowledge that teaches a creativity course within the business department. This course teaches students how to be creativity with their thought process.

“Participant F” of the English department stated very clearly that she uses synthesis everyday. She says her best teaching experiences are those in which her actions and deeds seem to be in a “harmony,” or a “wholeness” as she describes its.

I also asked three professionals that are not affiliated with the college to share their thoughts on how they use synthesis. “Participant I” uses synthesis in her three dimensional design and sculpture courses. In these courses her students are taught how to take their materials and ideas, to create whole sculptures/projects that are 3-D. Her students work towards combining unlikely ideas, and having them make sense.

“Participant J” is a musician and accountant, and he uses synthesis in both his musical career and professional career. He claims that synthesis in a song is when a song takes on a life of its own. He states that everyone hears a song differently, and when a song takes on a life of its own it evolves in a separate direction from that which any one person might have thought of or intend. He describes it as a whole being more than the sum of its parts.

“Participant K” describes her past experience as a student at RIC in her 2-d synthesis and 3-d synthesis courses. She states that in these classes she had to take the foundations of design and drawing that were learned in earlier classes, and combine them to form a higher level of artistic productivity. She also describes how she synthesizes by connecting what she teaches in her elementary art class to other content areas like literacy. She believes that being able to connect artistic ideas to a larger picture (content) helps her and her students learn the small pieces better.

Listed above are just some examples of how the eleven participants I surveyed use synthesis in their fields. I am now going to explain some of my favorite participant responses on how they use synthesis in their everyday lives. One response I really enjoyed was from “Participant B.” She stated, “I want to buy a book for my great-niece who has just lived through a rather traumatic experience. I think about what books I know that might be of interest to her general age group. (And I check some resources -- friends who teach high school, an expert on YA literature. I read some book reviews.) Then, I think specifically about what I know about her and her circumstance and think about what might be most useful for her right now.”

This was my favorite example, because I felt as though it lent itself to my model very well. It shows how she generalized, which is a piece of my model that I consider to be on the most important steps. Not only did she generalize she eventually made a conclusion when she chose which book to buy. As you can see the process of synthesis is as easy as thinking about a new book to buy.

This makes me think about all the different ways you can synthesize throughout the day. Think about every time you buy, or chose something. I think it is safe to argue

that sometimes when you are buying something you have to make a decision about why you are buying. You probably think about how this object will benefit you, why you need, what you will do with it, and I bet while you are doing this you are thinking about other “generalize” factors. For example: my friend has this object and says it works well, I saw someone using this object and it looks very easy to use, or I have used this object before and I like how it works, others recommend this object, etc... It has occurred to me that every decision you make can possibly be synthesized if you “pause” and think about it long enough. I would argue that the decision making process is a great way to teach someone how to synthesize their thoughts.

My other participants responded that they synthesize when they problem solve, think critically, and make connections between their lives and other’s lives, texts and etc... I like how ever participant’s examples were very different and distinct. Gather their responses helped me come to a conclusion about my research on synthesis.

❖ **Conclusions:**

I would conclude based on all of my data and results that synthesis is more than just a reading comprehension strategy, that it is a critical thinking strategy that can be applied in everyday life situations. I think that synthesis needs to be taught in the classroom early on to all learners, because as one of my professionals stated, if students are not taught how to synthesize we can not expect them to learn it on their own. I think that students can be introduced to synthesis in the early elementary grades, because I think of it is more of a thinking process than a reading strategy.

I think the best way to teach synthesis in the classroom would be to apply synthesis to various content areas and daily tasks. I would have students practice

synthesizing first as a reading comprehension strategy, next as a way to describe a major event in their life, and after that I might challenge the students to find a way to incorporate synthesis in their daily life tasks.

Synthesis is an important skill for me, the field of education and the world thinkers to possess, because I feel as though it makes a person a better and “whole” thinker. Being able to synthesize allows thinkers to learn about new information in terms of information they already know, others’ viewpoints, and the other sources of generalizing factors that my model states.

From this study I have learned how academics and professionals think about synthesis, and incorporate synthesis into their everyday lives and the classroom. The information, I gathered from the eleven participants has taught me that there are many ways to incorporate synthesis in the classroom despite curriculum/time restrictions. The easiest way to incorporate synthesis is to allow students to connect newly learned “catalytic information” to their prior knowledge, other texts and the world. I now see that in order to synthesize, one must not only practice summarizing, they must also practice making appropriate connections (text-text, text-self, text-world).

