

Differentiated Instruction in the Middle School Physical Education Setting

Austin Clark

An Action Research Project
submitted in partial fulfillment of the
requirements for the degree of

Master of Arts in Teaching

Western Oregon University

2025

Reading Committee:

Marcus Wenzel

Kyle Silbernagel

Program Authorized to Offer Degree:

College of Education

MASTER'S DEGREE FINAL EVALUATION REPORT

Completion Term: Spring 2026

Type of exit requirement: Action Research Project

The supervisory committee met with the candidate for a final evaluation in which all aspects of the candidate's program were reviewed. The committee's assessment and recommendations are:

Recommendations:

- ✓ Degree should be awarded

Recommendations:

- ✓ Exit Requirement has been approved
-

Acknowledgements

To begin, I would like to thank my reading committee, Dr. Marcus Wenzel and Kyle Silbernagel. Dr. Wenzel, I have never received the kind of support that you offered to me, and the rest of my cohort classmates. Throughout this experience, you have given me feedback that has been able to shape my project into something beyond my capabilities. Not only do you give direct and targeted feedback, but you also show support in other areas as well. In times of desperation, exhaustion, and overstimulation, you helped me get through challenging experiences through reassurance and words of encouragement. I will never forget the support you have given me, and am truly grateful for getting to know you this year. Kyle, I would like to thank you for many reasons. First, I'd like to thank you for teaching me, encouraging me, pushing, and working alongside me this year as your student teacher. Your wisdom will stay engraved in my thoughts for as long as I am a licensed teacher. Thank you for taking the time this year to teach a beginner, and show them what hard work and dedication will grant you. Although I knew you were skeptical of having a student teacher, you still allowed me the opportunity to learn from you and encouraged me to be who I am today, a confident and motivated physical education teacher. For this, I am eternally grateful.

I would also like to extend my gratitude to all of the professors at Western Oregon University for pushing me to do my best. Along with your words of encouragement, the knowledge and wisdom you have shared with me will forever be a part of my teacher career. To my colleagues and peers, thank you for everything. Thank you for showing me that I'm not alone in this, and that I can do this. To my students at North Albany Middle School, thank you for the opportunity to get to know each and every single one of you. Although you all are not my

official students, I consider you to be my students, and you will forever hold a special place in my memories. Without you all, I wouldn't be where I am today. Lastly, I would like to thank my university supervisor, Wendy, for all of the feedback and mentorship you have given me. Even when I felt as though things didn't go as planned, you continued to support me and offer me guidance. Your positive attitude and advice carried me to success throughout this school year.

Additionally, I'd like to thank my wife, Amanda Clark, for being my main supporter and shoulder to lean on not only throughout my college career, but throughout life as a whole. Without your support and unconditional love, I'm not sure where I'd be right now. You have shown me that there is light to every darkness, and to take a step back and reflect on all of my actions. I will forever be grateful for the life we have created together, thank you. To my parents, Tonya and Joe, and to my friends and family, thank you for all that you do. There have been a lot of ups and downs throughout this journey, and you continue to push me to keep going and fight until I have finished. Whether physical or non physical, your presence has pushed me to be at my best and to keep my head up no matter what. Thank you, everyone.

This project is the culmination of the collective support and encouragement I have received from all of you. I appreciate every single one of you, and thank you with all of my heart.

Table of Contents

Acknowledgements.....	i
Chapter 1. Introduction.....	1
Guiding Pedagogical Theory.....	3
Connections to InTASC Standards.....	7
Summary.....	8
Chapter 2. Review of Relevant Research and Scholarship.....	10
Chapter 3. Methods.....	23
Participants & Setting.....	24
Data Collection & Analysis.....	26
Researcher Positionality.....	28
Chapter 4. Findings.....	29
Chapter 5. Discussion, Limitations, and Conclusion.....	43
Limitations.....	45
Conclusion.....	48
References.....	49

Chapter 1. Introduction

For background information, I grew up in the small town of Jefferson, OR, where the total population consisted of about 3,000 people. Jefferson is a rural town that consists mostly of crop fields and farms outside of the main part of town. My graduating class in high school was about 68 students total, and we all knew each other very well, as well as the teachers. Put simply, throughout the Jefferson School District (JSD), everyone knew each other, and the teachers mostly stayed in touch with their students all the way through high school graduation.

When comparing the school district that I had attended to the school districts in surrounding areas, it appeared that Jefferson offered substantially less opportunity for their students. For example, the Jefferson School District only offers a specific amount of college credit classes for their high school students, whereas some of the nearby school districts would offer quite a lot more. When thinking about how I felt overlooked/unseen as a learner, this is one of the main examples that come to mind. As a high school student, approaching graduation and adulthood, I really wanted to get a head start on college classes so that I wouldn't have to take them at full price once I graduated. Knowing that schools within a 30 mile radius of Jefferson were offering more college credit classes than what Jefferson had to offer seemed unfair, in a sense that I wasn't given the same opportunity as other students just because of where my parents bought a home, and where I had to attend school.

In another aspect, more specifically related to my learning experience and how I felt overlooked/unseen, it was really difficult for me to learn in a few classes during my middle school experience due to specific teacher interactions. I had a few teachers in middle school who were also coaches for the track team who appeared to have "favorites." What I mean by this is

that because I did other sports, rather than track, I felt like the teachers would treat me differently than the track athletes they would have in the same class. In a way, I felt targeted just because I didn't participate in the sport that they enjoyed, and it felt unfair to me. By doing this, it can create a sense of ignorance towards the students who were not considered "favorites" by this teacher which could lead to a very awkward environment. There were a few times, from what I can remember, that one of the students on the track team would be able to leave class to go practice for an upcoming meet, but nobody else was allowed to leave class for other reasons. Because the teacher allowed this behavior, it made it seem like the track athlete had privileges that other students (including myself) did not.

When considering class material, and experiences that others have had during their time in school, there were a lot of differences when comparing my K-12 duration. In Kuo's "*A Historical View of the Discrimination of Chinese Americans in Public Schools*" it is asserted that Chinese American children were treated very differently than the white students within California. The article also expresses that the school boards in California blamed "lack of funding" (Kuo, 1998, p. 188) as the sole reason for Chinese American public schools not being able to open. Even when these schools did eventually open, they would be built outside of community zones which forced students to walk to school because bus routes would not go out of their zones "Because the new location 'fell in Caucasian territory,' not only was there a long commute to school, but white school children often insulted, abused, and threw stones at the Chinese students." (Kuo, 1998, p. 192). In other words, these students had experienced inequality, and were subjected to a consequence that was undeserving. Although I felt, as stated above, that it was unfair to not be granted the same opportunities in class as those who were on

the track team, it does not compare to the experiences that these students had, because they weren't even granted access to public school for a long duration due to white officials/leaders within the school board. The discrimination towards these Chinese American students was far deeper than any sort of discrimination I had felt in my experience none-the-less because they were not given any opportunity to participate in these sports.

An important lesson that I have learned from this, is that although what I may have felt at the time was unfair, it is actually considered a privilege, and should not be taken for granted. I have also learned that the education system as a whole has come a long way from what we have read about in the past. However, there is still a lot of work left to be done because there is still systemic racism and discrimination in the society we live in, regardless of how many years have passed by. It is important for me to recognize that all students learn in their own unique fashion, and that instruction should vary depending on those students. To instruct a class in one particular way without the consideration of all students would be considered inequity in education. These experiences I have had are what have led me to teaching, and the pedagogy of teaching I want to enable which is differentiated instruction (DI).

Guided Pedagogical Theory

DI, or differentiated instruction, are adjustments to the content (what is being taught), process (how the learning is structured), product (how learning is assessed), and the physical learning environment according to the student's individual interests and needs (Bondie et al. 2019). In other words, this pedagogical theory addresses the concern that each student learns differently than the student to their right or left. In the same classroom, there can be students who are exceeding teacher expectations during an activity, while the other students are struggling with

the concepts that were taught to them. This philosophy of teaching is designed to integrate teaching strategies that will be suited for all students needs, rather than one individual student “Kids of the same age aren’t all alike when it comes to learning, any more than they are alike in terms of size, hobbies, personality, or likes and dislikes.” (Tomlinson 2001, p. 1). Rather than relying on a singular uniformed style of teaching, DI allows educators to use a wide range of teaching strategies to ensure that all students are learning.

The foundation of DI comes from the understanding that diversity among students is not only inevitable, but also a valuable tool in the teaching profession. Due to the diversity of each student’s learning styles, educators can use those differences to help instruct other students. The main objective of DI is to create a lesson plan that will offer students the ability to choose or select how they learn the curriculum that will best meet their needs. Differentiated instruction relies on educators to be responsive and willing to adapt on the go rather than locking into a step-by-step process with little to no wiggle room of change “Effective differentiation will typically be proactively planned by the teacher to be robust enough to address a range of learner needs, in contrast with planning a single approach for everyone and reactively trying to adjust the plans when it becomes apparent that the lesson is not working for some of the learners for whom it was intended.” (Tomlinson 2001, p. 4).

