

Essay

Centering Young Adolescents: A Call for Purposeful Virtual Pedagogy in the Middle Grades

Brooke Eisenbach

Lesley University

Bridget Coleman

University of South Carolina Aiken

Correspondence

Brooke Eisenbach

brooke.eisenbach@gmail.com

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Centering Young Adolescents: A Call for Purposeful Virtual Pedagogy in the Middle Grades

Brooke Eisenbach, *Lesley University*
Bridget Coleman, *University of South Carolina Aiken*

Abstract

With virtual schools increasing in number and gaining popularity as a viable educational option, how should they be designed to optimize learning for young adolescents? Is research-based pedagogy for this age group intentionally embedded in their foundational design? In this essay, the authors draw upon a scoping review of literature focused on virtual pedagogy in the middle grades to examine how the Association for Middle Level Education (AMLE) essential attributes of a successful middle school are directly or indirectly addressed in existing research on online pedagogy for middle level education. The paper explores implications for aligning virtual middle grades pedagogy with the AMLE essential attributes, preparing teachers to incorporate virtual pedagogy into their instructional planning and practice, and establishing accountability measures for today's virtual middle grades schools.

Introduction

Virtual education entered the U.S. K-12 public educational landscape in the early 1990s (Barbour et al., 2011; Barbour, 2021; Clark, 2013; Eisenbach & Coleman, 2024; Toppin & Toppin, 2016). Characterized by the delivery of a majority of instructional content via the internet (Digital Learning Collaborative [DLC], 2019), online learning served as an alternative to traditional teaching and learning. By the early 2000s, state-supported K-12 virtual teaching and learning had expanded to more than 14 states (Clark, 2001; Eisenbach & Coleman). Following the COVID-19 pandemic, figures revealed a spike in K-12 virtual school enrollment, as national enrollment doubled from 0.5% in the 2015-2016 academic year to 1.1% in the 2021-2022 school year (Burtis & Goulas, 2023). As of 2023, there were more than 700 full-time publicly funded virtual schools serving K-12 students throughout the U.S. (Molnar et al., 2023; U.S. Dept. of Education [DOE], 2019). In addition, forms of online learning such as blended learning, known as a combination of face-to-face and online instruction, and hybrid learning, noted to be a flexible approach to blended instruction, occur even more frequently than full-time online learning at both a national and international level (Barbour et al., 2011; DLC, 2019, 2024; Eisenbach & Coleman). These multiple approaches to online teaching and learning have continued to gain

traction in K-12 education following the COVID-19 pandemic (DLC, 2024) and emergency remote teaching (ERT). Online learning, also referred to in research as e-learning, or virtual learning, requires purposeful planning, course development, pedagogical strategies designed to engage and facilitate learning for K-12 students through academic content, collaboration and assessment (Barbour, 2022; Eisenbach & Coleman).

Middle level learners, most commonly defined to be students between 10-15 years old or students enrolled in grades 5 through 8, have specific developmental needs that need to be recognized and addressed within the classroom (Association for Middle Level Education [AMLE], 2024; Bishop & Harrison, 2021). While specific national figures for middle grades virtual learning today are not readily available, as of 2016, more than 200,000 middle grades students were enrolled in some form of virtual education in the U.S. (Evergreen Education Group et al., 2017) with more than 12% of public middle schools offering at least one course fully online (U.S. DOE, 2019). Virtual schools are no longer considered a last resort for students who struggle in traditional settings. An increasing number of students are choosing to learn online for a variety of reasons and through a variety of approaches, making it difficult to track on a national level. For example, many students may take online courses to supplement traditional

schooling. Others participate in blended learning models that combine in-person and online instruction. In addition, virtual education is increasingly identified in home school settings. With virtual schools growing in numbers and gaining popularity as a viable option, how should they be designed to optimize education for young adolescents? Is consideration of research-based pedagogy for this group intentionally ingrained in the foundation?

Despite the publication of a plethora of educational resources that offer schools and educators suggestions for engaging in online pedagogy, there is limited empirical research demonstrating the effectiveness of suggested strategies on student academic, social and emotional outcomes (Barbour, 2011; Barbour et al., 2012; DiPietro et al., 2010; Toppin & Toppin, 2016). In fact, much of what is offered to K-12 online educators in terms of pedagogical strategy stems from research centered on higher education rather than the needs of young adolescent learners (DiPietro et al.; Eisenbach & Coleman, 2024; Toppin & Toppin). Such statistics and limitations in research led us to consider what this means for effective teaching and learning of middle level students within an expanding online context.

