

The MLER SIG Research Agenda

Prepared by
The Middle Level Education Research
Special Interest Group

An Affiliate of the
American Educational Research Association

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Endorsements and Acknowledgement

Endorsements



The MLER SIG Research Agenda is endorsed by the Middle Level Education Research Special Interest Group (MLER SIG), an affiliate of the American Research Association.

The purpose of the MLER SIG is to improve, promote, and disseminate educational research reflecting early adolescence and middle-level education.



The MLER SIG Research Agenda is endorsed by the Association for Middle Level Education and the National Forum to Accelerate Middle Grades Reform.

Acknowledgement

The MLER SIG wishes to acknowledge the leadership and tireless contributions of the Advisory Committee Members:

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Introduction

In 1997, the National Middle School Association (now the Association for Middle Level Education) published, *A 21st Century Research Agenda: Issues, Topics, and Questions Guiding Inquiry into Middle Level Theory and Practice*. This comprehensive agenda served as a guide to promote ongoing conversations and foster new research studies. It was comprised of more than 200 research questions organized around the 12 characteristics outlined in NMSA's vision statement, *This We Believe: Developmentally Responsive Middle Level Schools* (NMSA, 1995).

In 2015, the Middle Level Education Research (MLER) Special Interest Group (SIG) of the American Educational Research Association (AERA) revisited the need for a revised research agenda, one that could reflect the issues and concerns of the ever-changing world of middle grades education. The SIG represents the largest group of researchers focusing on middle grades education in the world, and according to its bylaws, the purpose of the MLER SIG is to improve, promote, and disseminate educational research reflecting early adolescence and middle grades education. It seemed appropriate that such a group should consider creating a revised middle grades education research agenda. In April 2015, the SIG held a meeting in Chicago, IL to determine the level of interest SIG members would have in developing a revised research agenda focusing on early adolescence and middle grades education. What follows reflects the work of more than 40 SIG members over the course of nearly 18 months.

Purpose of Research Agenda

The primary purpose of the MLER SIG Research Agenda was to develop a set of questions that provide direction to the field of middle grades education research. The research questions are intended to initiate and guide conversations, generate research projects, and contribute new knowledge to the field. The research agenda

also provides guidance to new faculty members in higher education seeking to establish research agendas and graduate students seeking topics of study for dissertation studies and theses.

During the inaugural project meeting in April 2015, the group decided that the MLER SIG Research Agenda would be designed to address the most critical issues and concerns facing the field over the course of the next five years. At the end of the five-year period, the research agenda would be re-evaluated to determine what new topics, issues, and research questions were of concern to the field.

Process for Developing the MLER SIG Research Agenda

In April 2015, prior to the annual AERA meetings in Chicago, IL, an inaugural meeting of 22 MLER SIG members was held to discuss the need for and development of a new middle grades education research agenda. After reviewing NMSA's *A 21st Century Research Agenda* (1997), the group discussed and identified the various topics and issues currently deemed important to middle grades education and the education of young adolescents. In discussing and reaching consensus concerning the specific research areas, it was agreed that these topics and components would be the focus of collaborative research efforts for the next five years. Eight workgroups, and co-chairs for each group, were established after the inaugural meeting:

1. Educator development (teachers preservice & professional development, administrators, and teachers as leaders)
2. Organizational structures that support learning;
3. Cultural responsiveness (including diversity, social justice, equity, etc.);
4. Special populations;

5. Developmental aspects of young adolescents;
6. Social-emotional learning (climate and culture);
7. Digital technologies; and
8. Pedagogy (curriculum, instruction, and assessment).

SIG members were notified of the project and encouraged to participate by joining one of the workgroups. The workgroups were charged with initiating an extensive literature review of their topic or issue to identify current research efforts and gaps in the research literature.

In early November 2015, the SIG formed a project Advisory Committee, whose membership included SIG members with extensive research experience, including a few of the workgroup leaders, as well as representation of the Association for Middle Level Education (AMLE) Research Advisory Committee. The responsibilities of the Advisory Committee included advising the workgroups, developing the format for the final workgroup reports, reviewing the workgroup reports, and compiling and editing the final research agenda. The Advisory Committee members included Gayle Andrews, Penny Bishop, Micki Caskey, Larry Daniel, Nancy Flowers, David Strahan, and Steve Mertens.

Subsequent project meetings were held during the 2015 annual Association for Middle Level Education (AMLE) conference in Columbus, OH and at the 2016 annual American Educational Research Association (AERA) meetings in Washington, DC. During the Washington, DC meeting, the Research Advisory Committee of AMLE invited the MLER SIG to present the new research agenda at an invited session at the AMLE annual conference in Austin, TX in October 2016.

Organization of Research Agenda

The Research Agenda contains reports focusing on the eight research areas or topics identified during the April 2015 meeting. The individual reports include a list of the contributing workgroup members, a working definition of the research area or topic of study, a description of the literature review process followed by the workgroup, the list of research questions, and a list of influential publications relevant to the research area or topic.

Recommendations for Using the Research Agenda

A research agenda such as this can serve multiple purposes. The MLER SIG Research Agenda was developed primarily to serve as a guide for middle grades educational research for the next five years; providing guidance for large- and small-scale research projects, doctoral dissertations, master's theses, and undergraduate honor theses. Given the depth and breadth of the research questions contained in this agenda, it is feasible that the SIG would design, develop, and implement research projects to address one or more aspects of the Research Agenda.

The literature reviews contained in the reports serve as beneficial resources as they describe the various approaches the workgroups used in reviewing the relevant research literature. The groups used a variety of approaches, accessing a variety of databases and keyword searches. The Advisory Committee believed that these literature reviews constituted a valuable resource for existing and future middle grades education researchers.

Steven B. Mertens

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Part I: Young Adolescents

A. Developmental Aspects

Group Members

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Definition of Research Area and Terms

For the purpose of our review, we considered young adolescents as youth between the ages of 10-14 years old. We included all developmental aspects in our review, including the broad categories of physical, biological, cognitive, socio-emotional, and behavioral.

Literature Review Process

For the initial literature search, we assigned each team member one aspect of development based on Caskey and Anfara's (2014) research summary: physical, intellectual, moral, spiritual, psychological, and socio-emotional. Team members added their literature reviews to a shared summary document. Team members also added questions and on-going considerations to be discussed in upcoming group meetings.