There are four key elements that are aligned with DI in which educators can adjust accordingly to their students needs/interests. Below are the four main elements:

- **Content:** This is what students are learning. The overall knowledge, concepts, or skills that the educator is implementing with respect to the curriculum standards.

An example of differentiated content in a physical education setting might include

- some students learning through verbal cues, whereas other students may learn more efficiently through visual demonstrations.
- **Process:** This element involves how students engage in specific material that is instructed to them, and to make sense of the content that is being taught. In order to differentiate processes, educators often use varied instructional strategies such as guided drills/practice or cooperative learning.
- **Product:** This is a reference to how students are able to demonstrate their understanding or mastery of the content the educator is teaching. Differentiating the product means that students are given a choice as to how they will demonstrate this understanding/mastery in the classroom. Examples of this might include having students complete an assignment, write a report, give a Power Point presentation, performing a physical skill, or designing a posterboard.
- **Learning Environment:** Refers to the physical and emotional settings of the classroom in which the students are engaged in. All students engage differently depending on the environment they are surrounded by, therefore differentiating this learning environment can only be beneficial for all students.

While DI is a notable pedagogical theory that is beneficial for all students, there are some barriers and facilitators that could interfere with this theory of learning. The first barrier being support of the educator from the school/district. It's essential that educators acquire the support, both physical and psychological, from their school/district to effectively differentiate instruction (Bondie et al. 2019). A study provided by Brighton et al. (2005) demonstrates that educators who worked in a school with supportive and encouraging administrative staff who provided adequate

resources were more likely to differentiate their instruction. Additionally, teachers were more likely to differentiate instruction when their beliefs were aligned with the school's definition of DI.

When considering my educational history, I thought back to all of the experiences I had where I had felt unnoticed or invisible to my teachers. There were times in my K-12 experience where I felt like maybe I would have been more successful if I had been given the opportunity to demonstrate my understanding of the content I was taught. Possibly, due to the lack of differentiated instruction, I fell short of success in some classes. Additionally, I remember feeling discouraged and afraid to express myself in future lessons due to the fear of being unable to master the content my teacher was teaching because it had to be demonstrated in a particular way. Because of these experiences, I have decided to make it my priority to change that narrative of my future students. My goal as a future educator is to ensure that students are given the opportunity to show their success in the classroom without fear of being shut down.

Using DI to guide my study is appropriate for many reasons. In the physical education setting, students have a very wide range of physical abilities, confidence levels, and experiences with sports or other movements. As a physical education teacher, having differentiated instruction allows students multiple ways to demonstrate their ability to participate in and progress their skills that are aligned with their curriculum standards. Advanced students will be given the opportunity to demonstrate their skills while staying engaged in the learning content due to differentiated instruction, while beginners are able to stay engaged in their own learning through focus on developing proper form and technique. Additionally, as a physical education

teacher, using DI to guide my study provides a tiered level of learning for my students, where students can be motivated to progress their learning through multiple levels.

Connections to InTASC Standards

My instructional goals are aligned with the following InTASC (2013) standards:

- **Standard One: Learner Development**

“The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.”

- **Standard Two: Learning Differences**

“The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards”.

- **Standard Three: Learning Environments**

“The teacher works with others to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self-motivation”.

DI aligned with Standard One of the InTASC (2013) standards due to understanding how students develop physically and emotionally, I can create lesson plans that meet students where they are and promote consistent growth in the classroom. Students will be able to participate in tiered skill challenges and activities that align with their stage of motor development.

Additionally, I will use formative assessments in order to track students progress and tailor my instruction to fit the students needs as they progress throughout the school year.

In order to be successful within Standard Two of InTASC (2013) standards, I plan to adjust tasks, rules, and equipment in order to meet diverse student needs. I also intend on incorporating cultural relevance into my teaching strategies as well by using games, sports, and other activities of diverse cultures in my lessons in order to promote inclusivity and keep students engaged. It is also important to acknowledge that I plan to design my lesson so that students with disabilities, language barriers, or different cultural backgrounds can actively participate in class. Because standard three focuses on understanding and addressing learning and cultural differences, my goal is to foster an inclusive PE environment where all students feel capable of achieving success and valued by not only myself, but the peers around them.

Lastly, DI aligns with the third InTASC (2013) standard as I am able to structure a positive learning environment for all of my students as well as encouraging the development of social and emotional skills that go beyond physical fitness. I plan to establish clear routines, expectations, and respect norms for all of the activities or games that will be introduced in my future classroom. I have always been a huge supporter of fostering teamwork and collaboration amongst students, therefore my goal will be to use cooperative learning games and peer feedback to build social skills and teamwork. Additionally, I plan to create a safe, supportive, and motivating environment that promotes lifelong physical activity.

Summary

Due to the educational experiences I have had throughout my K-12 timeline, I have been converted into a motivated, understanding, empathetic, and lifelong learner/education enthusiast.

I have learned that not only did I have individual needs as a student that weren't met, but every student that comes in contact with education has individualized needs that shouldn't be ignored; using differentiated instruction in my classroom promotes this idea of individualized needs. I intend on using DI in my classroom to ensure all students are engaged and participating to their full capability, while also adjusting my teaching with respect to student progression. Using DI not only promotes individual learning and progression through a scaffolded instructional approach, but it also aligns with three core standards noted in the InTASC (2013) resource. Overall, I plan to create an environment that is suitable and supportive for all students, rather than focusing solely on one group of students. I plan to set students up for success, and teach them skills that will be necessary to not only be successful in my classroom, but outside of school in the society we live in today. I want to teach students in a way that will benefit them and encourage them around their peers, as well as helping promote self confidence and cooperation within physical education activities/sports.

Chapter 2. Review of Relevant Research and Scholarship

Differentiated instruction has become one of the most important components to education, more specifically during physical education, as students are entering the classroom with a wide range of physical abilities, developmental needs, motivation, and preferences on learning. As physical education programs start to shift towards a more inclusive and student-centered environment, educators are required to modify tasks, equipment, assessments, and learning environments in order to ensure that every student has an equitable learning opportunity. The following annotated bibliography examines current research and classroom strategies that are relevant to differentiated instruction in physical education. Through these sources, educators can better understand how to be able to adapt the PE curriculum in order to address the needs of diverse learners. Within this project, I aim to connect relevant research with current methods of differentiated instruction into my classroom through tiered skill progressions, student autonomy, multimodal instruction, and flexible grouping. I chose the following resources as they are directly related to the instructional approach I will be using this year; I located these resources through the Hamersly Library within Western Oregon University.

Akbaruddin et al. (2024) examined and reviewed existing scientific literature in order to determine how differentiated instruction has been applied in physical education, specifically to help improve the active lifestyle behaviors of middle school/junior high students. The findings from this article were analyzed through conducting a systematic literature review, drawing data from the Scopus database and following procedures to identify, screen, and evaluate relevant studies. This study used differentiated instruction as its theoretical framework, emphasizing the need for PE experiences that align with students' developmental needs. Ultimately, the review

only found six qualitative articles regarding the outcome and application of differentiation in middle school/junior high PE. The author concluded that the research on this topic remains extremely limited and recommends further research to be conducted.

This study is valuable to my research as it shows the research gap that many PE educators experience in practice which is the lack of evidence-based strategies for applying differentiated instruction to improve physical fitness outcomes. The overall strengths of this article include having a clear focus on the research gap in literature with respect to differentiation in the PE setting, the use of a strong theoretical lens, and the rigorous article review process that took place. The article could have included a broader search across multiple databases in order to get the results that they were looking for and additionally could have included a more detailed evaluation of the six studies that were included.

Akbaruddin et al. (2024) explored how differentiated instruction in physical education influences students' passion for learning, study habits, and physical activity levels. The authors of this article used an empirical research design that focused on examining the learner responses and fitness outcomes across a junior high school or adolescent student population. The theoretical lens that was used for this study included differentiated instruction as a learner-centered pedagogical model, emphasizing the importance of instruction that is tailored to student readiness, interests, and learning profiles that create meaningful learning experiences. The study concluded that differentiated instruction can positively impact students' motivation and overall behavior in the classroom while also impacting their physical fitness. The authors noted that differentiated PE environments support greater student engagement and participation, which leads to healthier lifestyle patterns.

