Highlights in this issue:

- **Building Pre-Service Teachers' Self-Efficacy in an Online Science Methods Course**
- **Generative Artificial Intelligence for Differentiation and Individualization in Middle School**
- **Celebrating the Leadership of North Carolina's Teachers**
- **Connecting Teen Development and Place-Based Writing**
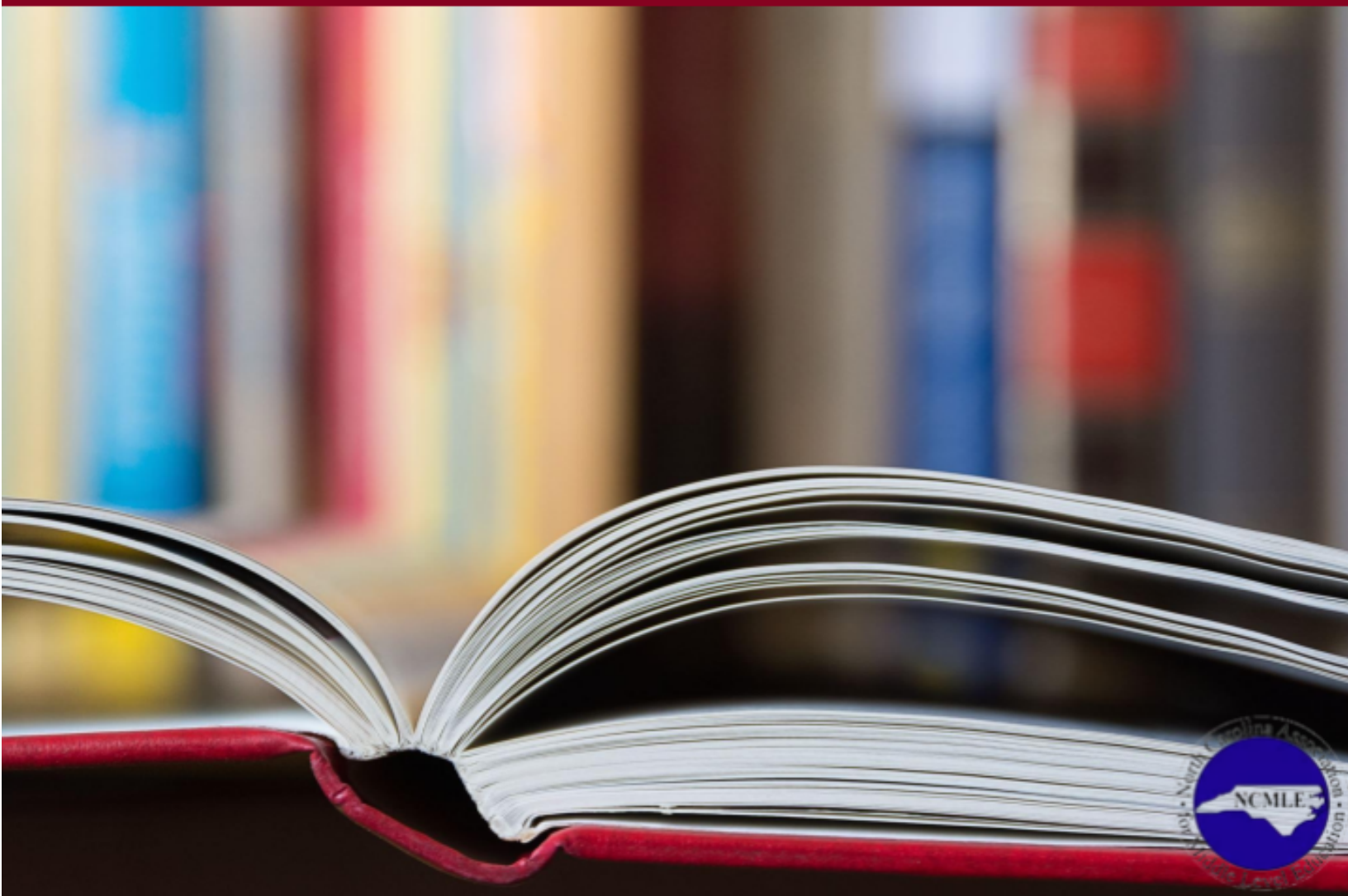
Manuscripts

The NCMLE Journal, a double-blind peer reviewed journal, is an official publication of the North Carolina Association for Middle Level Education. It publishes a wide range of articles related to middle level practice, theory, commentary, and research. Its primary objective is to enrich the understanding of the developmental and educational needs of North Carolina's early adolescents.

Manuscripts should be written in a clear, non-technical style for an audience consisting largely of preservice teachers, in-service teachers, and administrators. Each article should not exceed 15 double-spaced pages, including in-text citations and an accurate list of references when appropriate (APA style). Authors should submit their article through the NCMLE Manuscript Submission Form with a separate title page that states the author(s), institutional affiliation, position within that institution, and a contact email address and telephone number. Deadline for submission to the Fall issue is May 15 and the deadline for the Spring issue is November 15.

All manuscripts will be acknowledged upon receipt. The editorial review board will carefully review the article to determine if it is a good fit for the NCMLE Journal. Authors will subsequently be notified of publication decisions.

Additional correspondence should be addressed to:
    NCMLE Journal Editorial Board
    Email: journal@ncmle.org

Duplication Policy

All published manuscripts become the property of the NCMLE Journal and cannot be published elsewhere without permission. An an author may self-archive an author-created version of their article on their own website and their institution's repository, including their final version; however, the author may not use the publisher's PDF version which is posted on www.ncmle.org and/or www.ncmlejournal.org. Furthermore, the author may only post their version provided acknowledgment is given to the original source of publication by inserting a link to the published article on NCMLE's website. The link must be accompanied by the following text: "The original publication is available at www.ncmle.org and www.ncmlejournal.org."

Published articles represent the authors' views and do not necessarily represent the views of NCMLE.

Contents

From the Editors

Dear Readers,

Welcome to the latest edition of the NCMLE Journal! As we embark on a new year, we are thrilled to present a collection of insightful articles and research that continue to advance our understanding and practice of middle-level education.

In this issue, we explore a range of timely and impactful topics. From innovative teaching strategies that engage young adolescents to the latest findings in self-efficacy and pre-service teachers. Our contributors have provided valuable perspectives that will inspire and inform your work.

One of the highlights of this edition is our feature on integrating Generative AI technology in the classroom as a way to individualize instruction. As digital tools become increasingly prevalent in education, it is essential to understand how they can be effectively utilized to enhance learning outcomes. Our authors share practical applications and success stories demonstrating technology's transformative potential in middle-level education.

Additionally, we are proud to include a series of columns celebrating the leadership of North Carolina's teachers and other educational leaders. Ensuring that all students have access to high-quality education is a fundamental goal, and our contributors offer thoughtful analyses and strategies to address the needs of our student populations.

We would like to extend our heartfelt gratitude to our authors, reviewers, and editorial team for their dedication and hard work. Their contributions are what make this journal a valuable resource for educators, researchers, and policymakers alike. We would also like to formally recognize Dr. Laurie Dymes for her outstanding editorial service to the NCMLE Journal, establishing the strong foundation upon which this edition is built.

As we look ahead, please consider submitting your own work to the NCMLE Journal. We are always seeking fresh perspectives and innovative research that can contribute to the field of middle-level education. Whether you have a case study, practitioner-focused research article, or practical insights to share, we welcome your submissions. Together, we can continue to build a vibrant and dynamic community of educators dedicated to the success of young adolescents.

As always, we welcome your feedback and encourage you to share your thoughts and experiences with us. Your insights are invaluable as we strive to improve and serve the middle-level community.

Thank you for your continued support of the NCMLE Journal. Together, we can make a difference in the lives of young adolescents.

Warm regards,

Joey Lord and Daniel Maxwell

Building Pre-Service Teachers' Self-Efficacy in an Online Science Methods Course

Authors: Bradley Rhew[1], Joey Lord[2], Jennifer Putnam[3]

Abstract: This study examines the challenges facing the teaching profession in the United States, focusing on the ongoing teacher shortage and its impact on science education. The research highlights the decline in teacher education program enrollment and explores the potential of online courses to address these issues. Specifically, the study investigates the role of teacher self-efficacy in science instruction and its importance in middle school education. The article discusses strategies for designing effective online science methods courses to enhance preservice teachers' self-efficacy, including simulations, collaborative projects, and formative assessment. The research emphasizes the critical role of feedback in building self-efficacy and improving instructional practices. By addressing gaps in self-efficacy and providing comprehensive training, teacher preparation programs can better equip future educators to inspire scientific curiosity and literacy in students. The study concludes that fostering self-efficacy in preservice teachers is essential for improving science education and addressing the teacher shortage crisis.

Keywords: science education, online methods courses, teacher self-efficacy, teacher preparation programs

The teaching profession in the United States faces significant challenges, including an ongoing teacher shortage. In 2022, the National Center for Education Statistics reported that over 18% of public schools had at least one teaching vacancy, while 30% reported multiple openings (National Center for Education Statistics, 2022). North Carolina has been particularly affected, with difficulties recruiting and retaining science teachers since the 1980s due to low pay, increasing workloads, and the shift to online teaching during the COVID-19 pandemic (National Math + Science Initiative, 2022; Williams, 1983).

Compounding this issue is the significant decline in teacher education program enrollment. Nationally, teacher preparation programs have seen a nearly 30% drop in enrollment since 2010 (Partelow, 2019), and North Carolina reports a 39% decline (Granados, 2023). Contributing factors include stress and burnout, negative perceptions of teaching, limited professional growth opportunities, and political debates surrounding education (Schaeffer, 2022). In response, many

Bradley Rhew: btrhew@gmail.com
[1] Guilford County Schools, Greensboro, NC, USA
[2] Hickory Education Program, Reich College of Education, Appalachian State University, Boone, NC, USA. Joey Lord is co-editor of the NCMLE Journal and was recused for the review process with Daniel Maxwell serving as handling editor for this manuscript.
[3] College of Education, Gardner-Webb University, Boiling Springs, NC, USA.

universities have turned to alternative course formats, offering traditional face-to-face, hybrid, and online models to attract and retain preservice teachers (Kebritchi et al., 2017; Knaggs et al., 2017; Wang & Wang, 2021).

Science education faces an added challenge: fostering self-efficacy in preservice teachers. However, the potential of online courses to build self-efficacy while providing robust science instruction is a beacon of hope. Research shows that teachers with higher self-efficacy are more likely to engage students and improve classroom outcomes (Menon & Sadler, 2016; Perera et al., 2022). This potential of online courses is critical for addressing teacher shortages and enhancing science education.

Problem Statement

The COVID-19 pandemic reshaped teacher preparation programs, requiring alternative approaches to in-person field experiences. Traditionally, preservice teachers honed their skills through classroom observations and hands-on teaching experiences. However, during the pandemic, restrictions limited school access, forcing programs to adapt to virtual environments (VanLone et al., 2022). This shift highlighted existing gaps in content knowledge and teacher readiness, particularly in science education.

Preservice teachers often need more knowledge of science content to enter the profession, which erodes their confidence in teaching science (Bleicher, 2006). The pandemic exacerbated these issues, as online instruction introduced new uncertainties about effectively engaging students in science lessons (Macias et al., 2022). Many preservice teachers felt unprepared to deliver science instruction that inspires and motivates students.

Teacher Self-Efficacy

Teacher self-efficacy is a crucial determinant of teaching success. It encompasses a teacher's belief in their ability to achieve desired outcomes in student learning and engagement (Lazarides & Warner, 2020; Menon & Sadler, 2016). Teachers with high self-efficacy are more likely to embrace challenges, adopt innovative teaching strategies, and persist in difficult situations (Bandura, 1977). This confidence directly impacts their effectiveness in the classroom, particularly in content-specific areas like science.

In science education, teachers' efficacy beliefs shape their instructional practices. High-efficacy teachers are likelier to employ inquiry-based learning, problem-solving activities, and hands-on experiments that enhance students' understanding of scientific concepts (Blonder et al., 2014; Haatainen et al., 2021). These methods foster critical thinking and engagement, benefiting both teachers and students.

Preservice Teacher Self-Efficacy Toward Science Instruction

Preservice teachers develop their self-efficacy during teacher preparation programs, shaped by their prior experiences in K-12 science education and their exposure to science instruction models (Menon & Azam, 2021). These early experiences, such as the quality of hands-on learning or inquiry-based activities in their education, play a significant role in forming attitudes toward teaching science. However, many preservice teachers prioritize acquiring teaching strategies over deepening their science content knowledge (Membiela et al., 2022). This imbalance can create a perception of inadequacy, leading to anxiety and negative attitudes about teaching science effectively, further eroding their self-efficacy.

To address this issue, teacher preparation programs have increasingly emphasized redesigning science methods courses to enhance preservice teachers' confidence and competence in science instruction (Wilder et al., 2019). These redesigned courses often integrate active

learning strategies such as simulations, collaborative projects, and scaffolded inquiry-based lesson planning. Such approaches aim to provide practical teaching experiences while deepening content knowledge, fostering a greater sense of preparedness among future educators (Mikeska et al., 2022; Loach, 2021).

Improving preservice teachers' self-efficacy has a cascading effect. Studies indicate that higher self-efficacy in science teaching leads to more engaging classroom practices, including experiments and inquiry-based learning, which, in turn, enhances student achievement and interest in science (Perera et al., 2022; Menon & Azam, 2021). Moreover, fostering self-efficacy equips preservice teachers to overcome challenges and adopt reflective practices, improving their instructional methods continually (Blonder et al., 2014; Haatainen et al., 2021).

Preparation programs must combine theoretical knowledge with practice-oriented approaches to further strengthen self-efficacy. These programs can bridge content mastery and effective pedagogical strategies by aligning methods courses with the challenges preservice teachers will face in the classroom and offering structured feedback. Such efforts build confidence in teaching science and instill a sense of responsibility and enthusiasm for cultivating scientific literacy in future generations.

Feedback and Its Role in Building Self-Efficacy

Feedback is a cornerstone in building self-efficacy. Constructive feedback is a powerful tool that aids preservice teachers in identifying their strengths and areas for improvement, fostering growth, and bolstering confidence. Feedback is particularly crucial in online learning in fostering connections between students and instructors (Straub, 2024).

A recent study found that feedback from professors and peers significantly influenced preservice teachers' perceptions of their learning and their confidence in teaching science (Rhew, 2024). Feedback on assignments, lesson plans, and teaching demonstrations allowed candidates to reflect on their practices, identify areas for growth, and develop their instructional skills. This process strengthened their belief in their ability to teach science effectively.

Designing Effective Online Science Methods Courses

Creating engaging and effective online courses is crucial for preparing preservice teachers. Online science methods courses must incorporate critical elements of in-person instruction, including interactive content, collaborative projects, and hands-on experiences (Mahmood, 2020; McMahon, 2021).

Strategies for building self-efficacy in online science methods courses include:

1. **Simulations and Virtual Labs:** Research into the effectiveness of virtual environments in science teaching supports tools such as PhET Interactive Simulations and Labster for immersive virtual experiments (Mikeska et al., 2022).
2. **Collaborative Projects:** Research on collaborative and inquiry-based teaching methods supports assignments encouraging group work and peer feedback to foster cooperative learning environments (Haatainen et al., 2021).
3. **Modeling Effective Instruction:** Video demonstrations and virtual classroom observations were beneficial for showing preservice teachers how to adopt best practices and refine their teaching in virtual settings (Chiu et al., 2021).
4. **Formative Assessment and Feedback:** Straub (2024) highlights the role of specific, actionable feedback in refining

teaching practices and building confidence.

5. **Scaffolded Lesson Planning:**
Guided lesson planning and iterative feedback have been recognized as effective for building preservice teachers' skills in creating structured and engaging lessons (Membiela et al., 2022).

6. **Addressing Science Anxiety:**
Studies on building confidence through content knowledge and hands-on activities have explored strategies to demystify science concepts and help preservice teachers overcome anxiety about science teaching (Loach, 2021).

Connecting Self-Efficacy to Middle School Science Teaching

Middle school is a critical developmental stage where students' interest in science can flourish or falter, making it a critical period for fostering scientific curiosity and literacy. Teachers who possess high self-efficacy—the belief in their capacity to influence student outcomes—are more effective in implementing inquiry-based, hands-on learning approaches that promote active engagement, critical thinking, and a deeper understanding of scientific concepts (Blonder et al., 2014; Haatainen et al., 2021). Research has shown that teachers with high self-efficacy are not only more adept at creating dynamic, student-centered learning environments but are also more likely to persist in the face of challenges, adjust their teaching strategies, and inspire a growth mindset in their students (Bandura, 1997; Tschannen-Moran & Hoy, 2001). Moreover, preservice teachers who cultivate strong self-efficacy during their teacher preparation programs are more inclined to integrate these effective instructional practices into their teaching once they enter the classroom, positively impacting student engagement and achievement in science (Lazarides & Warner, 2020; Tschannen-Moran

et al., 1998). Studies have also emphasized that self-efficacy in teaching can be nurtured through formal training and reflective practice, further enhancing the likelihood of future success in fostering scientific literacy and interest among middle school students (Zeldin et al., 2008; Woolfolk et al., 2005).

Conclusion

Teacher self-efficacy plays a defining role in shaping instructional practices, student engagement, and learning outcomes (Menon & Azam, 2021). Building self-efficacy is essential for preservice teachers, particularly those preparing to teach science. Online science methods courses emphasizing interactive content, regular feedback, and opportunities for hands-on learning can effectively prepare future educators. By addressing gaps in self-efficacy and providing robust training, teacher preparation programs can equip preservice teachers to inspire the next generation of scientists.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191-215. https://doi.org/10.1037/0033-295x.84.2.191

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman and Company.

Bleicher, R. E. (2006). Nurturing confidence in preservice elementary science teachers. *Journal of Science Teacher Education*, *17*(2), 165-187. https://doi.org/10.1007/s10972-006-9016-5

Blonder, R., Benny, N., & Jones, M. G. (2014). Teaching self-efficacy of science teachers. In R. Evans, J. Luft, C. Czerniak, & C. Pea (Eds.), *The Role of Science Teachers' Beliefs in International Classrooms* (pp. 3-15).

SensePublishers https://doi.org/10.1007/978-94-6209-557-1_1

Bloomberg, L. D. (2021). *Designing and delivering effective online instruction: How to engage adult learners*. Teachers College Press.

Chiu, T. K., Lin, T., & Lonka, K. (2021). Motivating online learning: The challenges of COVID-19 and beyond. *The Asia-Pacific Education Researcher*, *30*(3), 187-190. https://doi.org/10.1007/s40299-021-00566-w

Cooper, R., Warren, L., Hogan-Chapman, A., & Mills, L. (2020). Pre-service teachers and their self-efficacy toward online teaching. *Southeastern Regional Association of Teacher Educators*, *29*(2). https://files.eric.ed.gov/fulltext/EJ1268635.pdf

Haatainen, O., Turkka, J., & Aksela, M. (2021). Science teachers' perceptions and self-efficacy beliefs related to integrated science education. *Education Sciences*, *11*(6), 272. https://doi.org/10.3390/educsci11060272

Granados, A. (2023, February 2). *Districts could be headed for teacher drop-off in the 2024-25 school year*. EducationNC. https://www.ednc.org/2023-02-02-districts-could-be-headed-to-teacher-drop-off-in-2024-25-school-year/

Kebritchi, M., Lipschuetz, A., & Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education: A literature review. *Journal of Educational Technology Systems*, *46*(1), 4-29. https://doi.org/10.1177/0047239516661713

Knaggs, C. M., Sondergeld, T. A., & Henry, D. (2017). Science self-efficacy of preservice teachers in face-to-face versus blended environments. *School Science and Mathematics*, *117*(1-2), 27-33. https://doi.org/10.1111/ssm.12204

Lazarides, R., & Warner, L. M. (2020). Teacher self-efficacy. *Oxford Research Encyclopedia of Education*. https://doi.org/10.1093/acrefore/9780190264093.013.890

Loach, K. A. (2021). Science in elementary education: Teacher self-efficacy, preparation, and student achievement. *Journal of Research in Education*, *30*(1). https://files.eric.ed.gov/fulltext/EJ1293022.pdf

Macias, M., Iveland, A., Rego, M., & White, M. S. (2022). The impacts of COVID-19 on K-8 science teaching and teachers. Disciplinary and Interdisciplinary *Science Education Research*, *4*(20). https://doi.org/10.1186/s43031-022-00060-3

Mahmood, S. (2020). Instructional strategies for online teaching in the COVID-19 pandemic. *Human Behavior and Emerging Technologies*, *3*(1), 199-203. https://doi.org/10.1002/hbe2.218

McMahon, E. (2021). Designing effective online courses: Exploring the relationships amongst online teaching self-efficacy, professional development, online teaching experience, and reported implementation of effective higher education online course design practices. *The Interactive Journal of Global Leadership and Learning*, *2*(1). https://doi.org/10.55354/2692-3394.1026

Membiela, P., Vidal, M., Fragueiro, S., Lorenzo, M., García-Rodeja, I., Aznar, V., Bugallo, A., & González, A. (2022). Motivation for science learning as an antecedent of emotions and engagement in preservice elementary teachers. *Science Education*, *106*(1), 119–141. https://doi.org/10.1002/sce.21686

Menon, D., & Azam, S. (2021). Investigating preservice teachers' science teaching

self-efficacy: An analysis of reflective practices. *International Journal of Science and Mathematics Education, 19*(8), 1587-1607. https://doi.org/10.1007/s10763-020-10131-4

Menon, D., & Sadler, T. D. (2016). Preservice elementary teachers' science self-efficacy beliefs and science content knowledge. *Journal of Science Teacher Education, 27*(6), 649-673. https://doi.org/10.1007/s10972-016-9479-y

Mikeska, J. N., Howell, H., & Kinsey, D. (2022). Examining the usability and viability of using a simulated classroom environment to prepare preservice science teachers during and after the COVID-19 pandemic. *Disciplinary and Interdisciplinary Science Education Research, 4*(1). https://doi.org/10.1186/s43031-022-00054-1

National Center for Education Statistics. (2022, March 3). *U.S. schools report increased teacher vacancies due to COVID-19 pandemic, new NCES data show - March 3, 2022* [Press Release]. https://nces.ed.gov/whatsnew/press_releases/3_3_2022.asp

National Math + Science Initiative. (2022, May 19). *America's growing teacher shortage*. https://www.nms.org/Resources/Newsroom/Blog/2022/May/America-s-Growing-Teacher-Shortage.aspx

Otter, R. R., Seipel, S. J., Graeff, T. R., Alexander, B., Boraiko, C., Gray, J., Peterson, K., & Sadler, K. (2013). Comparing student and faculty perceptions of online and traditional courses. *The Internet and Higher Education, 19*, 27-35. https://doi.org/10.1016/j.iheduc.2013.08.001

Page, C. S., Pendergraft, B., & Wilson, J. (2014). Examining elementary teachers' sense of efficacy in three settings in the southeast. *Journal of Inquiry & Action in Education, 5*(3), 31-41. https://files.eric.ed.gov/fulltext/EJ1134226.pdf

Partelow, L. (2019, December 3). *What to make of declining enrollment in teacher preparation programs*. Center for American Progress. https://www.americanprogress.org/article/make-declining-enrollment-teacher-preparation-programs/#:~:text=Nearly%20every%20state%20in%20the,students%20completing%20teacher%20preparation%20programs

Perera, H. N., Maghsoudlou, A., Miller, C. J., McIlveen, P., Barber, D., Part, R., & Reyes, A. L. (2022). Relations of science teaching self-efficacy with instructional practices, student achievement and support, and teacher job satisfaction. *Contemporary Educational Psychology, 69*, 102041. https://doi.org/10.1016/j.cedpsych.2021.102041

Quality Matters. (2023). *Quality matters: About*. https://www.qualitymatters.org/index.php/about

Rhew, B. (2024). *Understanding preservice teacher self-efficacy toward science and science instruction after completing an online science methods course: A case study*. (Publication No. 31301328) [Doctoral dissertation, Gardner-Webb University]. ProQuest Dissertations & Theses Global: The Humanities and Social Sciences Collection https://digitalcommons.gardner-webb.edu/education-dissertations/181

Schaeffer, K. (2022, September 27). *A dwindling number of new U.S. college graduates have a degree in education*. Pew Research Center.

https://www.pewresearch.org/short-reads/2022/09/27/a-dwindling-number-of-new-u-s-college-graduates-have-a-degree-in-education/

Straub, E. O. (2024, January 15). *Giving good online feedback*. Online Teaching. https://onlineteaching.umich.edu/articles/giving-good-online-feedback/

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783-805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, *68*(2), 202-248. https://doi.org/10.3102/00346543068002202

VanLone, J., Pansé-Barone, C., & Long, K. (2022). Teacher preparation and the COVID-19 disruption: Understanding the impact and implications for novice teachers. *International Journal of Educational Research Open*, 3, 100120. https://doi.org/10.1016/j.ijedro.2021.100120

Wang, J., & Wang, Y. (2021). Compare synchronous and asynchronous online instruction for science teacher preparation. *Journal of Science Teacher Education*, *32*(3), 265-285. https://doi.org/10.1080/1046560x.2020.1817652

Wilder, O., Butler, M. B., Acharya, P., & Gill, M. (2019). Preservice elementary science teacher attitudes matter: A new instrument on positive affect toward science. *Journal of Science Teacher Education*, *30*(6), 601-620. https://doi.org/10.1080/1046560x.2019.1589849

Williams, R. T. (1983). The science teacher shortage in North Carolina: Facts and myths. *Science Education*, *67*(4), 479-488. https://doi.org/10.1002/sce.3730670405

Woolfolk Hoy, A., & Burke-Spero, R. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education*, *21*(4), 343-356. https://doi.org/10.1016/j.tate.2005.01.002

Zeldin, A. L., Britner, S. L., & Pajares, F. (2008). A comparative analysis of predictors of middle school students' science self-efficacy and science outcome expectations. *Journal of Research in Science Teaching*, *45*(9), 1036-1058. https://doi.org/10.1002/tea.20227

Dr. Brad Rhew is the Science & STEM Coordinator for Guilford County Schools, NC. He holds an undergraduate degree in Middle Grades Education Science/Social Studies from UNC-Greensboro and a master's degree in STEM Education from NC State University. His doctorate is in Curriculum and Instruction from Gardner-Webb University. Dr. Rhew is Nationally Board Certified and currently serves as the president-elect for the North Carolina Science Teachers Association.