When I first started this study, I thought of synthesize as more of just a strategy that goes beyond summary. I still think that synthesizing relies heavily on ones ability to summarize. I will now argue that in order to synthesize well, students also need to know how to make appropriate connections between themselves and “catalytic information.” I think the connection piece, or the “generalize” step is a very critical aspect of my model.

From this study, I also feel more strongly about teaching all students to synthesize. Since synthesis is about summarizing and making personal connections, I

would argue that one is able to synthesize even if they can not read well. I think that synthesis should be taught at the same time students are being taught to summarize and make connections. To me synthesis is the tying together of these two strategies. Even though synthesis is a high order thinking strategies, I feel as though it may be just as complicated if not easier to do when compared to other lower order thinking strategies, such as sequencing.

Even though synthesis is a high order thinking strategies that ties together summary and connections, it needs to be taught as “synthesis.” I argue that you should teach synthesis when you are teach students how to summarize and make connections, but you must understand that synthesis is its own distinct strategy that must be taught separately from the summarizing and making connections strategies. Synthesis may be a higher order functioning skill, but it deserves to be recognized on its own, because it is more than just a sum of its parts (lower order thinking skills). It may be the “whole” picture, but it is a distinct strategy.

One of the main things that I learned from this study is that synthesis occurs in both the classroom and everyday life. I have also learned that everyone has the ability to synthesize. I still disagree with the statement that synthesis is a high order thinking strategy that only advanced learners and thinkers should be taught. All learners should be taught how to synthesize newly learned information in order to make their own interpretations that they can use to better understand what they have just learned.

Something I still would like to learn is how I can get students synthesizing daily without having to think about the fact that they are synthesizing. I want synthesis to become an automatic and natural process that they use when they think. I am also

interested in learning more about how I can educate others in educational and non-educational fields on how to use synthesis. I would like to share my research with others, by modeling synthesis in my everyday life. Something I would like to teach myself is how to synthesize more often, in order to make “new catalytic information” personal to me and my own learning styles. My goal is to teach as many people as I can to synthesize. I would also like to learn how to teach students to synthesize using the multi-sensory approach as well. I currently have a visual model I created, but I would like to learn how to create a hands-on and auditory example of synthesis as well.

Furthermore, I would like to learn more ways to go about working synthesis into your lessons meaningfully if you have time/curriculum restrictions. This was my “overall” research question for this project, but I feel as though I have learned some ways to work synthesis into the classroom despite time restrictions, but I want to learn more ways. I feel as though this study turned out to be more of a learning experience for me. I learned more about what I think synthesis is, and how others use it in the academic field and in everyday life. I feel as though I still have more I want to learn, and I will be able to use this study and research to help me design ways to use synthesis in my classroom.

Overall, synthesis is a topic I have become very interested in the past year, and it is something I plan on studying further. While studying further I hope to try “completely” answer and come up with new ways to use synthesis in the classroom and your everyday life. This study has taught me that you are never truly done researching and wondering about a topic. In the end, this was a great learning experience for me that I plan to carry on and remember for years to come.