When we reconvened we discovered several issues regarding the study of this topic. First, these categories are not necessarily separate nor are they mutually exclusive. So, we began to examine research investigating the ways in

which different aspects of development interacted with one another and how they informed typical or atypical student behavior. Second, we were unsure of whether to focus on students or teachers. We resolved that both were important to the task. Third, because development is a vast topic covered across many disciplines, we decided to narrow our focus to the intersection between young adolescent development and middle grades education. Finally, we recognize the possibility that our efforts to conceptualize "developmental responsiveness" may, inadvertently, lead to restrictive perceptions of young people. We now see our role in this initiative as raising questions and encouraging dialogue, as well as presenting information.

After many discussions, we created a shared annotated bibliography that we used to create a summary response. This document details our wonderings and insights about this developmental stage and how it interacts with middle grades students and professionals. We identified a set of recommended research questions we believe to be most important on which to focus research efforts during the next three to five years.

Research Questions

Areas of Development

1. What are the key areas of development for young adolescents?
 - a. In what ways is early adolescence a critical time for aspects of development?
 - b. What areas are "make or break" at this stage?

Brain Development

2. In what ways does brain development impact early adolescence?
 - a. What is the impact on physical health?
 - b. What is the impact on physiological development?
 - c. What is the impact on executive functions?
 - d. What is the impact on social cognition?
 - e. What is the impact on emotional health and development?

Educator Practices

3. What teaching, counseling, and leadership practices have a positive impact on young adolescent development?
 - a. In what ways do successful middle grades educators address physical, socio-emotional, and intellectual development through their instructional decision making?
 - b. In what ways do successful middle grades educators discourage gender/sexuality stereotypes (research emphasizes that gender/sexual identity becomes very influential in the middle grades)?
 - c. In what ways do middle grades educators discourage other stereotypes (e.g., socio-economic status, race/ethnicity, gender orientation, sexual orientation)?
 - d. In what ways do successful middle grades educators encourage students to develop stronger growth-oriented mindsets?
 - e. In what ways do successful middle grades educators encourage stronger mastery orientations toward learning (intrinsic motivation)?

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B. Cultural Responsiveness

Group Members

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Definition of Research Area and Terms

As a well-documented and persistent opportunity, achievement, and discipline gaps exist between White, middle-class students and students of color; those from low-income backgrounds; speakers of languages other than English; Lesbian, Gay, Bisexual, Transgender and Queer (LGBTBQ) youth; students identified as disabled; and immigrants, we focused our review and subsequent empirical questions on the needs of marginalized populations. We subscribed particularly to Ladson-Billings' (1995) tenets of culturally relevant teaching: (a) students must experience academic success; (b) students must develop and/or maintain cultural competence; and (c) students must develop a critical consciousness through which they challenge the status quo of the current social order (p. 160).

Literature Review Process

We began our review by identifying all book chapters and articles from the *Handbook of Research in Middle Level Education* series, *Middle Grades Research Journal*, *Middle School Journal*, and *Research in Middle Level Education Online* between 2000 and 2013 that addressed our topic based on Brinegar's (2015) content analysis of these same publications. This included 133 documents.

Due to the vastly different ways scholars defined and applied terms in these articles, we could not synthesize findings at this point and took additional steps to categorize articles with regard to how they met the following criteria:

1. Defined terms related to power, culture, and difference, and used citations;
2. Focused on changing unjust systems rather than changing individuals to fit into unjust systems;
3. Used at least one element of the middle grades concept and included citations.

Once we developed these criteria, we created a codebook in a shared Google Sheet articulating how we would identify evidence of each, with inclusion and exclusion criteria. Each team member independently coded each article using the codebook. We met weekly to discuss our categorizations of 10 articles at a time, coming to consensus regarding each difference of opinion and continuing to hone our codebook.

Once we had completed the categorization process, we analyzed the 14 articles that reflected all three dimensions of our theoretical framework to: (a) evaluate how these authors had addressed each area; and (b) identify empirical and conceptual gaps with which to develop an agenda for future research.

Research Questions

Student Experiences and Identity Development

1. What are the experiences of marginalized youth in today's middle grades?
2. How can the field better elucidate the voices of marginalized students when conducting research on middle grades practices?
3. What does it mean to acculturate vs. assimilate for today's young adolescents?
4. How are young adolescents choosing to identify vs. how are they being forced to identify?
5. What are the larger socio-cultural-historical discourses at play in the construction of marginalized youth identities?
6. What funds of knowledge do marginalized young adolescents draw on in the process of constructing their identities?

7. What is the role of intersectionality in understanding the identity development of young adolescents?
8. What are the needs of different groups of young adolescent immigrants?
9. What are the differing needs between various groups of immigrants and refugees?
10. How do marginalized students in the middle grades respond to national standards?

How Teachers Enact Culturally Responsive Teaching Practices

1. How do we create critical consciousness in teacher candidates and middle grades teachers?
2. How do we create critical consciousness in all middle grades students?
3. How can teachers address the needs of early adolescents in a classroom with multiple subgroups without essentializing any one group's experiences?
4. What does it look like when teachers from different backgrounds/identities successfully implement culturally responsive practices?
5. What are the experiences of middle grades teachers from marginalized backgrounds?
6. What are the interrelated connections between middle schools, communities, families, and students when investigating culturally responsive pedagogy?
7. How do teachers support LGBTQ students within their classrooms?

How Schools Support Student Identity Development and Culturally Responsive Teaching Practices

1. How can the school environment be used to support positive cultural/ethnic identity development?
2. How can the middle grades concept be used to enhance educators' culturally responsive practices for young adolescents from marginalized backgrounds?

3. Which culturally responsive middle grades practices apply across subpopulations and which are group specific?
4. Which elements of the middle grades concept help support the development of equity for marginalized populations and can these findings be generalized?
5. What barriers exist to implementing middle grades concepts in schools with majority minoritized populations?
6. What is the state of culturally responsive middle schools west of the Midwest?

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C. Special Populations

Group Members

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Definition of Research Area and Terms

For this literature review, the term special populations was defined as middle grades students with exceptionalities, including those who are considered gifted and talented. While some definitions of special populations include English Language Learners and students who are economically disadvantaged, communication with the Cultural Responsiveness workgroup revealed that they were including these two groups of students in their literature review.