Exploring the Current State of Middle Level Virtual Teaching

In 2023, we (teacher educators focused on middle grades research) engaged with members of the Middle Level Education Research Special Interest Group (MLER SIG) of the American Education Research Association (AERA) in a research agenda. Specifically, we set out to examine the current state of research surrounding virtual pedagogy for the middle grades. As a component of that work, we conducted a scoping review of the literature surrounding middle grades virtual pedagogy (Eisenbach & Coleman, 2024). A scoping review serves as a rapid and systematic approach to mapping relevant literature pertaining to a field of interest (Arksey & O'Malley, 2005; Frydman & Mayor, 2023). Our work within the MLER SIG research agenda served as a starting point for examining literature published within the last decade that addresses online pedagogies within the middle grades. We sought to identify the current state of research centered around national and international middle level online pedagogy. We utilized the term “online

pedagogy” to encompass any technological-based pedagogies accomplished at least partially through asynchronous or synchronous virtual instruction (Vawter & McMurtrie, 2022). For the purpose of this essay, we give attention to a call to action based upon one of the questions guiding our prior review of the literature:

In what ways, if any, are the AMLE essential attributes of a successful middle school (i.e., responsive, challenging, empowering, equitable and engaging) (Bishop & Harrison, 2021) directly or indirectly addressed within the existing literature on online pedagogy for middle level education (Eisenbach & Coleman, 2024)?

As a result, we now share our perspectives on the implications for virtual middle grades education.

Implications for Virtual Middle Grades Education

Intentionally incorporating the AMLE Essential Attributes for Successful Middle Schools (Bishop & Harrison, 2021) into middle level virtual education has the potential to foster online environments that are just as empowering, engaging, challenging, and developmentally responsive as in-person settings. As a result, we offer suggestions for virtual schools, educators, teacher educators and educational researchers as we consider what these attributes mean for the continued development of effective virtual pedagogy within the middle grades.

Aligning Pedagogy with the AMLE Essential Attributes

We believe it is imperative that middle level virtual pedagogy aligns with research-based practices that address the unique needs of young adolescents. As online education continues to expand and evolve, educators are challenged with engaging in pedagogy specifically designed to remain challenging, empowering, equitable, responsive and engaging for middle level learners (Bishop & Harrison, 2021). In examining current literature on a contextual level, we discovered that while most of the educational research we reviewed did not explicitly reference the AMLE essential attributes, we found evidence of the attributes themselves (Eisenbach & Coleman, 2024).

Other studies offer a variety of purposeful strategies designed to ensure equity in educational access for virtual learners despite a lack of direct reference to the AMLE essential attributes. For instance, Asim et al. (2020) provide virtual teachers insight into ways of bridging Universal Design for Learning (UDL) practices with the online context. Suggestions such as mindful visual components (i.e., font size, type, page design, etc.), careful curation of online platforms based upon student needs, consistent asynchronous access to course materials, and access to content that speaks to student interests and diverse abilities will offer greater equity in learning (Asim et al.). As we move forward, more attention should be focused on accessibility for students with a variety of diverse and specific learning and developmental needs.

Despite the change in context, young adolescents deserve to experience pedagogical practices that are specifically designed with their unique needs in mind (Eisenbach & Greathouse, 2020; Eisenbach & Coleman, 2024). According to the Student section of the The International Society for Technology in Education (ISTE) Standards (2024), learners enrolled in virtual learning should seek to demonstrate seven essential attributes: empowered learner, digital citizen, knowledge constructor, innovative designer, computational thinker, creative communicator, and global collaborator. And, while we continue to research ways in which the needs of virtual learners may differ from those of students enrolled in traditional brick-and-mortar schools, we understand that effective virtual schools go beyond replicating a traditional school day and are more than hours on end of screen time.

Organizations such as ISTE (2024) and the National Standards for Quality Online Learning (NSQOL) (2025) provide standards to guide students, teachers, and administrators in using technology for innovative and effective education. The standards speak to professional responsibilities, digital citizenship, engagement and belonging, learner-centered instruction, and instructional design (NSQOL) and can be linked to addressing specific aspects of young adolescent development. For instance, NSQOL's standard on nurturing individual learner agency, as well as the standard to build upon learners' needs and preferences can be perceived to connect to the AMLE essential attributes that education be equitable and engaging (Bishop & Harrison, 2021). In addressing the NSQOL online teaching standard of creating,

adapting and modifying instructional strategies to meet learner needs, virtual educators strive to implement pedagogy that is responsive, challenging and empowering for learners.

