

Choice in Learning: Differentiating Instruction in the College Classroom

Angela Danley, EdD

Associate Professor, School of Teaching and Learning
University of Central Missouri

Carla Williams, EdD

Assistant Professor, School of Teaching and Learning
University of Central Missouri

Abstract. This article addresses the importance of differentiated instruction in the college classroom. Additionally, it focuses on the results of the students' perceptions of differentiated instruction in the college classroom. Students in the college classroom were given choice boards to display their understanding on phonemic awareness, phonics, and morphology. The article discusses ideas for future direction based on the results from the action research project.

Imagine if we went into a shoe store and every pair of shoes were the same color, the same heel height, same price, and same brand. It would be awkward to see everyone walking around wearing the same shoes. It would also be frustrating for people because not all shoes fit the same. The choices in shoes allows everyone to differentiate based on their foot type whether it be narrow, wide, or medium width. Choice in shoes also provides each person the opportunity to purchase shoes that fit their budget and needs. This same analogy applies to the learning which takes place in the classroom. Each learner brings unique learning characteristics to the classroom with a preference on how they learn the content. Just like having choice in shoes, educators can provide choice in learning the content. This choice in learning is referred to as differentiated instruction.

At a Midwestern university, first semester senior level teacher candidates (TCs) in the elementary and early childhood education programs were given a choice board after instruction took place over phonemic awareness, phonics, and morphology. TCs from three different sections of the communication arts integration course were given the choice board assignment along with the scoring rubric after covering the learning modules. Each TC was required to complete two different choice board activities which included one focused on phonemic awareness and phonics and another one for morphology. TCs were invited to participate in a pre and post survey to gather their experiences and perceptions connected to choice in learning in the college classroom. It is the belief that differentiating instruction in the college classroom, specifically using product type, is an effective approach to engage students in learning the content.

This article includes a review of literature over differentiating instruction in the college classroom, student agency, self-determination theory, and supporting students' metacognition. Additionally, the three different types of differentiated instruction are included in the literature review with examples of activities instructors can implement and embed into coursework. The results of the action research are discussed with selected examples of completed student work. Lastly, ideas for future direction and research ideas are included.

Review of Literature

Providing choice in learning is one way to engage students in the content being taught. Allowing students the opportunity to select how they will learn the content is one way to increase engagement and boost student learning (Anderson, 2016). Differentiated instruction has been embedded in pre-kindergarten through twelfth grade classroom instruction, which has proven effective and is worth being implemented in the college classroom (Mintz, 2016). Using choice boards to differentiate instruction allows the student to actively engage in the learning by selecting an activity or activities to display their understanding of the content. Using choice in learning is one way to motivate and actively engage the students in the learning process.

Using choice in learning is one way to motivate and actively engage the students in the learning process.

Research on Differentiation in the College Classroom

While research reports positive results for differentiating instruction in the secondary classroom, limited research exists on the implementation in the college classroom. Differentiation may not be the instructional practice of choice in the college classroom due to the commitment it takes to develop a variety of resources to appeal to the learning preferences of students (Lightweis, 2013). Adding to the research on differentiating instruction is imperative at the college level in order to provide engagement and student-centered learning, but more importantly it helps contextualize the learning to teacher and students' lives and experiences.

Students enter the college classroom with diverse learning needs due to the differences in life and educational experiences (Merriam et al., 2007). Dosch and Zidon (2014) stated, "The one-size-fits-all, traditional model of lecture-style teaching and teacher-driven education continues to dominate in college" (p. 343). Ernst and Ernst (2005) wrote that at the college level, fewer studies exist regarding differentiation for several reasons, which include 1) class sizes are typically larger than a K-12 setting; 2) the number of contact hours with students is minimal; 3) designing varying assessments takes time and can present challenges for instructors, and 4) ethical concerns such as grading creates controversy.

In a study completed by Livingston (2006), differentiation of instruction yielded positive results of 33 undergraduate pre-service teachers. The students wrote about how they enjoyed the constructivist approach of teaching and being able to choose how to complete the assignments based on their own learning preferences. In another study, Ernst and Ernst (2005) administered a survey about differentiation in an undergraduate political science course. A majority of the 35 students shared how they appreciated being given choice in learning and exploring topics connected to their preference of learning. Further, Santangelo and Tomlinson (2009) designed assessments and rubrics for five key course assignments and classroom activities to determine student mastery of the content. Results of the study were limited, but the in the course evaluations, students wrote that they benefited from the choices and options to display their knowledge.

Student Agency

Student agency is the ability to manage one's learning. It requires students to take an active role in their learning. Agency and cognition originated with Piagetian notion of constructivism (Piaget, 1967), where knowledge is seen as "constructed" through a process of taking actions in one's environment and adjusting existing knowledge structures based on the outcome of those actions. This is meaningful to the discussion on differentiation in college classrooms because student agency is the belief that student learning is transformed by learning experiences that are directed by the learner's motivations and existing knowledge. Bandura (2001) highlights the role of agency in the self-regulation of learning: "The core features of agency enable people to play a part in their self-development, adaptation, and self-renewal with changing times" (p. 2). Student agency provides students the sense that they have control and the power to affect their own learning. Agency can shape both the process and the outcomes of student learning. Falk and Dierking (2002) studied free-choice learning, where students can make decisions about what, where, and with whom to learn. A large part of agentic learning is the ability to make meaningful choices that impact our learning.