Literature Review Process

The workgroup on special populations began communicating via email in June 2015. In August 2015, members began to discuss possible topics for inclusion in the literature review. Initial conversations led to fourteen topics being identified for review; however, the list was later reduced to include a more realistic number of five topics that are often discussed when considering students with exceptionalities.

The workgroup decided to complete research summaries in a uniform manner. Group member Mary Rice recommended the following format, which the remaining members agreed to use: (a) definition of topic; (b) connection of topic to middle grades education; (b) summary of findings from recent studies; (d) proposed research questions: one main and two to three sub questions; and (e) references.

The majority of the research conducted was within the span of the last five years (2011-2015); however, due to limited research related to some of the topics, the span was increased to

10 years for those topics. Journal articles, theses, and dissertations were reviewed through library catalogs and data bases including EBSCOhost, Education Full Text, ERIC, Academic Search Complete, Google Scholar, ProQuest, and Web of Science. Keyword searches used combinations of related terms for each topic. For the topic of *gifted/talented*, searches included the following keywords: middle learning + gifted and talented, middle learning + GATE, and middle school + gifted and talented; however, combining gifted programs + middle school provided the most success. For *response to intervention*, keywords included response to intervention + middle school and interventions + middle school + reading. For *inclusion*, keyword searches included inclusion + middle school and inclusion + middle grades, and these keyword combinations yielded numerous results. The search was more focused when utilizing keyword combinations such as, co-teaching + middle grades/middle school and inclusive classrooms + middle grades/middle school. For *technology*, keywords included early adolescence, middle grades, middle level, + technology, technologically enhanced learning, and/or technology use + disability, special education, diversity, and/or special population. For *Universal Design for Learning (UDL)*, keyword searches included UDL + middle grades, UDL + middle school, Universal Design for Learning + middle grades, and Universal Design for Learning + middle school.

Research Questions

Gifted and Talented

1. How are students with advanced abilities successfully being identified and supported in middle grades classrooms?
 - a. What practices in identification and teacher preparation are being used to correct the underrepresentation of children who are limited English proficient, disabled, or from low-income backgrounds?

- b. What are the perceptions of and assumptions about the prevalence and characteristics of low income, high-ability children held by middle grades teachers, school psychologists, and administrators?
- c. How are views about the prevalence and characteristics of low income, high-ability children formed?
- d. How can productive views of low income, high ability learners be cultivated?
- e. What are the components of successful middle school-based or outside-of-school program/intervention models designed to support middle grades low-income, high ability learners?
- f. How are the national standards being adopted for advanced and gifted middle grades students?
- g. How are middle schools nurturing the social and emotional development of gifted children?

Inclusion

- 2. How is inclusion defined and implemented in the middle grades?
 - a. What are the roles of general education and special education teachers who participate in inclusion models in the middle grades?
 - i. How are teacher preparation programs preparing general education and special education teacher candidates to work in inclusion models in the middle grades?
 - ii. What support is provided to general education teachers and special education teachers who participate in inclusion models in the middle grades?
 - b. How is the effectiveness of inclusion models assessed in the middle grades?

Response to Intervention (RTI)

- 3. How can the RTI model be effectively implemented in middle grades settings?
 - a. How can middle school content area teachers provide greater support and differentiation in their instruction for all students (Tier 1)?
 - b. What interventions have the greatest impact on the reading achievement of struggling middle grades readers (Tiers 2 and above)?
 - c. What assessments provide the best information for screening (i.e., identification for intervention) and progress-monitoring (meeting students' individual needs in interventions)?

Technology

- 4. How do teachers of special populations support inquiry with technology in classrooms under conditions of varying or limited resources?
- 5. How does access to technologies for learning interface with the developmental trajectories of early/mid-adolescents, particularly those with disabilities?
 - a. How does technology use influence or make visible cognitive, social, physical, and/or linguistic changes in middle grades settings?
 - b. How can teachers support developmentally appropriate self-regulatory behaviors in special population students?
 - c. How do special populations take up new interactions and social roles in the presence of technologies?
- 6. How does the use of classroom technologies influence the relational aspects of teaching middle grades learners from special populations?
 - a. How do teachers use technologies to build relationships with students from diverse backgrounds?
 - b. How do students and parents from diverse backgrounds use

- technologies to build relationships with teachers?
7. How is appropriate access to technology determined and maintained for special population students?
 - a. How can educators help students from special populations move from accessing technology for entertainment to using technology to learn?
 - b. What roles and responsibilities do parents assert in determining technology use both in and out of school for their children from special populations?
 - c. What are the costs (e.g., financial, social, physical, emotional) of unequal access to technologies for middle grades learners from special populations?

Universal Design for Learning (UDL)

8. How do middle grades teachers perceive the importance and usefulness of UDL?
 - a. In what ways are teacher education programs preparing teacher candidates to implement UDL in the middle grades?
 - b. In what ways have middle grades teachers' teaching methods changed since implementing UDL?
 - c. In what ways is the effectiveness of UDL assessed in the middle grades?

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Part II: Teaching and Learning

A. Educator Development

Group Members

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Definition of Research Area and Terms

For the purposes of this project, we understand *educator development* to include both teacher candidate preparation and inservice professional development for teachers and for administrators. We used the following terms in recommended research questions and ground them in the following definitions.

Effective middle grades educators: Teachers of young adolescents need specialized professional preparation to be highly successful. Effective middle grades teachers understand and value young adolescents, have content knowledge and know how to teach that knowledge to young adolescents. In *This We Believe*, National Middle School Association (2010) contended that these teachers employ teaming, integrated learning, interdisciplinary work, and connecting content to real-world situations to motivate and challenge students. In *Turning Points*, the Carnegie Council on Adolescent Development (1989) provided a framework which stated, in part, that middle grades teachers acquire, understand, and advocate for adolescents and that they “are as knowledgeable about their students as they are about the subject matter they teach” (p. 13). According to National Middle School Association’s (2010), position statement, *This We Believe: Keys to Educating*

Young Adolescents, effective middle grades educators serve as role models who understand the developmental uniqueness of this age group, the appropriate curriculum, effective strategies for learning and assessment.

Every Student Succeeds Act (ESSA): The ESSA is a law passed in December of 2015 that governs the United States K-12 public education policy.