Dr. Joey Lord is the Instructional Coordinator of the Hickory Education Program for Appalachian State University. She is also a full-time faculty member of the Reich College of Education. This is her 24th year in education with a specialties in the areas of Mathematics, Science, Curriculum and instruction and edTPA.

Dr, Jennifer Putnam serves as the Associate Dean for the College of Education at Gardner-Webb University, and as the Coordinator of the EdD program in Curriculum & Instruction. Before joining

Gardner-Webb, she worked in public schools where she served as a teacher, instructional coach, and as an elementary science content coordinator.

ORIGINAL PAPER

Navigating Uncharted Waters: Using Generative Artificial Intelligence for Differentiation and Individualization in Middle Schools

Authors: Hilary Dack[1], Daniel G. Maxwell[2], Paige Lane[1]

Abstract: Generative AI (GenAI) can provide middle grades educators with tools that streamline instructional planning and save volumes of time. Among their broad offerings, GenAI tools afford many potential ways to support teachers' responsive instruction, or instruction that proactively anticipates and responds to learners' varied strengths, preferences, and growth areas. Differentiated and individualized instruction are two forms of responsive instruction commonly used by middle school educators, which can be time-consuming to plan. In this article, we explain how teachers of young adolescents can use three popular GenAI tools - MagicSchool, Diffit, and ChatGPT - to make planning for both types of responsive instruction more efficient. We describe each tool's key features, strengths, and limitations and offer concrete guidelines for using each effectively. We also share recommendations for middle level educators' ethical, safe, and accurate use of all GenAI tools.

Impactful learning experiences are often hard to create. Crafting learning experiences responsive to differences among individual students in your classroom takes time, and time is one of middle school educators' most limited resources. With diverse learner needs, instructional design, ongoing assessment, and numerous other requirements chipping away at every planning hour, teachers are often left scrambling to balance responsibilities. Differentiating and individualizing instruction to meet varied student needs are essential to fostering student growth (Dack et al., 2022; Tomlinson, 2017), but they can also be particularly demanding. The challenge of providing tailored support to each student while managing the rapid pace of life in the classroom places significant pressure on teachers, necessitating the efficient use of time.

Generative Artificial Intelligence (GenAI), the technologies that power many popular tools like ChatGPT, MagicSchool, Gemini, and CoPilot, present a potential solution to these challenges. Rather than adding further tasks to a teacher's workload, GenAI tools offer practical ways to streamline time-consuming elements of lesson planning, content creation, and assessment, including elements necessary for meaningful, differentiated, and individualized instruction (Maxwell, 2023; United Nations Educational, Scientific and Cultural Organization, 2023). By automating and supporting many tasks related to responsive instruction, GenAI can empower educators to maintain high standards for all learners while maintaining efficiency.

Hilary Dack: hdack@charlotte.edu
[1] Department of Middle, Secondary, and K-12 Education, University of North Carolina at Charlotte, Charlotte, NC, USA
[2] Daniel G. Maxwell is co-editor of the NCMLE Journal and was recused for the review process with Joey Lord serving as handling editor for this manuscript.

Any exploration of GenAI's capacity to revolutionize planning for instruction should first be rooted in understanding the definitions of GenAI and artificial intelligence (AI) more broadly. AI is not a single tool but a broader concept that may describe various technologies "that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions" (National Artificial Intelligence Initiative Act of 2020, H.R. 6216, 116th Cong., 2020, Sec. 3. Definitions). AI tools like search engine algorithms, graphing calculators, language translation software, and predictive text have been used in classrooms for decades (Trust et al., 2023). However, the recent innovation of GenAI—tools capable of recalling, learning from, and improving multi-modal output quality over time—exploded in popularity following the public release of OpenAI's ChatGPT in November 2022, sparking essential questions about the role AI should play in the classroom (Cooper, 2023; Hardesty, 2017; Sier, 2022). Much attention has been paid to student use of these technologies, including concerns regarding plagiarism and ethical use (Haque et al., 2024; Hays et al., 2023; Rahimi & Talebi Bezmin Abadi, 2023; Tlili et al., 2023). However, the topic of teacher use of GenAI for instructional planning has been addressed less frequently to date. Our focus in this article is on the latter.

How can this emerging technology help middle grade educators optimize their time while improving students' educational experiences? The following sections explore the answer to this and other questions about GenAI tools' potential to transform differentiated and individualized instruction for young adolescents. We evaluate the strengths and limitations of three popular GenAI tools for these purposes and conclude with practical recommendations for responsibly and ethically using these tools.

Defining Differentiation and Individualization

In the sections below, we examine the use of GenAI technologies to support differentiation and individualization in middle level classrooms. Both instructional approaches reflect responsive instruction, or instruction that proactively anticipates and responds to learners' varied strengths, preferences, and growth areas. Each approach also has distinct differences.

Differentiation

To differentiate instruction, a teacher typically uses assessment data, student input, and other observations to identify patterns across a class and adjust instruction based on those patterns. Differentiation's emphasis is often on modifying instruction for groups of learners rather than for one individual learner. These modifications are usually based on three categories of differences among students that may affect learning: 1) readiness, 2) interest, or 3) learning profile (Tomlinson, 2017).

Readiness refers to a student's current level of proficiency with specific knowledge or skills (Tomlinson, 2017). If a learning objective represents a lesson's destination, then a student's readiness level reflects how near or far—based on assessment data—a student is from that destination at a particular moment in time. The teacher then assigns each group a different "tiered" task designed to move that group's proficiency a step closer to the objective (Tomlinson, 2017). Each task aligns with what that group is "ready" to learn next.

For example, imagine a social studies teacher is teaching two consecutive lessons targeting the learning objective: *Students will be able to evaluate a primary source's trustworthiness based on its audience and purpose* (Dack et al., 2022). An exit ticket at the end of the first lesson shows that some students correctly identify the source's audience and purpose but do not reach a logical conclusion

about its trustworthiness, while others do not correctly identify the source's audience or purpose and therefore do not reach a logical conclusion about its trustworthiness (Dack et al., 2022). Since students will begin the second lesson at different starting points, the teacher will group students with similar proficiency. Then, they will work with other primary sources, and the questions they answer about those sources will vary based on what they are ready to practice (Dack et al., 2022).

Interest refers to a student's affinity for particular topics that motivate learning, and a learning profile refers to a student's personal preferences for approaches that make learning more efficient (Tomlinson, 2017). Learning profiles might include preferred working configurations, such as with a partner or independently, preferred learning modes, or an analytical, practical, or creative intelligence preference (Sternberg, 1985). Students usually choose among varied options when a lesson is differentiated by interest or learning profile (Tomlinson, 2017).

A math teacher uses interest-based differentiation when they offer students a choice among three sets of word problems—one about professional sports, one about Broadway shows, and one about popular video games—that all involve the multiplication of fractions. A science teacher uses learning profile-based differentiation when providing students with different options to express what they learned about local ecosystems by designing a blog, creating a podcast, writing an op-ed, or developing a presentation for the fish and wildlife department.

The three categories of learner differences often targeted by differentiation—readiness, interest, and learning profile—apply to every learner in a middle school classroom. In any given lesson, all students will have a particular level of proficiency with the targeted knowledge or skill, varying degrees of interest in the topics explored, and varied preferences regarding which learning approaches would feel most efficient that day.

Individualization

While differentiated instruction focuses mainly on identifying patterns across a class and responding to those patterns by modifying learning experiences in different ways for different groups, individualized instruction targets the learning needs of individual students. Through this approach, teachers customize lesson elements to accommodate one student or a handful of students with similar needs (Bray & McClaskey, 2015).

The types of learner differences targeted by individualization often do not apply to every learner in a general education classroom. Instead, they reflect the unique circumstances of learners that merit the teacher's instructional attention. Examples of the types of needs teachers often address through individualization include accommodations for students with IEPs and 504s, linguistic supports for multilingual learners, scaffolds for students reading below grade level, or extension options for students with advanced proficiency.

Although we sought to clarify key differences between differentiation and individualization in this section, the line between these approaches is sometimes blurred in practice. For example, if an educator teaches a class in which half the students are multilingual newcomers and half the students are not multilingual, a lesson that builds in an additional scaffold for all multilingual learners might be logically classified as differentiation rather than individualization since it involves identifying a pattern of needs across a broader group of learners in the classroom. Nevertheless, these two instructional approaches—differentiation and individualization—offer useful conceptual categories a teacher can use to determine whether or how to use a GenAI tool to enhance responsive instruction.

Using GenAI Tools for Differentiation or Individualization

There are many GenAI tools middle school teachers can leverage to support responsive instruction. Some of these tools have been designed for use by educators, while others are built for broader audiences (Diffit, 2024b; MagicSchool AI, 2024a; OpenAI, 2024). We view GenAI tools used by educators as serving two primary purposes. First, GenAI can provide new ideas or inspiration for teaching. Nieves (2023) offers an example by suggesting a teacher could input the prompt "What are three different approaches to teaching the central idea of a text?" into ChatGPT. The tool's output might include several broad instructional approaches, such as graphic organizers, guided reading, close reading, and visual representations, which can provide a helpful starting point for lesson design (Nieves, 2023). We refer to this as GenAI's "**Brainstorming Buddy**" function. However, it can also be used to create the instructional materials used during a lesson, including choice boards, multiple text versions, or tiered worksheets. We refer to this as GenAI's "**Resource Generator**" function.

In the following sections, we discuss three GenAI tools that can be used to support instructional planning for differentiation and individualization: MagicSchool, Diffit, and ChatGPT. We selected these tools based on their potential utility for middle grades educators, the variety of options they offer, and the fact that they all currently offer a free version or trial. For each tool, we address what it offers teachers, as well as its strengths and limitations. We also identify which student differences can be addressed with the tool's support (e.g., readiness, multilingual learners) and how it can be used for Brainstorming Buddy versus Resource Generator functions. Table 1 offers an overview of key aspects of each tool.

Table 1 *Selected GenAI Tools for Middle Level Education*

GenAI Tool	Web Address	Target Audience	Versions Offered	Account Required	Responsive Instruction Supported
Magic School	magicschool.ai	K-12 educators K-12 students	free version paid "plus" version	yes	differentiation individualization
Diffit	web.diffit.me	K-12 educators	free version paid "premium" version	yes	differentiation individualization
ChatGPT	chatgpt.com	general public	free version paid "plus" version	yes	differentiation individualization

MagicSchool

Once logged in to MagicSchool (MagicSchool AI, 2024a), the user can access one set of resources for educators called "MagicSchool" and a second set for students called "Magic Student." As previously noted, this article addresses tools for educators rather than student use. However, we encourage middle level teachers to explore the MagicStudent resources, as young adolescent learners may benefit from what they offer. The MagicSchool resources for teachers are divided into two main categories: "Raina" and "Magic Tools."

Raina

Raina is the name of MagicSchool's GenAI chatbot feature. MagicSchool introduces this feature to the user through the following text:

> Hello! My name is Raina, your AI instructional coach. You can ask any questions related to best practices in teaching or your work in a school building. Feel free to ask me for ideas for your classroom, research on best practices in pedagogy, behavior management strategies, or any general advice! The more specific your questions, the better my responses will be. How can I help you today? (MagicSchool AI, 2024b).

This introduction demonstrates that Raina allows users to seek information about any educational topic. This is underscored by MagicSchool's framing of Raina as an "AI instructional coach." In addition to specific inquiries, users can make broad, open-ended ones as well. For example, the first time we used Raina, we asked, "What are best practices for differentiated instruction in a middle school classroom?" and received a list of eight research-based practices. Users can engage in a back-and-forth discussion with Raina where they input an initial prompt, review Raina's output, input a second prompt (such as a follow-up question about the output), review the output, and continue in a back-and-forth conversation. We view Raina's primary function as a Brainstorming Buddy. However, it is also possible for Raina to serve a Resource Generator function if the user asks Raina to create instructional materials.

Magic Tools

Unique to MagicSchool is its Magic Tools feature. When we wrote this article, MagicSchool offered 83 of these tools, though new ones are added frequently (MagicSchool AI, 2024a). Each tool has a particular educational purpose and a narrowly focused structure to help teachers input the specific information needed to generate a targeted response. For example, the "lesson plan tool" asks the user to specify grade level, lesson topic or objective, any additional criteria the lesson should reflect (e.g., unit topic, previous lesson topics, preferences for structures like group work), and standards to which the lesson should be aligned (e.g., NCDPI 7th-grade ELA) (MagicSchool AI, 2024a). In contrast to using a chatbot like Raina, using Magic Tools relieves teachers of the responsibility of thinking through everything to include in the prompt to create the desired product. Instead, it prompts the teacher to incorporate those elements.

Many of Magic Tools have been designed to support differentiation or individualization. Table 2 lists key Magic Tools that target these areas. Although we have classified each tool based on one potential way it might be used for effective, responsive instruction, many of these tools can be used responsively in numerous additional ways. For example, although we have classified the Sentence Stem tool's potential responsive use as readiness-based differentiation to support the development of tiered tasks for students with limited proficiency with the objective, teachers might also use this tool to support multilingual learners, those with learning differences, or many other learners with unique needs. Each middle level educator should use discretion when determining the most beneficial role for each tool in their classroom in light of the particular students they teach.

Table 2 *Selected Magic Tools that Support Responsive Instruction*

Tool Name	Description from MagicSchool AI (2024a)	Brainstorming Buddy or Resource Generator	Responsive Instruction Supported	Potential Learner Difference Supported	Tips for Responsive Use
Accommo-dation Suggestions	*"Generate a list of accommodations for a student who needs support."*	Brainstorming Buddy	Individualization	Exceptional children	Be as specific as possible when describing student behaviors and needs.
IEP Generator	*"Generate a draft of an individualized education program (IEP) customized to a students' needs."*	Resource Generator	Individualization	Exceptional children	Input student strengths, not just growth areas.
504 Plan Generator	*"Generate draft of a 504 plan to support a student."*	Resource Generator	Individualization	Exceptional children	Input student strengths, not just growth areas.
Advanced Learning Plan	*"Generate draft of an Advanced Learning Plan (ALP) for a student."*	Resource Generator	Individualization	Advanced proficiency	Input student passions and/or socio-emotional needs, not just proficiencies.
Text Translator	*"Take any text and translate it into any language instantly."*	Resource Generator	Individualization	Multi-lingual learners	Ensure original text is free of errors.
Text Leveler	*"Take any text and adapt it for any grade level to fit a student's reading level/skills."*	Resource Generator	Individualization	Reading below grade level	Ensure you input accurate info about student's current reading level.
Text Scaffolder	*"Take any text and scaffold it for readers who are behind grade level or need extra support."*	Resource Generator	Individualization	Reading below grade level	Produces questions that draw reader's attention to key points in text and list of key vocab words from text with definitions.
Text Rewriter	*"Take any text and rewrite it with custom criteria*	Resource Generator	Individualization	Reading below grade level	Use it to reduce text length or to include/exclude

	however you'd like!"				particular details.
Assignment Scaffolder	*"Take any assignment and empower students by breaking it down into manageable steps, fostering stronger understanding and enabling greater independence."*	Resource Generator	Differentiation	Readiness	Use it to develop tiered tasks for students with limited proficiency who would benefit from step-by-step breakdown.
Sentence Starters	*"Provide sentence starters for any topic, assignment, standard, or objective."*	Resource Generator	Differentiation	Readiness	Use it to develop tiered tasks for students with limited proficiency who would benefit from support of sentence starters.
Make it Relevant	*"Generate several ideas that make what you're teaching relevant to your class based on their interests and background."*	Brainstorming Buddy	Differentiation	Interest	Describe what you are teaching and your students' interests with as much detail as possible.
Math Story Word Problems	*"Write a custom math word/story problem based on the concept you're teaching and a story topic."*	Resource Generator	Differentiation	Interest	Use it to create problems about topics that interest your students.
Choice Board (UDL)	*"Create a choice board for a student assignment based on the principles of UDL."*	Resource Generator	Differentiation	Interest Learning Profile	Consider inputting both different topics and different modalities.

Note: Tool names and descriptions are drawn directly from MagicSchool AI (2024a). All other information is provided by the authors.

Strengths and Limitations

We view Magic School as having two particularly noteworthy strengths:

- It features a user-friendly design. Within each Magic Tool, the simple instructions for using it include specific suggestions for what to input. They also include an "exemplar," or an example of what a teacher might use as an initial input, which provides a model and clarifies the level of detail needed.
- It includes recommendations for potential follow-up prompts that appear after the chatbot responds to an initial question. For example, when we asked Raina, "What are best practices for differentiated instruction in a middle school classroom?" and received a list of research-based practices in response, Raina suggested follow-up questions we might ask, such as, "What resources do you recommend for implementing these practices?" These potential follow-ups help teachers consider helpful next steps in a back-and-forth conversation with a chatbot.

Most of MagicSchool's limitations apply to all GenAI tools; we discuss those broad limitations toward the end of this paper. However, we do note some as specific to this tool:

- As previously mentioned, MagicSchool has chosen to give their chatbot a human name and refer to it as an "instructional coach." They have also decorated the page on which Raina is accessed with a cartoon icon of an appealing human figure.
- Experts advise caution when AI has been imbued with endearing human-like features (Mollick, 2024), as this may reduce a teacher's caution surrounding protecting student privacy when inputting information about their students.
- As further described below, we urge teachers to remain vigilant of possible ethical issues when using MagicSchool and all GenAI.

Diffit

While the scope of MagicSchool's and ChatGPT's offerings is broad, Diffit's (Diffit, 2024a) offerings are more narrowly focused. Designed for K-12 educators, Diffit is a text creator and modifier. We, therefore, view this tool as a Resource Generator rather than a Brainstorming Buddy. Diffit generates a 1-2 page text about any topic. It can generate this new text from scratch or based on another resource the user provides. These inputs can include an uploaded document, video, or website link; if provided, Diffit will incorporate content from the additional resource into the text it creates. The text's content can also be aligned to user-identified standards for ELA, social studies, or science (Diffit, 2024a). Once the text is generated, Diffit can 1) adapt the level of detail to make it shorter or longer, 2) change its reading level, or 3) translate it into a different language. A teacher can, therefore create multiple versions of any text to accommodate varied student needs.

For each text, Diffit automatically generates a series of corresponding resources, including a bulleted summary, a list of key vocabulary words with definitions, multiple choice, short answer, and open-ended questions. Diffit can also create instructional materials for student activities by pulling the previously generated vocabulary words or questions into templates (e.g., Frayer Models, claim-evidence-reasoning structures), which can then be exported as Google Docs, Google Slides, Google Form quizzes, PowerPoint slides, Word documents, or PDFs. These templates are sorted by category based on a teacher's goal for an activity, such as vocabulary practice, summarizing, reading strategies, text analysis, and more (Diffit, 2024d).

Strengths

Diffit's creators distinguish their product from other GenAI by emphasizing the quality of the initial text, the automatically generated text-based resources, and the user-selected activity materials (Diffit, 2024b). For example, Diffit only draws upon sources its developers have deemed reliable rather than pulling information from the open internet. This limitation on sources is intended to increase the accuracy and credibility of the text Diffit generates. If requested, Diffit will cite each statement within the text and include an accurate reference list for the citations. If a teacher does not want the text to draw from a particular source, they can edit the reference list to remove it and regenerate the text so that the information from the source no longer appears. Additionally, Diffit (2024b) touts the quality of its textual translation. While other GenAI offers this feature, Diffit's translation may be more accurate, which is critical if the teacher does not speak the language and cannot proofread the text independently.

Diffit is especially effective if the teacher wants to use GenAI for text modification to support responsive instruction. Different versions of a text might be created for students who are not yet reading on grade level, multilingual learners, or those with learning differences that affect reading. For example, a 7th-grade social studies teacher has a class with four newcomer multilingual students and two other students reading on a 4th-grade level. He imports a video about the bombing of Pearl Harbor into Diffit to create an initial text about the event at a 7th-grade reading level. After reviewing the automatically generated resources, he creates a cause-and-effect graphic organizer. He then generates two other versions of the text - one at a 4th-grade reading level and one in Spanish. Diffit creates new automatically generated resources and graphic organizers to correspond with these two new text versions.

While the previous example focused on individualizing materials, Diffit also offers some differentiation options. The student activity options include a Topic Choice Board, Poetry Choice Board, and Vocabulary Choice Board, which are differentiated based on learning profile since they give students choices in how to demonstrate their learning. A teacher could also use Diffit to support interest-based differentiation by creating texts about different topics for different students or to support readiness-based differentiation by creating texts for some students who lack background knowledge about a given topic (Diffit, 2024c).

Limitations

Because Diffit is a text generator and modifier, its use is focused on a reading passage. This may lend itself better to ELA, social studies, science, and world language instruction than math. Although some math teachers may occasionally find Diffit helpful in generating a reading passage about a particular math concept, Diffit cannot generate math problems yet, and none of the student activity options focus on strategies specific to math.

We also reiterate that Diffit's offerings are more narrowly focused than other GenAI options. Diffit does not include a chatbot, so asking open-ended questions and having back-and-forth conversations are not possible. As a result, Diffit is not an effective Brainstorming Buddy. Similarly, if a teacher wants to use GenAI as a Resource Generator to develop instructional resources that are not directly tied to a textual passage or are based on a strategy that is not reflected in any of Diffit's templates, this tool would not be an option.

ChatGPT

ChatGPT (OpenAI, 2024) is the least structured of the GenAI tools we have reviewed in this paper. It is designed for a broad public audience, not just educators. Like Raina from MagicSchool, ChatGPT is a chatbot; its

interface allows a back-and-forth conversation with the tool. The conversation begins with the user inputting an initial prompt, often a question (e.g., Which instructional strategies could be effective for...?) or a demand (e.g., Create a rubric with four criteria including...). After reviewing the initial output, the user can input additional prompts to cause revisions to the chatbot's initial response, narrow down the focus of the conversation to a particular aspect of the response, or raise a new question or topic. ChatGPT can serve as an effective and efficient

Brainstorming Buddy or a Resource Generator since it can offer ideas or create new instructional resources. We also note that it can level a text by lexile level, while MagicSchool's Magic Tools and Diffit can only level a text by grade level.

