

10-15-2018

# An Examination of Middle School Organizational Structures in the United States and Australia

Cheryl Ellerbrock

*University of South Florida*, [ellerbro@usf.edu](mailto:ellerbro@usf.edu)

Katherine Main

*Logan Campus University*

Kristina N. Falbe

*Illinois State University*

Dana Pomykal Franz

*Mississippi State University*

Follow this and additional works at: [https://scholarcommons.usf.edu/tal\\_facpub](https://scholarcommons.usf.edu/tal_facpub)



Part of the [Education Commons](#)

---

## Scholar Commons Citation

Ellerbrock, Cheryl; Main, Katherine; Falbe, Kristina N.; and Franz, Dana Pomykal, "An Examination of Middle School Organizational Structures in the United States and Australia" (2018). *Teaching and Learning Faculty Publications*. 169.

[https://scholarcommons.usf.edu/tal\\_facpub/169](https://scholarcommons.usf.edu/tal_facpub/169)

This Article is brought to you for free and open access by the Teaching and Learning at Scholar Commons. It has been accepted for inclusion in Teaching and Learning Faculty Publications by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).

Article

# An Examination of Middle School Organizational Structures in the United States and Australia

Cheryl R. Ellerbrock <sup>1,\*</sup>, Katherine Main <sup>2</sup>, Kristina N. Falbe <sup>3</sup> and Dana Pomykal Franz <sup>4</sup>

<sup>1</sup> Department of Teaching and Learning, University of South Florida, Tampa, FL 33620, USA

<sup>2</sup> Department of Education, Training, and Employment, Logan Campus Griffith University, Meadowbrook 4131, Australia; K.Main@griffith.edu.au

<sup>3</sup> Department of Middle Level Education, School of Teaching and Learning, Illinois State University, Normal, IL 61790, USA; knfalbe@ilstu.edu

<sup>4</sup> Department of Curriculum, Instruction, and Special Education, Mississippi State University, Starkville, MS 39762, USA; df76@colled.msstate.edu

\* Correspondence: ellerbro@usf.edu

Received: 1 August 2018; Accepted: 8 October 2018; Published: 15 October 2018



**Abstract:** The middle school concept, aimed at creating a more developmentally responsive learning environment for young adolescents, gained a stronghold in the later part of the 20th century. Proponents of this concept have argued continually for the holistic implementation of its six key characteristics if its benefits are to be realized. These characteristics include: (a) a challenging, integrative, and exploratory curriculum; (b) varied teaching and learning approaches; (c) assessment and evaluation that promote learning; (d) flexible organizational structures (i.e., including the physical space, scheduling, and grouping of students and teachers); (e) programs and policies that foster health, wellness and safety; and (f) comprehensive guidance and support services. Recently, Ellerbrock, Falbe, and Pomykal Franz identified key middle school organizational structures of people, place, and time as being interconnected and integral to effective middle school practices. Main also demonstrated the interconnected nature of these key characteristics and how organizational structures of people affected the successful implementation of other characteristics. Thus, how these organizational structures can and are being implemented has implications for our understanding of the effectiveness of other middle school practices. In this paper, researchers from both the United States and Australia examine and compare literature published between 2000 and 2018 addressing ways in which middle school/middle years organizational structures have been reported and categorized by structures of people, place, and time in these two countries. Pertinent literature related to organizational structures of middle schools in the United States and to middle years education in Australia was examined. Findings from studies and evaluations from each country are reported to provide an international perspective on the organizational structures of middle schools/middle years education across the two countries. Overall, since 2000, the body of knowledge about middle schools/middle years organizational structures has been surprisingly limited in comparison to their perceived importance in the field. This lack of research is concerning in the midst of educational reform in both countries, resulting in questions about the impact of school organizational structures on young adolescent development and learning.

**Keywords:** middle school; middle years education; school structures; young adolescents; interdisciplinary teaming; teaching teams; school choice; grade configurations; block scheduling

## 1. Introduction

In most countries, middle school is a relatively new concept. The middle school concept, aimed at creating a more developmentally responsive learning environment for young adolescents, gained

a stronghold in the later part of the 20th century. Proponents of this concept have continually argued for the holistic implementation of all of its six key characteristics if its benefits are to be realized. These characteristics include: (a) a challenging, integrative, and exploratory curriculum; (b) varied teaching and learning approaches; (c) assessment and evaluation that promote learning; (d) flexible organizational structures (i.e., including the physical space, scheduling, and grouping of students and teachers); (e) programs and policies that foster health, wellness and safety; and (f) comprehensive guidance and support services [1]. In the United States, the middle school concept gained a stronghold in the later part of the 20th century as a way to improve existing educational models into a more developmentally responsive schooling environment for young adolescents. Within Australia's long-held history of a two-tiered education system, the concept of middle schools has only begun to be investigated and promoted since the commission and release of a series of research reports in the late 1990s and early 2000s [2]. Many of these reports have focused on the unique educational needs of the young adolescent learner and have approached the evaluation of middle schooling in terms of student wellbeing and student outcomes. However, the implementation of middle schools across government, independent, and Catholic education sectors has been ad hoc and piecemeal and subject to jurisdictional policy and priorities. Recently, there has been a growing interest in and focus on middle years education. Depending on the state or type of school system (i.e., government or independent), schools that cater specifically for middle years learners (i.e., 10–15 years or grades 6–9, approximately) can be referred to as a middle school or, as in Queensland, a junior secondary. However, in general, Australia does not yet formally recognize middle schools as a distinct third tier of schooling but as the 'middle years'. For the purposes of this article, within the Australian context, middle schools will be referred to as the middle years or middle years education.