Self Determination Theory

Studies have shown that choice in learning does positively influence student motivation (Assor et al.). Self-determination theory states there are three needs necessary for growth and integration, which are autonomy, relatedness, and competence (Ryan & Deci, 2000). When students connect feelings of autonomy, relatedness, and competence with choice, then choice in learning has positive outcomes in student engagement and self-motivation is present (Katz & Assor, 2007; Beymer & Thomson, 2015). Parker et al. (2017) discussed how autonomy, relatedness, and competence benefit student learning (See Table 1). Providing opportunities requires planning, but finding the structure that works best for the students can be a powerful mechanism to foster student engagement.

Table 1

Description of Autonomy, Relatedness, and Competences

<u>Type</u>	<u>Description</u>
Autonomy	Students feel autonomous when they believe the task aligns with their interests and goals, as well as their values.
Relatedness	A sense of relatedness stems from feeling like the person belongs to a group. When students feel a sense of belonging, they are more likely to make contributions to the group.
Competence	Students feel competence when they understand what they need to be successful.

Supporting Students' Metacognition

Metacognition (also called reflection) is the process of thinking about one's thinking. Metacognition helps one become aware of their own strengths and weaknesses as learners. Students who know their strengths and weaknesses can "actively monitor their learning strategies and resources and assess their readiness for particular tasks and performances" (Bransford et al., p. 67). As Chick (n.d) stated, "Connecting a learning context to its relevant processes, learners will be more able to adapt strategies to new contexts, rather than assume that learning is the same everywhere and every time" (para 12). College instructors can support their students' metacognition through active learning, which in return will promote reflection and motivation.

Costa (2008) stated that metacognition can occur before, during, and after instruction. Before learning, the learner determines what needs to be done, what options and choices are available, and how to go about learning and doing the task on hand. The learner creates a plan for reaching the learning target. During learning, the learner self-monitors (or self-regulates) thoughts and actions to keep focused on the goals and the best pathway to achieve them. During learning, the learner self-evaluates progress and takes steps to change direction if needed. After learning, the learner determines what worked well, what didn't work well and how things might be done differently to improve the process. Student choice and student agency provide students and way to self-regulate as well as to reflect on their growth as a learner in a metacognitive context.

Three Types of Differentiation

One way to support students' metacognition is providing them the opportunity to engage in activities that match their preferred way of learning. Dosch and Zidon (2014) support the idea that educators should provide students the opportunity to learn and engage in the course materials that matches their learning preference. "When offered choices about materials, activities, and assessments, students feel a sense of empowerment which enhances their interest in a course" (Turner & Solis, 2017, p.73). Instructors can provide instruction in a number of ways to engage students in learning' and meet their learning preference through content, process, or product differentiation (Tomlinson & Allan, 2000). Table 2 provides an overview of three ways to differentiate instruction along with examples to use in the classroom setting. Wormeli (2007) asserted, "Differentiation is foremost a professional and responsive mind-set" (p. 7). Differentiation is a student centered approach that can be embedded across all coursework.

Table 2
Ways to Differentiate Instruction

Type	Description	Examples
Content	Content refers to the what is being taught as well as how the students access materials (Tomlinson & McTighe, 2006). The instructor pre-assesses the skills to be addressed and then differentiates instruction based on the results to meet the learning needs of each student.	<ul style="list-style-type: none"> • Use of reading materials at various readability levels • Use of supplemental material such as auditory aids or visual aids (e.g., videos, charts, tape or CD) • Reteach content to those students who need more guidance and exempts those students who achieved mastery • Use of presentation styles connected to the students' learning styles (e.g. lecture, modeling, and demonstration)
Process	Process refers to how the learner comes to understand the key facts, concepts, and skills of a subject (Tomlinson & Allan, 2000). Process differentiation also connects to the student's interest level or learning profile (Tomlinson, 2005). Process is also referred to as the activity the student completes.	<ul style="list-style-type: none"> • Using a variety of leveled activities to meet the students' learning needs (tiered lessons) • Provide opportunities for interactive journaling where the instructor and student exchange dialogue about the content being taught • Using graphic organizers which helps with visualizing and breaking down the information • Use of the jigsaw cooperative learning strategy where the students are placed in small groups to become experts on the topic
Product	Product refers to the culminating projects or assessments which allow students to demonstrate their learning and how they can apply what they learned after instruction has	<ul style="list-style-type: none"> • A portfolio of student work to demonstrate student learning • Choice boards, which are also referred to learning menus and tic-tac-toe boards

Table 2 Cont.