The degree to which teachers find ChatGPT's output helpful heavily depends on how effectively the educator prompts the tool. Based on our use of ChatGPT, we have found the guidelines listed in Table 3 helpful when writing chatbot prompts.

Table 3 *Guidelines for Effective Prompting of ChatGPT and Other Chatbots*

Topic	Guideline
Clarity	Write in a clear and concise manner.
Specificity	Include all important details, and exclude anything irrelevant to your goal.
Context	Offer context for your request (e.g., students have already learned about X but not yet about Y).
Length	Specify how long (e.g, word count) the result should be.
Role	Assign the chatbot a role for the output (e.g., You are a sixth-grade science teacher.), if applicable.
Audience	Clarify the audience for the output (e.g., for 6th graders), if applicable.
Style	Indicate the style of language that should be used in the output (e.g., formal, informal, using words a 6th grader could understand), if applicable.
Formatting	Specify how the product should be formatted, if applicable.

For instance, we followed the guidelines when crafting a prompt to generate a tiered task:

> You're a 6th-grade English language arts teacher. You're teaching a unit on writer's voice. You've already taught students that a writer's voice can be communicated through tone, diction, and syntax. Now, it's time for the class to practice writing a short piece with a clear writer's voice. However, the students have different levels of proficiency in this skill. One group has advanced proficiency, one has moderate proficiency, and one has emerging proficiency. Write a description of a tiered activity that allows the three groups of students to practice this skill at different levels. The explanations of every group's task should be 100-150 words each. The audience for the explanations is 6th-grade students who will complete the assignment, so use

words 6th-graders can understand.

This prompt successfully led ChatGPT to develop three tiered tasks that responded to varied proficiency levels by using tone, diction, and syntax to establish a writer's voice. It is important to remember that since ChatGPT's intended uses are not limited to education, teachers must often specify an educational context within their prompt. Middle level educators should ensure they specify a middle grades context to increase the likelihood that results will be developmentally responsive for young adolescents.

Strengths and Limitations.

We view ChatGPT's main strength and limitation as one and the same: its open-endedness. First, we address this trait as a strength. ChatGPT can accomplish many of the same tasks as Diffit and MagicSchool's Magic Tools. But because of its expansiveness, it can achieve many functions outside the bounds of those other resources. For instance, it can write complete lesson plans differentiated by readiness, interest, or learning profile. It can generate suggestions for how to help a multilingual learner feel more included in the learning environment. It can list multiple strategies to support a dyslexic student's writing and specify resources to help the teacher enact them. Or it can share best practices for differentiation and individualization in a particular content area in middle school.

However, because of ChatGPT's open-endedness, the teacher is responsible for following guidelines for effective prompting and including all information necessary to generate useful outputs. ChatGPT lacks structured, narrowly focused input frameworks like Magic Tools, so it does not provide suggestions for inputs for specific teaching approaches or exemplar

inputs to serve as models. There are also no suggested follow-up prompts like those offered by Raina. Instead, the onus is squarely on the teacher to consider all aspects of what must be included in the prompt to yield a successful result.

Suggestions for Navigating Uncharted GenAI Waters

GenAI tools create numerous opportunities for educators to meet the unique needs of their students. However, these tools are still early in their development. Although guidance about their use in education is beginning to emerge, their novelty and a lack of research into their long-term impacts means we are left to navigate uncharted waters. Below are key principles educators can use to safely, ethically, and accurately leverage these tools' benefits.

Handle with Care

Teachers must remain ever-present with concerns about the responsible use of these tools (Darics & Poppel, 2023). For instance, OpenAI explicitly states that since ChatGPT is most heavily trained in English, it functions best in that language and often perpetuates Western perspectives in its outputs (OpenAI, 2023). Therefore, educators must approach these tools with caution to ensure they do not inadvertently perpetuate potential biases in the data used to train GenAI tools.

Additionally, educators should carefully consider the terms of use of the tools they intend to use, especially if and when students utilize them for classroom purposes. For example, ChatGPT's terms of use state that users must be at least 13 years of age, and any user under the age of 18 must obtain parent or guardian permission before using the tool (OpenAI, 2023). Additionally, teachers should never input

personally identifiable information, especially confidential student information, into a GenAI system. An effective rule of thumb is to assume that anything prompted to a GenAI tool will eventually become publicly available.

Provide Intentional Oversight

AI and GenAI are tools for teachers, not replacements for teachers. No matter how capable education technology may be, there is simply no substitute for the power of human connection and strong teacher-student relationships. Additionally, although GenAI tools are impressive, their use still requires intentional human oversight. For instance, MagicSchool (2024c) explains that its tools should "by no means replace your professional skills and judgment" ("Your responsibilities" section). Instead, MagicSchool promotes a helpful "80-20" approach to using AI-generated content during the planning process. The tool is viewed as a starting point to get a user 80% of the way to their goal. The teacher's expertise guides the remaining 20% of planning through critical evaluation and revision of AI-generated content before it is used with students. Do not count on GenAI to deliver entirely accurate and reliable output in terms of both content and pedagogy.

Evaluate GenAI Resources for Responsive Instruction

Drawing upon our experiences with GenAI, we conclude by sharing three suggestions for critically evaluating outputs related to responsive instruction. First, when developing tasks with scaffolds for students with emerging proficiency, ensure that scaffolded options still reflect rigor. We have found that scaffolded tiers created by GenAI often water down learning opportunities

rather than "teach up" to high expectations (Tomlinson, 2024). Second, when reviewing GenAI-generated task options differentiated by readiness, interest, or learning profile, ensure that all options are aligned with the same learning objective. We have noticed that, even when we have provided the objective and specified the need for all tasks to be aligned to it, GenAI often creates differentiated tasks aligned to entirely different objectives. Last, look for recommendations from GenAI to differentiate based on learning styles, which have been debunked by cognitive psychologists (e.g., Reiner & Willingham, 2010). We have found odd disparities in GenAI's treatment of this topic. When asked directly about learning styles' validity, chatbots have informed us of their debunked status. But chatbots have often referenced learning styles in outputs when asked in separate conversations for principles of effective differentiation or examples of effective differentiated tasks.

GenAI tools can complete diverse tasks in remarkably effective and efficient ways, saving middle grades educators time and freeing up their energy for other purposes. The wise and intentional use of these tools has great potential to benefit teachers responsive to the varied proficiencies, interests, needs, and learning preferences of students in their classrooms.

References

Bray, B., & McClaskey, K. (2015). *Make learning personal: The what, who, wow, where, and why*. Thousand Oaks, CA: Corwin.

Cooper, G. (2023). Examining science education in ChatGPT: An exploratory study of generative artificial intelligence. *Journal of Science Education and Technology*, *32*(3), 444–452.

https://doi.org/10.1007/s10956-023-10039-y

Dack, H., Chiles, E., Kathman, L., Poessnecker, A., & Strohl, E. (2022). The key to equitable differentiation. *Middle School Journal*, 53(5), 15-32. doi: 10.1080/00940771.2022.2119756.

Darics, E., & Poppel, L. (2023). *Debate: ChatGPT offers unseen opportunities to sharpen students' critical skills*. The Conversation. https://theconversation.com/debate-chatgpt-offers-unseen-opportunities-to-sharpen-students-critical-skills-199264

Diffit. (2024a). *Diffit for teachers*. https://web.diffit.me/

Diffit. (2024b). *What makes Diffit different?* https://web.diffit.me/why-diffit

Diffit. (2024c). *FAQ + how to*. https://web.diffit.me/faq

Diffit. (2024d). *Diffit: For schools that "get it."* https://web.diffit.me/schools

Hardesty, L. (2017, April 14). *Explained: neural networks*. MIT News On Campus and Around the World. https://news.mit.edu/2017/explained-neural-networks-deep-learning-0414

Haque, M. U., Dharmadasa, I., Sworna, Z. T., Rajapakse, R. N., & Ahmad, H. (2022). "I think this is the most disruptive technology": Exploring sentiments of ChatGPT early adopters using Twitter data (arXiv:2212.05856). *arXiv*. https://doi.org/10.48550/arXiv.2212.05856

Hays, L., Jurkowski, O., & Sims, S. K. (2024). ChatGPT in K-12 education. *TechTrends*, *68*(2), 281–294. https://doi.org/10.1007/s11528-023-00924-z

MagicSchool AI. (2024a). *MagicSchool*. https://www.magicschool.ai/

MagicSchool AI. (2024b). *MagicSchool: Raina*. https://app.magicschool.ai/raina

MagicSchool AI. (2024c). *MagicSchool: Terms of service*. https://www.magicschool.ai/privacy-security/terms-of-service

Maxwell, D. (2023). Handle with care: Generative AI in the classroom. *North Carolina Association for Middle Level Education Journal*. *34*(2), 8-12. https://www.flipsnack.com/FCAE5ABBDC9/fall-2023-journal/full-view.html

Mollick, E. (2024). *Co-intelligence: Living and working with AI*. Penguin.

National Artificial Intelligence Initiative Act of 2020, H.R. 6216, 116th Cong. (2020). https://www.congress.gov/bill/116th-congress/house-bill/6216/text#toc-H41B3DA72782B491EA6B81C74BB00E5C0

Nieves, K. (2023, June 6). *5 ways to use AI tools to meet students' needs*. Edutopia. https://www.edutopia.org/article/using-ai-tools-differentiated-instruction/

OpenAI. (2023). *Educator considerations for ChatGPT*. https://platform.openai.com/docs/chatgpt-education

OpenAI. (2024). *ChatGPT*. https://chatgpt.com/

Rahimi, F., & Talebi Bezmin Abadi, A. (2023). ChatGPT and publication ethics. *Archives of Medical Research*, *54*(3), 272–274. https://doi.org/10.1016/j.arcmed.2023.03.004

Riener, C., & Willingham, D. (2010). The myth of learning styles. *Change: The Magazine of Higher Learning*, *42*(5), 32–35.

https://doi.org/10.1080/00091383.2010.503139

Sier, J. (2022, December 8) *Chatgpt takes the internet by storm, bad poetry and all*. Financial Review. https://www.afr.com/technology/chatgpt-takes-the-internet-by-storm-bad-poetry-and-all-20221207-p5c4hv

Sternberg, R. J. (1985). *Beyond IQ: A triarchic theory of human intelligence.* New York: Cambridge Press.

Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, *10*(1). 1–24. https://doi.org/10.1186/s40561-023-00237-x

Tomlinson, C. A. (2017). *How to differentiate instruction in academically diverse classrooms* (3rd ed.). Alexandria, VA: ASCD.

Tomlinson, C. A. (2024). Making the choice to teach up. *Educational Leadership, 82*(2), 16-22. https://ascd.org/el/articles/making-the-choice-to-teach-up

Trust, T., Whalen, J., & Mouza, C. (2023). Editorial: ChatGPT: challenges, opportunities, and implications for teacher education. *Contemporary Issues in Technology and Teacher Education*, *23*(1), 1-23. https://www.learntechlib.org/primary/p/222408/

United Nations Educational, Scientific and Cultural Organization. (2023). *Guidance for generative AI in education and research.* https://doi.org/10.54675/EWZM9535

Hilary Dack, Ph.D., is an Associate Professor of Middle Grades Education at the University of North Carolina at Charlotte.

Daniel G. Maxwell is a Lecturer and University Supervisor at the University of North Carolina at Charlotte.

Paige Lane is an undergraduate pre-service teacher at the University of North Carolina at Charlotte

ORIGINAL PAPER

Person and Place: Connecting Teen Development and Place-Based Writing

Author: Adam Caliri[1]

Abstract: One challenge of teaching writing in the middle school classroom is maintaining student engagement and interest. To combat this, previous research has suggested using developmentally responsive teaching practices that meet various needs within young adolescent development. Place-based writing can fulfill this role and be used as a developmentally responsive practice. In this article, I examine the ways in which place-based writing requires self-reflective practices from each student, provides freedom for choice and agency in writing, and creates opportunities to involve the local community and/or environment and I view these fundamental characteristics of the practice through a developmental lens, specifically focusing on the social-emotional, cognitive and psychological, and physical developmental needs of young adolescents. Through doing so, I outline how place-based writing can be used to directly support many different facets of development and discuss how it can be applied to the classroom setting.

As I worked with middle school students as part of my bachelor's degree, I faced many instances where my students just did not want to write. They would complain about the prompts, they would write just enough to satisfy the rubric, or they would simply just not write at all. I tried the tricks my professors recommended: I leveled with them about why writing is important and how it will help them in life; I offered them choices between multiple predetermined prompts; I even tried a version of a writing workshop—but I couldn't get my students excited about writing. It wasn't until after my student teaching experience that I really started to look into place-based writing (PBW) as an option for middle school students. It'd been talked about in some of my classes before, but I hadn't ever seen a strong connection between it and middle school writing. However, I've since found that there are direct overlaps between young adolescent needs, specifically in middle school, and the core characteristics of PBW. Through these overlaps, I see great potential for it as a practice that can excite students and support their developmental needs. However, before we can explore these overlaps, we need to come to a shared understanding of three key things: what is the concept of "place"? What is PBW? What are the core characteristics of young adolescent development? I will address each of these in the following sections.

What is "place"?

We must first understand what "place" is when talking about PBW. If you were to ask someone to define the word "place," they'd

---

Adam Caliri: caliriaj@appstate.edu
[1] Student - Department of English, Appalachian State University, Boone, NC, USA

likely tell you that it's just a physical location–but can place be more than that? Can it be a memory? An emotion? Can it even be something as abstract as a concept or thought? As Rob and Amanda Montgomery (2021) put it, "the concept of place is quite slippery" (p. 10). In their book, *A Place To Write*, Montgomery and Montgomery (2021) lean on a definition presented by J. A. Agnew (1987): for something to be considered a "place," it must have three qualities: location, locale, and a sense of place. Location means that a place needs to have a physical, geographical location; locale references the features that determine why this place is unique (the Montgomerys use the example of a city having specific neighborhoods); and a sense of place can be understood as a "sense of identity," which is informed by what individual features are important to each specific person—what makes this place meaningful to people (Montgomery and Montgomery, 2021).

Other authors have also approached the question of what "place" is, such as Eric Donovan (2016), who described the concept of place as a narrative or "a story that involved interactions, characters, conflicts, and the rise and flow of humanity" (p. 23). In doing so, he views "place" as something fluid that "extends beyond just the location of where people live" (p. 23), and he reframes the concept to focus mainly on the impact a place has on individuals rather than its physical location or unique characteristics. Joni Adamson (2001) also defines place, calling it "space humanized" (p. 70), focusing on the sensory feelings and personal experiences that individuals associate with locations; similar to Donovan's, Adamson's definition places more emphasis on personal impact.

David Sobel (2004) thinks of place mainly through the lens of local culture and tradition and how these grow the community. Others offer more abstract definitions, such as Jenevieve Goss' (2024) inclusion of the exploration of memories as a way of exploring place.

None of these definitions are wrong, but rather they emphasize how "slippery" the concept is. In short, there's not a solid definition of what "place" is. While Agnew provides a good overarching definition of what a space needs to be considered a "place," other definitions ask which aspect to emphasize. However, limiting the concept of place to a physical location eliminates creative uses of the word. Could place relate to memory, as mentioned above? Could place extend to someone's place in a social hierarchy or to their place in a specific time period? Ultimately, defining place IS slippery, as the concept is nebulous and personal to each individual. These definitions other scholars have presented offer an extremely useful set of guidelines in approaching the idea of "place," but I implore you to keep an open mind about other ways the concept could be defined as you continue to read.

What is Place-Based Writing?

PBW is an evolution of the pedagogy of place-based education, first coined by Laurie Lane-Zucker and John Elder, which itself is an evolution of environmental education (Sobel, 2004). In the early 1990s, Zucker and Elder (2020) determined place-based education to be a "pedagogy of community, the reintegration of the individual into her home ground and the restoration of the essential links between a person and her place" (para. 28). However, it wasn't first put into print until 2004 when Sobel defined it as "the process of using the local community and environment as a starting point to teach concepts" (p. 11). As place-based education has evolved, it has produced the more specific practice of PBW,

and this evolution is evident in the main idea behind PBW: writing inspired by a place significant to the writer, especially as related to the writer's community. This idea leaves much room for interpretation, making it very flexible for classroom application. I've added some interpretations below.

In their book, *A Place to Write*, Montgomery and Montgomery (2021) state that PBW should be personal, agentive, engaging, audience-oriented, and built in a way that can promote change. It is personal, as each student will discuss a place significant to them; agentive, since students each have control over their topic and writing style; engaging, because choice and control over a project breeds engagement; audience oriented by providing new audiences outside of the classroom, such as community members; and built in a way to promote change, since students will often write about something they care about within the community.

Elliot Jacobs (2011) thinks that PBW needs "a balance between narrative and landscape [in which the] setting and story share a spotlight" (p. 50), a dialogue between the writer and the setting, especially when highlighting the writer's relationship with themselves; to allow students to choose what they will write about from personal experiences and places that are meaningful to them; and a writing environment that considers any place a student chooses as meaningful and worth writing about.

Donovan (2016) describes PBW as a way for students to find connections within their community and as a way to "better understand themselves while authentically expressing that understanding through writing" (p. 23). In doing so, he details PBW as a way to create active and purposeful learning through multimodal approaches with the goal of allowing students to clearly express their own stories within the context of their community.

Additionally, other scholars offer different ideas of central characteristics to define PBW. These include finding connections between nature and language (Lundahl et al., 2024), implementing technology into writing (Novak, 2024), the focus on community connections through research and interviews (Delgado-Chernick, 2024), and writing as a petition within the community (Hudson & Hudson, 2024).

Though all of these authors have different views on PBW and which characteristics to consider crucial, there are many points of overlap. Most of these authors agree that PBW needs:

1. To be focused on the writer and their personal experiences
2. To be about a meaningful, significant place within that writer's life
3. To allow choice and agency in the writing prompt and process
4. To connect the writer with their environment and/or community

Moving forward in this paper, I will use these four agreed-upon characteristics as the working definition of what PBW requires.

What Are Major Characteristics Of Young Adolescent Development?

To get to the heart of this article, we must first discuss another topic: adolescent development. Adolescents are going through one of the most developmentally rich times in their lives and require much support from the people around them to do this (Brinegar & Caskey, 2022). Though these adolescents are going through many changes, their development can be grouped into three distinct categories: social-emotional development, cognitive and psychological development, and physical development.

Below, I've added a brief description of each of these.

Social-Emotional Development

Much happens during the stages of social-emotional development. Friends turn on each other, peer groups shatter and reform, bullying, and anxiety become more regular—the list goes on. Social-emotional development is responsible for anything related to social circles, peer power dynamics, peer pressure, and interpersonal feelings (Bishop & Harrison, 2021). Developing adolescents are often susceptible to this peer pressure and bad decisions, as they want to be seen as individuals, but they also crave a sense of belonging among their peers, which leads to an increased willingness to take risks (Scholastic Parents Staff, 2021).

Social-emotional development is also responsible for the growing "awareness of social identities including race, ethnicity, class, gender, sexuality, religion, or immigrant status" (Brinegar & Caskey, 2022, para. 28), which leads to "a deeper and more nuanced awareness and understanding of social injustices such as racism, sexism, and homophobia" (Bishop & Harrison, 2021, p. 61). Together, these aspects serve to promote empathy and as a foundation for moral development.

Cognitive and Psychological Development

The psyche of an adolescent is a mess of figuring things out and learning who they are as an individual. This often presents itself through experimentation with their identity and developing strong egocentrism. This egocentrism has two aspects to it. These are the imaginary audience: the idea that everything they do and everything about them is extremely important to those around them, and the personal fable: the belief that

they are the only ones who experience their emotions (Scholastic Parents Staff, 2021). These students are beginning to understand that everyone has unique perspectives and thoughts, which may clash with their own.

Cognitively, this time in someone's life is when they develop a sense of independence and the ability to think critically and abstractly. This looks like the ability to "develop and test hypotheses, analyze and synthesize data, grapple with complex concepts, and think reflectively," as well as determining and arguing a position, thinking through ideologies, challenging positions of authority, and considering the future (including the development of personal goals) (Brinegar & Caskey, 2022, para. 15).

Similarly to social-emotional development, cognitive development also promotes moral growth. They start to move away from simply accepting the judgments of adults and start to develop their own moral and ethical positions. This may lead to questionable or even harmful behaviors, but ultimately this is the beginning of each adolescent determining what's important to them and what their beliefs are (Caskey & Anfara, 2007).

Physical Development

Physical development largely references the bodily changes adolescents experience. Students need opportunities to safely learn about these changes and different aspects of healthy living. This doesn't exactly match the curriculum of an ELA classroom, but physical activity is an extremely important aspect of supporting physical development (Brinegar & Caskey, 2022). Additionally, adolescents have a heightened awareness of how they are changing and may talk negatively or harmfully about the physical qualities of themselves or others (Bishop & Harrison, 2021). These aspects of physical

development can be incorporated in education outside of the health classroom, and both are applicable to the practice of PBW.

How Do Place-Based Writing and Young Adolescent Development Connect?

In the following section, I will describe how the characteristics of PBW and the characteristics of young adolescent development overlap and how utilizing PBW in the classroom can be beneficial for middle school students. To do this, I will highlight one of the characteristics from the earlier definition of PBW, and I will then explain how it can be connected to one or more attributes of developmental needs.

Focus on the Writer and Their Personal Experiences

As adolescents develop, they're figuring out their morals, their ideological positions, the existence and impact of social issues, and various parts of their identity. PBW can help them in this journey by asking them to think about who they are and what is most important to them. For example, a student may recognize that they care about social fairness if they realize an important moment in their life was standing up to a bully on the playground—a realization of asking themselves why they consider the playground a personally important place. This or any other recognition of an important place will be unique to each student, as it's unique to their individual identity and experiences.

Additionally, PBW, by its nature, requires writers to dive into their own identities and determine what's important to them. To accomplish this, writers have to grapple with how their environments and experiences have shaped them in life and continue to do so; they must understand that

their identities and priorities haven't been formed in a vacuum but are related, at least in part, to the community and culture they've grown up in. To take it further, by inspiring writing through somewhere important to the writer, the writer is also learning how to apply classroom concepts to real-world situations. An example of this comes from Amanda Montgomery (2024), who combined Google Street View and the Marietta History Project for her students to learn about Marietta Square, a place familiar to them. In the project, students learned about groups important to historic Marietta and the significance of the square, and they had to develop a narrative of daily life from the perspective of someone of the time period. Though students were familiar with the square, they didn't know the rich history behind it, to which this project exposed them, furthering their understanding of the community that shaped them while also showing how concepts, such as research and writing, can have real-life applications.

Write About a Meaningful, Significant Place in the Writer's Life

In a similar manner to the first characteristic, by asking students to write about a significant place in their lives, PBW is asking them to practice self-reflection and to be able to recognize what is significant to them as individuals. This directly targets aspects of their social-emotional, cognitive, and psychological development.

Social-emotional learning asks students to understand how interactions with others can affect how they view a place—they have to ask themselves questions about *why* a place is significant to them. Was there an important moment between them and their friends in this location? Is it a place that their friend group frequents? Is it a place they go to seclude themselves when being around people becomes too much?

Because a place is a story involving "interactions, characters, conflicts, and the rise and flow of humanity" (Donovan, 2016, p.23), its significance cannot exist without a connection to personal interactions with others. In other words, each student must understand how their interactions with others affect them to understand why a place is meaningful.

Regarding cognitive and psychological development, asking students to determine a meaningful place also requires them to understand part of their individual identities. Someone who is a social butterfly is more likely to choose a place of significance that focuses on something with their peer groups, such as a place where a party happens or where their friends regularly meet up, while someone more introverted may choose a place where they are typically alone. These examples are broad aspects of identity, but PBW would encourage students to dig deeper into themselves to determine what is truly important to them based on who they are and what they prioritize in life. Having students write about a place of significance may build into their strong sense of egocentrism as well, but this could be mitigated by sharing these locations and writings, ultimately promoting the idea that everyone has unique experiences, perspectives, and thoughts.