The middle school movement has long suggested the sheer importance of middle school organizational structures [3,4]. In one of the leading middle grade education textbooks used in teacher preparation courses in the United States today, Powell [5] organized middle school organizational structures into three categories: (a) structures of people include student groupings (e.g., teaming, ability grouping, multi-age grouping, looping, advisory programs); (b) structures of place include public (e.g., charter, magnet schools) and private options as well as grade configuration; and (c) structures of time include scheduling formats (e.g., block, traditional). In *Turning Points 2000*, another seminal work on middle level education, Jackson and Davis [6] stressed the importance of organizing middle schools according to people, place, and time to foster responsive relationships that lead to student success. Recently, the Ellerbrock, Falbe, and Pomykal Franz [7] used this way of conceptualizing organizational structures to identify key middle school organizational structures and their current implementation in middle schools in the United States, including structures of people (i.e., students, teachers), structures of place (i.e., types of schools), and structures of time (i.e., organization of the school day). Main [8] also demonstrated the interconnected nature of these key characteristics and how organizational structures of people affected the successful implementation of other characteristics.

Cleveland [9] argued that school structures, including the built environment, have a huge impact on what one can do within the school environment. In the United States, it appears that much of the literature on middle school organizational structures was published prior to 2000 when the middle school movement and reorganization from junior high schools to middle schools took place. Since 2000, the body of knowledge about middle school organizational structures has been rather limited in comparison to their perceived importance in the field. In fact, scholars have called for the need to also examine the current status of middle school organizational structures at the national level in the United States [10]. In Australia, following a number of state reviews in the early 1990s, the federal government commissioned and funded an initiative that focused on the middle years of schooling. The remit of this initiative was to try and understand the educational needs of young adolescent learners and to identify strategies to improve their educational outcomes. However, to date, there has only been a handful of small-scale studies that report across more than one middle years organizational structure. The only

exception to this was an evaluation of Western Australian public schools commissioned in 2004 with the report, *Middle Schooling in Western Australian Public Schools*, being released in 2008 [11].

Astoundingly, there has been a limited amount of research published on middle school/middle years organizational structures since 2000. The goal of this study is to examine and compare the available literature published since 2000 on the ways in which middle schools/middle years organizational structures have been reported and categorized by structures of people, place, and time in the United States and Australia. For the purposes of this paper, structures of people include the ways in which people are organized in the middle school setting (e.g., teaming); structures of place include public middle school options (e.g., charter and magnet schools), private and independent school options, and shared space and proximity; and structures of time include different scheduling formats (e.g., traditional and block) within the context of middle schools [5]. Our exploration of the literature is to increase our understanding of how middle schools/middle years organizational structures have been enacted in these two countries and to provide directions for future studies.

### 1.1. Historical Context of “Middle School” in the United States and Australia

Specialized education for young adolescents began in the United States in the early 1900s with the implementation of junior high schools across the country. Using the same structures as the high school (e.g., multi-teacher, departmentalized and multi-classroom models), junior high schools served as miniature high schools, creating a separate space for young adolescents, but doing little to specialize in meeting their developmental needs.

The 1960s marked a time of great social change in United States history (i.e., Civil Rights, Women’s Rights, the Vietnam War). While change was happening across society, it also was becoming increasingly apparent that young adolescents were being underserved in these “miniature high schools”. Important works from Gruhn and Douglas [12], *The Modern Junior High School*, and Alexander [13], brought a renewed commitment to these students in the form of middle schools. By 1968, there were over 1000 middle schools across the United States [14].

In 1973, the National Middle School Association (now known as the Association for Middle Level Education [AMLE]) became the first national organization focused specifically on middle schools. This organization helped start centralizing the views of middle level advocates. AMLE published key documents such as *This We Believe: Keys to Educating Young Adolescents* [3], a position paper that outlines the essential elements and characteristics of successful middle schools. Today, in the United States you can find both middle schools and junior high schools. Some are middle schools that function like junior high schools and vice versa.

In Australia, the impetus for the introduction of middle years education was in response to financial or pragmatic social imperatives [15]. However, during the 1970s and 1980s, as with those in other countries, Australian educators were becoming increasingly concerned by the levels of student disengagement and resulting school failure in the middle years of schooling. To address these concerns, the state of South Australia led a number of initiatives to develop a more developmentally responsive educational experience for young adolescents (see, for example, [16,17]). These initiatives drew on the experience and research from the United States with “an emphasis on student-centered pedagogies and supporting early adolescent needs” [15] (p. 154).

The study *In the Middle Report* [18] advocated for separate middle years organizational structures to support students during the transition from elementary to secondary schools. The report *From Alienation to Engagement* [17] argued specifically for “more holistic approaches to curriculum through flexible school structures and programming and through teachers working in teams as opposed to working within the isolation of their own classroom” [19] (p. 124). Further studies also promoted an ‘integrated curriculum’ [20], authentic assessment [21], community involvement [22], and middle years pedagogy [23].

In 1995, the Western Australian state government announced that every new government secondary school would have a purpose-built middle school structure. Following this announcement,

a major review, *Middle Schooling in Western Australian Public Schools*, was conducted that claimed to be “one of the first studies in the world to use a scientifically rigorous methodology to critically investigate the impact of ‘middle schooling’ on a broad range of school and student outcomes” [11] (p. v). At the time of their review in 2004, there were 13 new purpose-built middle schools with a further six to be completed by 2010 [11]. Thus, in Australia, the implementation of middle school organizational structures has been fragmented. Where purpose-built middle years structures have been introduced as part of a state government’s policy (i.e., Western Australia in 1995 and Queensland in 1998), schools have been designed and built to accommodate local needs and preferences with no one model of ‘middle schooling’ being put forward. Although there has not been a universal commitment to having purpose-built middle schools in Australia, most “state and territory governments and educational systems [have developed] middle years approaches and programs rather than middle school [structures] per se” [24] (p. 4).