Type	Description	Examples
Product	taken place (Tomlinson, 2005). Instructors provide activities which include various modes of learning styles (auditory, kinesthetic, and visual) along with options that are analytic, creative, and practical (IRIS Center 2019).	<ul style="list-style-type: none">○ Choice boards include a variety of activities to display understanding of content.○ Instructors set the parameters of how many activities to complete● Allowing students to create their own project that connects to the content taught

Purpose of the Action Research

The purpose of this action research was to determine student perceptions when it comes to differentiating instruction in the college classroom. The students were given choice in learning on displaying their understanding of phonemic awareness, phonics, or morphology using choice boards, which is a type of product differentiation. These choice boards provided the students in the course the opportunity to pick two activities to display what they learned. Though this was a required assignment for every student, they were given the opportunity to participate and sign consent for taking a pre and post survey on choice in learning and to share their final product for the purpose of the action research.

The research guiding this action research project were:

1. What are college students' perceptions when offered choice to display their understanding?
2. Is there a significant difference in perceptions when offered choice in learning?

Participants in the Action Research

Participants from a Midwestern university included students enrolled in the senior level Communication Arts Integration course in the teacher education program either in one of the three face-to-face classes or the online class. All students were required to complete the choice board activities for a grade connected to the course. However, students had the opportunity to sign consent for participating in the collection of student samples and a pre and post survey connected to choice in learning. Of the 79 students enrolled in the Communication Arts Integration course, consent forms were collected from 38 participants. The pre survey included 25 of the 38 participants, and the post survey included 16 of the 38 participants.

Process of the Action Research

Before beginning the choice boards, the students participating were invited to complete the pre survey on choice boards. After completing the choice boards, participants were invited to complete the post survey. The survey was set up in a Google Form as a rating scale from 1-5 with 1 being low or never and 5 being high or always. The post survey included the same questions as well as three reflection questions. See Table 3 for the survey questions.

After inviting students to participate in the survey, all students enrolled in the course were given the assignment and the directions connected to using choice boards through the online learning management system used at the university. The choice boards included nine different activities connected to phonemic awareness, phonics, and morphology. From those nine activities, they were instructed to select two of those activities to demonstrate their understanding. See the choice board and the rubric located at the end of the article.

Table 3
Pre and Post Survey Questions

Pre and Post Survey Questions

1. My instructor let me demonstrate what I needed to learn in different ways
2. Choice in learning provides me different options to learn the content
3. Choice in learning connects to different learning styles
4. Choice in learning allows me to be creative
5. My instructor provides me a variety of choice in learning from when displaying my understanding of the content
6. Providing choice in learning motivates me to learn the content
7. I prefer instructor led assignments over the choices given for assignments
8. Choice in learning does not enhance my learning.
9. Given choices in learning does not connect to my learning style
10. Choice in learning does not provide me an opportunity to be creative
11. My instructors do not give me a lot of choices to choose from to display my understanding of content.
12. Choice in learning does motivate me to learn the content.

Post Survey Reflection Questions

1. What did you enjoy about the choice board activities?
2. What did you least enjoy about the choice board activities?
3. What was something you discovered about yourself as a learner when completing the choice board activities?

Note. Survey questions were based on a scale of 1-5 with 1 being low/never and 5 being high/always rate the following statements based on your experiences in the college classroom.

Pre and Post Survey Results and Discussion of Results

When reviewing the results of the pre and post survey, a paired samples t-test was conducted in SPSS. The significance level was set at $p < .05$. When reviewing the results of the paired samples t-test of the 12 survey questions, six of the questions had a p value of $< .05$.

- Question 1- Instructors let me demonstrate what I need to learn in different ways:
 $p = .021$
- Question 2- Choice in learning provides me different options to learn the content-
 $p = .029$
- Question 5- My instructors provide a variety of choice in learning to choose from when displaying my understanding of the content: $p = .001$
- Question 6- Providing choice in learning motivates me to learn the content: $p = .006$
- Question 7- I prefer instructor led assignments over the choices given for assignments:
 $p = .001$
- Question 12- Choice in learning does not motivate me to learn the content: $p = .000$

Table 4 provides descriptive statistics of the questions with a significant value of $p < .05$.

Table 4
Pre and Post Survey Results Paired Differences

Question	M	SD	SEM	95% CI for Mean Difference	t	df	Sig
Q1	-.875	1.36	.340	-1.600, -1.50	-2.573	15	.021
Q2	-.375	.619	.155	-.705, -0.45	-2.423	15	.029
Q5	-1.375	1.408	.352	-2.125, -.625	-3.905	15	.001
Q6	-7.50	.931	.233	-1.246, -.254	-3.223	15	.006
Q7	1.688	1.621	.405	.823, 2.552	4.163	15	.001
Q12	-2.063	1.769	.442	-3.005, -1.120	-4.664	15	.000

Note. These were the questions which yielded a * $p < .05$.

The results did provide a statistical significance in 6 of the 12 questions. Though the sample size was small (N=16), the results are still worth noting. The results from the pre and post survey revealed the importance of differentiating instruction in the university classroom. However, when reviewing questions 6 and 12, it became clear that students misread question 12. Question 6 was in regards that they are motivated to learn the content when given choice. Question 12 focused on not being motivated to learn the content when given choice. The mean results provided insights that students were in favor of the choice board activities. It was evident based on the survey and reflection questions that students had limited opportunities with differentiation during their college career. Teaching the aspiring teachers about differentiation in the classroom is necessary. Therefore, the opportunities in choice in learning allowed the students to see how choice boards can be used to differentiate instruction.