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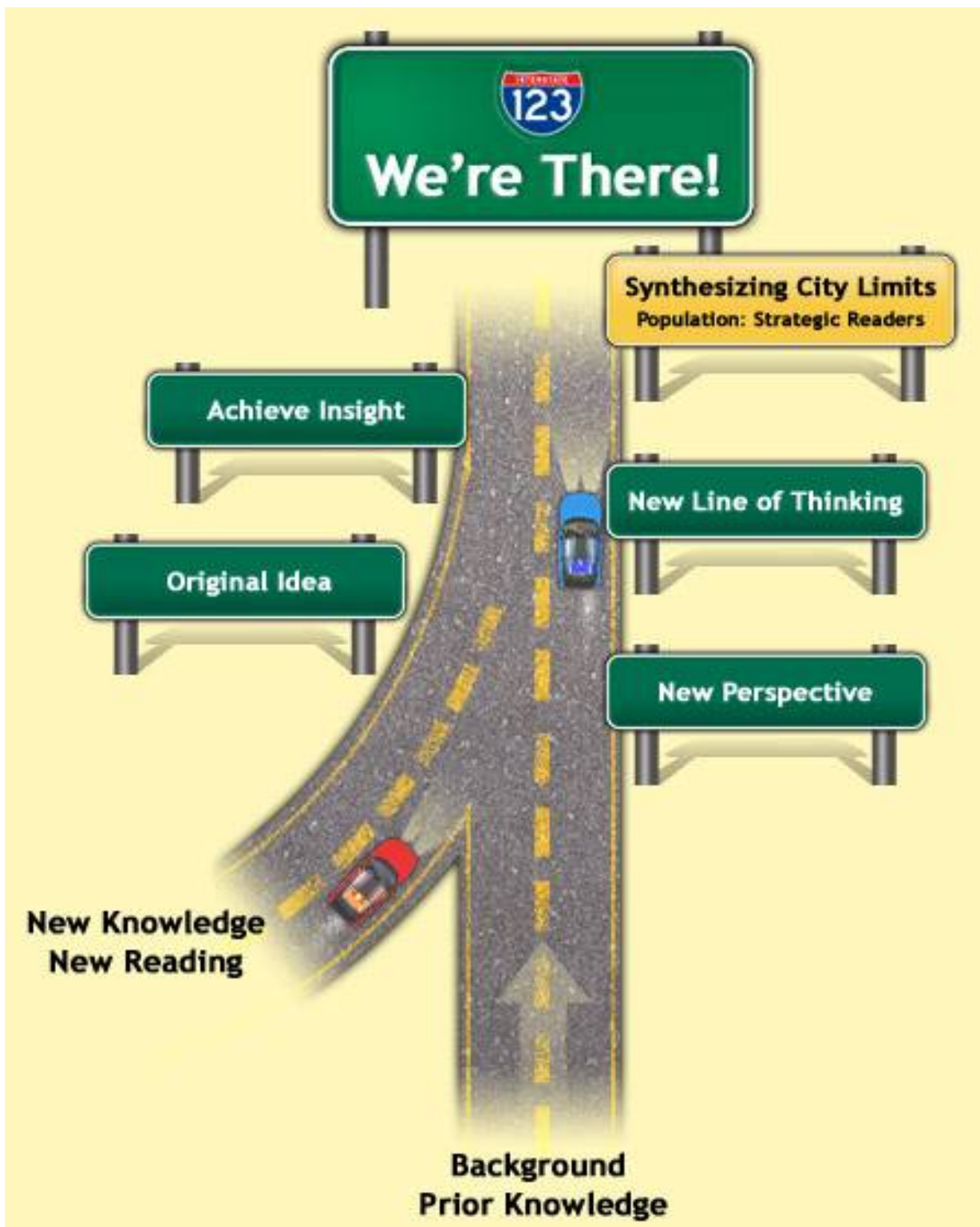
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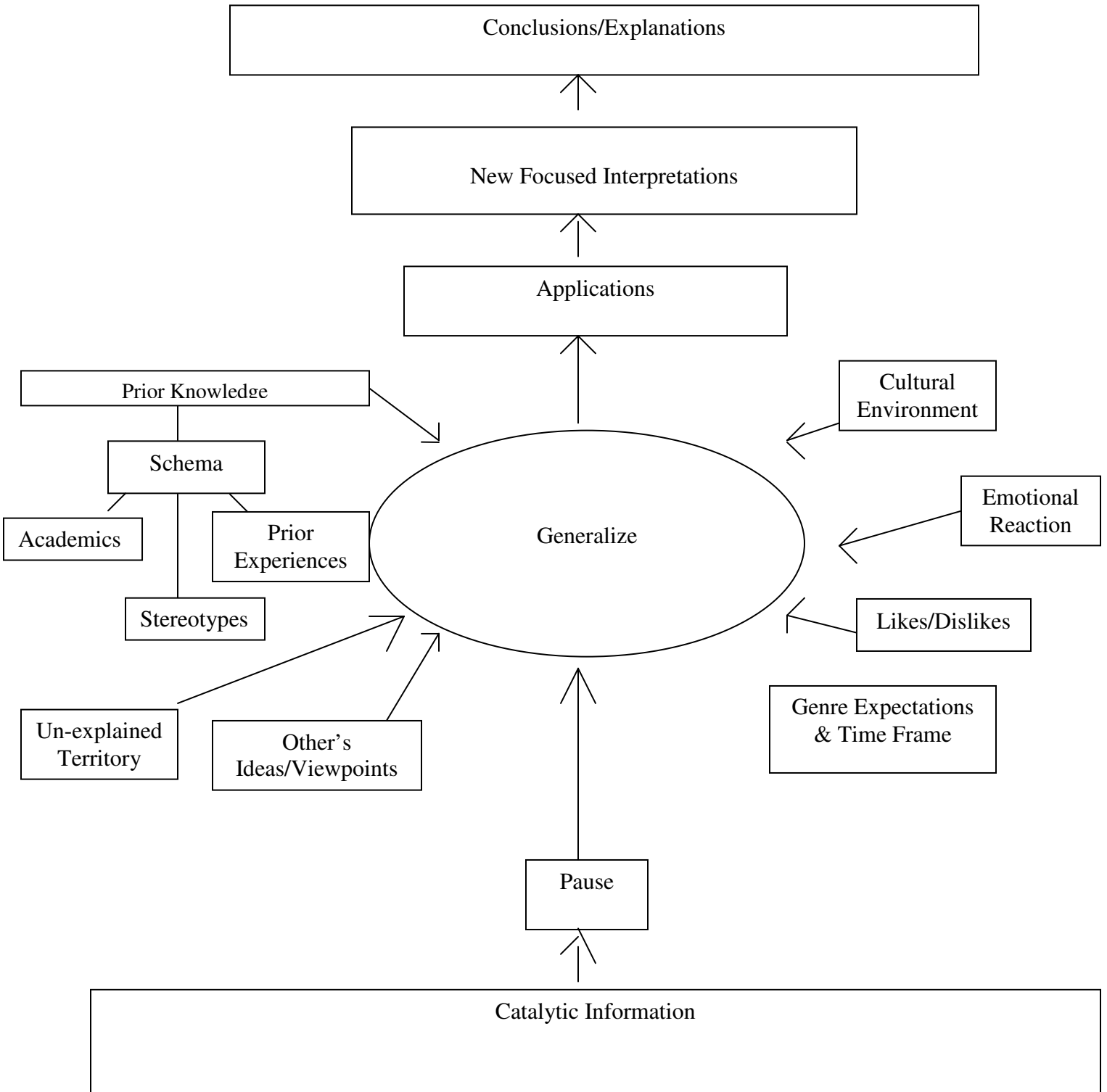
Special thanks to my advisor, Dr. Barton.