National accreditation: National accreditation is a status granted to an institution and its programs that meet stated criteria of quality. The criteria outline curriculum and experiences, which are closely associated with professional associations and aligned to standards in the field.

Middle grades philosophy: Middle grades philosophy includes a rationale for developmentally responsive programs and practices such as interdisciplinary teaming and advisory programs that can be applied across a range of school settings; a commitment to developmentally responsive organizational structures that foster socially equitable programs and practices that enhance the education and well-being of all young adolescents; and a commitment to successfully demonstrating best practices that are supported by the middle grades knowledge base in a variety of school settings.

Service learning: The concept of service learning has been defined as “an educational experience involving an organized service activity with structured reflection to guide students’ learning” (Bringle & Hatcher, 1995).

Community partnership: A community partnership is a formal arrangement between a school and an individual, business, corporation, public institution, association, or organization to

provide a program, service, or resource in an effort to support student achievement.

Literature Review Process

We reviewed the literature on initial teacher preparation, professional development for inservice teachers, preservice administrator preparation, and professional development for administrators. We drew on the idea in *This We Believe* that effective middle grades teachers “value young adolescents and are prepared to teach them.” To begin the literature review, we reviewed key documents including *This We Believe* (National Middle School Association, 2010), Association for Middle Level Education’s Middle Level Teacher Preparation Standards (2012), *Turning Points 2000* (Jackson & Davis, 2000), *Research and Resources in Support of This We Believe* (Caskey, Andrews, Bishop, Capraro, Roe, & Weiss, 2010), and *Research to Guide Practice in Middle Grades Education* (Andrews, 2013) to familiarize ourselves with key themes and practices for middle grades educator development. Next, members concentrated on three areas: teacher candidate preparation, professional development for inservice teachers, and administrator development (both preservice and inservice as there is much less research on middle grades administrators). Each sub-group reviewed the relevant literature via database searches, reviews of recent publications in middle grades journals, and seminal works in each subtopic. After expanding the questions considerably, we combined and condensed the topics using the 2012 AMLE Standards and A 21st Century Research Agenda (NMSA, 1997) as guides.

Research Questions

Practices

1. What are the common curricular, instructional, and assessment practices of effective middle grades educators?
 - a. How does the implementation of standards affect curricular, instructional, and assessment decisions
 - i. at the school level?
 - ii. at the classroom level?

- b. How does implementation of standardized assessments associated with state/national standards affect curricular, instructional, and assessment decisions
 - i. at the school level?
 - ii. classroom level?
- c. How do curricular, instructional, and assessments decisions made at the school and classroom levels as a result of standards and assessments compare to those outlined in middle grades literature such as *This We Believe* (NMSA 2003, 2010)?

Policy

2. How does policy affect middle grades teacher candidate preparation and inservice professional development for teachers and administrators?
 - a. In what ways do alternative certification/licensure policies affect middle grades educator preparation?
 - b. In what ways do alternative certification/licensure policies affect practices associated with middle grades education?
 - c. How do accountability policies such as Every Student Succeeds Act (ESSA) affect middle grades educator preparation and development?
 - d. In what ways does the Association of Middle Level Education recognition and national accreditation affect middle grades educator preparation?

Middle Grades Philosophy

3. How are middle grades teachers prepared and developed to understand young adolescent development and implement curricular, instructional, assessment, and organizational practices associated with

- middle grades concepts, initiatives, and standards?
- a. What courses do teacher candidates take that align to middle grades philosophy?
 - b. How many courses relate to middle grades philosophy?
 - c. What courses make up an entire middle grades education degree program?
4. How are middle grades administrators prepared and developed to lead and manage curricular, instructional, assessment, and organizational practices associated with young adolescents, middle grades concepts, initiatives, and standards?
- a. What programs exist that prepare administrators specifically for the middle grades?
 - b. What courses are there to prepare administrators for middle grades education?
 - c. What inservice development is offered for practicing administrators regarding middle grades education?
5. What is the status of universities and colleges with middle grades preparation programs?
- a. In what ways can studies such as Howell, Faulkner, Cook, Miller, and Thompson (2016) be replicated or expanded to include more institutions?
 - b. Which states require middle grades certification/licensure?
 - i. What are those certification/licensure requirements?
 - ii. How do these requirements compare with the 2012 AMLE Standards?
- iii. How do individual institutions within each state meet the requirements?
 - c. What are state and university requirements related to the preparation of middle grades administrators?
- Partnerships*
6. How are middle grades community partnerships affecting the preparation and development of middle grades educators (e.g., field experience/clinical placement, service learning, professional development)?
- a. What community partnerships exist and how are they formed?
 - b. How do field and clinical experience placements affect the preparation of middle grades teacher candidates?
 - c. In what ways do teacher placements affect development of middle grades educators?
 - d. How do service-learning experiences affect the preparation of middle grades teacher candidates and/or the development of middle grades educators?
 - e. How do school-community partnerships affect the development of middle grades educators?
- Recruitment & Retention*
7. How are middle grades educators recruited, supported, and retained?
- a. Why do teacher candidates choose middle grades preparation?
 - b. What is the career path of a middle grades administrator?
 - c. What supports and practices impact teacher and administrator retention?

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B. Curriculum Integration

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Definition of Research Area and Terms

Integrated Curriculum. Developing curricula that is relevant to students and exploratory in nature has been part of the middle grades movement since its inception (National Middle School Association, 2010; Schaefer, Malu, & Yoon, 2016), and a curriculum that is “integrated” is organized around the intersections among real world problems and students’ interests (Beane, 1996). Subject area lines blur as students engage in inquiry and exploration with the goal of understanding and addressing interesting ideas and problems. In the middle grades literature, we see pulses of the spirit of curriculum integration in the following areas of literacy, personalized learning, and project/problem-based learning.

Literacy Integration. Literacy integration can take several turns. One involves integrating the various processes of literacy in interdisciplinary endeavors that include reading, writing, listening, and speaking. Literacy integration can also be discipline specific (e.g., Alvermann, Gillis, & Phelps, 2013; Bennett & Hart, 2015; Hart & Bennett, 2013) so that students read, write, speak, and listen in subject area classrooms. In these instances, the goal is for students to understand the ways that mathematicians, historians, social scientists, and so on actually use literacy processes in their fields. A third way to look at literacy integration involves understanding literacy as a social construction. In this conception, middle grades students examine multiple forms of texts through

different modalities, aiming to understand how the *information* and messages from different content areas connects with their developing identities and worldviews (Thompson, 2008).