### 1.2. Developmentally Responsive Middle School Organizational Structures

Early adolescence is recognized as a distinct period of human development that takes place between the ages of 10 and 15, when students typically attend middle school [3]. Middle school advocates around the world recognize the need for a distinct approach to schooling for young adolescents that address their physical, intellectual/cognitive, moral, psychological, social-emotional, and spiritual characteristics [25]. This unique developmental stage and the fragility of this age group led middle school advocates to design and promote a school philosophy and school organizational structures that support young adolescents’ unique developmental characteristics. As Nesin and Brazee stated, “meeting the needs of young adolescents has always been a rallying cry for the middle school movement” [26] (p. 471). Recommendations from *This We Believe* [3], the National Forum to Accelerate Middle Grades Education [4], and *Turning Points* [6] all suggest that young adolescents require developmentally responsive schools and structures.

An examination of all three aforementioned reports highlight that middle school/middle years organizational structures that focus on fostering relationships among and between students and adults in the school building are essential. Because the middle school movement built its premise on being a developmentally responsive movement and, in part, the implementation of particular school organizational structures is how the middle school movement attempts to fulfill the developmental needs of young adolescent learners [3,4], in this paper we conceptualize middle school organizational structures as components or structures that organize people, place, and time in developmentally responsive ways.

## 2. Materials and Methods

In this paper, we examine and compare the available literature published since 2000 on the ways middle schools/middle years organizational structures are reported and categorized by structures of people, place, and time in the United States and Australia. The selection of the United States and Australia as comparative samples is twofold. First, both the United States and Australia have a significant history in middle schools/middle years and, second, the researchers had a pre-existing relationship, making this a convenience sampling. Our driving research question is: Since 2000, what literature is available on the ways middle schools/middle years schools categorize themselves by structures of people, place, and time in the United States and Australia? As a group of researchers in the field with a detailed and well-grounded knowledge of the issues related to the topic and sub-topics being examined, we conducted a thorough review of the extant literature published since 2000 (as well as some key foundational works) that focused on middle school/middle years organizational structures. When conducting our review, consideration was given to definitions of key middle school organizational structures as reported on in major middle level works and considered as foundational documents in the field (e.g., *This We Believe*, *Turning Points* 2000). Using large-scale databases (e.g., Academic Search Premier, Proquest, PsycINFO, ERIC, Science Direct) a search was

undertaken for literature using a combination of search terms (e.g., middle school\*, team\*, structure\*, organization, time, time-table, and schedule). Although a systematic process was followed to identify the relevant literature, many articles, reports, and studies that were relevant did not use the focused search terms in their title or as recommended search terms, returning few, if any, results. Thus, the search was broadened to government websites and other repositories such as Trove (digital theses, Australia).

We reviewed, accepted, or rejected all articles and other works based on the driving research question and overall relevance to the topic. That is, we read each work carefully and included it in the study if there was an explicit reference to one or more of the middle school organizational structures under review. Then, we organized materials by structures of people (i.e., students and teachers), structures of place (i.e., types of middle schools), and structures of time (i.e., how the school day is organized). Next, we organized each structure by recurring themes and noted the structures most prevalent and/or trending within the literature.

### 3. Results

The findings of this literature review highlight the ways middle schools/middle years education organizational structures have been reported and categorized by structures of people, place, and time in the United States and Australia. For structures of people, we explored interdisciplinary teaming within the United States and its Australian equivalent, teacher teams, which can include interdisciplinary teams but can also include other combinations of teachers working together to teach the same group of students [27]. For structures of place, we explored grade configuration and school choice (including magnet schools, charter schools, homeschooling, and private schools) within the United States. For Australia, we explained the introduction of separate purpose-built middle schools (i.e., place) designed to support the structures of people (i.e., teacher teams and student groupings) and middle schooling practices (i.e., including structures of time) within traditional structures. For structures of time, we explored traditional versus block scheduling within the United States. In Australia, studies that focused on structures of time reported their outcomes in terms of student achievement and the organization of the curriculum (i.e., siloed or integrated) rather than on traditional or block scheduling. We discussed separately results from each organizational structure in the following sections.

#### 3.1. Structures of People

Structures of people focus on how schools organize students and teachers within the school. Since 2000, literature that focuses on structures of people has centered on the organization of students and teachers into teams. Throughout the years, teaming in education has taken on multiple forms across all grade levels (e.g., grade-level teams, co-teaching, inclusion teaching teams, team teaching, teacher teams, interdisciplinary teaming). In this section, we focus on interdisciplinary teaming, as it is called in the United States, and teacher teams as it is referred to in Australia. Interdisciplinary teaming/teacher teams is when a group of teachers across subject areas share common students, schedules, and portions of the school building as well as teaching responsibilities [10,28,29]. This type of teaming is touted as the “heart” of highly successful middle schools [3] (p. 31), “signature middle grades practice” [10] (p. 61), and “the key to everything else” [J. Lounsbury, personal communication, 6 March 2017]. Yet, the purpose/s of implementation, like many school reform and organizational efforts, is often reflective of the social or political agenda at the time. As stated by Wraga [30], “Interestingly, the purposes teaming is purported to serve at a given time often parallel the prevailing educational reform sentiment” (p. 328). Wraga proceeded to warn against associating interdisciplinary teaming or any instructional approach with educational reform initiatives as it may cause the approach to be viewed as trivial and perceived as a fad to be replaced with the next educational fad that follows.