This study is a direct reflection of the success that differentiated instruction can have on students in a PE classroom environment, and allows me to understand that using this pedagogical method in the classroom can not only improve skill performance, but also strengthens student motivation and engagement. One of the main strengths to this article is the holistic perspective which links instructional practices to emotional, behavioral, and physical outcomes. The research done in this study also contributes meaningful empirical evidence for differentiation, helping support instruction choices in diverse classroom settings. With that being said, the article could have included more detail on the intervention's duration, sample characteristics, and context so that other educators could evaluate the relationship between the findings and their own settings.

Bondie et al. (2019) explored the importance of changing educator perspectives from “one size fits all” to using differentiated instruction strategies to promote a more equitable education for all students. The purpose of this article was to examine how to adjust from a traditional classroom environment where all students are taught the same to introducing instructional strategies that will change educator practices, decision making, and classroom dynamics. The authors synthesized findings from empirical and theoretical studies across the K-12 contexts. The theoretical lens that was used to guide this research is centered on differentiated instruction as a very complex pedagogical approach which requires educators to integrate knowledge of learner diversity, motivation, instructional design, and equitable learning opportunities. The conclusion of this article was that effective differentiation requires intentional instruction planning, the use of continuous formative assessments, flexible grouping, and a classroom environment that supports autonomy and engagement. The authors also noted that the

success of differentiated instruction relies on the educator mindset and ability to adapt their teaching strategies.

This article is impactful for my teaching practice because it highlights the thought process behind differentiation and not just the instructional strategies used, which helps me gauge and understand how to design PE lessons that will be inclusive for all students. Additionally, this article reflects on specific strategies that I plan to incorporate into my lesson planning. The strengths of this research include, but are not limited to, the research-based perspective that clarifies how differentiated instruction affects both the complexity of the instruction and the student outcomes. This research also uses a strong theoretical framework that can guide decision making in the physical education setting where student variability is extremely diverse. This article could have been strengthened with the addition of more subject-specific examples as most of the examples were in academic classroom settings rather than performance-based environments such as PE. Ultimately, the discussion of how differentiation looks in non-traditional settings could have made this article more useful.

Colquitt et al. (2017) examined how differentiated instruction can be applied in physical education to personalize student learning and meet the needs of diverse learners. The authors used a literature review to analyze existing studies and practices used in the PE setting to identify strategies for tailoring content, process, and student assessment. This theoretical lens was grounded in student-centered learning and differentiated instruction frameworks with the emphasis on interests and learning styles. The article concluded that differentiated instruction in physical education promotes engagement, skill development, and meaningful learning experiences for students while also encouraging teachers to use instructional strategies such as

flexible grouping, varied tasks, and choice-based activities in order to accommodate diverse learners.

This study is important for my teaching because it provides concrete strategies for personalizing instruction, which can directly support student motivation, engagement, and growth of skills in the middle school PE setting. A major strength of this research is that its practical focus offers specific examples that teachers can implement in their classrooms immediately, bridging theory and practice. This study also highlights the importance of using assessment and reflection in adapting lesson plans to student needs. With that being said, this article could have included data to support its claim due to most of the discussion being descriptive. Additionally, showing data on how to manage large classes would make the strategies more applicable.

Jarvis et al. (2017) examined how differentiated pedagogy can be applied in secondary physical education to accommodate learner diversity, including skill level differences, motivation, and physical ability. The authors of this article used a literature review to analyze case studies from secondary PE classrooms, highlighting instructional approaches that promote inclusive and engaging learning environments. The theoretical framework used to guide this study is derived from differentiated instruction and inclusive education frameworks with the emphasis on effective teaching requiring flexibility in content, process, and instruction. The study concluded that differentiated pedagogy enhances student engagement, supports skill progression, and fosters positive attitudes towards physical education.

This study is impactful for my teaching profession because it provides clear guidance on implementing differentiated instruction in PE to ensure that all students, regardless of their

ability, can be successful in PE and develop skills at their own pace. A major strength of this article is that it focuses on practical applications within the classroom setting, which can be directly applied in lesson planning and instructional design. Additionally, this study uses emphasis on reflective practice which highlights the role of the teacher in being able to continuously adjust their instruction to student needs. An improvement that this article could have incorporated would be including guidance for teachers when managing larger classes as well as limited resources in the classroom.

Li (2014) explored middle school students' perceptions of teacher caring in physical education and how these perceptions relate to student effort and enjoyment of class. The study used a quantitative survey design that collects self-reported data from students using specific measurements in perceiving caring, effort, and enjoyment. The theoretical lens used in this study is social-emotional learning and student-centered pedagogy with focus on supportive teacher-student relationships in promoting engagement and motivation. The conclusion to this research was that students who perceive higher levels of teacher caring demonstrate greater effort and enjoyment in PE with emphasis on the role of relational and affective factors in physical education outcomes.

The article impacted my understanding of building a caring and supportive relationship with students, which can be directly related to the influence of student motivation, participation, and overall engagement in PE. A key strength of this article is that it focuses on the effective dimension of learning, providing evidence that teacher behavior and relational support are critical for student outcomes. The quantitative design also allows for measurable relationships between the variables and how valid the research is. However, this study could be improved by

incorporating qualitative data such as student interviews or reflections in order to get a better understanding of student perceptions on teacher-student relationships. Additionally, including multiple schools or multiple student populations could increase the validity of the research.

Mucedola (2016) sought out to present a culture-based differentiated instruction model that addressed students' school, community, and health-related behaviors through health education. This study used a descriptive methodology which reviewed existing literature and presented a framework for integrating cultural relevance into differentiated instruction. The theoretical lens used in this study is combined with differentiated instruction and culturally responsive teaching, using student backgrounds, experiences, and community to guide the research. Mucedola (2016) concluded that using a culture-based differentiation model can enhance student engagement, improve health behaviors, and promote meaningful learning environments for all students.

This study impacts my understanding of the importance of considering students' cultural backgrounds and community experiences when designing lessons in PE with hopes to enhance student engagement in the classroom. A strength of this article is that it integrates cultural responsiveness with differentiated instruction, offering a practical framework for educators to apply in lesson planning. This study also emphasizes the importance of a more broad role in education in promoting positive health behaviors, not just skill growth. Although this article can provide a large amount of information and research behind specific strategies that I would implement in class, the study could have included case studies that demonstrates the effectiveness of this instructional modeling. Additionally, this study could have included

concrete examples of how to incorporate this model into lesson planning with middle school students in the PE environment.

Sitovskyi et al. (2019) investigated how integrating a differentiated approach in physical education can accommodate adolescents who develop at different biological rates. This study used an experimental design with adolescent students grouped according to their biological development stages, using physical fitness tests and PE performance assessments to measure these outcomes. The theoretical lens used to guide this study includes using developmentally appropriate practice (DAP) and differentiated instruction, focusing on PE educators' consideration of students' physical maturation and readiness in their lesson planning. Sitovskyi (2019) concluded that tailoring PE activities to students' developmental speed improves physical fitness outcomes and enhances participation levels within the classroom setting.

This study is important to my research because it demonstrates the importance of adapting PE instruction to student needs (both physical and emotional) in order to ensure that all students are receiving an equitable education. Not only does this article provide information about an equitable education, but it also uses examples of how to ensure that students are participating in PE activities safely, and respectfully which is a classroom norm/expectation that I expect students to fulfill each day. A strength of this article is that it provides measurable evidence of the benefits of differentiated instruction based on biological development. Additionally, this article demonstrates practical examples that educators can use for student grouping and modifying activities to tailor student needs. This article could have included a long-term plan for incorporating these strategies in the classroom, and showing data that includes what the longevity of using this model could look like.

Smale-Jacobse et al. (2019) examined existing research on differentiated instruction in secondary education to determine its effectiveness and identify best practices for implementation. The authors used a systematic review of literature methodology in order to analyze studies across various subjects and contexts focusing on evidence that demonstrates student outcomes in the classroom setting with the use of DI. The theoretical lens used within this study is differentiated instruction with focus on adaptation of the lesson planning product to accommodate student needs, readiness, and interests. The conclusion of this article was that differentiated instruction generally has a positive impact on student learning, engagement, learning outcomes, and motivation. With that being said, this results in the expertise of the teacher and context-specific adaptations.

This study is impactful for my teaching because it provides evidence-based support for using differentiated instruction in the PE setting, and tailoring instruction to fit student needs. The strength of this article is that it uses a systematic approach that synthesizes a wide range of research proving the effectiveness of using DI in the classroom. This article highlights the benefits of using differentiated instruction while also expressing the challenges that educators may have while implementing this model. Additionally, the importance of teacher training and reflective practice is highlighted within this article. Ultimately, this research could have included more subject-specific research, particularly in physical education, as most of the research was focused on academic subjects; using practical PE examples or case studies could have increased the effectiveness of this study.