❖ Appendix #1

Busy Teacher's Café's Model of Synthesis



❖ **Appendix #2**
 My Conceptual Model of Synthesis



❖ Appendix #3

Questions:

Overall Question:

- How do you go about working synthesis into your lesson meaningfully if you have time/curriculum restrictions?

How things work:

- What are academics and professionals' definition of the concept synthesis?
- Is application a necessary step that needs to occur before new focused interpretations can be made?

Application:

- How can you design and apply concrete applications of real life synthesis that do not occur in the classroom?

❖ Appendix #4

Email Survey

Hello _____,

My name is Melissa LeBlanc and I am an ELED/SPED major. I am working on a senior honors project that explores the topic of synthesis. I am working on my project with Dr. Jim Barton (my advisor) and part of my project involves collecting professionals' views on the topic of synthesis. My project is broken down into several parts with my overall questions being, "How do you go about working synthesis into your lesson meaningfully if you have time/curriculum restrictions?", and "Can synthesis be used in real life situations outside of the classroom?"

Before I can answer this question I have decided to ask the question, "What are academics and professionals' definitions of the concept of synthesis?" I am just curious as to see if it is a well known concept, what you think it is and how you use it. I am going to be gathering definitions from professionals from the Ed. dept. as well as other departments/fields, to see if it is strictly an education topic, because I am arguing that you use synthesis in everyday life.

Dr. Barton suggested that I contact you and see if I could get your opinion/views on the concept of synthesis. I am not supposed to tell you what it is, but if you are not sure it's usually associated with comprehension and higher level thinking skills.

If you have the time and are interested in responding to my message the questions I am asking are:

- 1.) What do you think synthesis is?
- 2.) How do you use/do it in your field and life?

You can simple respond to the questions through email, Dr. Barton and I figured it would be easier than trying to transcribe and record and interview. If you are interested would it be possible to contact you in the future through email/ in person during the rest of the summer/fall while I am completing my research?

Thank you very much for your time,

Melissa LeBlanc