Allow Choice and Agency in the Writing Prompt and Process

Young adolescents' cognitive and psychological development leads to an ever-growing need for autonomy and individuality in their lives. When students are given a very structured assignment, these needs are ignored, and students are less engaged and produce less authentic work. Much of Montgomery and Montgomery's (2021) work focuses on PBW in relation to

creating authentic work, defining authentic work as work created through "choosing topics, purposes, audiences, and forms that are relevant and meaningful" to the writer (p. 5), but they also determine that the very nature of a classroom setting will always prevent work from being truly 100% authentic. However, agency through choices about the writing and presentation of a project can help approach authentic work through the autonomy and individuality personal agency allows students to express (p. 6). Though you, as a teacher, require students to create work for your class, you can give them the choice of how to format their writing and, of course, the choice of which place of significance to write about. This aspect of PBW still allows for some structure in the format of a project, but it requires the students to think about what format would best relay the story they're creating about their significant place. This extra freedom for students not only addresses the need for autonomy and individuality but also requires students to think critically about how they present their work.

Connect the Writer with Their Environment and/or Community

A big part of PBW is the matter of getting students out of the classroom, into their community or environment and writing to an audience beyond the teacher and their immediate peers. In this, there's a lot of potential to have students make connections with local community members, such as various government agencies, neighborhood people, or anyone else who could be helpful in their writing. Perhaps they need to interview people to establish a history of their chosen place. Maybe they need to talk with a specialist, such as a scientist or an engineer, in order to better understand the mechanical aspects of their chosen place,

like a swamp, a specific building, or a garden. This is an area in which teachers can help promote necessary aspects of physical development. As I mentioned before, physical development is about educating the students, preventing negative talk about themselves and others, and having them move around regularly. For students to accomplish a connection with their environment or with their community, they must move around town and interact with people who are different from themselves; in doing so, they will witness people of all types, which could act as a positive representation.

A PBW assignment that invites students to explore their community will find affirmation of many types of positive representation, such as in race, ethnicity, gender, physical body shape, etc., as they are given the opportunity to explore differences and commonalities between themselves and the community members in ways typical classroom education may not allow for. Through community interactions, students will be able to identify with people they meet while also exploring different perspectives, addressing the social-emotional needs of developing a sense of belonging and learning to empathize with others.

Implementation of Place-Based Writing

As stated at the beginning, there are many interpretations of PBW, which means there are many ways to apply it to the classroom. As discussed previously, Amanda Montgomery's application was a journey through history to better understand the local community, but there are many other examples. Others have taken the approach of connecting with nature and the environment by having students compare aspects of their personal identity with objects and phenomena in the natural landscape

(Lundahl et al., 2024) or by asking students to inquire about how a geographical location connects to nature and culture through human needs, including creativity, survival, and spirituality (Hudson & Hudson, 2024). An example from Goss (2024) is the less physical approach to the concept of place, asking students to explore parts of their past, focusing on a single topic, such as food, music, or nature, which she found to inspire art and writing relating not just to their experiences within these topics but also to who they are as people. The Montgomerys (2021) discuss an example from Rob's childhood in which a teacher led the class around the school in silence as they recorded what they noticed, which they then used as inspiration for creative writing. I was involved in a similar use of PBW, in which we took a field trip to a nearby river and wrote creative pieces based on our observations and sensory experiences.

Ultimately, the ways to apply PBW are virtually endless. Application of PBW can range from a field trip to a park or downtown to exploring virtual tours on a website to a walk around the school to even just recalling important memories—it's incredibly flexible, depending mostly on the classroom environment, school limitations, needs of the students, and desired outcomes of the lesson. It can be used simply for creative inspiration or for learning bigger material. Regardless of how it's implemented, the practice will connect students to their community and/or environment, allow for personal agency over their writing, and ask them to think about themselves while still having positive developmental benefits across the range of young adolescent needs through interaction with community members, physical activity, critical thinking, self-reflection, and exposure to other people's experiences.

References

Adamson, J. (2001). *American Indian literature, environmental justice, and ecocriticism: The middle place*. University of Arizona Press.

Bishop, P. A., & Harrison, L. M. (2021). *The successful middle school: This we believe*. Association for Middle Level Education.

Brinegar, K. M., & Caskey, M. M. (2022, November 15). *Developmental characteristics of young adolescents: Research summary*. Association for Middle Level Education. https://www.amle.org/developmental-characteristics-of-young-adolescents/

Caskey, M. M., & Anfara, V. A., Jr. (2007). *Research summary: Young adolescents' developmental characteristics*. PDX Scholar. https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?params=/context/ci_fac/article/1009/&path_info=Developmental_Characteristics.pdf

Delgado-Chernick, M. A. (2024). Stories of our community: Podcasting for place-based inquiry. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing in action: Opportunities for authentic writing in the world beyond the classroom* (pp. 177–93). Routledge.

Donovan, E. (2016). Learning to embrace our stories: Using place-based education practices to inspire authentic writing. *Middle School Journal*, *47*(4), 23–31. https://doi.org/10.1080/00940771.2016.1202657

Goss, J. (2024). Using memory as an activator for exploration and creation. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing: Opportunities for authentic writing in the world beyond the classroom* (pp. 140-9).

Hudson, J., & Hudson, D. (2024). The sustainable resource project: Writing toward agency. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing in action: Opportunities for authentic writing in the world beyond the classroom* (pp. 80–95). Routledge.

Jacobs, E. (2011). Re(place) your typical writing assignment: An argument for place-based writing. *English Journal*, *100*(3), 49–54. https://doi.org/10.58680/ej201113437

Lane-Zucker, L. (2020 Aug. 17) *The impact of place: A keynote talk given by Laurie Lane-Zucker on the occasion of the 7th place-based education conference*. LinkedIn. https://www.linkedin.com/pulse/impact-place-laurie-lane-zucker

Lundahl, M., Zanto, K., & Hoffman, M. (2024). Observing nature, observing language: Using nature to teach rhetorical grammar. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing in action: Opportunities for authentic writing in the world beyond the classroom* (pp. 54–64). Routledge.

Montgomery, A. (2024). Making connections to the past: Using place-based writing to bring history to life. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing: Opportunities for authentic writing in the world beyond the classroom* (pp. 109-22). Routledge.

Montgomery, R., & Montgomery, A. (2021). *A place to write: Getting your students out of the classroom and into the world*. National Council of Teachers of English.

Novak, R. (2024). Mapping through justice, through Padlet, and through the world. In R. Montgomery & A. Montgomery (Eds.), *Place-based writing in action: Opportunities for authentic writing in the world beyond the classroom* (pp. 40–53). Routledge.

Scholastic Parents Staff. (2021, May 4). *Social development in pre-teens:* *What you need to know*. Scholastic Parents. https://www.scholastic.com/parents/family-life/social-emotional-learning/development-milestones/social-development-11-13-year-olds.html

Sobel, D. (2004). *Place-based education: Connecting classrooms and communities*. Orion.

Adam Caliri is a graduate student at Appalachian State University, where he is pursuing an English degree with a concentration in teaching literature and writing. He previously graduated from the same university with a bachelor's in Middle Grades Education with concentrations in English Language Arts and social studies.

ORIGINAL PAPER

Challenging Mathematical Tasks for Literacy Intervention = Equity

Author: Wendy Lewis[1]

Abstract: This article tells the story of a problem solving journey of equity. The story is based upon a pilot study at a K-8 independent school, located in a large urban setting in the southern part of the United States. The school's literacy specialist, who was also the camp's teacher, was invited to implement a series of challenging mathematical tasks as part of the rising third-grade students' camp schedule. The tasks originated from the NRICH website, and were based upon topics of addition, subtraction, logic, and problem solving. Throughout the pilot study, students developed their ability to productively struggle through mathematically challenging tasks. These students who were seen as at-risk with literacy, benefitted from the literacy and oracy skills embedded in the tasks, but also from the experience of solving mathematically challenging tasks within a sociocultural context with systematic support. The students within the study emerged as not only more confident mathematicians who could stick with difficult problems, but also as more excited readers. Elementary and middle level teachers, researchers, and mathematics educators should continue implementing a series of challenging math tasks and organic intervention experiences, so this is precisely what happens in our classrooms.

Keywords: mathematically challenging tasks, perseverance, literacy intervention, stamina

Children deserve spaces that emphasize making sense of math and reasoning, which are related to their culture and everyday world. They also deserve ways to access mathematics even if they can't read all the words in a task (NCTM, 2000; 2014). With the overall goal of providing mathematical challenges to students in a summer literacy intervention camp, I conducted a pilot study at a K-8 independent school located in a large urban setting in the southern part of the United States. I invited the school's literacy specialist, who also served as the camp's teacher, to implement a series of challenging mathematical tasks as part of the rising third-grade students' camp schedule. Based on end-of-year academic testing, these eight students were identified by the school as at least one grade level behind in reading and/or writing and, therefore, eligible for the three-week intervention. According to the literacy specialist, the students lacked enthusiasm for school and confidence in their ability to be successful. Like many schools in the United States, this one experienced a shutdown during the COVID-19 pandemic and chose to focus its summer learning efforts on literacy and mathematics. Throughout the pilot study, students developed their problem-solving ability and perseverance through mathematically challenging tasks. These students who were seen as at-risk with literacy benefitted from the mathematically challenging tasks and grew in their enthusiasm, ability, and stamina.

Wendy Lewis: lewiswm@appstate.edu
[1] Reich College of Education, Appalachian State University, Boone, NC, USA

The stakeholders and design of the study were carefully crafted. Though initially reluctant to include the mathematical tasks in the program, Ms. Johnson (pseudonym) agreed to give it a go to support the students' math learning with challenging tasks. She agreed that students would benefit from a collaborative process and believed that the reading interventions used within the tasks would support literacy intervention as a whole. As former classroom teachers and math coaches, we provided ongoing support and coaching to the teacher throughout the summer camp by meeting with her before and after the tasks were implemented to discuss reading and math strategies, as well as what worked and what didn't.

The group of students comprised eight rising third graders, five females, and three males. Three students in the group were economically disadvantaged, two students identified as African American, and one student identified as Hispanic, according to the school's admission data. I was interested to see how students identified as struggling readers would find success with mathematically challenging tasks instead of low-level tasks, which are often given to students who have reading difficulties and those who are economically disadvantaged or from marginalized groups (Krings, 2024; Moll, 1990; Smith & Stein, 2018). I also wondered how the literacy specialist would engage with the mathematical tasks as part of her overall instruction during the camp. The literacy specialist, serving as the camp's teacher, Ms. Johnson (pseudonym), soon discovered that, like her students, she too would grow in her mathematical ability that summer, and her attitude toward mathematics would change dramatically:

> In the last three weeks, I've rediscovered a joy for teaching math. I kind of shied away from it for a long time because I was just more comfortable with literacy. But I have definitely seen in the last few weeks the benefits of teaching math, problem-solving, and critical thinking, as well as the concept of having more than one solution or having to work on something more than one day.

Oftentimes, students, regardless of their reading or math ability, believe that math problems should be solved "in a snap" (Schoenfield, 2013, Stage & Kloosterman, 1992). Most students do not develop strategic thinking or problem-solving skills because math instruction focuses more on mastery of facts and procedures than understanding. We told the students that good math problems might take longer to solve and that some mathematicians spend their whole lives solving one problem! Would this phenomenon of wanting to solve problems quickly be more likely with students behind their peers in reading and writing? Would engaging in these tasks take precious time away from the urgent literacy work the students needed before the new school year, or might engaging with these mathematically challenging problems support their literacy goals? Ms. Johnson realized during the study that building grit and stamina through mathematical challenges could also improve students' efforts toward literacy:

> Even in just three weeks with these students, I was able to see improvements in their stamina and willingness to stick with a problem or go back to a problem. When we think about the whole child just in the academic realm, we can't lean on one content area over another. Math is included in that, and not just included. It's imperative.

During camp, Ms. Johnson launched two tasks each week (we share three tasks in this article), providing support and scaffolding through essential questions and other strategies, including reading strategies, to help them grow their understanding. The students grappled with the problems, but the teacher encouraged them to stay with it until they came to a solution or got closer to solving it. This productive struggle was intentional and something all students should experience regularly in mathematics. Productive struggle is necessary to deepen students' conceptual mathematical knowledge and to increase stamina for solving problems over time (Huinker & Bill, 2017; NCTM, 2014; Terada, 2022). As Ms. Johnson shared, "In math and in everything, I don't think you grow without a struggle."

Selection of Tasks

For the tasks, we selected a series of problems from a University of Cambridge website called NRICH (nrich.maths.org). These problems are designed to nurture students' potential and provide the opportunity for engagement with mathematically challenging tasks. The complex tasks require students to utilize prior knowledge, develop and strengthen conceptual mathematical understanding, and embody perseverance through problem-solving (Manuel & Frieman, 2017; Smith & Stein, 2018). The NRICH problems are free and include resources "designed to nurture curious, resourceful, and confident learners of school mathematics" (NRICH, n.d.). The beliefs of the NRICH team mirrored our own and served as a focal point in supporting the teacher and the students in this study:

- All students have the right to shine, and all have the right to struggle.
- Working mathematically requires

more than just conceptual understanding and procedural fluency; it also requires the ability to reason, to think strategically, and to have a productive disposition.

Below, I share three of the tasks from the study; one was designed for 5-7-year-olds, and two were for 7-11-year-olds, and all were considered "favorites" on the site. The NRICH website also has tasks for 11-14-year-olds, which can be differentiated according to topic, interest, or any other category in your math classroom (NRICH, n.d.). Also, the tasks had a range of math topics, reading levels, and opportunities for students to collaborate, all of which would support their literacy needs and the opportunity to experience challenging mathematics and productive struggle.

Why Use Mathematically Challenging Tasks

A mathematically challenging task must allow students to engage actively in reasoning, sense-making, and problem-solving to develop a deep understanding of mathematics (NCTM, 2014). Student learning is greatest in classrooms where tasks consistently encourage high-level student thinking and reasoning and least in classrooms where the tasks are routinely procedural in nature (Boaler & Staples, 2008; Hiebert & Wearne, 1993; Stein & Lane, 1996). When students engage in mathematical reasoning, especially in their adolescent years, they activate their abstract thinking and heightened reasoning skills.

Again, this practice is for *all* students, regardless of their literacy needs or abilities. Not all tasks provide the same opportunities for student thinking and learning (Cai, 2003; Stein et al., 2009). Research also suggests that challenging math tasks are the most difficult to

implement; these tasks are often transformed into less demanding tasks during instruction (Stein et al., 1996; Stigler & Hiebert, 2004; Smith & Stein, 2018). In the work with Ms. Johnson, I aimed to guide her through facilitating these tasks so the demands were not lowered (Smith & Stein, 2018).

Connecting Literacy Intervention to Mathematically Challenging Tasks

As previously noted, we were interested to see how students who were in need of traditional reading intervention would find success with a series of mathematically challenging math tasks. Social interaction (Cherry, 2023) and access to resources, including a rigorous curriculum, are essential elements for equity and learning among students (Gutierrez. 2009). We ensured the study was designed so students had guidance from the teacher acting as facilitator, social interaction with their peers in partners and groups, and tasks that positioned them in their zone of proximal development (Cherry, 2023).

Further, studies on reading intervention suggest that using manipulatives and multiple representations embedded within mathematics instruction helps students make connections to the real world and form relationships between math and language (Bawa & Imam, 2020; Krings, 2024; Lesh et al., 2003; Stein & Bovalino, 2021). To fulfill the study's goals and the goals of the literacy intervention camp more broadly, we intentionally selected the tasks based on the need to connect language to the mathematically challenging tasks.

Exploring The Tasks

Tall Tower

On the first day of camp, Ms. Johnson presented the *Tall Tower* (NRICH, n.d.-c)

problem, which focused on addition and subtraction skills for 7-11-year-olds. The visual representation of real-life ladders and rooms and the need to escape (see Figure 1) immediately captured the students' interest and positioned them in an imaginative story. These were the instructions:

> You have been imprisoned at the top of the Tall Tower by the Wicked Magician. You can get out by climbing down the ladders. As you come down, you collect useful spells. You can go down the ladders and through the doorways into an adjoining room, but you cannot go into the same room twice or climb up the ladders. The room numbers show how many spells there are in each one. Which route would allow you to collect the most spells? The least number of spells? Exactly 35 spells? (NRICH, n.d.-c, problem tab)

Figure 1 *Tall Tower Task*
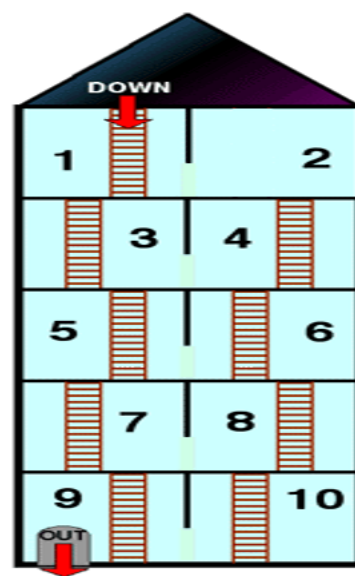
Ms. Johnson read the problem aloud twice while showing the *Tall Tower* (Figure 1) picture on the screen. To ensure the problem was accessible to all readers, we created a

separate sheet (see Figure 2), which provided systematic scaffolding by breaking the paragraph of text into smaller chunks. We also added pictures to support the students, especially the multilingual learners, and their ability to visualize the problem and connect the text with the image (Kurz et al., 2017); see Figure 2. Each student had their own copy of the *Tall Tower* problem, the adapted problem, and a separate copy of three towers (See Figure 3).

Figure 2 *Tall Tower Task Simplified*

After Ms. Johnson launched the task with the students, she provided feedback and explicit guidance. Providing scaffolding and miscue correction for the students was pivotal to reinforcing appropriate word reading strategies and supported the students' comprehension and connections to the word problem (Endo, 2024).

She told the class they had two minutes to work independently but could then work with a partner. Throughout the task exploration, Ms. Johnson selected various students to show and explain their thinking; she encouraged them to share why they approached a strategy a certain way. One of the students (Student A) began by trying to solve the problem of getting the "most" spells. She focused on the larger numbers on the right side of the tower by adding the numbers together in separate sums: 1+2 =3; 3+4 =7; 7+6 = 13; 13+8=21; 21+10 =__, as shown in Figure 3, and then drawing the route on the tower.

Figure 3 *Student A's Tall Tower Work*
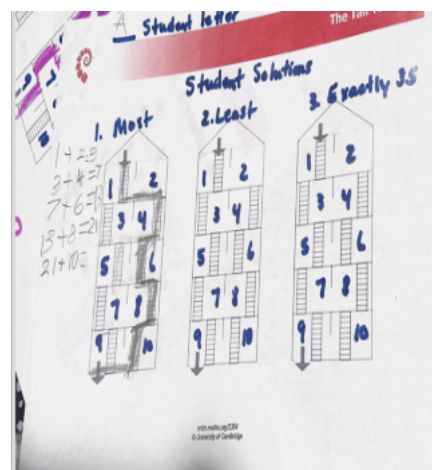
Ms. Johnson strategically selected a student who was using visualization as a strategy to solve the problem (Kurz et al., 2017; Gallagher et al., 2021). Student D saw each tower level as a floor and simply added the numbers across and wrote the sum to the right of the tower (see Figure 4). He then showed smaller sums to arrive at a total (he was working to find the most spells) but appeared to have added the numbers (on each "floor") mentally without notating them: 3+7 = 10; 11+ 15=26; +9 +10 = 45. Though the most spells that can be collected for this problem is 53, this was the highest sum the group found on the first day.

Figure 4 *Student D's Tall Tower Work*
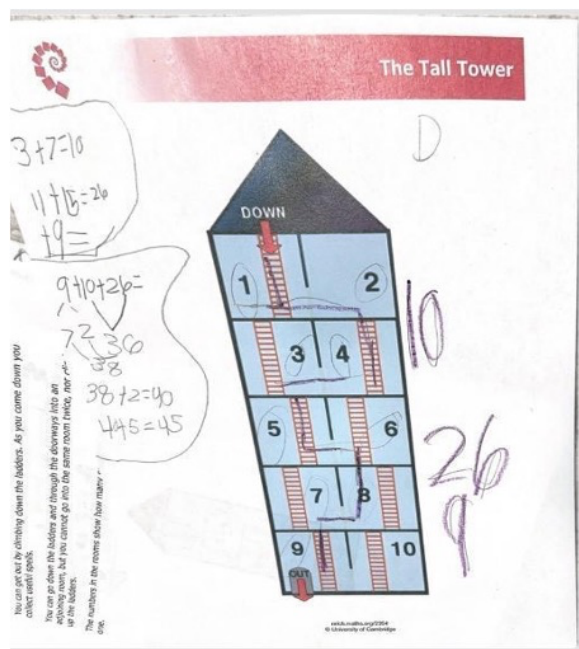
Ms. Johnson provided counters (a suggestion from the task) in case students wanted to keep track of the spells that way. Some of the questions she asked were, "Which might be the best number to leave out?" and "Might it help to record your routes so you don't repeat yourself?" She also shared the student strategies provided in the teacher resources, which included, "I thought that if I want to get the highest number of spells, I need to visit as many rooms as possible." The students continued working on this problem throughout the week, and several asked if they could take the *Tall Tower* sheets home to continue working on them after camp! Students expressed excitement about collecting spells and using addition strategies to solve the problem.

Ms. Johnson wanted to know if she could leave the *Tall Tower* problem in a center for students to return to during the week. We agreed that this was the right way to continue the students' engagement and work on the solution.

Arranging Cubes

The *Arranging Cubes* (NRICH, n.d.-a) task (recommended for 7 to 11-year-olds) required students to arrange eight cubes of four different colors based on eight different clue cards, as shown in Figure 5.

Figure 5 *Arranging Cubes Task*
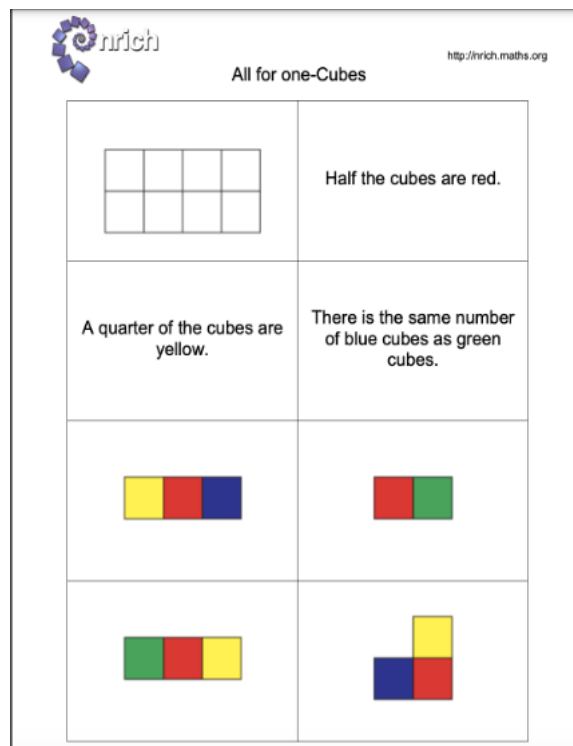
We selected this task because it was less text-reliant, had a geometry focus, and used manipulatives. Manipulating objects like blocks, chips, or cards creates a hands-on path for understanding math, science, language arts, or other content concepts. Manipulating selected objects can make complex concepts more concrete, which is one effective way to scaffold comprehension of grade-level concepts. Furthermore, this task required students to partner read the text. According to Endo (2024), when students read a section of text with a partner, this allows for sufficient cognitive breaks

needed for perseverance and increases their reading stamina (Endo, 2024).

The teacher placed students in small groups, read the task directions, and asked, "Does anyone have an idea of how they will get started with this task?" Without responding, the students quickly pulled the clue cards from an envelope and eagerly began to work together to solve the puzzle, and the partner read the clues.

Student E: "Look, guys, we should move both blues here and read this card: there are the same number of blue cubes as green cubes. This card is the key to figuring this out!"

Student F: "Oh, that means they have to have two or three each because we have to have red and yellow too."

Student E: "Let's look at your picture again and figure this out!"