Current research reveals ways in which middle level virtual programs, educators and classroom communities address these standards and essential elements in unique ways, even if inadvertently. For example, some full-time virtual schools encourage student empowerment through autonomy in engagement schedules and pacing with the assistance of structured support from teachers and technological platforms (Cui et al., 2022). Others reveal ways in which virtual communities can address young adolescent needs for authentic cognitive and emotional engagement by attending to student interests in curriculum and instruction, student-centered activities, consistent feedback, and careful design and facilitation of activities (Louwrens & Hartnett, 2016). As AMLE's Successful Middle Schools promotes challenging and rigorous curriculum for traditional settings, the same would be optimal in virtual settings advocating for curriculum that is exploratory where students are actively engaged in hands-on learning. According to the Community of DLC, synchronous learning is currently used as a primary modality by a small percentage of K-12 digital learning programs and used for a minority of students' learning time (Barbour et al., 2025). "The key challenges remain in determining when to leverage real-time interactions and when to provide flexible, self-paced learning opportunities that accommodate different student learning preferences and circumstances" (Barbour et al., p. 4).

Additional examples from the research that speak to incorporating essential attributes for effective middle grades virtual pedagogy include:

- Empowering:
 - ☐ Student agency over when and where they learn (Eisenbach & Greathouse, 2020)
 - ☐ E-portfolios to demonstrate learning (Asim et al., 2020)
 - ☐ Student agency over book choices and online resources (Asim et al.)
 - ☐ Differentiation of instructional methods for a more personalized approach (Asim et al.; Winter, 2018)
 - ☐ Discussion boards and polls that provide opportunity for student voice and choice helping to shape learning experiences (Louwrens & Hartnett, 2016)

- Responsive:
 - ☐ Connecting with caregivers through virtual channels to maintain open communication and support for students with specific learning needs (Rice et al., 2019)
 - ☐ Offering thoughtful and timely feedback on assignments and assessments (Louwrens & Hartnett, 2016)
- Challenging:
 - ☐ Engaging with professionals from various fields of study on collaborative projects (Asim et al., 2020)
- Equitable:
 - ☐ Implementing tenets of UDL within the virtual pedagogical approach (Daley et al., 2016)
- Engaging:
 - ☐ User-friendly software (Yalavac & Samur, 2016)
 - ☐ E-pals (electronic pen pals) (Asim et al., 2020)
 - ☐ Virtual field trips (Asim et al.)
 - ☐ Discussion forms (Louwrens & Hartnett, 2016)

Promising, innovative practices needing research that speak to incorporating essential attributes for effective middle grades online pedagogy include virtual advisory programs facilitated individually and with small groups, synchronously at specific times or scheduled at various times throughout the school day. Live meetings for one-on-one check-ins between students and teachers through video calls (e.g., Zoom/Teams/Google) and peer-to-peer collaboration opportunities. Examples include:

- ☐ Virtual advisory programs
- ☐ One-on-one check-ins between students and teachers through video calls (e.g., Zoom/Teams/Google)
- ☐ Peer-to-peer collaboration
- ☐ Service learning with social media campaigns for a cause.

Teacher Preparation

In order to ensure virtual pedagogy addresses the AMLE essential attributes, it is crucial that teacher preparation programs, coursework and field experiences provide the knowledge and experience

necessary for educators to engage in effective online pedagogy. As such, we call for higher education to expand teacher preparation programs, coursework and field experiences to prepare middle grade educators for effective online teaching. Effective traditional classroom instruction does not always directly translate to effective online teaching requiring teachers to utilize a variety of methods. Planning for in-person and e-learning have nuances unique to each format. The Educator section of the ISTE Standards (2024) provides a framework that offers digital skills and pedagogical insights for educators as they engage in teaching and working with online learners. Teacher preparation programs should give consideration to this framework and seek to prioritize explicit educator preparation in online pedagogies.