**Interdisciplinary teaming in the United States.** Interdisciplinary teaming, like other organizational structures advocated for in the middle school movement (e.g., houses), divide the school population into smaller subgroups, affording the opportunity for a more personalized learning experience where students

and teachers have an increased sense of connectedness to one another [31]. Interdisciplinary teams tend to consist of anything between two and six teachers per team. Ideally, student size can vary between 40 and 190 students with a ratio of no more than 25 students per teacher and should reflect the school demographics [6]. Some research has found small teacher teams of two to three teachers [3,6,21,32] with 90 or fewer students are preferable [33,34]. These teams also tend to have classrooms located in close proximity to one another, providing students and teachers with a space on the school campus devoted solely to them [28]. Additionally, other school organizational structures that support interdisciplinary teaming and help provide the infrastructure necessary for teachers to best meet the needs of the students on their team should also be implemented (e.g., block scheduling, common planning time for teachers).

A natural byproduct of interdisciplinary teaming is the opportunity to foster a developmentally responsive school environment where a sense of personalization, connectedness, and social bonding among teachers and students is promoted [28,32,35]. Jackson and Davis state that interdisciplinary teams reduce anonymity and stress for young adolescents by fostering a “psychological home” [6] (p. 125), or as the National Middle School Association stated, “a sense of family” [3] (p. 31). At the same time, interdisciplinary teaming affords teachers a more holistic picture of students’ academic strengths and needs, enabling the teachers to work together to support students’ curricular and instructional needs. Not surprisingly, findings from research suggest an increase in student academic achievement and learning gains as a result of interdisciplinary teaming [36–38]. The opportunity to identify with a group and feel a sense of connectedness to that group while at the same time experiencing a sense of competence and academic success are core psychological needs of all humans [39,40], but these needs are especially important to young adolescents [25]. Interdisciplinary teaming has been and continues to be pronounced as a way to organize teachers and students to help meet the developmental needs of young adolescents. Students are not the only beneficiaries of interdisciplinary teaming. Teachers also benefit from being organized into interdisciplinary teams; such benefits include, but are not limited to, an increase in support from colleagues, teacher efficacy, professionalism, and professional growth [3,6,41].

Despite the widespread belief and supportive documentation that suggests that interdisciplinary teaming is the “heart” of developmentally responsive middle schools [3] (p. 31), research published since 2000 suggests a decline in implementation, in general, and even more of a decline in full implementation in the United States that moves beyond the basic rearrangement of students and teachers into teams. In a national study published in 2009, 72% of middle schools in the United States report the use of interdisciplinary teaming, which represents a 5% drop since 2001 [42]. Similarly, in a tri-state study of Indiana, Kentucky, and Ohio, Huss and Eastep report that 67% of the 104 schools in their study have fully implemented interdisciplinary teams and 16% have partially implemented teams [43]. In a single-state study, George reports that in Florida one-third of participants have completely implemented interdisciplinary teams at their school sites with 64% reporting that interdisciplinary teaming was never implemented, partially implemented, or eliminated [44]. However, an earlier survey study reports an upward trend in the implementation of interdisciplinary teaming in Arkansas, from 34% in 1990 to 72% in 2004 [45]. Some suggested causes for a downward trend in the implementation of interdisciplinary teams include national (e.g., residual effects from No Child Left Behind [NCLB]) and state (e.g., Class Size Reduction Amendment in Florida) legislation [44], a perceived lack of fit associated with the accountability and assessment movement [10,43], a lack of professional development on the purposes and implementation of interdisciplinary teaming [44,46,47], a lack of implementation of additional organizational structures that support interdisciplinary teaming [34], and the costs associated with implementation [10,42,43].

**Teacher teams in Australia.** In the Australian context, teacher teams, one of the signature features of middle years education recommended by the Carnegie Council on Adolescent Development, have been the most visible and generally accepted feature adopted in Australian middle years reform efforts [6]. For the most part, studies conducted in Australian middle schools since the 2000s have found that despite the variability in middle years models and practices, one key structural change

was common among schools (i.e., teaching teams). The rationale proposed for the implementation of teaching teams is that teams are seen to be key to the implementation of other middle years practices such as building smaller communities of learners, delivering an integrated curriculum, and promoting teacher-student relationships [11,29,48].

To date, only one small-scale study (four teams across three schools) and one evaluation (13 schools within a state with over 160 secondary schools) that provide any statistical data on the implementation or configuration of teaching teams in Australian schools. Although there are limited studies reporting on the organization of middle school teams within the Australian context, [11,29], both noted that the configuration of team membership and the responsibilities of the team were contextually-dependent and driven. Typical middle school teams consisted of between 100 and 140 students (i.e., four or five class groups) that are either of the same grade (e.g., Year 7) or a combination of two grades (e.g., Year 7 and Year 8). Four to five 'home' teachers make up an interdisciplinary team (i.e., a specialist teacher from each of the following: English, mathematics, science, and the humanities [studies of society]). The team is highly autonomous, being responsible for the total curriculum planning, teaching, and assessment for students, and has a team leader that directs the team and reports directly to a head of department or deputy principal [11,29]. It was noted in both studies that teachers within the teams worked together to deliver a high level of pastoral care for students. That is, teachers were also focused on students' personal and social wellbeing and were able to respond to the particular needs of individual students.

Despite the lack of studies focusing on middle years teaching teams, the establishment of teaching teams to create small communities of learners has been seen as a priority in the implementation of a middle years philosophy within some Australian schools [49]. Where schools have attempted to create a middle school, their reform efforts have generally focused on the organizational changes necessary (i.e., teaching teams, an integrated curriculum, and block timetables) that are regarded as signature practices of middle schooling. Whether interdisciplinary teaming or teacher teams, research on and the implementation of structures of people remain scattered.

### 3.2. Structures of Place

For the purposes of this paper, we explored structures of place using a framework provided by Powell [5]. In this case, structures of place are defined in terms of grade configuration and school choice options. While structures of place could also include shared spaces and the classroom environment, those are small-scale school and teacher choices and this section aims to look at larger scale trends across two countries. In today's educational landscape, more options are available in the United States and Australia as a result of school choice measures. As a result, this section reports on current trends in terms of structures of place in both the United States and Australia, specifically grade configuration and school choice.