In this study, Subban et al. (2025) explored the challenges and successes that educators have experienced while implementing differentiated instruction in higher education settings. The

method that the authors used for research is qualitative based on interviews and surveys with higher education teachers in order to gather information on instructional practices, decision making, and perceived outcomes. The theoretical lens used in this study includes differentiated instruction, focusing on the adaptation of teaching strategies to address specific student learning preferences. Subban et al. (2025) concluded that while differentiated instruction can enhance student learning and engagement, its effectiveness is inconsistent due to the dependent variable being teacher experiences, training, and instructional support. The findings emphasized the importance of professional development and reflective practice.

The findings of this study are impactful for my research because it helps me better understand the role that differentiation in instruction has in the relationship with students and teachers. The study indicates that in order to promote a positive learning environment through differentiated instruction, teachers must be trained and willing to adapt their lesson plans. A key strength of this article is that it focuses on educator perspectives, providing insight to teacher challenges that influence differentiated learning beyond theoretical frameworks. Additionally, it demonstrates the importance of institutional support and teacher training. For this study to be more effective and useful, it could have included direct observations of classroom practices with emphasis on how differentiated instruction actually influences student outcomes.

Tomlinson (2001) explored practical guidance and strategies for implementing differentiated instruction in classrooms with students of varying abilities. The author of this book drew on extensive research and theory with the inclusion of classroom examples to better explain how teachers can modify content, process, and product to meet the needs of diverse learners. The theoretical framework used to guide this research was grounded in differentiated instruction

frameworks with emphasis on student readiness, interests, and learning styles as central factors in lesson planning. The book concluded that differentiation is essential to creating equitable learning environments for all students, and that teachers can achieve meaningful learning for all students through thoughtful planning, grouping, and modifications.

This resource is impactful for my teaching and research because it offers comprehensive and practical strategies that can be directly applied to middle school PE. This resource can help me design lesson plans that accommodate students' varied learning styles and abilities. One of the main strengths to this book is that it has a lot of depth in relation to research and has actionable classroom examples for teachers to use. This book also expresses the value of using reflective practice similar to some of the articles mentioned above. This resource could have been stronger if it included more specific examples for the PE setting or in the active learning context. Additionally, more discussion of challenges that teachers are facing in large student dynamic environments could have been useful information for my research.

Wen and Cai (2024) imposed the importance of teacher's beliefs and instructional practices and how it directly influences the implementation of differentiated instruction in physical education as well as how these influences affect student outcomes. The study used a quantitative research design using structural equation modeling (SEM) to analyze data that was collected from PE teachers and their students. The theoretical lens used in this study combines differentiated instruction with teacher belief models emphasizing that teachers' perceptions, values, and practices determine the effectiveness of differentiated instruction. The conclusion of this study was that teacher beliefs directly impact the influence of using differentiated instruction in the classroom and the overall effectiveness of this method with their students.

This study is impactful for my teaching profession because it highlights the critical role of the teacher mindset playing a significant role in student achievement and engagement. This article also expresses the importance of implementing differentiation effectively, and how effective teaching strategies can influence teacher confidence levels which impacts student learning. A strength within this article is that it uses structural equation modeling which uses statistics to support its claim. Additionally, this article emphasizes the importance of teacher beliefs and professional development as the anchor towards promoting an equitable education for all students. However, even with the strengths of the research mentioned above, in order to strengthen the research being conducted, this article could have included teacher interviews, student interviews, and classroom observations in order to demonstrate practical examples.

The research reviewed above demonstrates the growing recognition of differentiated instruction as a vital component to educational success, particularly in the middle school setting. Across empirical research, literature reviews, and practical examples, the research consistently demonstrates that differentiation within the classroom through adapting content, process, and assessment of students' readiness, interests, and developmental levels enhances student engagement, participation, skill development, and overall enjoyment of physical education. Several studies emphasize the role of the educator, and the beliefs of the educator, as a main influence to the effectiveness of this model in lesson planning, and enable students to be successful throughout their PE experiences. Though the research behind DI provides sufficient evidence that students will benefit from this method of teaching, there are still persistent gaps in the research behind PE specific contexts and small sample sizes. Ultimately, these resources collectively explore the idea that DI is not a "one size fits all" strategy, but a multifaceted

approach that allows teachers to meet the needs of all students within a diverse environment. For middle school PE teachers, this research provides clear and precise examples of how to create an inclusive, engaging, and effective learning environment that supports students' physical, cognitive, and motivational growth.

Chapter 3. Methods

Differentiated instruction has become one of the most important components to education, more specifically during physical education, as students are entering the classroom with a wide range of physical abilities, developmental needs, motivation, and preferences on learning. As physical education programs start to shift towards a more inclusive and student-centered environment, educators are required to modify tasks, equipment, assessments, and learning environments in order to ensure that every student has an equitable learning opportunity. Within this project, I aim to connect relevant research with current methods of differentiated instruction into my classroom through tiered skill progressions, student autonomy, multimodal instruction, and flexible grouping.

When preparing to become a well rounded and knowledgeable educator, it's important to acknowledge what action research is, and how it can shape instruction as a new teacher. According to Sagor (2000), action research revolves around a seven step process implemented to guide a new teacher through real-life experiences that can make a difference in education. The first step begins with reflecting on a topic or topics that are notable to the education field and worth studying; the educator must ask themselves "What element(s) of our practice or what aspect of student learning do we wish to investigate?" (p. 4). The second step includes pinpointing the theoretical perspectives that relate to the topic in question. In step three, and once a focus has been selected, the educator must identify "a set of meaningful questions that can guide the inquiry." (Sagor 2000, p. 4). During the fourth step of action research, the educator must collect meaningful data that is relevant to the topic and questions framing the research. In order to do this successfully, it's important to collect data that will justify that the actions being

conducted during this research process are valid. Notably in step five, the educator must analyze the data, and answer two questions essential to focus on the research: “What is the story told by these data? Why did the story play itself out this way?” (Sagor 2000, p. 5). Step six involves reporting the final sets of data after serious reflection, and lastly step seven includes taking informed action on the research that has been developed. Educators can then use this action research project as a tool to implement teaching strategies into their lesson planning that will benefit their students.

Action research is a tool to help new educators, groups of educators, and schools or school districts get closer to meeting the diverse needs of their students. Not only does this method of study serve as a direct tool for the individual producing the research, but it can be useful for anyone interested in incorporating new methods into their everyday lives in education. This study is built on three guiding questions: 1) How does implementing differentiated instruction into lesson planning improve student engagement? 2) What instructional strategies (e.g., task modification, choice, flexible grouping, and varied equipment) most effectively support skill development and confidence in middle school physical education? 3) In what ways can tiered tasks and skill progressions support students working at different readiness levels in middle school physical education?

Participants & Setting

This study was conducted across two 7th-grade physical education classes at North Albany Middle School (NAMS), where I began my student teaching experience and study. NAMS serves exactly 462 students. Amongst this student population, NAMS serves a diverse group of students with all different strengths and needs. The school student demographics are as

follows: <1% American Indian/Alaska Native, 1% Asian, 1% Black/African American, 23% Hispanic/Latino, 9% Multiracial, 0% Native Hawaiian/Pacific Islander, and 65% White. The teacher demographics are as follows: 0% American Indian/Alaska Native, 0% Asian, 0% Black/African American, 7% Hispanic/Latino, 3% Multiracial, 0% Native Hawaiian/Pacific Islander, and 90% White. Among this student population, class sizes average out to 24.5 students with a 76% regular attendance rate. Additionally, out of the 462 students enrolled, 16% of those students are ELL with 5 languages spoken, 14 % are qualified as Students with Disabilities, and 23% are listed as Students Experiencing Poverty. Because NAMS is a Title 1 school, 362 students are qualified for free or reduced lunches, while 126 students are qualified for free lunches with direct certification.

Within the community at North Albany Middle School, I have had the opportunity to know what cultures are celebrated in the area, the type of music students listen to, the kind of areas students live in, and the hobbies/interests that are popular as well. This has all shaped my way of thinking in the classroom. I firmly believe that music is a necessary tool to interact with students. Additionally, I have noticed the impact that music has had on my students' participation during PE. With that being said, I'm also aware of the resources available to the students, and how that may impact their learning in the classroom. For example, NAMS offers very few sports to their students. The sports that are available to the students to enroll in through the school district are Cross Country, Football, Basketball, and Track. Additionally, a lot of students are registered for club sports as NAMS has not offered all of these sports in previous years. This impacts students directly in physical education as they are only learning the skills of these sports during class, where some students may be learning outside of school. Because of the cultural

diversity amongst NAMS, it requires a lot of thinking outside the box when it comes to assessing students and their success in class. Additionally, because we are not in a traditional classroom and do not have a lot of materials accessible to the gym, I am required to assess the students differently than a traditional PE setting.