Post Survey Reflection Questions

When reviewing the three post reflection questions about the students' experiences and perceptions focused on choice in learning, themes emerged for each question. The patterns were important to discuss because they provide the instructors insights on future direction with differentiating instruction in the college classroom.

Question 1 asked, "What did you enjoy about the choice board activities?" For this question, 16 responses were submitted. Four of the 16 responses connected to the theme of enjoyment. A student wrote, "I enjoyed being able to explore different options to display my learning. I thought it was more enjoyable than simply writing a paper over the information. Also, it is much more visibly appealing than a paper would be to read." Another student submitted, "I enjoyed the creativity it allowed me to bring out in the assignments. I thought that it was fun to make the projects my own and really make them fun with the content included." Demonstrating learning of content was also a theme that emerged from the responses. A response from a student worth noting centered around this theme stated, "The freedom of choosing how I wanted to demonstrate my learning. I had options to choose from and was not just given something to do."

Question 2 focused on the following question: "What did you least enjoy about the choice board activities?" This question resulted in 15 of the 16 participants responding. This question was important to ask for the instructors to reflect on how to improve the delivery of the choice board activities. Two of the 15 students stated they enjoyed the activities offered while two others stated, "Nothing." However, some students suggested they would have preferred more descriptions of the choices given. A student wrote, "I would have liked to have had a say in what activities went in the choice board, or maybe a more in-depth description of some of the activities." Another student stated, "Some of the broadness it included; not always super specific." Two responses for this question centered around too many choices given. "My least favorite part about choice board activities is the amount of choices that are given. When there are too many choices given, it sometimes makes it harder to choose the best one." Another student considered how their peers may have felt by stating, "There were quite a few options, which could have been overwhelming for some." Though choice board activities typically have nine activities to choose from, it would be worth

adjusting the amount of choices while also including an option of creating a video to display learning.

Question 3 stated, "What was something you discovered about yourself as a learner when completing the choice board activities?" Students were given an opportunity through this question to share their experiences in learning. A student wrote,

The only part that gave me uncertainty was deciding on what to do for each section and how to complete it to a 100% standard. I feel like it was difficult to ensure that it was the material that was wanted to be discussed. However, with that it gave more of an opportunity to display my thinking as a student without limitations. While I always thought of myself as a visual learner, I never realized how much I was until after completing the choice boards. Both choices that I completed were very visual options where I could manipulate everything to fit exactly as I wanted.

This response was worth noting because it provides insight on the importance of being clear in the expectations given to students, especially with giving options to display understanding of content. Additionally, it provided the instructors an opportunity to reflect on the importance of offering choice in learning during the semester. Some students enjoy options which allow them to be creative like this student stated: "I like to do things that require me to be creative with sorting the information that I learned." Other students enjoy options, but does not necessarily have to be creative, "read through every option, and typically picked the most straightforward approaches." Though only 13 of the 16 participants responded to the third question, the responses allow for critical reflection for the instructors. Reflecting on balancing the need for direct instruction and providing opportunities to students to present their level of understanding which works for their learning preference is important when planning for the course. Examples of the activities students completed along with the choice board and rubric are provided at the end of the article.

Discussion for Future Direction

When considering future direction in differentiating instruction in the college classroom, there are many action research projects to consider. With limited research on process, content, and product differentiation, these types of action research studies could benefit not only student learning, but also enhance instruction across content areas in the college classroom whether that be face-to-face, hybrid, or online. Additionally, reviewing and revising the survey is necessary to gather more student reflections on differentiated instruction in the college classroom. Collaborating with other instructors across the college campus is also important to gather their perceptions on differentiation. These collaborative conversations would be beneficial to determine other action research projects connected to differentiation. For future direction, the following is suggested for types of differentiation to expand and incorporate into the classroom along with survey suggestions and collaborative conversations with other instructors.

Suggestions for Types of Differentiation

Content

Content differentiation is one area to focus on not only in terms of research purposes, but for instructors to consider when creating course modules and lessons for delivering instruction. Discussion is one way to differentiate content in the college classroom. Discussion shifts the work from the instructor to the students (Howard, n.d.). One discussion strategy worth implementing and researching the effectiveness is the technique called Thoughts, Questions, and Epiphanies (TQE). This strategy provides the students the opportunity to work in small groups to discuss their thoughts, questions, and epiphanies over assigned readings for fifteen to twenty minutes (Gonzalez, 2018). TQE not only allows the students to be engaged in discussion but holds them accountable to the assigned reading. Providing opportunities for student-led discussions allows the students to become “co-creators of knowledge and understanding” (Howard, n.d., para 10).

Process

Process differentiation is also worth considering for future research. The differentiation of process includes the use of a variety of strategies to motivate students (Reis & Renzulli, 2015). The interactive journal strategy (IRIS, 2019) is an approach with which the instructor can engage in conversations with students by providing discussion prompts connected to the content as well as based on the readiness skills of students. These prompts can be given at the beginning of class or a module for the students to respond to activate prior knowledge as well as to formatively assess student understanding. Another strategy worth researching the effectiveness in the college classroom is the implementation of the jigsaw method. The jigsaw method is a collaborative approach to engage students in becoming experts on a portion of the content. After the expert groups have learned the assigned content, they meet with their home groups to teach the content. This method helps students breakdown the content being addressed and allows for students to be held accountable to coursework.