Personalized Learning. A personalized learning curriculum allows students to access their abilities and interests to meet specific goals and demonstrate learning in a wide variety of ways with the support of adults (Clarke, 2013; Keefe, 2007). Personalized learning also provides students with learning opportunities that are based on sound middle grades practices including curriculum integration (Nagle & Taylor, 2015); technology integration (Richardson, 2012) and extended learning opportunities (Freely & Hanselka, 2009). Personalized learning promotes meaningful relationships and student voice in and out of the classroom (Ellerbrock & Kiefer, 2010).

Problem-based and Project-based Learning (PBL). In problem-based learning and project-based learning, students constantly pose and refine questions and design and construct simple and/or complex investigations, which require them to gather, analyze, and interpret data to report findings. These student-centered, inquiry-based pedagogical approaches, which are collectively referred to here as PBL, have been shown to be effective for facilitating knowledge acquisition and retention (Dochy, Segers, Van Den Bossche, & Gijbels, 2003; Mergendoller, Maxwell, & Bellissimo, 2006; Penuel, Means, & Simkins, 2000; Ross, Sanders, Wright, Stringfield, Wong, & Alberg, 2001), supporting the development of important real-world skills such as solving complex problems, thinking critically, analyzing and evaluating information, working cooperatively, and communicating effectively (Duch, Groh, & Allen, 2011), and for developing flexible knowledge (Boaler, 1997; English & Kitsantas, 2013).

Literature Review Process

In the early part of this process, the group discussed what might be encompassed in the topic pedagogy and assessment and recognized that these topics were too broad for this project. After additional deliberation, we decided that curriculum, instruction, and assessment in the middle grades is best represented with curriculum integration. We realized that while the term curriculum integration has existed for many years in the middle grades, integration now occurs through many models. As a result, we focused our questions on 21st century approaches to integration in the middle grades, with the subtopics of literacy integration, personalized learning, project-based learning, and problem-based learning. While we recognize that this approach is not exhaustive, we feel that this approach best captures what is unique about middle grades curriculum, instruction, and assessment.

The workgroup examined middle grades literature (e.g., *Middle School Journal*, *Research in Middle Level Education (RMLE)*, *Middle Grades Research Journal*, *Voices from the Middle*, *The Handbooks of Research in Middle Level Education*) to guide us in the development of research questions. The literature reviewed was published between 2000-2016. We conducted hand-searches of the specific journals and handbooks and/or used search terms (e.g. pedagogy, integrated curriculum, personalized learning) to locate literature relevant to the topics of middle grades pedagogy and middle grades assessment. We created Google Docs for each of the sources and listed the title of the article, the accompanying abstract, and keywords or themes describing article. The research questions were formulated from our conversations about what was and was not present in the literature base.

Research Questions

Curriculum Integration

1. What has been the evolution of integrated curriculum in the middle grades?
2. What approaches to integrated curriculum have demonstrated greatest impact on student outcomes?

Literacy Integration

3. In what ways is literacy being used as an integration tool?
4. In what ways do 21st century competencies (e.g., creativity, collaboration, critical thinking, communication) influence current literacy integration?
5. In what ways do educators integrate aspects of authentic assessment in literacy integration with standardized assessments at the local school, district, state, and federal levels?
6. What impact does literacy integration have on student achievement as measured by quantitative data?
7. What is the impact of literacy integration on middle grades student engagement?

Personalized Learning

8. In what ways is personalized learning being used to integrate curriculum in the middle grades?
9. In what ways do 21st century competencies (e.g., creativity, collaboration, critical thinking, communication) influence current approaches to personalized learning?
10. In what ways do educators integrate aspects of authentic assessment in personalized learning with standardized assessments at the local school, district, state, and federal levels?
11. What impact does a personalized learning approach to curricula have on student achievement as measured by quantitative data?
12. What is the impact of a personalized learning approach on middle school student engagement?

Project-Based and Problem-Based Learning (PBL)

13. In what ways is PBL being used to integrate curriculum in the middle grades?
14. In what ways do 21st century competencies (e.g., creativity, collaboration, critical thinking, communication) influence current PBL middle grades classroom models?
15. In what ways do educators integrate aspects of authentic assessment in PBL models with standardized assessments at the local school, district, state, and federal levels?
16. What impact does a PBL approach to curricula have on student achievement as measured by quantitative data?
17. What is the impact of a PBL instructional model on middle grades student engagement?

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C. Social and Emotional Learning

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Definition of Research Area and Terms

Social and emotional learning (SEL) refers to the development of broad set of social and emotional competencies including resilience, cooperation and negotiation skills, a positive self-identity, a sense of self-worth, empathy for others, decision-making and problem-solving skills, impulse control, anger management, stress management, and self-regulation. Social and emotional learning also refers to one's ability to effectively apply the knowledge, attitudes and skills and enable them to manage their emotions in their day-to-day interactions with others and to understand and feel and show empathy for others, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2013, p. 6).

Literature Review Process

Our workgroup on SEL in middle grades education began to refine its focus during the Association for Middle Level Education conference in Columbus, Ohio in October, 2015. Although including SEL part of the young adolescent development research group was proposed, the complexity and breadth of SEL ultimately was recognized as warranting its own investigation.

As work group members, we began by considering our own prior scholarship on SEL in the middle grades and identifying a number of key points. First, we recognized that early adolescence is a key period of development with increasing complexity in relationships and educational demands. This was coupled by the fact that SE skills have been identified in the literature as being critical for academic success, and that these skills are competencies rather

than character traits that can be developed through explicit teaching. We noted that there are a number of empirical studies about how to effectively teach SEL and a large number of SEL programs available ranging from whole school to individual classrooms. Finally, we observed minimal but growing empirical evidence regarding effective programs for young adolescents (CASEL Report, 2013).

Given the task of identifying the research priorities in SEL for the next three to five years, we considered responding to the findings of the CASEL Report, 2013 by examining whole-school and single classroom SEL programs in middle grades contexts and gathering more empirical evidence around effective programs. However, we felt the scope of this task was beyond the current workgroup and instead we chose it as a starting point for our literature search. With SE skills seen as critical core competencies that are necessary to meet the broader educational goals of local, state, and national governments, our discussions raised questions about the importance for SEL for all students, where SEL was positioned within the curriculum, and what capabilities of middle grades teachers possessed to teach SE skills.