**Grade configuration in the United States.** In the United States, responsibility for education lies with the 50 states and territories. There are approximately 50.4 million students enrolled in public schools in the United States [50]. The most recent report (2015–2016) on school enrollment from the National Center for Education Statistics (NCES) relays elementary enrollment (defined as K-8) and secondary enrollment. Using the enrollment breakdowns by grade, there are approximately 11.18 million students enrolled in grades 6–8 in the United States. This 2016 report [50] did suggest a shift taking place since the 1970s to move from junior high schools to middle schools. The NCES defined middle schools as "elementary schools beginning with grades 4, 5, or 6 and ending with grades 6, 7, 8" (p. 73). It defined junior high schools as "schools consisting of either grades 7 and 8 or grades 7 to 9" (p. 73). These definitions are based on grade configuration and are not centered on the philosophy or implementation of particular practices. In the NCES definition, middle schools are considered as elementary schools.

A common misconception of the middle school philosophy is that it is tied to a grade configuration. In reality, the idea of a middle school lies beyond just the grade configuration or name of a building.



Beane and Lipka pointed out that none of the research on the middle school concept is specific in regards to grade configuration [51]. The ideas associated with the middle school concept are relevant to good practices across all grades levels but are specifically designed to meet the developmental needs of young adolescents [51]. Therefore, grade configurations in the United States can include K-8, 6–8, 7–9, or any other configuration that includes students in their young adolescent years, between the ages of 10 and 15 [3].

**Grade configuration in Australia.** In Australia, the responsibility for school education rests predominately with the six state and two territory governments. The Australian education system has a distinct tradition of a two-tiered system of schooling with all jurisdictions providing 13 years of formal schooling. In all states and territories, primary education typically commences with a Foundation year (i.e., kindergarten year or preparatory year) and continues for seven years and is then followed by high school (secondary school) for an additional six years. The only exception to this is South Australia where students complete eight years of primary schooling followed by five years of secondary schooling. In 2017, there were 3,849,225 students enrolled in schools across Australia [52].

The 2016 *National Report on Schooling in Australia* noted that a number of states and territories “implemented new initiatives . . . for the middle years of schooling” [53] (p. 57). However, with such a brief history and limited research on practice, middle years education in Australia is still in its infancy. In 2008, *The Melbourne Declaration* was signed with all Australian state and territory governments committing to ensuring “that schools provide programs that are responsive to students’ developmental and learning needs in the middle years” [54] (p. 12). However, only Western Australia and Queensland have made significant organizational changes in the area of middle schooling. In 2008, the then state government of Western Australia allowed Catholic and independent schools and eight public schools to move Year 7 into a secondary school setting. This decision created inconsistencies in government schools and resulted in an increase in the numbers of Year 7 students moving to Catholic and independent schools. In response, the decision was made that in 2015, all Year 7 students in government schools would be placed in a secondary school. In Western Australia, the Catholic sector has also committed to having all Year 7 students move into a secondary school setting by the end of 2020. Likewise, in Queensland, in 2017 all Year 7 students attending government schools were moved into a secondary school setting to establish a Junior Secondary (Years 7–9). In the Department of Education, Training, and Employment report, the variability of age and grade configurations provided a range of options of middle schools including Years 6–9, 6–10, 7–10, 7–8, 7–9, 8 only, 8–9 and 8–10 [11].

**School choice in the United States.** School choice has become a growing part of the educational conversation in the United States since the implementation of the No Child Left Behind Act of 2001, which required test-based accountability [54]. Part of that mandate allowed for school choice in cases where students were assigned to a school that did not meet the accountability measures [55]. Not only did students have the freedom to go to a different school, but the failing districts were required to provide transportation for those students.

Proponents of the school choice model argue that providing choice in the American school systems creates a market type economy where schools are competing for funds and in return will perform better to acquire those funds. Some also argue this market economy promotes equity by removing boundaries on who can attend which school [55]. Critics of the system see the market economy as hurting local schools because their funding goes to these other options. Critics believe the additional funds are needed to hire staff, create programs, and so on; they cannot do that if they must compete for the money. Also, it is important to remember that many things (that are outside of the control of an individual school) can impact academic achievement, socio-economics being one of them. Bettebenner et al. pointed out that the school choice options simply skim the students and redistribute them, which, in turn, changes the achievement data [55].

There are many public and private schooling options open to families. There is also a great deal of variation in grade configurations across schools as each of the states has the power to write and enact laws about education in their state. Even the age of compulsory attendance is up to each state,

but commonly children are required to be in school from the ages of 5–8 up until they are 16–18 years of age. While this makes it difficult to talk in specifics, in all states families have some sort of choice about school. Among the most popular public-school options (aside from the traditional assigned neighborhood school) are magnet schools and charter schools. Other options for schooling exist such as homeschooling and private schooling. It should be noted that this is not an exhaustive list of school choices in the United States, but a recognition of the more popular options that one might read about in the literature.

**Magnet schools.** Magnet schools are public schools that have an instructional focus typically not available in the other public schools in the district. Magnet Schools of America lists Science Technology, Engineering, and Math (STEM), Fine and Performing Arts, International Baccalaureate (IB), Career and Technical Education (CTE), and World Languages as the most popular magnet school offerings [56]. Enrollment requirements at magnet schools vary but can include some type of application and/or audition. Magnet schools are funded by the public-school system and are regulated through local education districts. Magnet schools must comply with all state and federal education mandates.