Product

When considering product differentiation, specifically the use of choice boards, there are some components to think about implementing in terms of instruction and in research. For instance, continuing the choice boards will be beneficial in the course along with informing instructors in college classroom the importance of choice in learning. After reviewing the items offered on the choice boards, there is a need to review the activities to ensure students have enough information to complete the item. Offering a free space on the choice board for students to develop their own project connected to content would be beneficial. This free choice would need to be discussed with the instructor before completion.

When reviewing the reflection responses, a couple of students stated they selected the choice which was easier to complete. Parker et al. (2017) affirmed, “When

people are confronted with too many choices or believe the selections is too complex, they opt for an easier choice method” (para 10). The instructor needs to make the “selection process appropriate for students in terms of the number of choices and the ways in which students are expected to choose” (Parker et al., para 10). Additionally, pre and post conferences can be held with students individually so they can create learning goals centered around selecting appropriate selection of choice activities. These conferences would assist the instructor and the student to create a meaningful plan focused on choice activities applicable to their context.

Surveys Connected to Differentiation of Instruction Pre- and Post-Survey

In terms of the survey given, the questions should be revised to ask about learning preferences. Additionally, including reflection prompts before instruction took place would be a way to gather what students know about choice in learning and if they can reflect on other opportunities that have been given to them at the university level. Questions to consider on the pre survey include:

1. Have you been given choice in learning by your instructors in the university setting? If yes, please explain.
2. How do you feel about being given a choice in assignments to display your understanding of content? Explain.

Further, it would be worth administering the survey at the beginning of the semester and again at the end of the semester. This would allow for the students to reflect on their entire experience during the course in terms of having choice in learning over more than one activity.

Interest Surveys for Instructional Planning

Administering interest surveys to students to determine learning preferences would assist the instructor in providing differentiated learning activities centered around the students’ responses. For instance, when engaged in assigned readings, the instructor may offer various activities to reflect and summarize what the students have learned. The instructor could offer an option in note taking strategies. The instructor may allow students to display their learning through videos or using various graphic organizers. This does require the instructor to develop lesson plans along with a multiple of ways for students to engage in the content. The initial planning would take time. However, these ideas can be implemented in semesters that follow.

Collaborating with Other Instructors

To ensure validity and reliability of the survey as well as increasing participants for a larger sample size, inviting other instructors to collaborate is something to consider for future research. Additionally, collaborating with instructors at the university level in other programs would be a benefit not only to the students, but also for instructors to reflect on their teaching practices. It would also be worth considering surveying instructors on their understanding about differentiating

instruction in the university level classroom. This would allow for professional development and conversations on how university level instructors can differentiate instruction through choice in learning to increase student engagement in the coursework.

Summary of Future Direction

The ideas and next steps to consider in terms of differentiation in the college classroom will add to the limited literature connected to this topic. Though this action research was limited in terms of participants, it was beneficial because it sparked additional ideas to consider for research across the college classroom. This action research opened the need to have critical conversations with instructors across other content areas regarding the importance of differentiating instruction in the college classroom to benefit and enhance student learning.

Conclusion

This action research highlighted a need to reflect as an instructor on increasing differentiated instruction in the classroom. Further, this action research using choice boards as a means of differentiating instruction will add to the existing research. Additionally, it will provide instructors ideas on how they can differentiate instruction. Though planning for differentiation in coursework is time intensive, it has many benefits to enhance student learning in the classroom. Turner et al. (2017) stated, "When used by instructors, this teaching strategy promotes engagement, facilitates motivation, and helps students make the connection with what is being taught in the classroom to the things they value outside of class" (p. 491). Differentiating instruction places students at the core of the instructional planning process (Tulbure, 2011). Awareness and training in differentiating instruction are effective ways for creating instructional change in the classroom (Dosch & Zidon, 2014). It is important to have collaborative conversations across the college campus on the topic of differentiated instruction. This action research opened the door to critically reflect on differentiating instruction in the college classroom to promote active engagement in learning the content.

References

- Anderson, M. (2016). *Learning to choose choosing to learn*. Association for Supervision and Curriculum Development.
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good but relevance is excellent: Autonomy affecting teacher behaviors that predict students' engagement in learning. *British Journal of Educational Psychology*, 72, 261–278.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Beymer, P. N., & Thomson, M. M. (2015). The effects of choice in a classroom: Is there too little or too much. *Support for Learning*, 30(2), 105-120. <https://doi.org/10.1111/1467-9604.12086>

- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. National Academy Press.
- Chick, N. (n.d.). Metacognition. Center for Teaching: Vanderbilt University. <https://cft.vanderbilt.edu/guides-sub-pages/metacognition/>.
- Costa, A. L. (2008). The thought-filled curriculum. *Educational Leadership*, 65(5), 20.
- Dosch, M., & Zidon, M. (2014). The course fit us: Differentiated instruction in the college classroom. *International Journal of Teaching and Learning in Higher Education*, 26(3), 343-357.
- Ernst, H. R., & Ernst, T. L. (2005). The promise and pitfalls of differentiated instruction for undergraduate political science courses: Student and instructor impressions of an unconventional teaching strategy. *Journal of Political Science Education*, 1(1), 39-59. <https://doi.org/10.1080/15512160590907513>.
- Falk, J. H., & Dierking, L. D. (2002). Lessons without limit: How free-choice learning is transforming education. Alta Mira Press.
- Gonzalez, J. (2018). Deeper class discussions with the tqe method. <https://www.cultofpedagogy.com/tqe-method/>.
- Howard, J. (n.d.). How to hold a better class discussion: advice guide. <https://www.chronicle.com/interactives/20190523-ClassDiscussion>.
- IRIS Center (2019). Differentiating instruction: Maximizing the learning of all students. <https://iris.peabody.vanderbilt.edu/module/di/>.
- Katz, I., & Assor, A. (2007). When choice motivates and when it does not. *Educational Psychology Review*, 19(4), 429-444.
- Lightweis, S. K. (2013). College success: A fresh look at differentiated instruction and other student-centered strategies. *College Quarterly*, 16(3).
- Livingston, D. (2006). Differentiated instruction and assessment in the college classroom. *Reaching Through Teaching: A Journal of the Practice, Philosophy and Scholarship of College Teaching*, 16(2), 17-31.
- Mintz, S. (2016). Differentiating instruction in the college classroom. <https://www.insidehighered.com>.
- Parker, F., Novak, J., & Bartell, T. (2017). To engage students, give them meaningful choices in the classroom. *Phi Delta Kappan*. 99(2), 37-41. <https://kappanonline.org/engage-students-give-meaningful-choices-classroom/>.
- Piaget, J. (1967). *Biologie et connaissance (Biology and knowledge)*. Gallimard.
- Reis, S. M., & Renzulli, J. S. (2015). The five dimensions of differentiation. *Gifted Education Press Quarterly*, 29(3), 2-9.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.

- Santangelo, T., & Tomlinson, C. A. (2009). The application of differentiated instruction in postsecondary environments: Benefits, challenges, and future directions. *International Journal of Teaching and Learning in Higher Education*, 20(3), 307-323.
<http://www.isetl.org/ijtlhe/pdf/IJTLHE366.pdf>.
- Tomlinson, C. A. (2005). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Pearson Education, Inc.
- Tomlinson, C. A., & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design: Connecting content and kids*. Association for Supervision and Curriculum Development.
- Tomlinson, C. A., & Allan, S. D. (2000). *Leadership for differentiating schools & classrooms*. Association for Supervision and Curriculum Development.
- Tulbure, C. (2011). Differentiating instruction upon learning styles in higher education: A controversial issue. *Bulletin of the Transilvania University of Braşov*. 53(1), 79-84.
- Turner, W. D., Solis, O. J., & Kincade, D. H. (2017). Differentiating instruction for larger classes in higher education. *International Journal of Teaching and Learning in Higher Education*, 29(3), 490-500.
- Turner, W. D., & Solis, O. J. (2017). The misnomers of differentiating instruction in large classes. *The Journal of Effective Teaching*. 17(3), 64-76.
- Wormeli, R. (2007). *Differentiation: From planning to practice grades 6-12*. Stenhouse.

Appendices

Appendix A

Example of Choice Board Menu Directions for Phonemic Awareness Morphology

<p><i>Example of Choice Board Menu Directions for Phonemic Awareness and Morphology</i></p> <p>1. Pick one activity to complete for displaying your understanding of phonemic awareness/phonics</p> <p>2. Pick one activity to complete for displaying your understanding of morphology</p> <p>Note: You cannot pick the same activity twice. Pick one of the choices for phonemic awareness and one for morphology</p>		
<p>Write a parent letter about phonemic awareness/phonics or morphology. Include 2 images and 3 resources (i.e. websites) in the letter that connect to the topic at hand.</p>	<p>Create a game and with directions and summarize how this will help your students understand (1-2 paragraphs)</p>	<p>Create a PPT displaying your understanding of phonemic awareness/phonics or morphology (6-8 slides). Cite your sources (use at least 3 references)</p>
<p>Complete a R.A.F.T. (directions for a R.A.F.T: http://www.readingrockets.org/strategies/raft) Cite your sources</p>	<p>Create a detailed mind map displaying your understanding of phonemic awareness/phonics or morphology. Cite your sources</p>	<p>Find two articles connected to phonemic awareness/phonics or morphology. Synthesize and summarize the articles (1-2 pages) and create a top 5 list of things you took away. Cite your sources</p>
<p>Interview your cooperating teacher or reading teacher about how he/she teaches phonemic awareness/phonics or morphology? This could even include programs available. Summarize the interview and write 3 things you learned from your cooperating teacher.</p>	<p>Find 3 apps and/or online games that connect to phonemic awareness/phonics or morphology. Summarize each app or online game and how it could be used with your students or at home.</p>	<p>Research and write a summary of your findings about what should be included on a phonemic awareness/phonics assessment or morphology assessment. Also write how often these would be administered. Cite your sources</p>