A 40-hour search of literature from approximately the last 10 years regarding social and emotional programs that targeted young adolescent learners revealed that most studies on SEL were focused on younger learners, with only a limited literature available where programs targeted young adolescent learners. Identified through a range of databases including ERIC, JSTOR, Scopus, ProQuest, ScienceDirect and Google Scholar, the studies confirmed that, for the most part, SEL is taught through a variety of whole-school or individual classroom programs and that programs are not universally applied across regions, states or countries. The search also confirmed that effective implementation of SEL programs occurred where there was evidence of extensive

professional development throughout the entire school system and that there is limited empirical evidence on teacher training for teachers to teach SEL in schools. The majority of the literature was based in the US. Keywords included combinations of the following: social and emotional learning, social skills, social skilling, programs, young adolescent, middle years, middle grades, middle level, junior secondary, junior high.

The workgroup therefore decided to focus on teacher preparation programs and the training, if any, teacher candidates receive around social and emotional learning in middle grades classrooms. A further search of the literature was conducted by the workgroup members using the same databases but with combinations of the following keywords: teacher preparation programs, preservice teacher, teacher candidate, teacher training, social and emotional skills, SEL, emotional intelligence, emotional competence. Although not exhaustive, the search identified limited literature that specifically addressed the need for social and emotional learning to be part of teacher candidate preparation programs (Palomera, Fernández-Berrocal, & Brackett, 2008; Zins, Bloodworth, Weissberg, & Walberg, 2004). The existing literature was theoretical and posed the justification for the inclusion of SEL training for teacher candidates and in-service teachers rather than reporting on the implementation of a program. Further searching needs to be undertaken to include terms such as mental health and student wellbeing. Most articles focused on the need for the development of SE competencies in teacher preparation with few acknowledging the need to build their capacity or preparedness to teach SEL.

As such, our recommended research focus is threefold: (a) understanding the literature around effective SEL programs for young adolescents, including a theoretical review of studies conducted to date; (b) teaching SE skills; and (c) the inclusion of SE skills in teacher preparation programs.

Research Questions

Structure of SEL Programs

1. What SEL programs are currently being used in schools?
2. What are the core features of SEL programs?
3. How are schools implementing SEL programs (i.e., whole-school, individual classroom, embedded in curriculum)?
4. What are the key features of effective programs for young adolescents?
5. How is the effectiveness of an SEL program measured?

Pedagogy Associated with SEL

6. Who are tasked with teaching SEL programs in schools?
7. What competencies do teachers need to be able to effectively teach SEL to students?
8. Is there empirical evidence of effective pedagogies for teaching SEL to young adolescents?

Teacher Candidate Preparation for SEL

9. Is there any evidence of explicit training in middle grades teacher preparation programs to prepare teacher candidates to teach SE skills for young adolescents?
10. What level of awareness of the importance of SEL for young adolescents do teacher candidates have?
11. How confident do teacher candidates feel about teaching SE skills?
12. What additional training would be necessary for to build their sense of efficacy to teach SE skills?
13. How could the teaching of SE skills be embedded within teacher education programs?

Teacher Professional Development

14. What professional development is available to prepare teachers to teach SE skills for young adolescents?
15. What level of awareness of the importance of SEL for young adolescents do middle grades teachers have?

16. What level of efficacy do teachers have for teaching SEL?
17. What additional training would be necessary for to build their sense of efficacy to teach SE skills?
18. How might the teaching of SE skills be embedded across the curriculum?

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D. Digital Technologies

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Definition of Research Area and Terms

For the purposes of this review, we defined digital technologies as digital tools, strategies, and resources that are used to improve teaching, learning, and creative inquiry. The New Media Consortium organizes these technologies into seven categories: (a) consumer technologies; (b) digital strategies; (c) enabling technologies; (d) Internet technologies; (e) learning technologies; (f) social media technologies; and (g) visualization technologies (Johnson, Adams Becker, Estrada, & Freeman, 2015). Understanding the role of digital technologies holds particular relevance for middle grades education, given that some of the largest digital technology initiatives in United States schools in the past two decades have occurred in grades five through eight (e.g., Lowther, Strahl, Inan, & Bates, 2007; Texas Center for Educational Research, 2009) and also that young adolescents are among the greatest users of computers and the Internet (Bishop & Downes, 2015; Lenhart, 2015; Rideout, Foehr, & Roberts, 2010).

Literature Review Process

The group conducted its work over the course of eight virtual meetings. We began by reiterating the charge presented to us by the MLER SIG: To identify the most important areas to study

within digital technologies in the middle grades within the next three to five years. Then, we determined where we should draw the boundaries around our particular area, such as in school vs. out of school use, year span, types of documents, adult mediated vs. non-adult mediated, and content area emphasis. Next, we sought publications or other resources that already existed in terms of literature reviews on technology in the middle grades.

Based on our own research, reading, and experience in the field, we identified four appropriate sub-groups for the work:

1. Middle grades student use of digital technology for school-related learning
2. Middle grades teacher use of digital technology for teaching
3. New directions in digital technology use with middle grades learners
4. Systems and structures of digital technology use in the middle grades

We divided our group by area of interest and reviewed hundreds of studies. Databases included ERIC, JSTOR, Scopus, ProQuest, Google Scholar, A+ Education, Humanities & Social Sciences Collection, Australia and New Zealand Reference Centre, Index New Zealand, MasterFILE, ScienceDirect. Keywords included combinations of the following: middle grades, middle school, middle schooling, middle level, junior high, students, young adolescents, teachers, digital technology, educational technology, technology, assessment, formative assessment, summative assessment, literature review, equity, digital divide, access, access to information, student voice, and social media.

From the review, we identified potentially useful studies and compiled them into a shared archive based on sub-group. Finally, we identified a set of recommended research questions we believe to be most important areas to study within digital technologies in the middle grades within the next three to five years.