Figure 6 *Students E and F Cubes Work*

Ms. Johnson approached the students, eager to see why they were so excited. "What are you all discussing? The students said, "It's so tricky when you read the clues, but we are each reading one card at a time and trying to figure it out." When students engage in reasoning, argue their opinions, and discuss their mathematical thinking with other students, they actively use their

mathematical language and funds of knowledge to enter the floor of the task (González et al., 2005; Gutierrez et al., 2012). The students continued using the unifix cubes to draw the design. See Figure 6 for the arrangement Students E & F created (which is almost, but not quite, correct). The students declared they knew there had to be four reds because the clue card said half the cubes are red. They also determined there were two yellows because a clue said a quarter of the cubes were yellow. They told Ms. Johnson, "We used our reasoning to figure out there were two empty cubes left, and they had to be green and blue."

Domino Square

In the final week of camp, the students explored this task (designed for 7-11-year-olds), *Domino Square* (NRICH, n.d.-b) depicted in Figure 7, which challenged them to take a set of ten dominoes and use them to build a square where each side has a sum of eight dots. (We provided cardstock dominoes, which were included in the task materials, but you can use real ones.) As she launched the task by reading it aloud, Ms. Johnson wanted to be sure students thought carefully about decomposing the number eight and considered the sum combinations. She was purposeful in making real-life connections between the task and the game of dominoes. To solve the task, students had to use three dominoes on each side of the square and arrange the dominoes as shown in Figure 8.

Figure 7 *Domino Square Task*
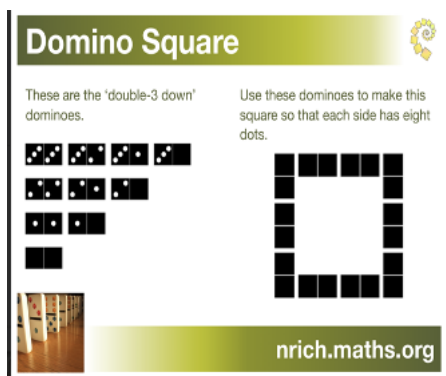
Figure 8 *Domino Square Grid*
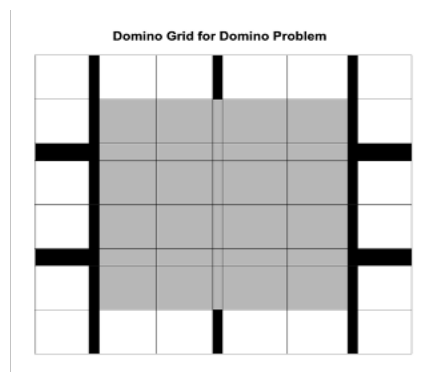
Ms. Johnson told the students, "While working, I want you to think about strategies. You're going to get a whole set of ten dominoes. You'll have to figure out how you will arrange them." To facilitate the task, we created a grid template that used blank spaces for the dominoes to match the size of the cardstock ones (see Figure 8). Student A grabbed some domino cards with ones and twos. While watching Student A, Student B was frustrated and unsure of what to do next. After two attempts at the task, he declared (and wrote!), "It can be hard, but you can still try." The students engaged in discussions throughout the task, sharing their mathematical thinking while rearranging the dominoes. We also provided a "Show Your Solution" sheet for students to record their domino dots and where they could share how they solved the task. (See

Figure 9). Some students preferred to use this format instead of rearranging the domino cards.

As shown in Figure 9, Student B began recording the "dots" for each domino, working side-by-side with Student A. Using mental math, Student B asked, "That's more than eight; what should we do?" The students decided that if a domino was too large, they had to have a domino with a zero or a one to make the task work. So, together, the pair moved the double three domino to the side for a few minutes while continuing to draw, erase, and redraw their dots.

Figure 9 *Student B's Domino Square Work*
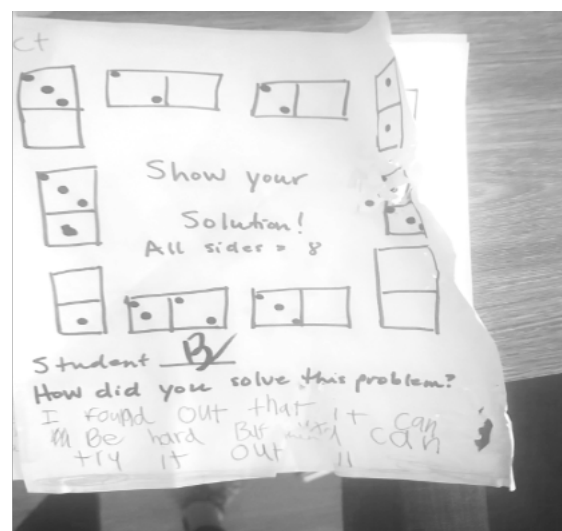
As Ms. Johnson engaged with the students, she noticed the student pairs collaborated differently to solve the task. For example, Student G decided it would be best to put a domino with a zero in each corner of the design (See Figure 10). Then, Student G placed the dominoes without zeros in between the dominoes with at least one zero. To check his thinking, he added the dots on each side of the square to double-check his sums. He worked diligently with the dominoes, turning them in different directions until he got a sum of eight on each side. He concluded that the sides with

double zeroes needed the dominoes with higher numbers.

Figure 10 *Student G's Domino Square Work*
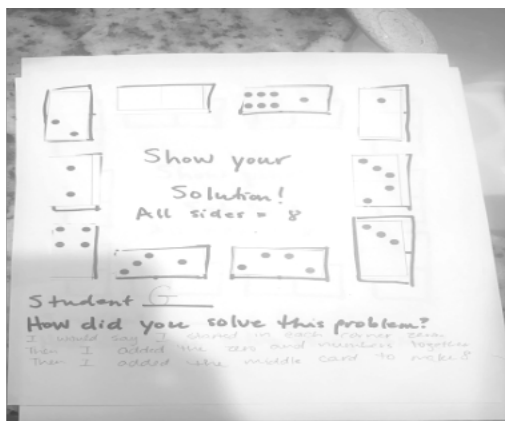
Finally, Student E (see Figure 11) used a strategy similar to Student G. She realized she needed to place the dominoes with a zero in each square corner. Then, she decided she needed dominoes with higher numbers to complete the square. She reasoned abstractly by using equations and checking the sum of other non-zero dominoes. She said, "I know 2 + 3 is 5. I know 3+ 3 is 6. So, I think I need a domino with a 1, 2, or 3. I can pair 5, 2, and 1 or 4, 2, and 2. I'm going to study the double ones and keep arranging my dominoes. Then, I will be able to solve the task."

Figure 11 *Student E's Domino Square Work*
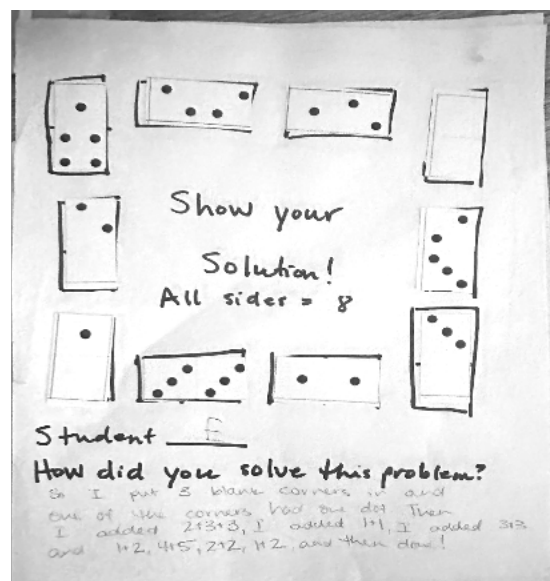
Addressing Equity and Access

To sustain a culture of equity and access in the teaching and learning of mathematics, it is critical that "all students routinely have opportunities to experience high-quality mathematics instruction, learn challenging mathematics content, and receive the support necessary to be successful" (NCTM, 2014, p. 60.). In our research, I noticed that although the students had been identified for literacy intervention, they also grew in their enthusiasm and ability to solve difficult problems through the NRICH (n.d-a, n.d.-b, n.d.-c) tasks, as evidenced in the focus group statements:

> Student A: "The Tall Tower task reminded me of a maze. It was fun, and it helped me understand how to solve it because I like mazes."
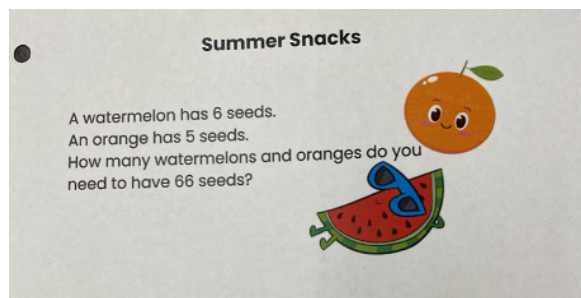> Student B: "I like using number lines, and counting groups helped me solve math problems with adding and subtracting."
> Student G: "I learned not to give up. The problems were challenging and fun. I went home and asked my mom to buy stuff to play with me."

Student F: "I felt excited about math. I created some of my own problems." (see Figure 12)

Figure 12 *Student F created math task*

Their teacher, Ms. Johnson, engaged the students in mathematical reasoning, which built upon their conceptual mathematical knowledge and their funds of knowledge to help them enter the "floor of the mathematical tasks" (Celedón-Patichis et al., 2017; Moll, 1990). Providing students access to rich tasks with multiple entry points is key to creating an equitable mathematics experience for all students (NCTM, 2000, 2014).

Inequitable structures hold students back from achieving their full potential. The deficit mindset that an at-risk student may not be capable of mathematics has emanated from society and is not research-based (Adams, 2018; Moll, 1990). Children who struggle in reading and need strong support are often labeled and tracked into programs focusing on low-demanding procedure-driven mathematics without being given opportunities to connect to high-level tasks (Huinker & Bill, 2017). Teachers may sometimes limit opportunities and access to challenging math tasks for students below grade level in reading because they feel the text is too complex (Smith & Stein, 2018). Or, they resort to a banking concept where students simply memorize and receive information (Freire, 1970, 2000). Creating an equitable, culturally responsive environment requires teachers to shift their thinking and adopt changes in pedagogical practices (Gay, 2002, 2018).

In this study, the floor was lowered so the students could access the tasks through play, fostering a sense of community and prior knowledge (Celedón-Patichis et al., 2017), and their literacy needs were addressed through appropriate adaptations and scaffolding (Gallagher et al., 2012; Kurz et al., 2017). Learning mathematics should include building upon children's prior knowledge and their funds of knowledge to deepen their learning (Huinker & Bill, 2017). A high-quality mathematics program has a "coherent sequencing of core mathematical ideas."

We adapted and redesigned the tasks as needed to create a more equitable classroom environment. The *Tall Tower* task required more reading than the other problems, so we scaffolded the reading and added pictures so students could make connections. Ms. Johnson lowered the floor by accessing students' prior cultural experiences with playing chutes and ladders and solving mystery clues. I also provided multiple copies and sizes of the *Tall Tower* problem (Figures 1 and 3), made the problem less text-heavy with a modified problem sheet with pictures (Figure 2), and encouraged students to collaborate.

I chose the *Arranging Cubes Task* to build upon students' interests and funds of knowledge, play, and collaboration (Celedón-Patichis et al., 2017). Some students were immediately engaged in the task since it was based on using blocks or cubes to build and play. Working in small groups also helped build community and supported reading intervention, as the students had to work together to read the clue cards. Some clue cards were images only so all students could enter the task. This task gave students many options for using manipulatives and drawing

representations to make sense of reading the clues.

In the *Domino Square* task, students solved a task based on play and simple sum combinations. Anticipating the solutions and sum combinations and creating a grid to help students set up the dominoes was the just right scaffolding for this task. Ms. Johnson paused several times during this task to encourage students to stick with it—to make sense and persevere in understanding what the problem was asking (CCSSM; CCSSI 2010). Since this task was mostly visual, she asked students more open questions and encouraged them to write equations and ideas down to help them understand the task without giving away the solution (Delpit, 2003; Smith & Stein, 2018).

Conclusion

All students deserve access to challenging mathematics in spaces where sense-making and reasoning are the norm. They deserve to be taught by high-quality teachers who see them as capable mathematicians and who recognize their cultures and languages as strengths and opportunities, even if they are not yet able to read all the words in a task (NCTM, 2000, 2014). Throughout this study, students developed their problem-solving ability and perseverance through mathematically challenging tasks. Students who were identified for literacy intervention benefitted from the experience of solving mathematically challenging tasks within a sociocultural context with systematic support. The students began to see themselves as successful and capable because they could stick with difficult problems. Ms. Johnson shared these thoughts in her final interview about how this work impacted her students:

> Getting kids and teachers pushed outside their math comfort zone a little bit is healthy. Having this open-ended, really challenging work to do taught these kids a lot about themselves and a lot about grit, stamina, and problem-solving. I think the built-in literacy support helped them, too. But it was built through teaching math and doing math in a different way.

I hope this different way of teaching and learning mathematics will become regular and routine for this teacher and her students, and for students everywhere, because all students have the right to shine, and all have the right to struggle. It is up to each of us, as teachers, researchers, and mathematics educators, to ensure this is precisely what happens in our classrooms.

References

Adams, M. (2018). I can solve all the problems: Latinx students (re) write their math stories. In I. Goffney, R. Gutierrez, & N. Boston (Eds.) *Rehumanizing Mathematics for Black, Indigenous, and Latinx students* (pp. 121-134). NCTM.

Bawa, N. and Imam, H. Y. (2020). Realia and its relevance in 21st-century learning. *International Journal of Applied Research and Technology*. 9(9): 52 – 56.

Boaler, J., & Staples, M.E. (2008). Creating mathematical futures through an equitable teaching approach: The case of railside school. *Teachers College Record: The Voice of Scholarship in Education, 110*, 608 - 645.

Cai, J. (2003). What research tells us about teaching mathematics through problem-solving. In F. Lester (Ed.), *Research and issues in teaching mathematics through problem-*

solving. Reston, VA: National Council of Teachers of Mathematics.

Celedón-Patichis, S. White, D., & Civil, M. (Eds.). (2017). *Access and equity: Promoting high-quality mathematics in pre-K-grade 2.* NCTM.

Cherry, K. (2023, July 6). *How Vygotsky defined the zone of proximal development*. Very well Mind. https://www.verywellmind.com/what-is-the-zone-of-proximal-development-2796034

Common Core State Standards Initiative (CCSSI). Common Core State Standards for Mathematics. (CCSSM). Washington, D.C.: National Governors Association Center for Best Practices and the Council of Chief State School Officers, 2010. http://www.corestandards.org.

Delpit, L. (2003). Educators as "seed people" growing a new future. *Educational Researcher 32*(7),14-21. https://doi.org/10.3102/0013189X032007014

Endo, A. (2024, March 5). *Reading Intervention Strategies for Struggling Readers*. https://www.hmhco.com/blog/reading-intervention-strategies-for-struggling-readers

Freire, P. (1970, 2000). *Pedagogy of the Oppressed.* 30th Anniversary Edition. translated from Spanish by Myra Bergman Ramos. New York: Continuum.

Gallagher, M. A., Ellis, L., & Weiland, T. (2021). Making Word Problems Meaningful. *Mathematics Teacher: Learning and Teaching PK-12, 114*(8), 580-590. https://doi.org/10.5951/MTLT.2020.0247

Gay, G. (2002). Preparing for Culturally Responsive Teaching. *Journal of Teacher Education, 53*(2),106-116.

Gay, G. (2018). *Culturally Responsive Teaching: Theory, Research, and Practice.* Third Edition. Multicultural Education Series. Teachers College Press.

González, N., Moll, L. & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms.* Lawrence Erlbaum Associates Publishers.

Gutiérrez, R.. (2009). Context matters: How should we conceptualize equity in mathematics Education? In B. Herbel-Eisenmann et al. (Eds.), *Equity in discourse for mathematics education: Theories, practices, and policies, mathematics education library 55*, (pp. 17-33). 10.1007/978-94-007-2813-4_2

Gutierrez, R., & Irving, S. (2012). *Student-centered learning: Latino/a and black students and mathematics.* Nellie Mae Education Foundation. https://nmefoundation.org/latino-a-and-black-students-and-mathematics/

Hiebert, J., & Wearne, D. (1993). Instructional tasks, classroom discourse, and students' learning in second-grade arithmetic. *American Educational Research Journal, 30*(2), 393-425. https://doi.org/10.3102/00028312030002393

Huinker, D. & Bill, V. (2017). *Taking action: Implementing effective mathematics teaching practices in K-Grade 5*. NCTM.

Kurz, T., Gómez, C., Jimenez-Silva, M. (2017). Guiding preservice teachers to adapt mathematics word problems through interactions with ELLs. *Journal of Urban Mathematics*

Education, 10(1). https://doi.org/10.21423/jume-v10i1a291

Manuel, D. & Freiman, V. (2017). Differentiating instruction using a virtual environment: A study of mathematical problem posing among gifted and talented learners. *Global Education Review, 4*(1), 78-98.

Moll, L. C. (1990). Social and instructional issues in educating "disadvantaged" students. In M.S. Knapp and P. M. Shields (Eds.), *Better schooling for the children of poverty: Alternatives to conventional wisdom. Academic instruction for disadvantaged students: Commissioned papers and literature review* (pp. 3-15).

National Research Council. (2001). *Adding it up: Helping children learn mathematics.*

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics.* NCTM.

National Council of Teachers of Mathematics. (2014). *Principles to action: Ensuring success for all.* NCTM.

NRICH. (n.d.-a) *Arranging cubes.* https://nrich.maths.org/problems/arranging-cubes?tab=teacher

NRICH. (n.d.-b) *Domino square.* https://nrich.maths.org/problems/domino-square?tab=teacher

NRICH. (n.d.-c) *Tall tower.* https://nrich.maths.org/problems/tall-tower?tab=overview

Schoenfeld, A. H. (2013). Metacognitive and epistemological issues in mathematical understanding. In *Teaching and learning mathematical problem solving* (pp. 361-379). Routledge.

Singer, F. M., Sheffield, L.J., Freiman, V., & Brandl, M. (2016). *Research on and activities for mathematically gifted students.* In *Research on and Activities for Mathematically Gifted Students.* ICME-13 Topical Surveys. Springer, Cham. https://doi.org/10.1007/978-3-319-39450-3_1

Smith, M. & Stein, M. (2018). *Five practices for orchestrating productive mathematics discussions (2nd ed.).* NCTM.

Stage, F. K., & Kloosterman, P. (1992). Measuring beliefs about mathematical problem-solving. *School science and mathematics*, *92*(3), 109-115.

Stein, M. K., & Lane, S. (1996). Instructional tasks and the development of student capacity to think and reason: An analysis of the relationship between teaching and learning in a reform mathematics project. *Educational Research and Evaluation*, *2*(1), 50–80. https://doi.org/10.1080/1380361960020103

Stein, M.K., Grover, B.W., & Henningsen, M.A. (1996). Building student capacity for mathematical thinking and reasoning: An analysis of mathematical tasks used in reform classrooms. *American Educational Research Journal, 33*, 455 - 488. https://doi.org/10.3102/00028312033002455

Stigler, J. & Hiebert, J. (2004). Improving mathematics teaching. *Educational Leadership, 61*(5), 12-17.

Terada, Y. (2022, September 16). *If you're not failing, you're not learning. George Lucas Educational Foundation*. Edutopia. https://www.edutopia.org/article/if-youre-not-failing-youre-not-learning/

Dr. Wendy Lewis is in her second year teaching for Reich College of Education at Appalachian State University, after over eighteen years of teaching elementary and middle school mathematics. She enjoys teaching elementary math methods and curriculum courses and is passionate about connecting teaching and research through her supervision of the university's math clinic and Block 3 internship.

ORIGINAL PAPER

Assembling Curriculum: A Framework

Author: Hilary R. Tanck[1]

Abstract: Middle school teachers today have access to an overwhelming array of curriculum resources, from traditional textbooks to digital tools. Teachers must navigate this inundation to select, adapt, and enhance curriculum materials to meet the unique needs of their middle school students. Through my work with four middle school teachers, I developed the Curriculum Assemblage Framework—a practical tool helping teachers thoughtfully select and combine resources to meet their students' needs. By sharing these teachers' experiences and the framework, the article aims to help teachers reflect on their current approaches to curriculum planning and to continue building their curriculum repertoire.

Keywords: middle grades, curriculum assembly, student engagement

Introduction

Middle school teachers face a daily challenge—selecting and adapting curriculum materials from an ever-expanding collection of resources. Gone are the days when teachers relied solely on textbooks and worksheets. Today's educators must embrace curriculum as a dynamic, adaptable process rather than a fixed structure (Fleener, 2002) as they navigate through digital platforms, social media resources, and online learning tools while staying focused on what matters most—supporting young adolescents' development and learning. Curriculum materials influence teacher practices (Moore et al., 2023) and have necessitated changes in how educators engage with the curriculum (Pepin et al., 2017).

The key challenge lies in thoughtfully evaluating and selecting materials (Webel et al., 2015) while keeping young adolescents' developmental needs at the forefront. The best middle school curriculum strikes a balance of challenging and engaging students while creating space for exploration, diverse perspectives, and democratic learning (Bishop & Harrison, 2021). Furthermore, Brown and Knowles (2014) highlight how a balanced curriculum design creates equitable opportunities for all students to connect with content in meaningful ways.

A balanced approach incorporates interactive elements that support differentiated learning, enabling students to engage with content through multiple pathways and share their understanding in various ways (Brown & Knowles, 2014). Teachers support diverse learners by providing varied opportunities for interacting with content (e.g., reading, multimedia, hands-on exploration), practice (e.g., independent work, group projects, discussions), and assessment (e.g., written, oral, creative projects). Additionally, differentiated pacing and complexity levels ensure all students can access the content while being appropriately challenged in their

[1] Stout School of Education, High Point University, High Point, NC, USA

learning journey. This balanced approach allows all students to connect with content meaningfully while developing new skills and strategies. Teachers shape their curriculum by reorganizing lessons, creating space for student thinking, and building authentic connections addressing student needs (Drake et al., 2015).

This article presents a reflective framework developed through studying four middle school teachers' curriculum work. The Curriculum Assemblage Framework (CAF) offers a structured approach to help teachers thoughtfully select and combine resources while maintaining focus on student engagement and democratic learning. Through real examples from these teachers' classrooms, we'll explore how educators can effectively leverage modern curriculum resources while staying true to essential middle-level education principles.

Background of the Study

Middle school represents a transitional period as students move from childhood toward adolescence, requiring a unique approach to teaching. This study was specifically designed to capture curriculum work at the middle school level. One participant described middle school students as a fun group to work with, noting their growing awareness while acknowledging their still-developing maturity. Furthermore, middle school students need opportunities to practice decision-making skills and take ownership of their learning (Bishop & Harrison, 2021).

To understand teaching during this distinct phase, the study followed four teachers, Abby, Andera, Cathy, and Savannah (pseudonyms), across grades 6-8, examining how they crafted and modified curriculum using digital tools and online resources. The research captured their work

through lesson plan walkthroughs (participants explained their process as they planned lessons), schematic drawings (participants created diagrams of their curriculum work), and curriculum resources (e.g., teacher-created worksheets and guided notes, quizzes, district pacing guides). Teachers who demonstrated the use of different curriculum materials were selected to ensure that each grade level 6-8 was represented.

The Curriculum Assemblage Framework

Based on the findings from the study, I developed the Curriculum Assemblage Framework (CAF) to capture the curricular work of Abby, Andera, Cathy, and Savannah (see Figure 1). The CAF centered on four interconnected quadrants: Curriculum Materials, Organization Method, Student Engagement, and Future Ideas. The Curriculum Materials Quadrant encompassed both digital tools and traditional print materials teachers drew upon daily. The Organization Method Quadrant focused on systematic approaches to file structure, cloud storage, and planning systems that made resources readily accessible. The Student Engagement Quadrant emphasized interactive elements, varied assessment methods, and opportunities for student choice. Finally, the Future Ideas Quadrant looked toward future growth through new tools, areas for improvement, and specific goals for curriculum development. These quadrants worked together as a cohesive system, as teachers thoughtfully assembled and adapted their curriculum to meet student needs. As components shifted in one quadrant, it often forced changes in another, creating an iterative process of implementation, reflection, and adjustment.