Given that I am 26 years old, I can relate to the students directly as I was in their position not all that long ago. Additionally, I have expressed my purpose in teaching with all of my students and classes. Because the age gap between myself and my students is so small, a lot of my students have siblings or family members close to my age which serves as a benefit for me when trying to build relationships. Although I have only been working with these students for less than six months, it feels as though I have known them for several years. With this information in mind, I did not attend a middle school that served more than 400 students which changed my perspective on the middle school realm entirely. I grew up in a small town of nearly 3,000 people where my middle school served around 150-200 students. At NAMS, there are class sizes ranging from 15-35 students, whereas in my classes at the middle school I had attended, the majority of students in one class was no more than 25. Although this might have been a large difference in experiences for myself and my students, we all bring common interests and experiences from other aspects of our lives to the classroom.

Data Collection & Analysis

Within this action research project, I began collecting data to help me understand how differentiated instruction influenced student engagement, learning, and access. Sagor (2000) emphasizes that action research should draw on multiple data sources in order to capture the intricacy of classroom practice and to support triangulation, credibility, and reflection through

decision making processes. First, I collected data from the unit plans I had designed which provided a macro-level view of my instructional goals, differentiated instruction strategies, and assessment alignment. The unit plan documented how scaffolding activities and learning targets were intentionally designed to meet the diverse needs of my students. When looking at the curriculum (both unofficial and official), clarified learning outcomes and expectations were achieved. The classroom norms, routines, expectations, and peer culture revealed how my students experience physical education in real-time. Additionally, collecting data from daily lesson plans documented the validation of differentiated instruction, including but not limited to task modifications, grouping strategies, and instructional support. Sagor (2000) highlights the importance of examining instructional decisions to understand how teaching practices influence outcomes.

In addition to unit plans, curriculum, and lesson plans, I used information from closing activities at the end of each lesson to gauge student understanding, confidence, and perceived success with skills and tasks. They helped identify misconceptions, readiness levels, and student perceptions of accessibility. Both formative and summative assessments documented student skill development, understanding of concepts, and application of strategies. These measures provided evidence of learning outcomes and patterns across the class. Furthermore, using informal observations through teacher checklists provided insight into student participation levels, peer interactions, and on-task behaviors during activities. Lastly, in order to further strengthen my data collection and analysis, I requested feedback from my cooperating teacher to see where his perspectives aligned with my own. His feedback offered a more in depth outlook

on his experiences with these students and previous students from several years of teaching at NAMS.

Researcher Positionality

Due to the fact that I am a White, 26 year old, English speaking male, my background influences not only data collection but also the analysis of my research. Because of my identity, I understand that my lived experiences and privileges influence how I interact with my students, interpret their behavior in class, design instruction, and evaluate engagement. Growing up and navigating school where my cultural background and language was reflected and valued, I have benefited from forms of privilege that may not be equal to the students who I am interacting with on a daily basis. This positionality shapes my view on participation, effort in class, communication styles, and confidence in the physical education setting. Additionally, as a male PE teacher, I acknowledge the gender dynamics that may influence students' willingness to participate in class, take risks, or express discomfort in physically active spaces. I have made it my best effort to get to know each and every student thus far, and plan to do my best to not let my own personal biases get in the way of teaching my students. Gathering student feedback and input from my cooperating teacher and field supervisor will support an on-going self-examination of my teaching efforts. By sharing this awareness, I am informing everyone of my commitment to differentiation in the classroom that promotes equality, access, and belonging. I strive to honor and navigate instructional strategies that will benefit all of my students. Lastly, I aim to foster a supportive environment where students feel safe to address their concerns and share their successes. I am aware I cannot be perfect, but I strive to be the best teacher I know I was destined to be.

Chapter 4. Findings

Differentiated instruction has become one of the most important components to education, more specifically during physical education, as students are entering the classroom with a wide range of physical abilities, developmental needs, motivation, and preferences on learning. As physical education programs start to shift towards a more inclusive and student-centered environment, educators are required to modify tasks, equipment, assessments, and learning environments in order to ensure that every student has an equitable learning opportunity. Within this project, I aim to connect relevant research with current methods of differentiated instruction into my classroom through tiered skill progressions, student autonomy, multimodal instruction, and flexible grouping. When analyzing the data collected during the two-week differentiated unit, there were three major themes noted. Beginning with the first theme, differentiated instruction correlated to a positive impact on student academic performance. The second theme being that differentiation created a student-centered learning environment and enabled inclusivity within the classroom. The last theme noted from this unit was an increase in student engagement. Each of these themes will be addressed individually with supporting data.

Positive Impact on Student Academic Performance

During the two-week Pickleball unit that I had implemented for this project, differentiated instruction had a direct impact on student learning and overall skill development. Tomlinson (2001) describes differentiated instruction to be tailoring instruction to be robust enough to meet the needs of a wide range of students and their needs. Rather than delivering instruction through a “one size fits all” lens, I intentionally designed lesson plans that allowed

students can access the content in multiple ways. This included breaking down complex skills such as the underhand serve and striking pattern into smaller, more manageable activities so that students could build more confidence and competence over time. For example, instead of having students go directly into serving across the court, they were expected to practice short distance serves and paddle contact before taking a few steps back to the official serving line. When scaffolding these tasks for my students, it was evident that the level of confidence from each student significantly increased as they progressed through the unit. Regardless of their prior knowledge and skill level, each student was expected to participate in the activities at hand to the best of their ability while I would walk around the gym and observe each group.

Additionally, differentiated instruction supported the cognitive development of learning within physical education. Not only were students developing skills necessary for success in Pickleball such as serving, striking, and technique, but also learning the rules, positioning, and strategy that play a crucial role in the sport. By proactively planning instruction with the use of visual demonstrations, guided questioning, and peer modeling, I was able to support multiple different learning styles and ensure that each student understood the reasoning behind each skill developing activity and strategies/gameplay that support those skills. This ultimately contributed to improved student success in class as students were able to transfer their knowledge and understanding into gameplay more effectively. For example, when instructing the students on how to successfully land a drop shot across the net, I had also expressed the importance of positioning during an in-game situation. Because students were learning this skill for the first time, I had felt that it was important to explain why drop shots could be a useful skill when playing against their opponents.

With that being said, I did have to adjust this lesson mid-instruction. Initially, I had planned for students to practice their drop shots with a partner of their choice by initiating play with a serve, and then rallying back and forth using the drop shot model. During observation, I noticed that some students were struggling to come closer to the net because of the positioning of the initial serve. Instead of carrying on with the activity, I decided to have the students freeze where they were, address the concern, and adjust the activity right there. Rather than initiating play with a serve, students were allowed to start the activity by standing up close next to the net which enabled them to practice the skill they had just learned. By doing this, I saw immediate results as students began implementing this change and demonstrating their ability to successfully land a drop shot against their opponents.

At the beginning of the unit, I had conducted informal pre-assessments through observation and questioning during instruction. These pre-assessments showed me the wide range of skill levels within my class. Some students had prior experience with paddle sports such as badminton, tennis, and pickleball itself, while other students had little to no experience outside of what they have learned thus far in physical education. While these observations were clear, we had just finished a unit on Badminton a few weeks prior to this Pickleball unit, therefore I was optimistic that students would be able to use some of the transferable skills from Badminton into this unit. Recognizing this skill gap within my students, I proactively planned scaffolding activities that allowed students to successfully learn each skill at their own pace which enabled student success. As the unit progressed, I used ongoing formative assessments including skill checklists, peer feedback, and teacher observation to monitor student growth. For example, I was able to track students' ability to maintain a rally with consecutive hits. At the start of the unit,

most students struggled to keep a rally of about five or more consecutive hits, and towards the end of the unit, that number increased to nearly double digits. This data demonstrated clear student growth in skill execution and consistency.

Another important factor to student achievement was allowing students the opportunity to learn and progress at their own pace. Differentiated instruction reduced the pressure of students naturally wanting to compare their skill level with their peers, and instead, emphasized their individual growth. The reason for this is because I created a supportive classroom environment by putting more focus on individual growth compared to competition and performance. In other physical education settings outside of my own, students may be measured based on how successful they are compared to their peers, whereas in my classroom, students are measured on their own starting point, and the progress they have made throughout the unit at hand. Students who needed additional time to master foundational skills necessary to be successful were given that opportunity without the stress of feeling overwhelmed with information, while students who were more advanced were challenged with increasingly complex tasks; some of these tasks included shot placement, and competitive gameplay scenarios. By allowing students with this opportunity of a self-pace oriented learning experience, this balance ensured that all students were working towards their own zone of proximal development which maximized learning outcomes throughout the class. Evidence of student achievement was also reflected in summative assessments at the end of the unit. During the gameplay evaluations, a large majority of students had demonstrated that they improved in key skill areas such as serving accuracy, rallying, and the overall understanding and knowledge of game rules. Additionally, student self-assessments indicated that there was an increase in confidence when it came to their overall performance. A

large majority of students reported that they had felt more capable and comfortable participating in the activities compared to the beginning of the unit.