Research Questions

Middle Grades Teachers

1. How do middle grades teachers use technology
 - a. for formative, authentic, and summative assessment purposes?
 - b. to advance student learning within content areas?
 - c. to promote interdisciplinary learning?
 - d. to involve families in the education of their young adolescents?
 - e. to promote community-based learning?
 - f. to improve team efficacy and effectiveness?
 - g. to personalize learning in the middle grades?
2. What is the nature of teacher learning and professional development
 - a. through the use of social media?
 - b. in technology integration into content area instruction?
3. How do teacher educators
 - a. model technology use for teacher candidates?
 - b. use digital technologies within specific content areas?
4. What effect does teachers' knowledge of technology integration have on instruction and assessment in the content areas?
5. How do middle grades teachers perceive the integration of technology into instruction and assessment? In what ways are these perceptions changing?
6. What is the impact of digital media on the role of the middle grades teacher?
7. What new forms of middle schooling pedagogy are opened up by the advent and affordances of emerging technologies?

Middle Grades Students

8. What are the most effective uses of technology for improving middle grades students'

- a. achievement within specific content areas?
 - b. personal efficacy?
 - c. school engagement?
 - d. cognitive and emotional motivation?
 - e. digital literacies?
 - f. higher order thinking skills?
 - g. 21st century skills?
9. How are middle grades students using technology to direct their own learning?
 10. What is the role of gamification and/or badging in middle grades students'
 - a. achievement?
 - b. engagement?
 - c. cognitive and emotional motivation?
 11. How do middle grades students leverage social media for learning?
 12. How and to what extent are middle grades students engaged in new technologies, including
 - a. blended learning?
 - b. flipped classroom?
 - c. makerspaces?
 - d. wearable technology?
 - e. 3D printing?
 - f. augmented reality?
 - g. virtual reality?
 13. In what ways does students' in-school and outside-school use of technology for learning differ?
 14. How do students make connections between content/concept and technology use?
 15. What factors impact middle grades students' equitable access to technology in and out of classrooms?

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Part III: Middle Grades Schools and Structures

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Definition of Research Area and Terms

We defined middle school organizational structures as those components or structures of middle grades programs and schools that organize people, place, and time. Powell (2015) outlined structures of people to include student groupings (i.e., homogeneous ability grouping, heterogeneous ability grouping, multi-age grouping, looping, teaming, advisory programs). Structures of place include public middle school options (e.g., charter, magnet schools) and private options as well as shared space and proximity. Structures of time include different scheduling formats (e.g., traditional, block). Jackson & Davis (2000) also highlighted the importance of organization of people, place, and time to foster the relationships that lead to student success.

Literature Review Process

In following suit with NMSA's (1997) *A 21st Century Research Agenda*, we sought to uncover questions pertinent to middle grades education today. Our guiding questions were: (a) what are the most pressing questions about current middle grades organizational structures that foster purposeful learning and meaningful relationships?; and (b) what factors and policies influencing the implementation of such structures need to be examined?

We searched the major middle grades journals, seminal databases (e.g., Ebscohost), books and

other resources published since 2000 by key terms (e.g., interdisciplinary teaming and middle school, teaming and middle school, interdisciplinary teaming and school, organizational structures and middle school, organization and middle school, common planning time, common planning time in middle school, advisory and middle school, PLC's and middle school, professional learning community and middle school, lesson study and middle school). In all cases, we added relevant works to the Google Spreadsheet, and stored a copy of the work in a Google Drive folder. Additionally, we sought the work of a middle grades education colleague who recently conducted a large scale search of literature (with structures as one of the subtopics) and went through all of the articles listed, again adding relevant works to the Google Spreadsheet, and storing a copy of the work in a Google Drive folder. We organized the Google spreadsheet into the following categories: bibliographic information, annotated summary, code based on structure (people, place, time), code based on influences (policies, factors). We also used Google Drive to save each file and stored one copy of every work that was recorded on the "yes" spreadsheet. Last, we used Google Docs to list our research questions, process, ideas for research studies, and key takeaways for the larger middle grades education research community.

After we conducted our first database search, we met to determine if this topic warranted further investigation. We gathered key statements and concepts from literature to ensure that the topic was a timely one. The search revealed that major national organizations routinely highlighted organizational structures in their criteria for assessing effective middle schools (e.g., National Forum, n.d.; National Middle School Association, 2010) and that interdisciplinary teaming was regularly identified as a defining feature of a

middle school (Hackmann, Petzko, Valentine, Clark, Nori, & Lucas, 2002; Warner, 2001). Swaim's (2009) perspective further solidified our belief that research into middle grades organizational structures remained timely:

Fifty years ago, the school was organized much differently than it is now. Maybe the system at that time was organized to fit who the students were at that time, or maybe it was just tradition. However, it made me wonder what it would have been like if the school had been organized as it is now, would today's middle school organization fit those earlier times? It also made me wonder if, in 2057, what we now consider effective middle school organization will still be the same. I came to the conclusion that the main reason it would be different would be if the needs and characteristics of young adolescents had significantly changed, because an enduring ideal that guides middle level education is that schools must be developmentally responsive to the students they serve (NMSA, 2003). (pp. 50-51)

We then used the emerging research questions to refine the spreadsheet (e.g., eliminating works no longer aligned with questions, duplications). We created a yes and no spreadsheet to list all works collected. We then identified focus areas that warrant further exploration. The group discussed the data until major themes, questions, key takeaways for the middle grades research community became apparent. Once we all agreed that we hit saturation, we discussed data until themes, questions, and key takeaways were refined.

Our final task was to identify gaps in knowledge and craft associated research questions. Utilizing the MLER SIG Common Planning Time study as a model for a large-scale study on one type of middle grades structure, we crafted a set of research questions that have the potential to guide the field for the next five years based on trends in middle grades school structures and gaps in the knowledge base. We broke our questions down by sub-topics (i.e., status of

school structures, structures of people, place, and time) to reflect our definition listed above. Structures within each sub-topic that were determined to be worthy of further investigation based on a large-scale search of literature on middle grades structures and are listed below followed by suggested research questions for each. For structures of people, interdisciplinary teaming will be explored. For structures of place, magnet and charter schools will be explored. For structures of time, traditional versus block scheduling will be explored.