**Charter schools.** The first charter school opened in 1991 in Minnesota, and now there are more than 6900 charter schools in over 40 states [57]. NCES reports that charter school enrollment is growing in the United States with nearly 6% of students (in all grades) enrolled in a public charter school, up from just 1% in 2001 [50]. The National Charter School Resource Center defines charter schools as “independently managed, publicly funded schools operating under a “charter” or a contract between the school and the state or jurisdiction allowing for significant autonomy and flexibility” [58]. Charter schools differ from magnet schools in that charter schools operate on their own charter and are not subject to the same laws, rules, and regulations of the district and that state while magnet schools operate within the confines of each school district [59]. According to Clark, Gleason, Tuttle and Silverberg, these charter schools are still accountable for student outcomes, but have flexibility in how to achieve and measure these outcomes [59]. Umpstead, Jankens, Gil, Weiss, and Umpstead noted that the intention of charter schools is to “experiment with different pedagogies and configurations and would develop models for great parent involvement and effective school operations” [60] (p. 87). The majority of the research on charter schools seems to center on the academic achievement of students in charter schools (in particular, how their achievement compares to their public-school counterparts). Despite claims that charter schools have increased academic achievement, there is actually little evidence to this effect [59]. Research is not available in prominent middle grades research journals on how the middle school concept is being implemented in charter schools. Again, nationally collected data from the NCES only reported on elementary and secondary schools, with elementary schools being those that have a grade 6 or lower, and secondary schools being those that have no grade level below 7.

**Homeschooling.** With the access to resources, curricula, and even online structured curriculum programs, homeschooling is becoming an increasingly popular choice for families and young adolescents across the nation. The NCES reports that the percentage of students in grades 6–8 that are being educated at home more than doubled from 1999 to 2016, from 1.6% to 3.3% [61]. Despite this fact, no articles are available in any of the leading middle school research journals that directly address homeschooling as a school structure in any way.

**Private Schooling.** The NCES reported private schools by typology: Catholic, Other Religion, and Nonsectarian. Within those categories, Catholic schools can be Parochial, Diocesan, or Private; other religion schools are labeled as conservative Christian, other affiliated, or unaffiliated; and Nonsectarian schools are labeled as regular, special emphasis, or special education. The most recent publicly available report (2015–2016) reports that 1,104,508 students in grades 6–8 attended a private school, meaning that roughly 9.4% of young adolescents in the United States are being educated in a private-school setting [62]. To date, scant articles are available in leading middle school research journals that investigate private schooling as a school structure.

**School choice in Australia.** In Australia, there are also compulsory education laws that require all children to attend formal schooling from approximately five years old to 16–18 years of age. There are many public and private options open to families in Australia with no one configuration of school choice. Each state and territory is responsible for its own education system and has individual governing bodies that make policies about education in their state. However, the curricula across all states and territories and across different types of schooling sectors are regulated by the same curriculum standards framework (The Australian Curriculum, Assessment and Reporting Authority). As such, since its announcement and rollout commencing in 2012, the same curriculum from the Foundation year to Year 12 has been delivered across the country. In Australia, families do have some different schooling options, including government schools, which in some states offer ‘selective’ schools (i.e., academic excellence schools) and private or independent schools. Private or independent schools are divided into religion-based systems and a number of other independent schools including Jewish and Islamic schools and a growing number of Montessori and Waldorf schools. Within the public and private sectors, there are also approximately 150 schools across Australia that offer the International Baccalaureate. A 2017 report notes that 65.6% of students were attending government schools (up from 65.4% in 2016), 19.9% were attending Catholic schools, and the remaining 14.5% were attending independent schools [52]. Australia is one of the most urbanized countries in the world with almost 85% of the population living within 50 km (approximately 31 miles) of the coast. This centralization means there is also a large number of students who study through ‘distance education’ or online due to their geographic location or through other circumstances (e.g., medical, home-based learners, or overseas travelling).

Lounsbury [63] unequivocally stated “The middle school concept is applicable wherever any 10- to 15-year olds are enrolled” (p. 2). He explains that the middle school concept is founded in ideals about “the nature and needs of young adolescents and the accepted principles of learning, both undergirded by a commitment to our democratic way of life” (p. 2). As explored in this section, both the United States and Australia have varied models of grade configuration and choice of school. This variance demonstrates that there is not one agreed or true model of middle school structure of place, but, rather, a wide range of grade configurations within different schooling options that meet individual contextual demands. Regardless of configuration and school type, the middle school concept is still applicable and researchers should be exploring the various ways in which the middle school concept is being applied in these schools. That is not to say that school choice does not support development in meaningful ways. As a matter of fact, some might argue that the opportunity to select the learning environment that best meets young adolescents’ developmental needs and interests is in direct alignment with being developmentally responsive schooling. The numerous models of structure of place point to the wide variance in implementation and the need for research to determine which models of place promote and support effective educational experiences for young adolescent learners.

### 3.3. Structures of Time

Structures of time refer to how time is allocated for student learning. Each school has some type of organizing structure of time that defines how the course content will be delivered within the prescribed school day [23]. Schools adopt a curriculum schedule that specifies the timelines for content delivery. Then schools must establish how to organize the school day to meet the timelines. Both the United States and Australia use similar structures of time.

**Time structures in the United States.** Traditionally in the United States, elementary schools are organized around reading and mathematics while middle schools and high schools generally designate a given amount of time to each of the required and elective courses. In general, middle schools have fewer course options and electives than high schools, affording middle schools more flexibility in scheduling the school day [64]. Middle school proponents encourage flexible scheduling designed to provide young adolescent sufficient time to engage in developmentally appropriate learning environments [6,65].

In response to school reforms of the 1980s and 1990s, school leaders introduced ideas of ways to maximize learning by increasing the daily amount of time a student spends in a course or by redesigning the school year [66]. Throughout the last decade, schools have continued to explore creative time formats to organize classes in an effort to improve student achievement [67,68]. Nonetheless, most schools still organize time around either uniform daily periods, usually six to seven periods of 45–55 min, extended time periods of 90 min with only four courses per day, often referred to as block scheduling, or some combination of short periods and extended time periods in the school day [43,65].