Data collected from the post-unit survey shown in Figure 1 display below further confirms that student achievement increased throughout the entirety of the pickleball unit. When reviewing answers, 90% of students had correctly answered the first question when sharing one benefit to using the handshake grip during gameplay. At the beginning of the unit when asked this same question, only one student could come up with a logical answer. In addition to this, the same results were shown for question number two. When looking at the data collected from questions three and four, 75% of students had rated themselves at least one full point higher at the end of the unit when compared to the beginning of the unit regarding their overall skill level in Pickleball. Lastly, just out of curiosity, I had students reflect on their experience during class by asking how much of an impact music had on their learning, demonstrating the influence that differentiation has on student success. As a result, 95% of students claimed to feel more confident in their ability to play Pickleball when music was playing in the background.

Pickleball Unit Reflection Questions:

Please answer the following reflection questions by restating the question using full, complete sentences.

1. What is one benefit to using the handshake grip during gameplay?
2. When serving during Pickleball, what is the target zone to land the ball in?

3. On a scale of 1-5, how would you rate your Pickleball skills at the BEGINNING of the unit (1 = needs improvement, and 5 = I can demonstrate all of the skills at a proficient level).
4. On a scale of 1-5, how would you rate your Pickleball skills at the END of the unit (1 = needs improvement, and 5 = I can demonstrate all of the skills at a proficient level).
5. Did you feel more confident playing Pickleball when music is playing in the background? If so, why?

Figure 1. Post-Unit Survey

Overall, differentiated instruction had a direct and positive impact on student academic achievement. By providing students with targeted support, scaffolded learning through proactive planning, and continuously adjusting instruction based on assessment data, I was able to ensure that all students were actively engaged in learning, made meaningful progress in class, and felt more confident in their skills than they did before the unit began. This experience reminded me of the importance of responsive teaching and highlighting how differentiation can lead to improved success for such a diverse population of students within the physical education setting.

Student-Centered Learning Environment & Inclusivity

One of the key elements to differentiating instruction is fostering a student-centered environment where all students feel heard and included within their learning experience “Participants with higher levels of perceptions of caring were likely to put forth more effort and exhibit more enjoyment in PE. It is suggested that teachers create a caring climate to motivate students to be engaged in PE.” (Li, 2014). With that in mind, it’s important to understand that teachers need to know who their students are individually, and create an environment where each

student can express themselves freely. Throughout the pickleball unit, and throughout the entirety of my teaching career thus far, I have prioritized creating a student-centered learning environment by emphasizing inclusivity, equity, and access for all learners. In other words, creating an environment where students feel comfortable to learn new skills without feeling worried about being shamed by their peers has been a priority of mine throughout this experience. Proactively planning activities that allow every student to practice motor skills at their own pace while also getting targeted feedback from myself and peers has also been a large influence on my students' academic achievement. I noticed that when I proactively planned instruction around inclusivity, my students felt more competent and comfortable. As an educator, recognizing that students bring a wide range of abilities, backgrounds, and experiences into the physical education setting is very important in order to be successful during instruction. In relation, I intentionally designed instruction that allowed each student to participate in the activities meaningfully and feel a sense of belonging with the class.

As expressed above, in order to foster a student-centered environment, it was important and necessary for me to know who my students are. With that in mind, creating this environment goes beyond my more recent actions. At the beginning of the school year, I prioritized getting to know my students through consistent conversations and relationship building exercises such as walking around the gym while students are stretching and asking how their day is going, or what they might have planned for the weekend. Doing this not only educated myself on what values each of my students bring to the classroom, but it also created a sense of respect within my teacher-student relationships. Because I had taken the time to talk to my students individually, hear their stories, and learn where they came from, it directly impacted the success I had

instructing them. Without a trusting relationship with my students, it's unclear as to what the results of this data might look like. Ultimately, having a positive rapport with my students lead to a more positive learning experience in the classroom.

One of the main ways that I was able to foster a student-centered environment was through multiple entry-points of learning. Rather than expecting every student to perform the skills they were learning at the same pace and ability, I modified activities to meet students where they are. For example, during the second lesson of this unit, I had designed an activity where students practiced their striking technique against the gym wall. The overall premise of this activity was to not only practice technique, but also power and control through target practice. Rather than assuming all students could hit the target I had given them, I adjusted the activity to have students stand either closer to or further away from the wall depending on their skill level. Additionally, I allowed students to practice this activity with a partner of choice if they had felt comfortable enough to do so. By reducing the distance requirements and the optional small-group possibility, this reduced the physical demands of the skill and made it more accessible for students who were still developing foundational skills.

In addition to modifying the task or activity at hand, I had also incorporated student choice within this unit. My students were given the opportunity to select a skill to focus on during practice drills such as serving, striking, drop shots, and footwork/positioning. By doing this, students were able to take ownership of their learning and focus on areas where they needed improvement. An example of this occurred during the first few days of the unit, where a student had expressed their frustration with their serving skills. Rather than simply moving on in the unit and having that student continue to struggle with serving, I allowed them to continue to practice

the skill that needed the most attention while others worked on the next skill. Once that student felt confident and comfortable, I had them progress to the next skill. Over time, this student demonstrated a massive leap of improvement in foundational skills as the unit progressed.

Creating an inclusive environment also required intentional efforts to build a positive and supportive classroom culture. I emphasized the importance of respect, integrity, effort, and growth over competition and performance. Rather than grading students on their ability to perform the skill at hand, the gradebook reflects each student's effort level and participation overall. I encouraged students to support one another through peer feedback and collaboration when participating in either small group or whole class activities. When collecting data for this unit, flexible grouping strategies further supported inclusivity. For certain activities, I had students find a partner of their choice, while other activities required small groups of about three to four students. Specifically for this Pickleball unit, there were very limited opportunities for whole-class activities, however when collecting data at the end of the unit regarding flexible groupings, it was evident that the students preferred to be in either small groups or preferred partners. Looking at the data in Figure 2, it is asserted that whole-class activities are the least preferred (only one student chose this option). In contrast, 13 of 14 students chose small group activities, and 10 of 14 students chose partner activities (they were allowed to choose more than one option). Allowing students to work with others allowed for a more inclusive environment as more experienced students were able to model skills and provide guidance to their peers, while less experienced students benefited from watching and practicing alongside the advanced classmates. This approach not only enabled students to participate, but it had also created a sense

of a community where all students felt valued and supported.

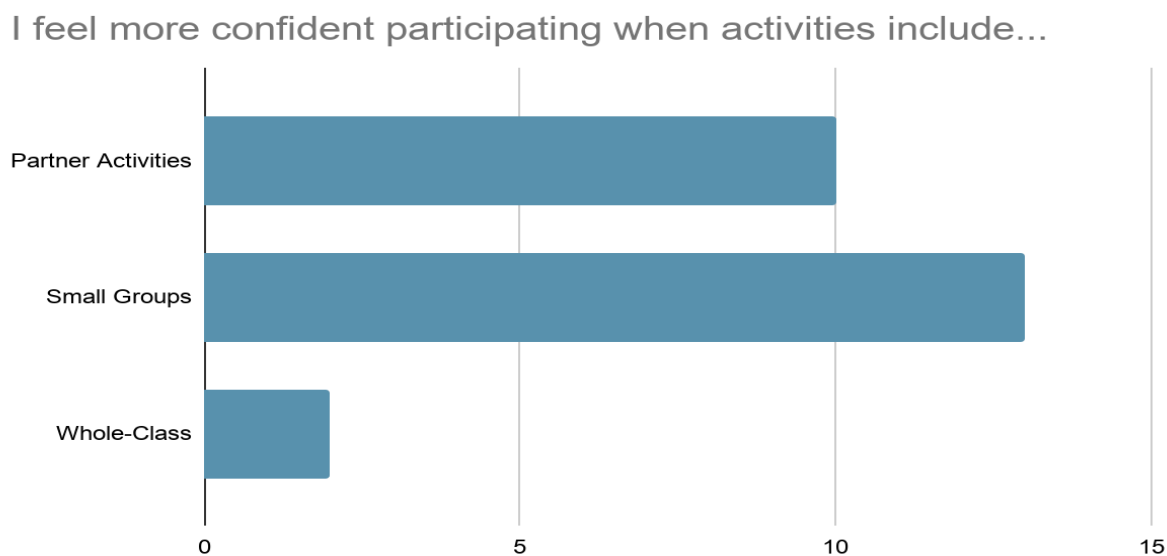


Figure 2. Differentiation Survey

Alongside flexible grouping, I also considered the diverse backgrounds and experiences that my students bring to the classroom when planning instruction. While some students had prior experience with paddle/net sports outside of school, some students had little to no experience outside of what they have been taught in physical education. Additionally, students varied in comfortability with competition and physical activity. Because of this, I prioritized adjusting my instruction to accommodate all of my students' needs and interests, while also challenging the students who were more advanced in skill development. This approach is supported by research, as the principles of differentiated instruction align with practices that improve learning outcomes by engaging students at an appropriate level of moderate challenge within their zone of proximal development and by matching learning tasks to students' abilities and interests to promote a state of "flow" (Smale-Jacobse, 2019). In other instances, I did use