Research Questions

A. Status and Vision

Status

1. What is the current status of middle grades organizational structures and what factors and policies influence the implementation of such structures?
 - a. In what ways are contemporary schools with middle grades organized (e.g., structures of people, place, time)?
 - b. How do these differ regionally?
 - c. In what ways do these structures foster or hinder
 - i. purposeful learning?
 - ii. meaningful relationships?
 - iii. student achievement?
 - d. What factors drive these organizational decisions (e.g., school leadership, district-level decisions, professional development)?
 - e. What policies drive these organizational decisions at the local, state, federal levels (e.g., accountability movement, class size reduction amendment)?

Vision

2. How should 21st century middle grades schools be organized to foster purposeful learning, meaningful relationships, and student achievement?
 - a. What organizational structures should exist in 21st century middle

- grades schools (e.g., structures of people, place, time)?
- b. What would these organizational structures look like when implemented?
 - c. What is needed to implement these organizational structures with fidelity?
 - d. In what ways might these organizational structures foster
 - i. purposeful learning?
 - ii. meaningful relationships?
 - iii. student achievement?
 - e. What factors drive these organizational decisions (e.g., school leadership, district-level decisions, professional development)?
 - f. What policies (school, district, state, federal) influence the effectiveness of these structures?

B. Interdisciplinary Teaming

Understanding and Implementation of Interdisciplinary Teaming

3. What is the intent of interdisciplinary teaming?
4. In what ways has the interdisciplinary teaming model changed over time?
5. In what ways is the implementation of interdisciplinary teaming influenced by external forces (e.g., administration, district expectations, and state requirements)?
6. In what ways does interdisciplinary teaming influence classroom practices (e.g., teaching, management)?

Teacher Candidate Preparation and Teacher Professional Development

7. What is the status of teacher candidate preparation for interdisciplinary teaming?
8. What is the status of teacher professional development for interdisciplinary teaming?
9. What preparation or development is necessary to implement interdisciplinary teaming effectively?

Benefits of Interdisciplinary Teaming

10. What are the benefits of interdisciplinary teaming for
 - a. students?
 - b. teachers?
 - c. the school community?
11. In what ways does interdisciplinary teaming foster
 - d. purposeful learning?
 - e. meaningful relationships?
 - f. student achievement?

Disadvantages of Interdisciplinary Teaming

12. What aspects of interdisciplinary teaming are difficult for
 - g. students?
 - h. teachers?
 - i. the school community?
13. In what ways does interdisciplinary teaming negatively affect
 - j. students?
 - k. teachers?
 - l. the school community?
14. In what ways does interdisciplinary teaming hinder
 - m. purposeful learning?
 - n. hinder meaningful relationships?
 - o. student achievement?
15. What factors, if any, influence the effectiveness of interdisciplinary teaming?
16. What factors, if any, lead to the reduction of fully implemented interdisciplinary teaming?
17. What policies (school, district, state, federal) negatively influence the effectiveness of interdisciplinary teaming?

Alternative Structures to Interdisciplinary Teaming

18. What alternative structures, if any, are being used in place of interdisciplinary teaming?
19. What are the benefits of these alternative structures for
 - p. students?
 - q. teachers?
 - r. the school community?
20. In what ways do these alternative structures influence

- s. classroom climate?
 - t. school climate?
21. In what ways do these structures foster or hinder
- u. purposeful learning?
 - v. meaningful relationships?
 - w. student achievement?

C. Magnet and Charter Schools

Status of Magnet and Charter Schools

22. What is the status of the magnet and charter school movements in the middle grades?
23. How do the purposes of magnet and charter middle schools compare to those of other schools with middle grades?
24. In what ways, if any, have magnet and charter schools changed over time?
25. In what ways, if any, do these structures support or hinder the middle grades movement?

Professional Preparation and Professional Development

26. How does teacher candidate preparation or teacher professional development differ for educators in magnet or charter middle schools?
27. What further preparation or development, if any, is necessary?

Benefits of Magnet and Charter Schools

28. What are the cognitive, social, emotional, and physical benefits of magnet or charter schools for young adolescent learners?
29. What are the benefits of magnet or charter schools for teachers?
30. In what ways do magnet or charter schools foster
- a. purposeful learning?
 - b. meaningful relationships?
 - c. student achievement?
31. What factors (school, district, state, federal) have influenced the effectiveness of magnet or charter schools in positive ways?

32. What policies (school, district, state, federal) have influenced the effectiveness of magnet or charter schools in positive ways?

Disadvantages of Magnet and Charter Schools

33. What are the barriers to participation in magnet or charter schools for students?
34. What are the disadvantages of magnet or charter schools for students and teachers?
35. In what ways are students' cognitive, social, emotional, and physical growth unaddressed by magnet or charter schools?
36. What factors, if any, have detracted from the effectiveness of magnet or charter schools?
37. In what ways have magnet or charter schools hindered
- a. purposeful learning?
 - b. meaningful relationships?
 - c. student achievement?
38. In what ways have magnet or charter schools affected local, state, and national education programs negatively?
39. What policies (school, district, state, federal) have influenced the effectiveness of magnet/charter schools negatively?

D. Scheduling Formats

Understanding and Implementation of Scheduling Formats

40. What scheduling formats are being used in the middle grades (e.g., traditional 6/7/8 period schedule, waterfall, rotating, long block, flexible block)?
41. What is the purpose of each scheduling format?
42. In what ways have scheduling formats changed over time?
43. In what ways are decisions about scheduling formats influenced by external demands (e.g., school administration, district expectations, state requirements?)

44. In what ways do scheduling formats influence classroom practices (e.g., teaching, exploratory classes)?

Teacher Candidate Preparation and Teacher Professional Development

45. What is the status of teacher candidate preparation on scheduling formats?
 46. What is the status of teacher professional development on scheduling formats?
 47. What further preparation or development is necessary to teach within various scheduling formats effectively?

Benefits and Outcomes of Scheduling Formats

48. What are the benefits and outcomes of various schedule formats for
 a. students?
 b. teachers?
 c. the school community?
 49. In what ways do various schedule formats foster
 a. purposeful learning?
 b. meaningful relationships?
 c. student achievement?

Perceived Barriers of Scheduling Formats

50. What aspects of various schedule formats are difficult for
 a. students?
 b. teachers?
 c. the school community?
 51. In what ways do various schedule formats hinder
 a. purposeful learning?
 b. meaningful relationships?
 c. student achievement?
 52. What policies (school, district, state, federal) influence the effectiveness of have various schedule formats?

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