**Traditional scheduling.** Traditional scheduling refers to a school schedule that is organized into short, equal periods of time. Before the 1990s, this was the standard organizational scheme [66]. Typically, traditional middle school and high school schedules are six to seven periods per day with each period lasting between 45 and 55 min. From an organizational standpoint, this format is the most efficient design as it allows for the easy arrangement of courses, advisories, teacher planning periods, and other school-wide courses and requires fewer teachers than block or flexible schedules [69]. However, the traditional schedule format is rigid. Teachers must be creative to provide students with dynamic lessons that allow students to develop critical thinking and problem solving [70].

The traditional schedule restricts the amount of interaction between students and teachers that is needed to foster strong relationships. A key component of the AMLE's *This We Believe* [3] is that teachers value young adolescent learners and create an environment that is supportive. The traditional schedule limits the daily contact with an individual student and increases the number of students that a teacher sees each day. Thus, teachers do not have the time needed to form a true bond with all of their students.

**Block scheduling.** Block scheduling gained popularity in the 1980s and 1990s as a method to increase the number of courses high school students could take each year. Educational leaders endorsed the idea that longer blocks of time would increase teachers' ability to use a variety of teaching strategies and, thus, increase student engagement and ultimately achievement. There are a variety of block formats, but the most popular are the A/B Block where students take four classes on "A Day" and a different four classes on "B Day", and the  $4 \times 4$  or Accelerated Block where students take four classes per semester. In reviews of the block scheduling format, the most frequently noted benefits are: (a) extended periods of time to fully develop concepts and themes and allow students to interact with the material while a teacher is present; (b) fewer transitions during the day; (c) more time for individual interaction between and among teachers and students; and (d) increased opportunities for teachers to respond to classroom needs [70]. The  $4 \times 4$  Block is most critiqued for the amount of time that may occur between sequential courses. For instance, a student may take a math course in the fall of their freshmen year and not again until spring of their sophomore year [71].

Assessing the effectiveness of scheduling formats has resulted in mixed findings. Most research studies are grounded in student achievement within a specific content (e.g., [72,73]) and have varied results. Other studies report on students' and teachers' perceptions of the prescribed schedule and how they believe a particular schedule may have affected the learning environment [74]. Linking scheduling formats to student achievement is very complex as so many factors interact with student learning, including teacher content knowledge and pedagogy [66,74]. Additionally, few studies exist on the ways in which scheduling formats are developmentally responsive to the academic learning needs of young adolescents (e.g., [69,75,76]).

**Time structures in Australia.** Middle schools in Australia mirror both the rationale for and types of time scheduling that is experienced in the United States. However, as with other research on organizational structures, there are limited studies in Australia that specifically document the most common or effective types of scheduling in the middle years. Fisher examined school organizational structures in Australia and commented that there was "a deep spatial silence" (p. 1) where there was little to no awareness or recognition of the influence that 'space' has on school organizational structures and, in particular, the way that traditional 'cells and bells' (p. 1) can restrict innovative reform agendas (i.e., time schedules) [77]. In a small-scale study focusing on the way in which built

environments supported innovative learning in Australian middle schools (three government schools), Cleveland argued:

Replacing traditional classrooms and education models based on industrial concepts with learning environments and education models that facilitate connection and flow was observed to lead to pedagogical innovation and the emergence of new socio-pedagogical cultures that supported high levels of student engagement [48] (p. 245).

Furthermore, in a nationwide study Pendergast and Bahr found that where schools had implemented integrated studies that were supported through block scheduling, improved student outcomes were reported [78]. However, this study was undertaken across all schools that had students within the middle years (i.e., 12 to 15 years of age) and were not middle schools per se.

### 3.4. Key Findings

The key findings from the literature review comparing middle school organizational structures in the United States and Australia are outlined in Table 1 and synthesized below.

**Table 1.** Significant Literature on Middle School Structures of People, Place, and Time Since 2000.

Organizational Structure	United States	Australia
People	Interdisciplinary teaming [3,10,28,29,42–45]	Teacher teams (including but not limited to interdisciplinary teams) [3,6,11,29,48,49]
Place	Significant variation in grade configuration [51] Magnet schools [56] Charter schools [57] Homeschooling [61] Private Schools [62]	Significant variation in grade configuration [52–54] Governments schools [52–54] Private schools (Catholic and Independent) [52–54]
Time	Traditional Scheduling [3,69] Block Scheduling [69,75,76]	Environment has a significant influence on time [48] Block Scheduling [48,77,78]

Regarding structures of people, since 2000, the literature that focuses on structures of people has centered on the organization of students and teachers into teams, referred to as interdisciplinary teaming in the United States and teacher teams in Australia. Research on teaming in both countries is not overly plentiful, with limited research on Australian teacher teams [11,29] and not as much research on interdisciplinary teaming in the United States since 2000 as expected, given its pronounced significance as being the “heart” of highly successful middle schools [3] (p. 31), “signature middle grades practice” [10] (p. 615), and “the key to everything else” (J. Lounsbury, personal communication, 6 March 2017). Of the research available, teaming appears to be a key component of the middle school concept implemented to varying degrees in both countries [3,6,10,11,28,29,48,49]. Teams typically range between four and six teachers in the United States and between four and five teachers in Australia [6,8,28] and are responsible for between 40 and 190 students in the same grade in the United States and between 100 and 140 students in either the same grade or a combination of grades in Australia [8,28]. In both countries, research points to teams supporting students’ personal and social wellbeing as well as their academic outcomes. Interdisciplinary teams in the United States are viewed as a “psychological home” [28] (p. 125) for students that foster a “sense of family” [53] (p. 31) and, as stated in Australian studies, teacher teams foster a high level of pastoral care for students [10,29]. Specific to the United States, one large-scale national study suggests a 5% drop in the use of interdisciplinary teaming between 2001 and 2009, with 72% of schools reporting the use of interdisciplinary teaming in 2009 [43]. Other state-based studies [28,44], with the exception of one study [45], seem to also suggest a decline in the implementation of interdisciplinary teaming. In Australia, there is an overall lack of studies focusing on middle years teaching teams in any capacity (e.g., implementation, byproducts of implementation). However, one study seems to suggest that

teacher teams are viewed as a priority in the implementation of a middle years philosophy within some Australian schools [49].