mixed-ability grouping to promote peer-learning and collaboration. During the pickleball unit, I designed an activity where students would practice their drop-shots around the net, and instead of pairing students of similar skill level with each other, I found that it would be a good idea to create mixed-grouping activities. This not only promoted a sense of community and inclusivity, but also allowed for my more advanced students to show their classmates their skills and how to improve. While the students were participating in the activities, there was a noticeable difference in engagement and overall learning. My students were engaged for the entire duration of the lesson, and had a sense of understanding of the skill they were learning. Overall, student-centered learning and inclusivity were a critical element to the success of my teaching practices this year. By creating an environment where all students were able to succeed and matching activities to better fit individual needs and interests, student success was inevitable.

Increased Student Engagement

Throughout my student-teaching experience, differentiated instruction has played a major role in increasing student engagement, and more specifically during the pickleball unit. As stated above, creating lesson plans that were responsive to student interests, ability levels, and needs promoted an environment where students were actively involved and motivated to participate. One of the most significant aspects of differentiated instruction that contributed to increased engagement was the use of varied instructional strategies. Along with flexible grouping, designing activities that were aligned with student abilities and interests, I had also incorporated some technology into my lesson planning which proved to be effective. During the two-week pickleball unit, I had the opportunity to include YouTube videos of kids (similar in age to my students) participating in pickleball. Although my students were also given verbal instruction and

visual demonstration aids, showing them the video of kids playing pickleball was a huge success. By doing this, my students were able to compare and contrast their skill level to the kids they were watching. As they were watching, I had expressed that this was a good opportunity to evaluate their own skill level and learn from the video they were analyzing. Shortly after this video was played, all of my students were eager to start the activity and play pickleball.

Rather than relying on direct instruction, I incorporated a range of teaching methods, including demonstrations, peer modeling, station-based activities, and small-sided games. Allowing my students to participate in these activities promoted engagement with the content in multiple ways and helped maintain a high level of interest throughout the unit. Another key component of student engagement was keeping activities and tasks appropriately challenging for all of my students. Differentiation allowed me to adjust the level of difficulty based on student readiness, which ultimately helped keep students engaged and within their optimal learning zone. Additionally, scaffolding the activities to where they had built upon each other also helped increase student engagement and participation. I had noticed that when activities were too complex or difficult for my students, engagement significantly decreased. Student focus was much lower, and the perception of the content was no longer valued. When adjustments were made to make the activity more easily accessible for my students, the focus increased again. This information also allowed me to adjust my lesson planning for future activities and other units within the curriculum I was teaching.

Student choice also played a significant role in keeping students engaged and willing to participate. I noticed that when students were not given a choice in the activity, the engagement and participation decreased. Allowing students to have some opportunities of autonomy not only

increased their motivation to participate, but also helped maintain positive student rapport. Along with this, giving my students a choice in what skill to practice or which challenge to participate in created a sense of ownership and control. This was reflected in higher levels of participation and effort, as students were more likely to participate in activities they found meaningful and relevant. Tailoring my instruction to better support my students not only promoted a positive learning environment, but also helped ensure that the teaching strategies I was implementing were working. At the beginning of the school year, something that I had noticed was that student enthusiasm was lacking in the classroom. When I had spent the time and effort designing activities that would be fun and engaging (or at least I had thought), the students did not appear to have the same enthusiasm as I did. After adjusting my instruction throughout the school year, the more differentiation that was implemented, student enthusiasm was directly impacted in a positive way.

The incorporation of collaborative learning experiences further contributed to student engagement. Along with the increased inclusivity and student-centered environment that collaborative learning offers, my students were more likely to participate in the activities when paired with other students that they could learn from as shown in the figure 2. Partner and small-group activities allowed students to interact with each other, learn from one another, and give targeted feedback during skill development. Additionally, students were able to work together towards common goals, and learn how to problem solve in live play situations. In support, proactively planning my instruction based on the information above has been very effective. Evidence of increased engagement was observed through both student behavior and feedback. Throughout the unit, students demonstrated high levels of participation, effort, and

persistence. Many students who were initially hesitant became more involved as they experienced success and gained confidence in their abilities. Additionally, student reflections and exit tickets indicated that they enjoyed having choices in their learning and appreciated the opportunity to work at their own pace.

In conclusion, student success can be seen through many lenses. In the physical education setting, success can be seen throughout active engagement, student perception of content, motivation, and many other aspects. Although differentiated instruction has been very effective in my classroom thus far, I am still reflecting on my practices every day. While these teaching strategies have brought a lot of insight to how students learn and succeed, it's still important to note that adjusting instruction in real time is essential and necessary to provide an equitable education to all students (Tomlinson 2001, p. 3). By the end of my student-teaching experience, I plan to move forward by implementing these practices into my own classroom through consistent reflection and evaluation of my own teaching. Additionally, I plan to seek feedback from not only my future administrators, but also from students and other colleagues as it's important to get multiple perspectives and targeted feedback opportunities. I have learned a lot about teaching, and I will continue to thrive to be the best teacher I can possibly be. Not only am I trying to be a better teacher for myself, but for my students as well.

Chapter 5. Discussion, Limitations, and Conclusion

Differentiated instruction has become one of the most important components to education, more specifically during physical education, as students are entering the classroom with a wide range of physical abilities, developmental needs, motivation, and preferences on learning. As physical education programs start to shift towards a more inclusive and student-centered environment, educators are required to modify tasks, equipment, assessments, and learning environments in order to ensure that every student has an equitable learning opportunity.

Within this project, I aim to connect relevant research with current methods of differentiated instruction into my classroom through tiered skill progressions, student autonomy, multimodal instruction, and flexible grouping. When analyzing the data collected during the two-week differentiated unit, there were three major themes noted. Beginning with the first theme, differentiated instruction correlated to a positive impact on student academic performance. The second theme being that differentiation created a student-centered learning environment and enabled inclusivity within the classroom. The last theme noted from this unit was an increase in student engagement. Each of these themes will be addressed individually with supporting data.

Akbaruddin et al. (2025) found that there is an importance for designing curriculum content in a way that is interesting, challenging, and has the potential to improve passion learning, study habits, and physical fitness through differentiated instruction. My action research supported this finding through proactive lesson planning, and the formative assessments I conducted with my students. Because I was able to tailor my instruction to meet the needs of

most of my students while also challenging them, created a positive learning environment. What I have observed from the inclusion of differentiated instruction in my classroom was a significant increase in motivation and understanding of content. With this in mind, my students' view on physical education has increased throughout the duration of my student teaching experience, mostly due to my ability to make activities and content interesting and engaging. When comparing student grade reports from earlier in the school year compared to current grade reports, a large majority of my students' grades have improved as well which tells me that not only are they meeting expectations in class, but their motivation and passion for physical fitness has improved.

Additionally, Li (2014) explored the idea that creating a caring environment in physical education through the lens of differentiation had a significant influence on student effort and engagement. My action research project can support this finding through my students' perception of physical education and willingness to participate in activities that I had designed for them. Throughout the school year, I have made it a priority to get to know each of my students, the unique backgrounds in which they come from, and the individual experiences they have encountered. Listening to my students, getting to know them, and showing that I care about their experiences has had a large impact on the overall engagement during instruction. Additionally, creating an environment in which all students feel comfortable and confident when participating has helped support the findings from Li (2014).

Mucedola (2016) found that focusing on individual cultures with the support of differentiated instruction can create a purposeful and meaningful learning environment for students. As mentioned above, my action research project helps support this aspect of teaching as

I have had the opportunity to create a learning environment where students are allowed to connect their personal experiences to the content via whole-class discussions, guided questioning, and peer communication. Throughout the planning process of my pickleball unit, I designed activities that allowed most of my students to achieve success. Because I am aware that each student enters the physical education setting with different skill ranges, perceptions of physical activity, and experiences with recreational games, I was able to create lessons that promoted engagement and in a way that was purposeful and meaningful to them. Additionally, allowing students to have a voice and feel heard has also directly impacted their willingness to participate in class.