Appendix B
Rubric for Choice Board Activities

	20	15	10	5	0
Content	Content is accurate and all required information is presented in a logical order, and displays exceptional understanding	Content is accurate but some required information is missing and/or not presented in a logical order, but is still generally easy to follow, and displays understanding with little misconception	Content is accurate but some required information is missing and/or not presented in a logical order, making it difficult to follow	Content is questionable. Information is not presented in a logical order, making it difficult to follow.	Content is inaccurate. Information is not presented in a logical order, making it difficult to follow or lacks understanding of content addressed
Mechanics	8	6	4	2	0
	No spelling errors. No grammar errors. Text is in authors' own words.	Few spelling errors. Few grammar errors. Text is in authors' own words.	Some spelling errors. Some grammar errors. Text is in authors' own words.	Some spelling errors. Some grammar errors. Most of text is in author's' own words.	Many spelling and or grammar errors. Text is copied.

Appendix C

Student Examples

Student Example 1: RAFT Activity for Displaying Understanding on Morphology

Dear Students,

Hello there! My name is Murphy the Morpheme and I am here to teach you about morphology! Have you ever heard that word before? Let me make it simple for you! Morphology is the study of how words break down; it includes how words are formed, structured, and what they mean. Now let me tell you, I am just a single part of the Morphology family. There are so many of us and we each have our special characteristics and tasks.


Like I said, my name is Murphy the Morpheme and I am the smallest person in my family, I represent words that are independent and can be broken into sub-parts. For example, I could be the word trainings, which has three morphemes: train - ing - s. I represent all three morphemes!

Let's begin the family tree break down. We have the Closed Morphemes that never change, they can go from sentence to sentence and always be the same, such as and, he, she, may, can. Then we have the Open Morphemes, they change depending on the grammar and meaning of a sentence (usually adding -s or -ing). Next, we have my cousin, Freddy the Free Morpheme. Freddy is always alone during family gatherings (he is made of only one morpheme and can

Stand-alone like the words quick and up. My other cousin, Brandy the Bound Morpheme on the other hand is always bouncing from person to person during family gatherings (she cannot stand alone and must be attached to other free morphemes). Brandy has two younger siblings, Iris the Inflectional Morpheme who can walk into the room and change the entire feeling such as the words dog to dogs and walk to walking (she is suffixes, plurals, possessives, etc.). Then there is her twin sister Debra the Derivational Morpheme who also changes people in our family, but she changes the person completely such as the words healthy and unhealthy and love to lovely (she changes nouns to a verb and the meaning using prefixes and some suffixes).

There is something that you should know about my family; we must all be taught and continually practiced for you to be successful with your reading, writing, and finding meaning of words! Your teacher needs to let you listen, speak, read, and write us frequently for you to learn to your highest ability! Do not be afraid to study the different parts of my family individually! Some of us are hard to know about without learning about the other first. Just know that we all are a part of the English language and have important roles that allow you to break down words and determine the meaning and context we should be used in.

Happy decoding!
Murphy the Morpheme

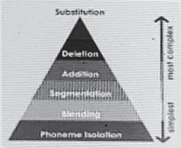


A parent's guide to... PHONEMIC AWARENESS

WHAT IS PHONEMIC AWARENESS?
Phonemic awareness is the ability to hear and manipulate sounds (phonemes) that make up words. Phonemic awareness does not utilize visual letters. It is done completely through listening and speaking and gets stronger with lots of practice.

WHY IS PHONEMIC AWARENESS SO IMPORTANT?
The National Reading Panel's research found that phonemic awareness is one of the **BEST PREDICTORS** of future reading successes. Strong phonemic awareness skills will enable your child(ren) to become a better reader and write for the many of years to come!

WHAT SHOULD MY CHILD BE ABLE TO DO?
Phonemic awareness is a continuous process on skills. The skills build on one another and become more difficult through the progression. Make sure your child is using the letter sound, not the name.



BASIC PHONEMIC AWARENESS SKILLS

- Recognize rhyming words (ex. pat - tap, do these words rhyme?)
 - "Tap out" words for syllables (ex. back - pack)
- Blending words to form a compound word (ex. "back" and "pack" make "backpack")
- Tap and count words in a sentence (ex. "I have a new cat" has 5 words)

INTERMEDIATE PHONEMIC AWARENESS SKILLS

- Produce rhyming words (ex. tap - lap, hair - chair)
- Count the number of syllables in words (ex. com - pu - ter has 3 syllables)
- Match / identify initial sounds in words (ex. Do **hat** and **hay** start with the same sound? What sound?)

ADVANCED PHONEMIC AWARENESS SKILLS

- Match / identify final sounds in words (ex. What sound is at the end of **cat**? Is it the same as **map**?)
- Blend individual phonemes (sounds) to form words (ex. /h/ - /t/ - /a/ - /t/ What word does that make?)
- Segment individual phonemes (sounds) in words (ex. **hat** is /h/ - /a/ - /t/)

YOU MIGHT FEEL SILLY... but phonemic awareness is just a fancy word for **WORD PLAY!**
So, have some fun and make it enjoyable for your child!