Figure 1 *Depiction of Andrea's curriculum work using CAF*

Andrea's Curriculum Assemblage Framework
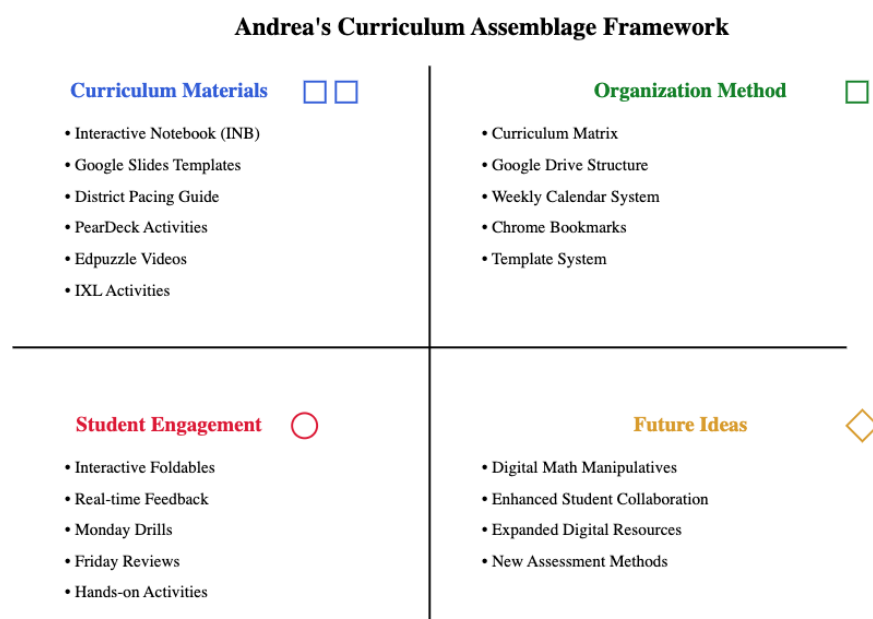
The four teachers in the study exhibited work in each of the four quadrants. Their ability to integrate these elements of curriculum planning provided opportunities for them to organize materials, enhance student engagement, and implement new curriculum materials. Each teacher in the study noted the importance of maintaining eye contact with the standards as they planned and innovated. Furthermore, they described how incorporating new curriculum materials and digital platforms instigated professional growth. The following section describes each quadrant and provides ideas for teachers to consider as they work in the designated quadrant.

Curriculum Materials

The teachers in the study demonstrated thoughtful approaches to selecting and adapting curriculum materials to create balanced learning experiences that challenge and engage their students. While drawing from diverse sources, including district resources, Teachers Pay Teachers, educational organization websites, social media, and grade-level colleagues, they carefully evaluated materials to ensure they created space for exploration, diverse perspectives, and democratic learning. Savannah, for example, exemplified this balanced approach through her responsive curriculum adaptations. She consistently modified content to match varying student mastery levels while providing multiple pathways for learning through both digital and physical modalities. This flexibility ensured students were appropriately challenged while having opportunities to explore content in ways best suited to their individual learning needs. Her varied assessment strategies gave students a voice in demonstrating their understanding, shifting away from a one-size-fits-all approach to student evaluation.

Andrea intentionally structured her curriculum to create multiple entry points for engagement and exploration. She explained that students learn in diverse ways, so she strives to provide multiple learning opportunities using a variety of

formats, including digital, paper-based, and hands-on materials. This approach honored diverse perspectives and learning preferences while positioning students as active decision-makers in their learning process.
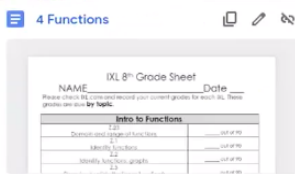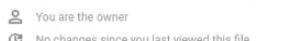
Cathy's work showed how curriculum choices can make room for student voice and real connections. Instead of just using textbooks, she made stuff that fit her students' lives. She explained that it's hard to find resources that are a perfect match, so she pulls bits and pieces from different places and changes things up, adding her own problems and local stuff. She's found that when she brings things closer to home, like using examples from their school or teachers, the students get way more into it. By using local examples and student experiences, Cathy helped all her students really get into the material and showed them that their ideas matter.

Together, these teachers demonstrated how thoughtful curriculum selection and adaptation can create learning environments balancing challenge with engagement while making space for exploration and diverse perspectives. Their approaches ensured materials met not only academic standards but also validated different ways of learning, provided multiple pathways for engagement, and supported democratic learning through student choice and voice.

Organization Method

Cloud platforms like Google Drive were instrumental in the teachers' assemblage of curriculum, enabling them to quickly adapt materials to support student needs and collaborate with colleagues. They used cloud platforms not just as a storage space but also as a dynamic platform for curriculum assembly and organization. For example, Andrea described using Google Drive for its functionality to create links, use templates, and copy and paste components from one place to the next efficiently (see Figure 2). She organized her drive by topic and unit, with each component linked back to her curriculum matrix. Moreover, she used templates to create new materials more efficiently. This organization allowed her to locate and modify materials to provide appropriate challenges while maintaining multiple entry points for student engagement with ease. Her template system enabled the rapid creation of differentiated materials that supported various learning preferences and exploration styles. Abby transitioned from static PDFs to Google Spreadsheets because it allowed her to "organize curriculum by units and topics, add links, rearrange lessons, and change the time frame for topics." Instead of using matrixes, Savannah leveraged Google Drive to organize her units and lessons in distinct folders.

Figure 2 *Glimpse of Andrea's curriculum matrix*

These cloud-based systems also fostered collaborative approaches to balanced curriculum design. For example, Cathy and her 6th-grade colleague used a shared matrix to develop weekly plans, dividing tasks between themselves to create diverse learning experiences. This collaboration enhanced their ability to create engaging materials that incorporated multiple perspectives and approaches to learning. By establishing these structured yet flexible systems on cloud platforms, teachers could quickly retrieve, adapt, and share curriculum materials supporting both academic challenges and student engagement.

Student Engagement

At the heart of the participants' work was student engagement. Each teacher in the study carefully crafted opportunities encouraging active participation while respecting different approaches to learning and expression. Andrea's implementation of Interactive Notebooks exemplified this balanced approach. By blending traditional paper-pencil materials with digital videos and hands-on activities, she created multiple pathways for engagement honoring different learning preferences (e.g., visual, tactile, auditory). These notebooks challenged students through rigorous content while supporting exploration through varied

representations and activities. Additionally, Andrea transformed vocabulary instruction into a collaborative learning space using Padlet, where students could engage with content in ways that felt authentic to them. Students built knowledge together, whether linking web resources, crafting personal explanations, or building upon peers' ideas. This approach positioned students as active co-creators of class knowledge, encouraging them to both challenge themselves and contribute their unique perspectives to the collective learning experience.

Cathy demonstrated how thoughtful structuring of classroom discourse could create space for diverse voices while maintaining academic rigor. She strategically balanced small group discussions, simultaneous response software, and whole group conversations to ensure all students had meaningful opportunities to engage with challenging content and share their thinking. This layered approach to discussion created multiple entry points for participation while encouraging students to explore and build upon each other's ideas.

Savannah leveraged Google Slides to create digital collaborative opportunities that balanced individual accountability with group exploration. Her approach exemplified how technology can be used to create spaces where students engage deeply

with content while contributing their unique perspectives to class discussions. These digital platforms created opportunities for students to challenge themselves and their peers while maintaining a supportive environment for exploration and growth. The teachers' approaches aligned with Bishop & Harrison's (2021) vision for middle-grade classrooms that support active and democratic learning while maintaining appropriate academic challenges. Their careful attention to balancing engagement with rigor and individual expression with collaborative learning created opportunities where all early adolescent learners could meaningfully participate in and contribute to the learning process.

Future Ideas

These four middle school teachers continuously integrated new ideas and curriculum materials. This adoption of curriculum materials pushed the boundaries of their current practices and often encouraged professional growth. Their openness to new curriculum materials and teaching methods expanded possibilities for student exploration while deepening their own professional practice. For example, Abby adopted a self-paced software students used on the occasional remote school days. Through this adoption, she was able to see the wide range of skill levels her students demonstrated. This encounter with a new curriculum material instigated a shift in her lesson plan designs. She began implementing more opportunities for students to work at their own pace and level. The introduction of student-created concept maps transformed traditional unit planning into a democratic learning experience— students actively tracked their progress and

shaped their learning journey as a class. This shift created space for diverse learning paths while ensuring all students moved toward mastery of core concepts.

These four educators developed responsive feedback loops—an iterative process where teachers try something new, see how students respond, and then adjust their teaching based on what they learned from their students. They would implement new curriculum material, a digital platform or tool, or district resources to obtain and adjust student feedback. When teachers implemented new tools or approaches, student responses provided valuable data informing future instructional decisions. This cyclical process of implementation, observation, and adaptation allowed teachers to refine their practice while remaining responsive to student needs. Such feedback loops demonstrated key dynamics in educational change, where each action influences future conditions and decisions (Howard & Thompson, 2016). Innovation is important not only to expand the curriculum toolbox but also to encourage professional growth (Moore et al., 2023). Furthermore, this feedback allowed the participants to identify gaps in their curriculum work and find alternative methods for ensuring all students were supported and had a voice.

Try It Out

Ready to reflect on your curriculum practices? Let's use the Curriculum Assemblage Framework (CAF) to examine your current approach and plan for growth (see Figure 3). This can be used as an individual exercise, or if you plan with a team, consider collaborating to complete the CAF. Here's how to get started:

Figure 3 *CAF to guide your work*

Curriculum Assemblage Framework

Curriculum Materials ☐ ☐	Organization Method ☐
Student Engagement ◯	Future Ideas ◇
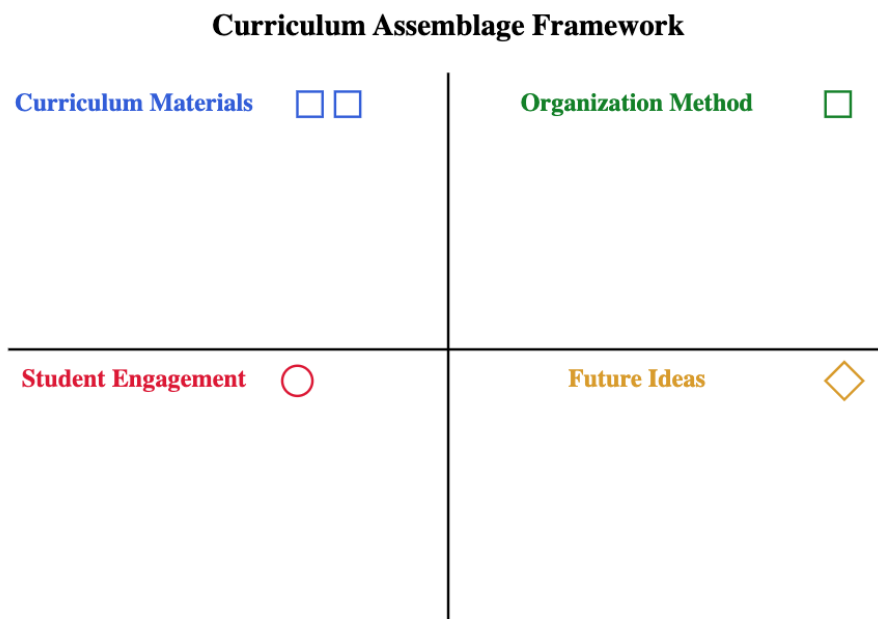
Step 1: Initial Reflection

Begin by examining your current practices in each quadrant of the framework. Jot down a quick bulleted list in each quadrant.

Curriculum Materials
Thoughtful resource selection creates opportunities for all students to see themselves in the curriculum and actively shape their learning experiences.

- What are your go-to resources?
- What gaps do you notice in representation within your current resources?
- In what ways do students have agency in choosing how to demonstrate their understanding?
- What opportunities do students have to take ownership of their own learning?

Organization Method
The strategic organization of curriculum materials not only saves time but also allows for quick adaptation to meet diverse student needs. Consider how your current system supports or hinders responsive teaching.

- How do you currently store your materials?
- How do you share materials and/or collaborate?
- What works well? What feels chaotic?

Student Engagement
Effective student engagement strategies must intentionally create space for all voices. Consider which student voices can be heard in your current classroom.

- How do you keep students actively involved?
- What structures support students who are traditionally less likely to volunteer?
- How do you incorporate student feedback about learning preferences and needs?

Future Ideas

Innovation in curriculum design opens new possibilities for student voice and democratic learning while spurring professional growth. Reflect on opportunities to expand your practice in ways that center student agency.

- What new approaches interest you?
- Which areas need improvement?
- How might you increase opportunities for student choice and voice?

Step 2: Implementation Plan

After your initial reflection, select one specific area for improvement. For your selected area, follow these steps:

1. Set a clear, measurable goal for the next month. Start small - implement your change in one unit or lesson first.
2. Schedule a weekly time to review and adjust your progress, documenting what works and what needs modification.
3. Get feedback from students and colleagues.

Remember: Change is most effective when it's manageable and purposeful. Focus on one area at a time and give yourself permission to experiment and adjust as needed.

Step 3: Track Your Journey

Use the CAF template regularly (monthly is a great place to start). Continuous reflection not only supports coherent curriculum design but also spurs professional growth. Set a goal with specific dates to return to the CAF template.

Conclusion

Effective curriculum assembly in middle school requires intentional organization, strategic resource integration, and consistent focus on student engagement. Through intentional implementation of the CAF, educators can create more equitable and democratic learning environments where all students feel valued and empowered. The framework's emphasis on continuous reflection and adaptation helps teachers identify and address barriers to participation, ensure diverse representation in curriculum materials, and create multiple pathways for student success. Additionally, professional growth occurs through innovation. By implementing the framework and strategies outlined in this article, educators can create more efficient and effective learning experiences for their students while maintaining their own professional organization and growth.

References

Bishop, P. A., & Harrison, L. M. (2021). *The successful middle school: This we believe*. Association for Middle Level Education.

Brown, D. F., & Knowles, T. (2014). *What every middle school teacher should know* (3rd ed.). Heinemann.

Drake, C., Land, T. J., Bartell, T. G., Aguirre, J. M., Foote, M. Q., McDuffie, A. R., & Turner, E. E. (2015). Three strategies for opening curriculum spaces. *Teaching Children Mathematics*, *21*(6), 346–353. https://doi.org/10.5951/teacchilmath.21.6.0346

Fleener, M. J. (2002). *Curriculum dynamics: Recreating heart*. Peter Lang.

Howard, S. K., & Thompson, K. (2016). Seeing the system: Dynamics and complexity of technology integration in secondary schools. *Education and Information Technologies*, *21*(6), 1877–1894. https://doi.org/10.1007/s10639-015-9424-2

Moore, N., Coldwell, M., & Perry, E. (2023). Exploring the role of curriculum materials in teacher professional development. In *Non-linear perspectives on teacher development* (pp. 135–151). Routledge.

Pepin, B., Choppin, J., Ruthven, K., & Sinclair, N. (2017). Digital curriculum resources in mathematics education: Foundations for change. *ZDM Mathematics Education*, *49*, 645–661. https://doi.org/10.1007/s11858-017-0879-z

Webel, C., Krupa, E. E., & McManus, J. (2015). Teachers' evaluations and use of web-based curriculum resources to support their teaching of the Common Core State Standards for mathematics. *Middle Grades Research Journal*, *10*(2), 49–64. https://eric.ed.gov/?id=EJ1144331

Hilary R. Tanck is an Assistant Professor at High Point University, where she leverages seven years of middle school teaching experience to inform her academic work. Her research centers on curriculum implementation and the effectiveness of Number Talks in mathematics education.

Growing an Intervention System

Authors: Jade Tornatore and Dr. Holly Williamson

Spring is upon us! Spring nurtures growth all around by providing the additional sunlight, rain, and warm temperatures needed for a myriad of plants to bloom and grow. Just as Spring brings favorable conditions for trees and flowers to flourish–a multi-tiered system of support creates an optimal school environment where students and staff can grow and thrive.

This article, the fourth in a four-part series, is aimed to help middle level educators conceptualize North Carolina's Multi-Tiered System of Support (MTSS) and better understand how the MTSS framework can be used to support school improvement, student academic success, and well-being. The first and second articles of this series discussed myths associated with MTSS and the recommended teaming structures to support the NC MTSS framework, respectively. The third article described the significance of solid core instruction as the foundation of MTSS. In this current piece (article four) we will continue to build understanding of multi-tiered instruction, specifically focusing on the intervention system. While this article can be read as a stand-alone piece, it is

recommended that readers peruse previous articles for additional context.

Universal Screening/ Mid-Year Data Review

MTSS is a continuous improvement model where school teams regularly analyze data and make adjustments to meet the needs of students, first by investigating the effectiveness of core instruction, then through examining the need for additional instructional support or intervention. To accomplish this, school-based MTSS teams typically utilize universal screening data considering school-wide academic, behavior, social, emotional, and attendance needs at beginning, middle, and end of year intervals. A universal screening system allows district and school teams to synthesize multiple sources of data to make predictions about the future instructional performance and educational outcomes of students. After examining the effectiveness of core instruction across the school and grade levels, school MTSS teams analyze the data to determine groups of students who may be at risk. Once potential risk is identified, school MTSS teams can then use data decision guidelines to determine how they can best distribute or tier their intervention resources to meet student needs.

What is intervention?

NC MTSS defines *intervention* as "The systematic and explicit instruction provided to accelerate growth in an area of identified need" (NC MTSS Glossary of Terms, 2022). By *systematic*, we mean that the instruction

provided for intervention follows a logical sequence and is sequential in its structure. *Explicit* describes a clear and unambiguous method of instruction that is intentional to address the identified needs. Intervention is designed to improve performance relative to a specific, measurable goal. These goals may be designed to address academic, behavioral, social, emotional, and/or attendance concerns. No matter the area of need, interventions are based on valid information about student current performance, designed to be applied in a meaningful and realistic way, and include methods for ongoing student progress monitoring.

Interventions can sometimes be confused with accommodations or modifications, remediation or differentiation, or even tutoring scenarios. However, true intervention includes the characteristics previously described, with instruction carefully designed to target a specific skill or set of skills. Unlike remediation, instructional intervention is not always directly tied to the North Carolina instructional standards themselves– instead, they address the underlying skills needed in order to be successful with those grade level standards. Effective interventions are backed both by research and evidence that confirms their effectiveness in improving the progress on identified skills.

Although intervention may be provided by educators who serve in a variety of roles and positions, it is best practice for MTSS teams to match staff to student intervention groups based on specialized training and expertise in the specific area of need. In addition, educators providing intervention should be adept in making instructional adjustments, providing frequent and constructive instructional feedback, allowing students ample opportunities for practice, and on-going assessment of student progress. Skilled interventionists ensure that

explicit instruction is delivered utilizing an evidence-based instructional method in a prescribed sequence.

Standard Treatment/Standard Treatment Protocol (STP)

NC MTSS recommends using a standardized approach to design and implement intervention. This can be referred to as a standard protocol or standard treatment protocol (STP). In most cases, educators are familiar with the recurrent skill needs and issues that students demonstrate in their particular grade span. For example, each year, middle grade math teachers may work to support students struggling with rational number reasoning or algebraic expressions. These are areas in which students entering higher grade math classes commonly struggle. We also rely on national research to identify areas across literacy, math, social, emotional and behavior where students in middle grades most frequently have difficulty. If we encounter these struggles year after year and trends from our universal screening tell us our students typically need additional support with certain skills, doesn't it make sense to get ahead of the struggles and create a proactive plan for how to intervene in these areas? That is exactly what a standard treatment protocol aims to do. NC MTSS recommends having a "standard treatment" for intervention, which specifically outlines our response (how we tailor instruction) so that we are prepared to intervene quickly when student needs arise.

NC MTSS recommends an STP that defines curriculum, instruction, environment, and data evaluation for each of the areas where students commonly experience needs and challenges, as shown in Table 1 (Intervention Matrix Rubric, 2022).

Table 1 *Intervention Matrix Rubric*

Instruction	Curriculum	Environment	Data-Evaluation
Daily instructional routines include:	Pre-Designed Curriculum materials include:	Intervention environment is set up to include:	Data-Evaluation planning for the intervention includes:
Explicit modeling of concepts/skills by the interventionist	Systematic scope and sequence of skills within a program that is multi componential	Instructor that is trained in the curriculum program and practices utilized	Progress monitoring: Using multiple measures to measure student and group response to intervention Academic Progress Monitoring Behavior Progress Monitoring
Opportunities for guided practice within each lesson, including scaffolding to move students to mastery	Controlled introduction of small sets of skills/concepts	Group size based on program recommendations	Diagnostic assessments or placement tests if universal screening system data alone is not sufficient for intervention matching
Multi-sensory activities included in guided practice (academics)	Opportunities for frequent review and practice of previously mastered concepts	Dosage: Time scheduled for the intervention is scheduled according to program recommendations;	Data decision rules for intervention entry, intervention intensification, group response and intervention exit
Intervention is designed to help students transfer skills and see connections between mastered and related skills	Multiple opportunities for student to respond and receive corrective feedback are incorporated	Frequency and Duration: How often and how long?	Information about who and how often data will be analyzed to determine next steps
	Resources for curriculum reviews: Reading League Curriculum Review CASEL Program Guide National Center on Intensive Intervention IRIS	Behavioral support: program incorporates self-regulation and executive function components and behavioral principles to minimize non-productive behavior	Fidelity Checklists are included.

A well-planned STP designates if the intervention is used to support supplemental (tier 2) or intensive (tier 3) needs and provides reference to aligned core guidance and resources. It should list the curricular materials to be utilized for intervention in a specific area of need and describe exactly how direct, explicit instruction would be provided for that particular intervention group. Additionally, an STP outlines recommendations regarding group size, duration of the lesson, and frequency of intervention sessions. The STP also outlines which data sources should be used for on-going progress monitoring, and to make decisions about intervention entry, exit, and intensification.

Typically, STPs are developed at the district level. District MTSS Teams often research, appraise, and procure evidence-based instructional resources such as curriculum, programs, instructional materials, and assessment tools based on resource mapping activities and through the analysis of district and school data indicating need. This work is used to develop district-wide standard treatment protocols. In some cases, school MTSS teams may then tailor the STPs based on school-specific data, and begin steps to implement those protocols. Before students can receive the instruction outlined on the STP, administrators must work with staff to develop a master schedule that includes protected time for intervention to occur. In addition, teachers or other staff must be trained to appropriately utilize data to identify groups of students or individual students that would benefit from the prescribed intervention. They also should receive professional development and coaching support on how best to deliver the intervention according to the STP. With proactive planning and training, effective interventions may be offered to students in a timely manner, resulting in positive outcomes for students and increased efficiency for school MTSS teams and PLCs. Teachers no longer have to waste time searching the internet for intervention ideas or resources since the instruction and support procedures are already defined through standard protocols.

If we think of Springtime and the plant metaphor mentioned at the beginning of this article, we can compare a standard treatment protocol to the plant tag that accompanies newly purchased plants. This little plant stake concisely, but thoroughly describes how we care for the plant. It tells us the plant needs 4-6 hours of sun each day. It also describes the type of soil needed and outlines the watering schedule we should follow to ensure growth. The recommendations on the tag have been determined by years of research and practical evidence which verify optimal growth of the plant under the specified conditions. In a way, this is the standard protocol for growing that type of plant. We want to provide a similar structure to

support our teachers and staff with growing our students in identified areas of need.

Intervention System

The standard treatment protocol is an essential resource to successfully providing interventions, but in an MTSS, the goal is to build a well-defined *intervention system* that is highly effective for meeting the needs of students, while also operating efficiently for the adults.

In a well-functioning MTSS, the multi-tiered instruction and intervention model is well defined throughout the STP. Teachers do not have to agonize over the identification and delivery of effective interventions for individual students, because vetted, evidence-based interventions proven to work well for most students with specific areas of need have been pre-designated and described in the standard treatment protocol. When developing STPs, district and school MTSS Teams thoughtfully explore and clearly define intervention programs, resources, and instructional guidance so that educators and staff can easily carry out small group or individual interventions. To do so, additional considerations are necessary for the STP to be applied in a practical and effective manner by school teams and staff. These considerations include determining intervention entry and exit rules, examining the fidelity of intervention, and ascertaining the effectiveness of intervention. The following paragraphs describe a few of the components particular to successful implementation of an intervention system.

Professional Development

If staff are expected to know how to deliver interventions outlined in the standard treatment protocol, then they need to be adequately trained to do so. Part of building

an effective, efficient intervention system includes determining the professional development needed to support those educators implementing intervention and designing a PD and coaching plan to address those training needs.