Tomlinson (2001) explored the idea that educators assume each student has different needs, and with this information, proactively plan instruction to express the importance of the content. My action research project allowed me to support this claim due to the nature of my lesson planning. Within the structure of the pickleball unit, lessons were designed in a way that allowed for task modifications such as scaffolded skill progression, varied equipment, and flexible grouping strategies. For example, instead of introducing pickleball skills through a single method, I planned short-distance serving, target practice, small-game activities, technology implementation, and cooperative rallying in order to ensure that students with varied skill levels were able to engage in the content equally. This reflects Tomlinson's emphasis on anticipating student differences and designing instruction that is unique enough to address a range of learners and learning styles.

Limitations

One theoretical limitation of this study was the overall ability to incorporate every aspect of differentiated instruction into the classroom. While this action research project provided me with a lot of insight as to how differentiated instruction can improve students' experiences and achievement, limitations should be considered when interpreting the findings. While this study specifically focused on incorporating all four elements of differentiated instruction (content, process, product, and learning environment) as described by Tomlinson (2001), the implementation was not always balanced. For example, a lot of my focus went towards the process aspect of planning (modifying tasks/drills, grouping strategies, etc.) and the learning environment (supportive classroom environment), while differentiation of product was limited in the physical education setting.

Additionally, while the findings of this study were aligned with principles of differentiated instruction in general, student learning was not fully captured across all areas of content. Emphasis on skill development and enjoyment of content was prioritized, and autonomy, identity, and deeper understanding was not in comparison. Future research of this study should aim to more intentionally balance all aspects of differentiation instruction in the classroom, and more specifically demonstrate student learning through varied products. With this in mind, future studies should incorporate more tools to measure student cognitive perception of physical education such as student voice and ownership of learning.

The main methodological limitations to this study was the duration of the unit and the type of data that was collected. While typical units at North Albany Middle School range from one to two weeks in duration, this limited the ability to observe long-term student growth towards pickleball skills. Although I had collected data through short-answer reflection questions

and surveys, they introduce a level of subjectivity and may not provide an objective measure of student learning. It is important to note, however, that these forms of data are appropriate and valuable in a physical education setting. Additionally, observational data in the physical education setting (fast-paced) can result in difficulty monitoring a large majority of my students individually at the same time. Future research for this study should consider not only extending the duration of the study to observe long-term growth, but also incorporating more structured quantitative data collection methods. Some of these methods include, but are not limited to, skill rubrics and/or video analysis.

When considering the practical limitations to this study, consistency of implementing differentiated instruction into each activity and lesson became challenging. While I did intentionally design activities that revolved around differentiated instruction, the nature of the physical education environment made it challenging to meet the needs of every student at times. Being able to manage multiple groups of students within a short period of time as class periods varied in length, providing individual feedback, and adjusting instruction in real time required significant attention and flexibility. In my smaller classes, this was more achievable and realistic when compared to my larger classes (up to 35 students). An observation noted from this study was that when class sizes increased, the ability to disperse my attention equally to students decreased. While other educators could apply this pedagogy in their own classrooms, class size, and duration of instruction has proved to be of great influence in this study. Future research and practice should explore specific strategies that could make implementation of differentiation instruction more manageable and obtainable in the physical education setting. Additionally,

continued professional development and reflection of this teaching model could be of great benefit to ensuring that every student has an opportunity to learn.

Conclusion

My action research project has confirmed and extended the findings of existing research on differentiated instruction. Being able to differentiate instruction based on individual student needs, interests, backgrounds, and experiences can and has significantly improved student engagement and motivation in the physical education setting. In addition, proactively planning instruction with this model in mind and reflecting on teaching practices is an essential aspect to student achievement. Tailoring, adjusting, and scaffolding instruction offers each student the opportunity to demonstrate success and create a positive learning environment where all students feel welcomed, comfortable, and confident. Lastly, while this study may have limitations, meaningful insight into the implementation of differentiated instruction within a physical education setting has been achieved. Addressing these limitations and challenges in future research studies will contribute to a deeper understanding of how effective this pedagogy truly is.

References

- Akbaruddin, A., Suherman, W. S., Komari, A., Hambali, S., Saputra, W., & Permana, M. F. (2024). The Utilization of Differentiated Learning in Improving Physical Fitness and Active Lifestyle of Junior High School Students: Literature Review in Physical Education. *Pamukkale Journal of Sport Sciences*, 15(3), 561–577. <https://doi.org/10.54141/psbd.1512748>
- Akbaruddin, A., Sundawan Suherman, W., Komari, A., Saputra, W., Permana, M. F., Bayetov, K., Kurtoğlu, A., Bahadirovna Khamraeva, Z., Lobo, J., & Setiawan, E. (2025). Differentiated Instruction in Physical Education: Influences on Student Passion, Study Habits and Fitness Levels. *International Journal of Kinesiology and Sports Science*, 13(1), 33–44. <https://doi.org/10.7575/aiac.ijkss.v.13n.1p.33>
- Bondie, R. S., Dahnke, C., & Zusho, A. (2019). How Does Changing “One-Size-Fits-All” to Differentiated Instruction Affect Teaching? *Review of Research in Education*, 43(1), 336–362. <https://doi.org/10.3102/0091732X18821130>
- Colquitt, G., Pritchard, T., Johnson, C., & McCollum, S. (2017). Differentiating Instruction in Physical Education: Personalization of Learning. *Journal of Physical Education, Recreation & Dance*, 88(7), 44–50. <https://doi.org/10.1080/07303084.2017.1340205>
- Council of Chief State School Officers Interstate Teacher Assessment and Support Consortium. (2013, April). InTASC model core teaching standards and learning progression for teachers 1.0. Council of Chief State School Officers Interstate Teacher Assessment and Support Consortium.

<https://learning.ccsso.org/intasc-model-core-teaching-standards-and-learning-progressions-for-teachers>

Jarvis, J. M., Pill, S. A., & Noble, A. G. (2017). Differentiated Pedagogy to Address Learner Diversity in Secondary Physical Education. *Journal of Physical Education, Recreation & Dance*, 88(8), 46–54.

<https://doi.org/10.1080/07303084.2017.1356771>

Kuo, J. (1998). Excluded, Segregated and Forgotten: Historical View of the Discrimination of Chinese Americans in Public Schools. *Asian Law Journal*, 5, 181-212.

Ladson-Billings, G. (2004). Landing on the Wrong Note: The Price We Paid for Brown.

Educational Researcher, 33(7), 3–13. <https://doi.org/10.3102/0013189X033007003>

Li, W. (2014). Middle school students' perceptions of caring and its relationships to their effort and enjoyment in physical education. *Research Quarterly for Exercise and Sport*, Suppl. Supplement, 85, 1. Retrieved from

<https://wou.idm.oclc.org/login?url=https://www.proquest.com/scholarly-journals/middle-school-students-perceptions-caring/docview/1621828736/se-2>

Mucedola, M. S. (2016). A Culture-Based Differentiated Instruction Model: Addressing School, Community, and Health Related Behaviors through Health Education. *VAHPERD Journal*, 37(2),

14+. <https://link-gale-com.wou.idm.oclc.org/apps/doc/A543899223/AONE?u=s8399535&sid=bookmark-AONE&xid=8abe2288>

Sagor, R. (2000). Guiding school improvement with action research. Association for Supervision

and Curriculum Development.

Sitovskyi, A., Maksymchuk, B., Kuzmenko, V., Nosko, Y., Korytko, Z., Bahinska, O., Marchenko, O., Nikolaienko, V., Matviichuk, T., Solovyov, V., Khurtenko, O., Slyusarenko, N., Zhorova, I., & Maksymchuk, I. (2019). Differentiated approach to physical education of adolescents with different speed of biological development. *Journal of Physical Education and Sport*, 19(3), 1532–1543.

<https://doi.org/10.7752/jpes.2019.03222>

Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). Differentiated Instruction in Secondary Education: A Systematic Review of Research Evidence. *Frontiers in Psychology*, 10, 2366. <https://doi.org/10.3389/fpsyg.2019.02366>

Subban, P., Suprayogi, M. N., Preston, M., Liyani, A. N., & Ratri, A. P. P. (2025).

“Differentiation is Sometimes a Hit and Miss”. *Educator Perceptions of Differentiated Instruction in the Higher Education Sector. The Asia-Pacific Education Researcher*, 34(3), 873–884.

<https://doi.org/10.1007/s40299-024-00904-8>

Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.).

Hawker-Brownlow Education.

<https://ebookcentral.proquest.com/lib/wou/reader.action?docID=3002067&c=UE RG&ppg=5>

Wen, Q., & Cai, J. (2024). Applying structural equation modeling to examine the role of teacher beliefs and practices in differentiated instruction in physical education: Multiple

mediation analyses. *Psychology in the Schools*, 61(7), 3045–3062.

<https://doi.org/10.1002/pits.23206>