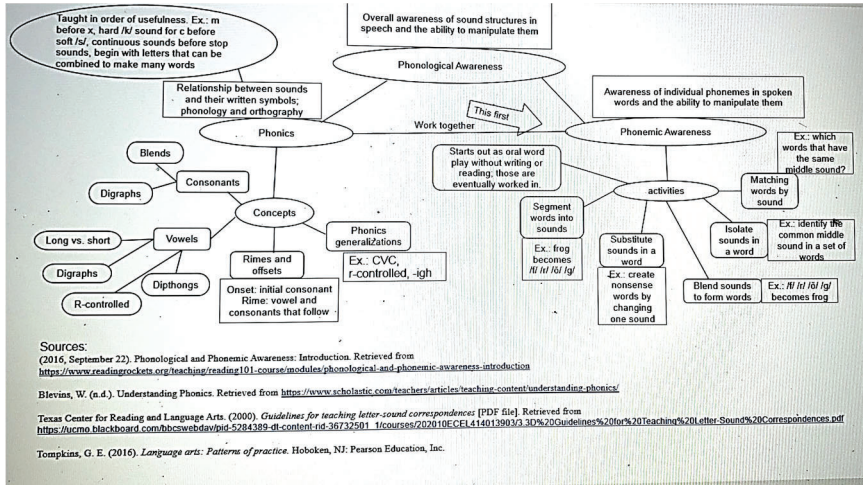
If you have any questions, please feel free to reach out to me and we can discuss phonemic awareness more!

Email : (my school email here)
School Phone Number : (my school phone # here)

PHONEMIC AWARENESS RESOURCES

- <https://www.education.com/games/phonological-awareness/>
- <https://homeschoolingwithdyslexia.com/apps-teaching-phonemic-awareness/>
- <http://www.bigbrownbear.co.uk/dnmc/blender.htm>

Student Example 3: Mind Map on Phonological Awareness



Newsletter

September 2019

Morphology

Morphology is the study of words. It is broken down into Morphemes which is the smallest unit of meaning in oral language. Each word is composed of one or more phonemes. In *Helping Young Children Learn Language and Literacy*, "The word Cats contains two morphemes: Cat (name of a type of animal) and s (plural). Children develop morphemes as their phonological development progresses. It begins the moment a child says, "Mama or Dada" because they are linking sound patterns with meaning.

Unbound "words"

Cat box
laugh hat
look house

Bound "units of language"

• **INFLECTIONAL MORPHEMES**
change in number, tense, gender, and case

house → houses
(noun)

• **DERIVATIONAL MORPHEMS**
modify a word according to its class and grammatical class

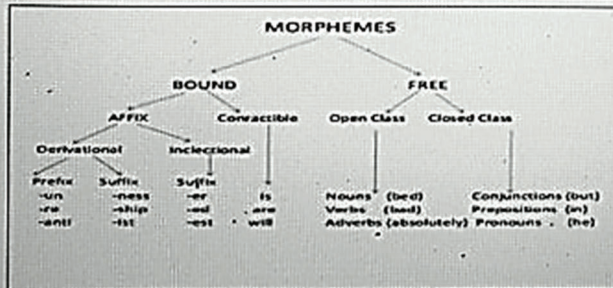
style → stylish
(noun) (adjective)

Resources for you:

- ❖ <https://all-about-linguistics.group.shef.ac.uk/branches-of-linguistics/morphology/what-is-morphology/>
 - Defines what Morphology is and goes into depth of what a free morpheme and a bound morpheme is. This is a great site to break down the meaning and gives examples of Morphology Trees.
- ❖ <https://Cstisotherapy.com/morphology-and-syntax/>
 - Breaks down the child growth of morphology and syntax. Gives a detailed month by month explanation of what a child develops while creating their phonological development.
- ❖ <https://www.youtube.com/watch?v=jMF5eJLYTnE>
 - A video explaining morphology in detail.

Morphology is

- ✓ Changing words using prefixes and suffix
- ✓ Shows singular and plural possessives
- ✓ The use of comparative adjectives
- ✓ Words such as dog, play, cat, birth, boat, and father
- ✓ Free morphemes stand alone
- ✓ Bound morphemes are the endings like s and ed



Creation

Watch: C. Scott Helping young children learn language and forage birth through kindergarten. Boston Pearson.

Dr. Angela Danley is an Associate Professor of Elementary Education at the University of Central Missouri. Dr. Danley teaches both undergraduate and graduate courses in the elementary program. She teaches senior-level early childhood and elementary teacher candidates. In addition, she supervises teacher candidates in their clinical practicum. Dr. Danley also serves as the undergraduate program coordinator for elementary education.

Dr. Carla Williams is an Assistant Professor of Early Childhood and Elementary Education at the University of Central Missouri. Dr. Williams teaches both undergraduate and graduate courses in literacy and language acquisition. Dr. Williams supervises senior preservice teachers as well as provides coaching and training to several school districts around systems thinking, data based decision making, common formative assessments and collaborative teaming.

“Teaching does not need to be, should not be, a solitary endeavor. We need SOTL so we can retain and share the intellectual work being achieved by those seeking to foster student learning.”

*~Jessamyn Neuhaus (2019). *Geeky Pedagogy: A Guide for Intellectuals, Introverts, and Nerds Who Want to Be Effective Teachers**