When planning intervention systems at the school level, school MTSS teams examine patterns in their student data to determine trends by areas of need, grade level, etc. They also study school schedules, staff capacity to deliver the STP (expertise and availability), and inventory the resources available to support the provision of interventions. Just as the District MTSS Team needs a professional development plan to ensure successful intervention, so should the school. Throughout the year at both district and school levels, teams will need to re-evaluate and update their PD plan as capacity is built, feedback is gathered, and/or new needs are identified.

Intervention Entry Rules

In order to create effective intervention groups, districts set guidelines for identifying academic, SEB, and attendance risk, utilizing the assessment tools they have available. Based on district-wide data and the technical specifications of screening tools, districts may generate recommendations that specify thresholds, where students falling below a certain level or score on a screening assessment should be considered "at risk". These general guidelines are used by school problem-solving teams as they determine how support will be provided within their schools and which students are most likely to need supplemental or intensive instruction.

The level of risk present within each school or grade level will need to be examined by school MTSS teams. Students considered for potential risk do not always immediately receive support through

supplemental or intensive intervention. In some situations, the number of students identified for intervention may be so great that it makes most sense to provide support to all students through intensifying core instruction. This is helpful in situations where the number of students not meeting grade-level expectations exceeds the school's resource and staffing capacity to provide intervention through small group or individual instruction. In cases like these, the intervention support is then pushed into the core classroom, where a greater number of students will have access to and benefit from the intervention. By intensifying core instruction for all students and focusing supplemental and intensive intervention resources on students with the greatest need, schools can create more manageable intervention systems, and have confidence that students identified for supplemental and intensive support are receiving both quality core instruction and well-designed intervention to meet their needs.

Furthermore, certain intervention programs may have their own recommendations for intervention appropriateness (entry) and schools must work with their students and staff to adhere to those as strongly as they can. Teachers should not make student support decisions in isolation. NC MTSS recommends the use of team-based decision making using clear intervention entry guidelines. One example of this is to set additional criteria for intervention entry through what is known as *multiple gating*. This involves using existing data to determine risk and then using another piece of data to confirm that risk or match to intervention. In this situation a team may look first at an adaptive computerized assessment to determine risk. If there are larger number of students presenting with risk, the team may need to adjust core and look to another data source (or gate) to determine how intervention

resources will be tiered. Intervention resources may then be designated to only those students presenting at risk on the computerized screening assessment *and* not passing an end of grade test. This guidance to look at multiple gates or data sources in a given scenario should be defined ahead of time as part of the intervention system so that when needs arise, school teams know how to quickly adjust and make decisions.

Intervention Integrity

Once plans for professional development and intervention entry have been established, school teams must also consider measures to ensure intervention integrity. What does intervention integrity mean? Simply stated, it means that a specific intervention plan or program is implemented exactly as designed. Educators and staff providing instruction demonstrate intervention integrity by providing intervention per the guidance of the standard treatment protocol and in alignment with the training they received for that specific intervention. Instruction is delivered as shown on the intervention plan, with close attention to intervention frequency, session duration, group size, and adherence to instructional protocols.

School MTSS teams should then monitor intervention delivery, continuing to support teachers and staff by observing the intervention in practice and providing feedback as needed. This can be accomplished by school MTSS teams setting a schedule for routine checks and observations. Additionally, time should be allocated for school MTSS teams to analyze the intervention observation data and problem solve any barriers preventing staff from delivering interventions as intended. Challenges in intervention fidelity may link back to the intervention requirements of the STP, complications with the school

schedule, or the need for more professional development. All of these aspects need to work together systematically, thus illustrating the need for district and school MTSS teams to spend adequate time, attention and resources to building an intervention system rather than simply creating a menu or list of interventions.

Intervention Effectiveness

Once school teams feel confident that interventions are consistently implemented with integrity, as previously described, they can then begin to examine the effectiveness of the interventions provided. In order to make this determination, district and school MTSS teams need access to consistently collected implementation data and student progress monitoring data. The specific data to be collected should be described within the standard treatment protocol for each area of need.

As staff provide intervention and collect data, school based MTSS teams periodically review the data. First teams examine implementation data, considering whether the intervention has been provided as prescribed in the STP. For example, the team may examine school-wide or grade level specific data to assess whether the number of intervention sessions provided and intervention session time matches the number of sessions and session time described in an intervention group's instructional plan. They may consider the number of days students or staff were absent or if there were natural disruptions such as holidays or long breaks during the intervention cycle and discuss how this impacts student growth.

After examining the implementation of the intervention protocol itself, teams can assess intervention effectiveness data. When a school utilizes a certain intervention protocol, they want to determine if that

intervention is being successful for the entire group or population that is receiving that intervention. For example, if 100 students across grades 6-8 are receiving a fluency, vocabulary and comprehension intervention, the team would ask, "*Are the majority of students receiving this intervention showing progress?*" This is to ensure the efficacy of the intervention as a whole. In order to say that an intervention is effective, the majority of the students (75-80%) should be making progress. If the majority of students are not making progress, then the team should collaboratively problem-solve to address issues with the design or implementation of the intervention protocol before making decisions regarding individual students. (Data/Evaluation in a Multi-Tiered System of Support, 2022)

If the intervention is effective for most of the students in the group, then teams can further examine the intervention effectiveness for smaller groups or individuals. Generally, assessment and progress monitoring tools provide graphable data that visually indicates a student's response to the instruction provided. This data can be utilized to study growth across groups of students or individual students, compare student progress to state or national norms, and examine rates of improvement, or other criteria. District/School MTSS teams specify tools to monitor interventions within an STP, and then they must further establish data decision rules and guidance for how the data is to be utilized within their system of support.

When making student support decisions, it is important to note that all data (e.g. classwork examples, tests, intervention-based work, progress monitoring data, computer adaptive assessment, observation data) gathered regarding student progress is relevant and should be given equal consideration. Additionally, current research indicates that length of time of intervention

rather than number of data points collected should be the primary method of determining when to assess a student's response to intervention. "Data point rules are used to see if they made progress or not but these decisions cannot be made if the student has not been given enough time in the instruction to make progress (Data/Evaluation in a Multi-Tiered System of Support, 2022).

Teachers and/or staff deliver interventions, collect data, and contribute as an important member of the decision-making team, and ultimately determine the effectiveness of the instructional support offered to students. These roles are most easily accomplished when district and school MTSS teams create an intervention system which includes data decision rules and guidance based on instructional research and the recommendations of the assessment tools that they are utilizing.

A clearly defined intervention system enables MTSS teams to effectively utilize data to recognize the need for adjustments to core instruction, pinpoint potential risk and student need for additional intervention, and determine how to best deliver intervention. Just like our beautiful summer gardens which take time to sprout and grow, intervention systems must be carefully planned and cultivated in order to produce fruitful outcomes. NC MTSS recommends both district and school teams work together to build a framework that best meets the needs of teachers and students. The North Carolina Department of Public Instruction, employs Integrated Academic and Behavior Systems (IABS) Consultants that partner with district and school teams to implement MTSS. A great first step in the work of implementing MTSS or in building an intervention system is to take part in the Facilitated Assessment of MTSS (FAM). There is a facilitated assessment for both the district team (FAM-D) and for school teams

(FAM-S). These facilitated self-assessments enable school teams to look deeper at a series of items aligned with successful MTSS implementation and then pinpoint both areas of relative strength and potential spaces for growth. With this information in hand, districts and schools may then craft a school improvement plan designed to facilitate student growth.

For more information on NC MTSS, visit: https://www.dpi.nc.gov/districts-schools/districts-schools-support/integrated-academic-behavior-systems

It is important to note that when individual students are discussed, the problem-solving team has an obligation to consider whether the student is suspected of having a disability. If so, the continuum of teaming extends/expands to include the IEP Team for an initial referral.

References

Integrated Academic and Behavior Systems, North Carolina Department of Public Instruction. (2022). *Data/Evaluation in a Multi-Tiered System of Support.* https://drive.google.com/file/d/1AHq1Ot44MduNEsfU_NjftqWBai40rDmR/view

Integrated Academic and Behavior Systems, North Carolina Department of Public Instruction. (2022). *NC MTSS Glossary of Terms.* https://drive.google.com/file/d/1LFUZQ8FlTfXL2kfigifVuWCs4ewfHBLz/view

Integrated Academic and Behavior Systems, North Carolina Department of Public Instruction. (2022). *NC MTSS Intervention Matrix Rubric.* https://drive.google.com/file/d/1Qyj0TvFXVYANXH_dqCcfVTBKEpA0mSMZ/view

Jade Tornatore is a 20+ year North Carolina educator who has dedicated himself to the "on the ground" implementation of a multi-tiered system of support (MTSS) serving as part of the Integrated Academic and Behavior Systems (IABS) Team at NCDPI.

Holly Williamson believes in the implementation of the MTSS framework to support student needs and promote overall school improvement. An educator since 2001, she currently serves as a regional consultant with NCDPI's Integrated Academic & Behavior Systems (IABS) Team, assisting districts and schools with this effort.

Sharing and Celebrating the Leadership of North Carolina's Teachers

Author: Sarah Lefebvre

Across North Carolina, teachers and other school staff are stepping into leadership roles that extend beyond their classrooms, transforming education for their students and peers. This leadership takes many forms, from creating innovative peer observation systems to spearheading projects that address specific challenges in schools. These efforts not only improve educational outcomes but also inspire others to take on leadership roles of their own. As the 2024 Burroughs Wellcome Fund Southwest Region Teacher of the Year, I've had the privilege of observing these impactful practices firsthand and reflecting on how teachers can harness their potential as change agents.

Teacher Leadership Across North Carolina

In my role, I've been able to visit schools and witness the extraordinary work of teachers and staff throughout the Southwest region and the state of North Carolina. These experiences have underscored the creativity and resilience of educators who are finding solutions to complex problems. For example, at Lincolnton Middle School, the school social worker, Marsha Beattie, has created a mentoring program that focuses on real-world skills with a social-emotional component. The members of Team Beattie support one another in reaching academic and behavioral goals while learning life skills that help them give back to their school community, including cooking breakfast for the school staff during teacher appreciation week. At A.L. Brown

High School teachers are finding creative ways to incentivize reaching academic and attendance goals, which includes an in-house barber shop experience for students. Brandon Lane, the music teacher at Landis Elementary, has exponentially increased community involvement in curriculum night by tying it to a student-led contra dance.

There are many commonalities that tie NC's public schools together. At every school I've visited, I've seen staff who are extremely passionate about the profession and their students. But I am also seeing first-hand how each school, district, and region has its own unique personality and its own unique challenges. As a teacher in a large district, I never imagined the issues faced by schools like Ocracoke School, the Pre-K through 12 schools on Ocracoke Island. When touring the school, Principal Jeanie Owens opened my eyes to issues like taking the four-hour ferry to away basketball games, having the whole school go home for lunch each day, and meeting the curricular needs of all students with a small staff. On the other side of the state, I spoke to teachers and principals in Waynesville, Rutherfordton, Asheville, and Boone, who were pulling together to contact students and provide resources and shelter in the wake of Hurricane Helene. These school leaders face adversity head-on and are prime examples of how teachers step up to meet the needs of their students and communities.

My journey as a Regional Teacher of the Year has also deepened my understanding of how to advocate for my students and the teaching profession. I have been given opportunities to speak to and

encourage hundreds of high schoolers who are considering education as a profession. I have also gotten to speak with local civic groups, like the Kiwanis and Rotary clubs, about the ways they can support local schools. This title allowed me to share my passion for relevance in middle-grade math instruction through NCDPI's Promising Practices Clearinghouse and a Lunch and Learn session at the AIM conference last fall.

My team is learning more about educational policy through our participation in the Educational Policy Fellowship Program. This experience has been transformative, equipping me with the tools to advocate for policies that support teachers and students alike. Engaging with stakeholders, analyzing policy impacts, and collaborating with other fellows have shown me how educators can play a pivotal role in shaping the systems that govern their work. In the coming year, I'll take this knowledge to Raleigh, NC and Washington, D.C., where I'll have the opportunity to speak directly with lawmakers about the realities of education in our state.

None of these incredible opportunities have been experienced alone. The NC Teacher of the Year process is unique to other states. While only one regional finalist is ultimately selected as the state Teacher of the Year (the incomparable Heather Smith from the Western Region was recognized with this title from my cohort), we get to serve together as a team for a year of service. The other regional finalists are visiting schools across their regions as well, and we are using these experiences to inform our advocacy during our year of service and beyond.

Emerging as a Leader

Take Informed Action

So, how can other teachers step into leadership roles and begin their own journeys? First, recognize that leadership doesn't require a formal title! You do not need a plaque or trophy to address issues in your school or community. Leadership begins with identifying a need and taking action, like the teachers and staff I mentioned above. As a teacher, you are uniquely positioned to lead because you understand your students and community better than anyone else. Start small— perhaps by leading a professional development session or organizing a school-wide initiative or incentive. Consider partnering with local organizations (businesses, civic groups, religious organizations) to enrich student learning or meet student needs. It is also important to remember that you do not have to lead alone. Find a colleague or team of colleagues that share your desire for change and work together to accomplish your goal.

Continue to Learn and Grow

Second, seek opportunities for professional growth. Programs like the Educational Policy Fellowship can provide the knowledge and networks needed to expand your impact, but that is not the only option. Teachers can learn how to advocate through professional development opportunities like workshops, conferences, online courses, joining teacher advocacy organizations, collaborating with colleagues, and actively participating in school committees. Teachers can also stay up to date on issues and educational policies by following the work of EdNC and the Public School Forum. Each step in the learning process will help you deepen your understanding of the issues, sharpen your focus, and build the confidence to advocate for yourself and your ideas.

Share Your Story

Finally, share your story. The first goal our Regional Teacher of the Year team set for ourselves was to use our voices to positively inform others about the great things happening in the public schools of North Carolina. We do that by sharing the stories of the teachers, schools, and districts we visit. One of the most powerful ways to inspire others to act is by sharing your journey, successes, and lessons learned. By doing so, you open others' eyes to the needs of your students while inspiring them to advocate for their own students.

Teachers are the backbone of our education system, and their leadership has the power to drive meaningful change. By observing, learning, acting, and sharing, you can have an incredible impact on not just your students but on public education as a whole.

Sarah Lefebvre is a dedicated Curriculum Facilitator and Secondary Math Specialist in Union County Public Schools, from which she is a proud alumna. Sarah graduated from Monroe High School in 2001 and went on to earn a BS in Elementary Education and an MA in Special Education from Appalachian State University.

With 17 years of teaching experience, Sarah has been recognized for her outstanding contributions to education. She works to ignite a passion for mathematics and to foster growth mindsets among her students and fellow educators. She was honored as a 2023 NCCTM Outstanding Secondary Mathematics Teacher and named the 2023 Union County Public Schools Teacher of the Year. Currently, Sarah serves as the 2024 Burroughs Wellcome Fund North Carolina Southwest Region Teacher of the Year.

Beyond the classroom, Sarah enjoys spending quality time with her husband, daughter, and dog. They often bond over card games, road trips, and cheering on their favorite teams. To recharge, she loves doing all things crafty.

Harold E. Winkler Middle School: An IB World School

Author: Rebecca Phillips

Harold E. Winkler Middle School, an International Baccalaureate (IB) World School, opened its doors in August 2011 with a mission to provide a high-quality, challenging, and globally minded education for students in 6th through 8th grade. Today, Winkler serves over 1,100 students and is home to a dedicated staff of more than 100 professionals. The school is named in honor of Harold "Butch" Winkler, the former superintendent of the district who served from 1990 to 2009. His vision of excellence in education continues to influence Winkler's philosophy and its commitment to developing inquiring, knowledgeable, and caring students.

At Harold E. Winkler Middle School, it is a common understanding that the process of learning is ongoing, and we are committed to growing together as a school community. We strive to ensure this is reflected in everything we do—from our inquiry-driven curriculum and collaborative professional development to our focus on service learning and extracurricular activities.

Our IB World School status is a key component of our mission to provide students with a globally focused, high-quality education. By fostering curiosity, critical thinking, and a commitment to making a difference, Winkler staff work to prepare students not only for success in school but also for the challenges and opportunities they will face in the world as their futures unfold.

We are proud to be a school that values continuous growth, collaboration, and a deep commitment to both academic excellence and personal development. Whether it's through our rigorous academic programs, professional development initiatives, or service-learning projects, Winkler is dedicated to helping students thrive in every aspect of their education and lives.

In addition to Winkler's designation as an IB World School, the school has earned the honor of being named a National Forum School to Watch, an accolade that recognizes schools for their commitment to academic excellence, developmental responsiveness, social equity, and organizational structures and processes. This recognition highlights Winkler's focus on providing a world-class educational experience that challenges students and supports their growth in all areas—academic, social, and emotional.

Being named a National Forum School to Watch is a testament to the hard work and dedication of our teachers, staff, and students. It reflects the collaborative culture at Winkler, where everyone works together to provide a safe, nurturing, and intellectually stimulating environment. Winkler continuously strives to be recognized for its innovation, high academic standards, and emphasis on creating a positive school climate.

Many things make Winkler Middle School a unique place for staff, students, parents, and community partners. One thing that Winkler staff takes pride in is an emphasis on helping students understand not just *what* they are learning but *why* it matters. This approach is at the heart of the IB program, but also the heart of dedication to the growth and development of students. All students are encouraged to ask questions, make connections across subjects, and explore the broader implications of their knowledge in the world around them.

The continuous goal is to develop critical thinkers who are curious about the world and can apply their learning to real-world situations. This philosophy is central to Winkler's commitment to preparing students for success in an increasingly interconnected world.

At Winkler, we also believe that continuous learning is essential for both students and staff. One of the distinctive features of our school is our commitment to professional development, which plays a vital role in ensuring that our teachers are always improving and innovating in their practice. Each Friday before school, our educators participate in *Wolfpack Workshops*, a series of staff-led professional development sessions.

In these workshops, teachers take on the role of experts, sharing their knowledge and best practices with one another. This collaborative approach not only strengthens our teaching community but also enhances the overall learning experience for our students. By fostering a culture of shared expertise, we ensure that our staff remains at the forefront of educational strategies, making Winkler an inspiring place for both teachers and students to grow.
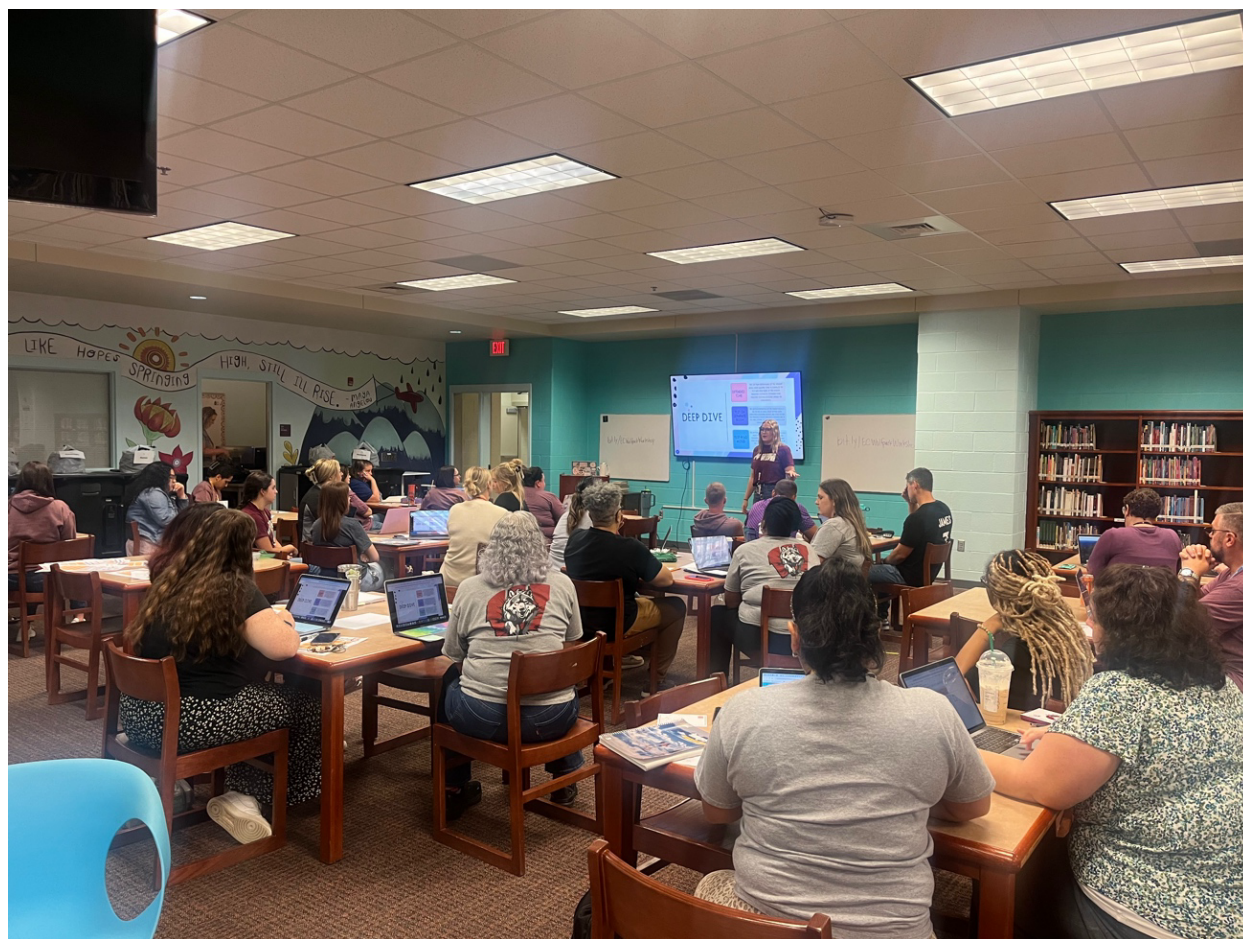
Harold E. Winkler Middle School teachers engaged in a Wolfpack Workshop.

In addition to an academic focus, Winkler offers a variety of extracurricular activities to help students connect with their peers and discover new interests. Each month, Winkler students participate in *Club Day*, where students can choose from over 40 clubs, ranging from Robotics and Art to Cricket, Dance, History, and Community Service. These clubs allow students to explore their passions, develop new skills, and form meaningful friendships with others who share similar interests.

Club Days provide a valuable opportunity for students to build relationships with their peers outside of the classroom, helping to foster a sense of belonging and community within the school. Whether they are working on a creative project, learning a new sport, or volunteering for a good cause, students have the chance to engage in activities that contribute to their personal growth and social development.

Another belief shared at Winkler is that learning should extend beyond academic performance and include a commitment to community and service. As part of the IB program, Winkler emphasizes service learning as an integral part of students' educational experiences. Service learning helps students understand the importance of making a positive impact on the world around them while developing skills such as empathy, leadership, and problem-solving.

One of the key components of our service-learning program is *8th Grade Community Projects*. This year-long project challenges 8th-grade students to identify a social or environmental issue in their community, conduct research, and take meaningful action to address it. The project not only encourages students to apply their academic skills to real-world problems but also fosters a deep sense of responsibility and civic engagement.

In addition to the 8th Grade Community Project, Winkler offers other service-learning opportunities across grade levels. These initiatives help students build a strong sense of social responsibility while contributing to the well-being of their local and global communities.

In conclusion, Harold E. Winkler Middle School is more than just a place of academic learning; it is a collaborative, supportive community of scholars, staff, parents, and community members that encourages growth, inquiry, and service. Through our commitment to the IB philosophy, staff development, extracurricular activities, and service learning, we aim to create well-rounded individuals who are ready to make a positive impact on the world.

Rebecca Phillips is the proud principal at Harold E. Winkler IB Middle School in Concord, NC. With 18 years of experience in education, she has spent the last 9 years in middle school. Throughout her career, Rebecca has been dedicated to fostering a positive and nurturing learning environment where students and educators alike can thrive. She is passionate about promoting academic excellence, social-emotional growth, and preparing students to become responsible, engaged citizens in an ever-changing world.