What does this look like? We believe methods courses should incorporate both traditional and virtual lesson planning with optimal, high-quality pedagogy to maximize learning. While designing and evaluating lesson plans, teacher candidates need experiences in planning and implementing virtual lessons, asynchronously and synchronously. As teacher candidates learn more about ways of addressing diverse student needs, crafting and implementing 504 plans and IEPs, and engaging in inclusive instructional preparation and practices, they need to learn more about how such pedagogy translates to the virtual context. When it comes to effective classroom management practices, community-building and family engagement, teacher preparation programs should immerse education majors in coursework and clinical practice that expands to include quality online practices. Teacher candidates should acquire skills necessary to cultivate caring classroom communities and connections with virtual learners. Virtual learning in a cohort model may impact student engagement and empowerment when teachers are maximizing community-building (Berry, 2019; Kelly & Lock, 2021). Essentially, teacher candidates need the opportunity to research, engage, practice and develop their skills in addressing middle level learner needs within the virtual context.

Accountability Measures

Finally, we believe there is a need for ongoing accountability and performance measures to monitor the effectiveness of virtual schools and educators in meeting the developmental needs of young adolescent learners. Beyond

utilizing research to establish virtual pedagogy to address the specific needs of young adolescents, we call for thoughtful and consistent review of the effectiveness of such programming and instruction, as well as distribution of such success to fellow virtual institutions.

For example, The National Forum, a nonprofit educators' association devoted to improving the education and support of middle grades education, operates a "Schools to Watch" program dedicated to the recognition and improvement of middle grades schools throughout the country (The National Forum, 2024). Similar to the AMLE essential attributes, The National Forum believes that middle schools are responsible for ensuring they address developmental responsiveness, social equity, academic excellence and continuous improvement with an emphasis on meeting the needs of the whole child (The National Forum). Just this year, The National Forum recognized its first fully virtual school, Valley View Charter Prep, as a distinguished "School to Watch" noting that this virtual institution demonstrated the criteria established by the organization to meet the needs of young adolescent learners.

Similarly, AMLE provides an opportunity for schools to be honored as a "School of Distinction" (AMLE, 2022a). Middle schools can apply to become a "School of Distinction" and if awarded will be recognized as an institution that effectively implements the AMLE essential attributes and characteristics of middle grades schools (AMLE, 2022a). While no fully virtual middle school has yet to apply for "School of Distinction" recognition, several have participated in the AMLE "Successful Middle School Assessment" and demonstrated strong implementation of attributes of *This We Believe* (AMLE, 2022b). This assessment is noted to be a "flexible, data-driven tool that can be used by schools and districts to drive meaningful school improvement" (AMLE, 2022b). While the initial assessment was designed for the traditional school setting, the assessment tool is accessible for the online school environment as it speaks directly to the essential attributes regardless of setting. Specifically, survey items such as those related to the physical environment (i.e., cleanliness, safety within the school space, etc.) can be removed or interpreted as necessary for the online context without limiting assessment of the characteristics (K. Powell, personal communication, April 23, 2025).

As more learners enroll in virtual schools or engage in virtual learning through blended or hybrid instruction, it is important to consider how the very criteria utilized to assess and maintain the values, philosophy, and effectiveness of quality middle level pedagogy within the brick-and-mortar context can transfer to that of the online space. In this way, we can assess the effectiveness of virtual pedagogy for middle grade learners and also promote effective pedagogy for those continuing to develop practices aligned with research and the AMLE essential attributes. We can continue to consider should the process and criteria for virtual schools be the same as for traditional brick and mortar schools? Should the criteria be expanded? Or, should it be changed for all?

A Call to Middle Grades Virtual Research

Learning happens in a variety of settings. How well are we maximizing opportunities to meet the diverse needs of young adolescents? As researchers invested in addressing the developmental needs of young adolescent learners engaged in the ever-expanding world of virtual education, we call upon our fellow middle grades and virtual education colleagues to engage in research specific to the middle grades classroom and how such contexts speak to the AMLE essential attributes. Our recent review of the literature reveals a continued need for research that examines the long-term impacts of online teaching and learning on young adolescent development and academic success. There is also demonstrated need for research that examines how the use of online, blended and emergency remote pedagogies impact young adolescent engagement, collaboration and learning. The DLC (2024) calls for research for K-12 among 10 themes including areas of structure of learning, assessment, instructional strategies, support systems, and educator preparation. We support this request and go a step further to call for research in those areas related specifically to middle grades. Finally, with the continued growth of augmented and immersive realities, there is a need for research that examines the potential use of such realities within middle grades virtual education. While research on virtual education moves forward, it is imperative that our young adolescent learners and their unique educational needs are not left behind.

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