Narratives, Triangulation, and Tech: Proven Strategies for Application & Implementation to Keep History Relevant & Engaging in the 21st Century Middle Level Social Studies Classroom

Author: Brett Little

What on earth possessed John Adams to represent British soldiers in court after the Boston Massacre? When five American colonists were killed by British militia who fired into the crowd, Founding Father John Adams could have easily denied those men the right to fair treatment and representation. However, this is not what happened. The soldiers' case was a question of character, dignity, and equal justice under the law for Adams, so he chose to represent them. This decision established a precedent that would later influence the principles the United States would found itself upon, including due process, civility, and fairness. It also laid the groundwork for future actions of Adams, including the establishment of the peaceful transfer of political power from one party to another for generations to come (Sanchez & Mills, 2005).

The point of this anecdote is that these are *exactly* the type of compelling stories that middle level educators could be leading the day's lessons off with. Not only do these value-laden chronicles hook our students—inviting them to investigate history for themselves—but the presentation of ethical dilemmas within them reveals important insights about our nation's past. Furthermore, they create opportunities for teachers to use the lessons of history to highlight admirable traits modeled by individuals like John Adams. Narratives like these have a powerful effect because they nudge adolescents toward behaviors like being fair and treating others with respect, while at the same time teaching them a bit of interesting history. They impart a bit of wisdom into real life complexities and human qualities because decency is at the center of the story, and when done right, the art of storytelling, in terms of civil discourse, "has a huge payoff if done properly and consistently" (Sanchez & Mills, 2005, p. 274).

Stories such as these reflect current challenges present in relevant contemporary issues and accomplish what a textbook excerpt cannot—serve as an example of how to treat people respectfully-both personally and professionally. Even still, according to the American Historical Association's survey of U.S. history teachers in 2023, 52% of teachers use a hard copy textbook to teach U.S. history (American Historical Association, 2024). But whereas a textbook may point out the date, weapons used, or what took place preceding the Boston Massacre, that textbook might miss those dramatic personal accounts that make investigating historical narratives so engaging by drawing from primary sources such as letters or diaries like where the Adams narrative is derived from. Often, these sources color in empty spaces historians have questions about, which is why organizations like the Library of Congress and the Smithsonian Institute now provide primary source professional development modules and inquiry kits/sets for educators. Additionally, scholastic experts have been increasingly trending toward a primary-source-based pedagogy (Garcia et al., 2019), so there are now many

digital academic databases that are easily accessible, and these archives can provide clearer answers than a textbook ever could. And wouldn't it be convenient for teachers to have a comprehensive list of these databases all in one place? Well, this is exactly what I have attempted to do by creating a website that contains these resources and more—so that first year social studies teachers can have some sense of direction.

Introduction

My name is Brett Little, and the story concerning John Adams was found in one of many valuable scholarly articles I came across for Appalachian State's Middle and Secondary Teaching Graduate Certificate Program during the course of my research. This extensive investigation culminated in a paper and then a website which includes three specific middle level history teaching strategies, along with links to websites so that first year teachers will not be in the dark when they first set foot in a classroom. The creation of this website is my attempt to help other first year middle level teachers by providing a catalogue of ready-made resources to teach history, and the research process I used attempted to find solutions to two problem questions:

- A. What are some specific pedagogical content knowledge best practice recommendations for teaching history to middle school students based on research from scholars in the field of education?
- B. How can middle level students study history in a way that prioritizes empathy, objectivity, and 21st century digital engagement?

One of the reasons I chose "History as Stories vs. History as Events" (Little, 2024) for my research topic is because there has never been a greater need for this area of focus, and subsequent debate about it, than right now. "Just 20% of fourth graders, 18% of eighth graders, and 12% of twelfth graders achieved proficiency in U.S. history on the National Assessment of Educational Progress" (Robertson et al., n.d., Primary section). Additionally, The Nation's Report Card indicates a decline in average U.S. History scores for 8th graders by nearly 10 points since 2014 (pre-Pandemic!) (The Nation's Report Card, 2023). This result held true for the themes of democracy, culture, world role, and technology, and the declines were especially pronounced among lower-performing students. A final, but important piece of evidence for the need for this research is that "Eighth grade U.S. history scores continued a previous pattern of decline, reaching the lowest levels since the mid-1990s, and civics scores declined for the first time ever" (Kaufman & Diliberti, 2023, para. 1).

In response to these and other challenges facing middle grades social studies education, I designed my website around three strategies that my research found aligned with the North Carolina Standard Course of Study, especially with regard to the Inquiry Strand for grades 6-8. Narratives, triangulation, and science/tech are the three methods, according to experts, that keep history relevant and engaging. "Assessing the credibility of primary and secondary sources", "constructing compelling and supporting questions", "identifying central themes/lessons", and utilizing a "range of civic approaches" are all inquiry indicators which tie-in to each of the three strategies listed on my site (NCDPI, 2021, p. 2). Students in the 21st century might not become historians, but they still need to learn how to "find valid information, analyze it from multiple perspectives, and communicate it clearly" (Cooper, 2014, Symphonic section).

The Importance of Historical Narratives

Many educators recognize, and research supports, that incorporating narrative into the classroom is conducive to improving student learning and engagement (Ramsey, 2017). This means museum/historical site visits, book clubs, read-alouds, and creative-writes that bolster critical thinking truly work. These activities invite students to put themselves in someone else's shoes to see what something might've meant to a person in a certain time period (Ramsey, 2017). Focusing on individual stories is a credible strategy because, for instance, instead of generalized military tactics, reading about it from the perspective of someone who was there is better. "Describing what trench warfare entailed is one thing but reading a firsthand account of a soldier who lived through it-exposed to rats and standing in frigid water amidst piled-up bodies-is another" (Leonard, 2024, Individuals section). For example, Rosa Parks' refusal to give up her seat, John Brown's raid on Harper's Ferry, or the assassination of Franz Ferdinand are all stories with riveting starting points that center on one individual. Similar to the Understanding by Design method Wiggins and McTighe (2005) advocate, teachers can work backward, then upward through the taxonomy levels. "This approach is similar to a TV crime show that reveals the body in the first minute and then spends the rest of the show assembling evidence" (Leonard, 2024, para. 15). Furthermore, according to Sarah Cooper of MiddleWeb, "Adolescents see history through the eyes of individuals and then move outward to larger implications and patterns" (Cooper, 2014, Symphonic Skills section). Author Daniel Pink (2006) supports this as well and points out that students must learn the concept of symphony, or "putting the pieces of a puzzle together" by understanding individuals' motivations or fears at a particular moment in history (Pink, 2006).

Elias (2010) found that fictional books about history engage middle schoolers by providing students with greater feelings of understanding through perspective-taking, and a more comprehensive knowledge of the historical period. So along with mastering transferrable skills for the real world like research, teamwork, and presenting orally, they were also able to analyze and contextualize their research. Elias concluded by stating that students exhibited "substantial engagement, investment, connection to the material, and very high scores on class work, scrapbooks, and their final performance scores" (Elias, 2010, p. 53). The students under observation also displayed empathy and compassion after the fact (likely a positive byproduct of the narrative approach).

Benjamin Barbour of Edutopia advocates the use of fictional books as well. He utilizes dystopian novels like *1984*, *Brave New World*, *Fahrenheit 451*, *The Giver*, or *Hunger Games* to teach the Bill of Rights. He explains that when James Madison wrote it, "he attempted to prevent the very future that many dystopian authors fear" (Barbour, 2019, par. 3). These fears had to do with propaganda, restrictive laws, and state-sanctioned violence. And so, by connecting the freedoms we often take for granted to the rights lost in the novels, it gives students the opportunity to explore topics like the right to privacy, freedom of the press, the right to protest, and examine controversies around laws such as the Patriot Act.

A final way that students can learn through historical narrative is by bringing in familial artifacts like authentic documents or

heirlooms which may spur newfound understanding between different cultures in a classroom or even forge lasting bonds with family members. AMLE recommends that middle schoolers dig into memorabilia, letters, or photographs like these so they can wrestle with complicated issues in a legitimate way (AMLE, n.d.).

Triangulation as an Instructional Strategy

Educators can also teach history using a method called triangulation, which is events-based. Johns Hopkins historian Nathan Connolly wants humans to evolve from arguing from one perspective's point of view to progress to what contemporary scholars are doing more often—primary source triangulation (Keiger, 2018). This is the process of bringing in different points of view on the same event in order to be as accurate as one can. Gifford's (2011) research concluded that history is interpretive, not objective, so one must corroborate and synthesize from multiple sources that contain different perspectives to understand what truly occurred. One can do this by bringing up voices in history that have been traditionally suppressed, and by "balancing various accounts" through rigorous investigation to see which sources are the most reliable (Keiger, 2018, para. 4). Additionally, Yilmaz (2008) supports the assertion that "every historical event is open to multiple interpretations" (p. 45), and that it is not just subjective, one-person stories that are biased, so to always be vigilant. Therefore, my website has enumerated a variety of archives for historical literacy to empower students to become more objective citizens and have more informed discussions. The Inquiry Strand states that students must investigate "multiple perspectives" and the "origin and authority" of sources, and the resources on my site

invite them to do just that (NCDPI, 2021, p. 2).

One such resource I list, the Zinn Education Project, offers alternative voices from history that students can triangulate from like lesser-known civil rights leaders and civilian perspectives from poverty in war-torn countries (Zinn Education Project, 2023). The Gilder Lehrman Institute, Yale's Avalon Project, and the National Archives are all examples of databases I have catalogued which offer credible primary sources where students can practice triangulation. Teachers can also use these nonpartisan sites for Webquests, interactive notebooks, or portfolios for inquiry-based learning units.

In addition, I have embedded links for primary sources on the website that are not traditionally seen in social studies classes that reflect diversity and inclusion. Sources such as Chinese Commissioner Lin's letter to Queen Victoria on the opium trade, Benjamin Banneker's letter on slavery and human equality, and a Francis Ellen Watkins Harper poem on education during Reconstruction-all examples from the site *TeachersPayTeachers.com*. Practicing this sort of primary source analysis in order to "connect emotionally and understand another person's perspective and motivations" works wonders for forging empathy and understanding (Robertson et al., n.d., Empathy section).

In summary, triangulation helps students become more open-minded, helps repair strained relations between cultures, and gets students to see things in a broader fashion than just a strict dichotomy of good and evil. With all of this comes greater historical accuracy and a larger historical archive to work from. By trying to understand an individual's thought process and the complexities of events in prior time periods, students can hopefully begin to take "informed civic action" to affect meaningful

change in their communities, which is an important goal of the NC Inquiry Strand (NCDPI, 2021, p. 2).

Integrating Technology into Social Studies

The Inquiry Strand states that a "range of civic approaches" should be used, so utilizing technology/internet applications and stressing science and innovation throughout history is the final impactful strategy featured on my site (NCDPI, 2021, p. 2). Fisher (2012) offers up an insightful approach to ingraining historical lessons, concepts, and figures into young adolescents' minds. One major detail Fisher (2012) noticed is that students were very interested in the idea of technological advancement. Adolescents are surrounded by cars, computers, iPhones, social media, and AI-and are usually interested in it. They are also excited about possible progress in tech, and in their view, if a culture did not have it, then that culture was ignorant. Therefore, Fisher says to focus on the scientists, inventions of different cultures, and to emphasize technology in order to keep students engaged (Fisher, 2012).

One benefit of utilizing technology is that it can more readily gain/keep adolescents' attention. Discussion apps I list on the site such as YoTeach, Voxer, or Mentimeter can be used to stimulate recall, brainstorm, practice civility, or conduct polls/surveys. Adolescents are also somewhat competitive by nature, so any site that includes history games will help foster the type of engagement Fisher (2012) refers to. On my site, I have catalogued a wide variety of game-based resources on the "Tech/Science" tab that are tailored to the NC standards. *iCivics.com* and *Mr.Nussbaum.com* offer digital civic libraries that have curriculum resources, educator tools, and video games that

improve civic skills and dispositions. ICivics encourages taking informed action to address national and global challenges which the NC Inquiry Strand (NCDPI, 2021) advocates, and iCivics lessons can also be tailored specifically to NC standards. Additionally, I have catalogued 3D museum galleries and exploratory sites like the Louvre, Be Washington, Google Expeditions, Rekrei, Mission US, and Nearpod which satisfy the "investigation" Inquiry indicator through exploration of specific times and places in history (NCDPI, 2021, p. 2).

Finally, *Sciencehistory.org's* scientific biographies page is listed on my site, which can engage students by focusing on inventions from history, as well as teach about the lessons and struggles from various scientists' life stories in terms of what to do or not to do in order to be successful. This satisfies the indicators of "secondary sources," "evidence-based claims," and "multiple perspectives" from the Inquiry Strand (NCDPI, 2021, p. 2), while at the same time keeping students engaged.

Key Concepts and Conclusion

It is vital for educators to review the consequences tab on the website about how each of the three strategies presented manifest in society and the real world. These insights contain information about how interdisciplinary overlap is possible, how more civility can be achieved, and the positive and negative impacts of implementing a certain solution in the classroom. Seeing how the implications of each strategy tie-in to the NC Professional Teaching Standards (NCDPI, 2018) of promoting a respectful environment, teaching life/career skills, and giving back to one's community through leadership, can be helpful for choosing how to implement a given strategy, and for seeing how each

strategy fits into the North Carolina Standard Course of Study (NCSCOS).

One especially useful part of the website is that it gives a list of 20 key concepts and terms that middle level social studies teachers could use more often in the classroom. Concepts like historical literacy, grey areas, historical consciousness, historical empathy, and historiography. These traditionally under-utilized terms and concepts help to make sure students understand why history is important and how to better connect with and contextualize disparate people, places, and events over the arc of time. "Credibility," "context", and "reliability" are all terms specifically used by NCDPI in the NCSCOS Inquiry Strand that are defined on my site (NCDPI, 2021, p. 2). So by incorporating these terms into assessments, projects, and class discussions, students can practice the media, digital, and information literacy skills that are so vital to careers in the 21st century. Knowing the specific lexicon encompassing history is also quite useful in examining evidence more critically in research and helps with being able to discern fact from fiction in the ecosystem of social media misinformation and disinformation we currently inhabit.

I sincerely hope that my website can offer useful solutions for helping other first year middle level social studies educators teach such a broad subject like history. I truly want to aid middle school students in growing and developing into model citizens who contribute in meaningful ways to their communities. I also strongly believe that providing educators with access to resources through strategies like historical narrative, primary source triangulation, and a technology/science-based focus can help bridge the gap between teachers feeling overwhelmed into teachers feeling comfortable. These may be new ideas, but sometimes adaptation and innovation in response to the changing world around us is

the name of the game. As famed education reformist John Dewey once said, "If we teach today's students as we taught them yesterday, we rob them of tomorrow" (Dewey, 1915, p. 20).

References

American Historical Association. (2024). *American Lesson Plan: Teaching US History in Secondary Schools.* Historians.org. https://www.historians.org/wp-content/uploads/2024/09/American-Lesson-Plan-1.pdf

AMLE. (n.d.). *Social Studies Simulations-Do they Still have a Place in Middle School?* AMLE. https://www.amle.org/social-studies-simulations-do-they-still-have-a-place-in-middle-school/

Barbour, B. (2019, October 15). *The Bill of Rights Through the Lens of Dystopian Tales.* Edutopia. https://www.edutopia.org/article/bill-rights-through-lens-dystopian-tales

Cooper, S. (2014, May 20). *8 Ways to Make MS History More Meaningful.* MiddleWeb. https://www.middleweb.com/15288/make-middle-level-history-meaningful/

Dewey, J. (1915). *Schools of Tomorrow.* Dutton.

Elias, A. (December 2010). *Using Fiction to Teach American History in Middle School: Effects on Student Engagement.* [Master's Thesis, Dominican University of California's School of Education and Counseling Psychology]. https://files.eric.ed.gov/fulltext/ED513433.pdf

Fisher, E. (2012). Teaching World History: One path through the forest. *National council for the social studies: Social*

Education Journal 76(1)*. 10-13. https://www.socialstudies.org/social-education/76/1/teaching-world-history-one-path-through-forest

Garcia, P., Lueck, J., & Yakel, E. (2019). The pedagogical promise of primary sources: Research trends, persistent gaps, and new directions. *The Journal of Academic Librarianship. 45*(2), 94-101. https://doi.org/10.1016/j.acalib.2019.01.004

Gifford, D. (2011). *Implementing the Common Core Literacy Standards for history/social studies: A presentation by the Kansas State Department of Education*. Slideplayer. https://slideplayer.com/slide/14087177/

iCivics. (2024). *Who we Are*. https://www.icivics.org/who-we-are

Kaufman, J., & Diliberti, M. (2023). Social Studies Achievement has Plummeted Nationally. Four Reasons this Trend will not be Reversed without Systemic Action. *Research & Commentary Blog.* https://www.rand.org/pubs/commentary/2023/05/social-studies-achievement-has-plummeted-nationally.html

Keiger, D. (Host). (Summer 2018). *History as story, for better or worse* [Audio podcast]. *The Known World.* Johns Hopkins Magazine. https://hub.jhu.edu/magazine/2018/summer/nathan-connolly-on-studying-retelling-history/

Leonard, D. (2024, June 3). *7 Strategies to Captivate Students in History Class.* Edutopia. https://www.edutopia.org/article/captivate-students-history-class

Little, B. (2024). *History as a Story (or Stories) vs. History as Events:*

Identification, Application, & Solutions. Appalachian State University/Google. https://sites.google.com/appstate.edu/historysite-brettlittle

Mr. Nussbaum (2024). *History*. https://mrnussbaum.com/history

The Nation's Report Card. (2023). *NAEP Report Card: 2022 NAEP U.S. History Assessment*. https://www.nationsreportcard.gov/highlights/ushistory/2022/

North Carolina Department of Public Instruction (2018). *North Carolina Teacher Evaluation Process*. Raleigh, NC: North Carolina State Board of Education.

North Carolina Department of Public Instruction (2021). *North Carolina Grade Seven Standards: Standards for Social Studies.* https://www.dpi.nc.gov/social-studies-7th-grade-standards-fall-2021-implementation/open

Pink, D.H. (2006). *A Whole New Mind: Why Right-Brainers Will Rule the Future*. Riverhead Books.

Ramsey, J.T. (2017). *The Validity of Historical Narrative and its Use in Teaching History* (67) [Honors Project, Seattle Pacific University]. University Scholars at Digital Commons. https://digitalcommons.spu.edu/cgi/viewcontent.cgi?article=1064&context=honorsprojects

Robertson, S., Scanfield, V., Cunningham, C., & Dotoli, V. (n.d.). *Throw out your History Textbook*. AMLE. https://www.amle.org/throw-out-your-history-textbook/

Sanchez, R. & Mills, R. (2005, September). *"Telling tales": The teaching of American history through storytelling.* Social Education. *69*(5). 269-274.

https://www.socialstudies.org/system/files/publications/articles/se_6905269.pdf

Wiggins, G.P., & McTighe, J. (2005). *Understanding by design* (2nd ed.). Pearson.

Yilmaz, K. (2008). A vision of history teaching and learning: Thoughts on history education in secondary schools. *The High School Journal, 92*(2), 37-46.

Zinn Education Project (2023, October 1). *People's History Teaching Stories in 2023*. https://www.zinnedproject.org/news/peoples-history-teaching-stories-2023/

Brett Little is a student in Appalachian State's Middle and Secondary Teaching Graduate Certificate Program and aspiring first year teacher in Cumberland County. His research interests include digital and media literacy, instructional design, and developing expertise in the academic content area of social studies. A third-generation educator, he takes pride in instilling the value of lifelong learning and conveying the lessons history can teach in the 21st century classroom through the power of relatable historical figures to increase both empathy and civil discourse among young adolescents. His website he refers to in the article can be found at this link: https://sites.google.com/appstate.edu/historysite-brettlittle

Elusive Culture

Author: Kevin Cassidy[1]

Every school wants to improve culture, but what exactly is culture? It's hard to define and equally hard to implement. Even if you establish a "better" culture in your school, what does that even mean? What metrics do you use to establish that a school's culture has improved? If it's hard to define, hard to implement, and hard to measure objectively, why are schools spending so much money and energy chasing it?

Let's dive headfirst in search of this white whale and see if we can catch it.

Kids would define culture as a "vibe," which isn't that far off. It's subjective enough to make it hard to define but palpable enough to feel in the air around you. Great sports teams have this vibe. It's derived from a shared vision, a clear goal, and a cohesive and passionate work ethic to achieve the goal and realize the vision. The key word here is passion. Many schools have a "shared vision" and a "cohesive work ethic," but without the passion, it is just some vague words on a mission statement and never really translate into the type of culture we envision.

The relationship between culture and vibe is that culture is the vision, and vibe is the passion behind the vision. So, how does a school establish or improve its culture and vibe?

We need to start with the boring but more straightforward part of defining what culture means in our school, then move to the more nuanced part and build passion around living up to the culture we just defined. This definition of culture closely resembles a mission statement or a philosophy school post on their website. Still, those are typically very broad and have no real accountability. *The definition needs to have tangible metrics against which to be measured.*

The dictionary defines culture as "the customs, arts, social institutions, and achievements of a particular nation, people or other social groups" (Merriam-Webster, n.d). This is an excellent start mainly because one could establish objective metrics for this definition. What customs does your school have, and should you modify or improve on these customs? What arts and social institutions are valued at your school, and what are you doing to show this value? What are the tangible achievements that have been made, and what are the goals and paths to achieve those goals moving forward?

What do you value, and how are you holding yourself and your school accountable for living up to those values? These are the core tenets of culture.

It is possible to build a great culture at your school, but the leadership must be very intentional about what that means by creating a mission statement with a clear path to accountability. If this is truly a priority for the school, it must invest time and money into cultivating it. Things like having X amount of pep rallies—and not just for sports—sometimes for no reason. Celebrating small wins around the school that point back to the definition you establish. Wins by students and staff,

[1] Kevin Cassidy: KCassidyconnect@gmail.com

school-wide competitions, celebrating charity work, organized support for the school community, a program that lifts students who are down (whether socially, academically, or emotionally), and so many other actual programs can not only be established but need to be openly valued to build your culture.

Once the school defines its desired culture and values (mission statement), create a checklist to see what is being done that supports this mission. It needs to focus on building a passion for this mission. Once the passion is shared by much of the school, it becomes a vibe. Passion is something you can't fake, though. Students and staff will sniff out anyone going through the motions. If that happens, it's very hard to regain trust and build momentum. The most important part of this process is not to rush it. You must put the right people in the right places and hire the right people to fill the inevitable holes that will exist. This is assuming your leadership is already passionate about changing this area. If going through the motions is already the status quo for your school's leadership, it will be very hard to change.

Establishing or changing a school's culture is a personal thing and must be done at a personal level. Any school can make kids go to a pep rally, give prizes for achievements, or create a few clubs that contribute to the mission, but if the staff leading those endeavors aren't passionate and devoted, it will always be an uphill climb. Hiring the right people is key. These great staff members need to be rewarded as well. Which is tough with limited budgets, but I don't know anyone who went into teaching for the money. These people must

feel valued and given authentic leadership opportunities and a long leash to try new things and create new traditions. If you have money, I am certain they would not turn it down.

I understand that all schools have more significant problems, limited staff, and an even more limited budget, but once this culture/vibe exists in your school, you can do so much more with so much less. It is always worth the investment in the long run, if it's done right.

Every school has different needs, and the leadership needs to know what needs to be filled to create the most significant cultural change. The passion must be passed down from teachers to students, and then once it takes, something magical happens. The students become the source of energy, and they refuel the staff. When done right, a self-sustaining energy loop is created, and culture becomes a vibe.

Again, to change or establish a positive culture at your school, you must create a cultural definition or mission statement with a clear path for accountability. You must place and/or hire passionate people and give them some power to make changes. You must be patient and not rush through the process.

It can be done. In many cases, it must be done. When it's done, your school becomes a better place to learn and work.

References

Merriam-Webster. (n.d.) Culture. In Merriam-Webster.com dictionary. Retrieved January 22, 2025, from https://www.merriam-webster.com/dictionary/culture

Kevin Cassidy was a middle school teacher outside of Washington DC before moving to LA and becoming a Hollywood Stuntman. He is now a business owner focusing on building confidence in children through the new sport of Ninja. He is also a published author (Falling Down to Find

Myself), and TEDx speaker focusing on the topics of resilience, perseverance, and internal confidence.

Email: KCassidyconnect@gmail.com
Website: www.KevinCass.com