Regarding structures of place, many similarities exist between the United States and Australia in terms of the places where young adolescents are educated. While grade configuration is commonly regarded as a defining marker of middle school [51], in both the United States and Australia young adolescent students are educated in a variety of schools with a variety of grade configurations. In both countries, school mandates and practices are the responsibility of state and territory governments. Both countries have a growing school choice system allowing families to choose what type of school their students will attend, either public or private. In the United States, popular public-school options are magnet and charter schools [56,57]. Alternatively, students can be homeschooled, or attend a variety of public-school options [61,62]. In Australia, options exist for government schools, and private schools (both independent and Catholic) [52–54]. What is not present in the literature for either country is how these alternative school structures support middle level practices and/or the development of young adolescents.

Regarding structures of time, there is limited research that specifically examines the benefits or challenges of the organization of the middle school day in both the United States and Australia. In the United States, much of the research has focused on students' academic achievement in a given content area within the context of a structure of time [72,73]. Similarly, researchers in Australia studied the advantages of integrated studies where teachers worked in a block schedule structure [78]. It is important to note that results were varied across the structures of time in both the United States and Australia. Furthermore, several researchers stated that it is very difficult to attribute student achievement directly to the structure of time because the context of the learning environment is complex [66,74]. Nonetheless, allowing that structure of time is difficult to study there are still limited studies that attempt to examine the benefits of how time is allocated within a school. This lack of research is concerning given the overarching tenant that having the time to develop both content and relationships is key to the development of the young adolescent learners [1,3].

#### 4. Discussion and Recommendations

The major takeaway from our work is the immense need for research that investigates current middle schools/middle years organizational structures in both countries. There seems to have been little research on the efficacy of middle school organizational structures published since 2000. Yet decisions are being made on how to organize people, the school itself, and the school day. Who is making these decisions? How? Why? Using what data? Are these decisions being made with the developmental needs of young adolescents in mind or are other factors driving them?

In the United States, education is changing on a national level. The past decade has brought increased high stakes testing, more public and private school options, a push for a national curriculum, and other major reforms. Likewise, the Australian education system has undergone significant changes at both national and state levels over the last five years. A national curriculum was introduced in 2012, national high stakes testing is coming under increasing pressure to be revised or rejected, and a number of states have moved whole cohorts of Year 7 students from their elementary or primary years settings into high school settings to create middle school or junior secondary schools. Across both contexts, these changes will play a role (either positive or negative) in the implementation of middle school philosophy and structures.

With such large-scale changes taking place in both countries, it is imperative that research examine the ways these changes and other factors are impacting the implementation of what have traditionally been regarded as key organizational structures of people, place, and time (e.g., teaming, common planning time) in the middle grades. Are the structures that seemed so imperative to middle schooling at the onset of the middle school movement still relevant in today's educational setting? If research does not support the use of these organizational structures, then what support is there to suggest that schools should continue to implement them? Are there more modern organizational structures being

implemented across middle schools that are not being captured in the research? In today's educational system with various types of middle schools (e.g., charter, magnet, private), in what ways are different types of middle schools organizing themselves and how do these organizational structures support students' developmental needs and learning? What is the effect of middle school organizational structures on the types of pedagogical practices enacted?

## 5. Limitations

Due to the broad nature of this study, a systematic literature review was not a suitable methodology. As such, the collective expertise of the authors in the areas being examined was important to enable the data to be identified within a range of source documents. Furthermore, this study was a convenience sampling comparative study between the United States and Australia due to a working relationship of the authors and the authors' collective expertise in middle schooling in these two countries. Further research that includes a wider range of countries that offer middle schooling programs is warranted.

## 6. Conclusions

Decisions on middle level schooling are being made in both the United States and Australia, and we can only assume other countries as well, which are potentially informed by a dearth of recent research, dated research, or completely uninformed by research focused on young adolescents, their needs, and the middle school years. If we can truly say that the middle school years matter, then scholars, ourselves included, need to consciously and purposefully research and report on middle level topics, school organizational structures being just one of the many topics, and ensure that we present our research to the appropriate authorities who create policy and enact practice. Otherwise, we fear that middle schools may become "middle schools" in name only and turn into schools that are potentially uninformed by young adolescent development and best practices for those in the middle years. Without solid research and strong advocacy for middle schooling, middle schools may remain in the shadows of that of elementary/primary and high schools and never reach the limelight young adolescents so desperately deserve.

**Author Contributions:** All the authors collaborated and contributed substantially to the entire manuscript. C.R.E. focused primarily on structures of people for the United States and served as the lead author. K.N.F. focused primarily on structures of place for the United States. D.P.F. focused primarily on structures of time for the United States. K.M. contributed to all structures for Australia.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Lounsbury, J.H. *Key Characteristics of Middle Level Schools*; ERIC Clearinghouse on Elementary and Early Childhood Education: Urbana, IL, USA, 1996.
2. Pendergast, D. Middle years education. In *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*, 3rd ed.; Pendergast, D., Main, K., Bahr, N., Eds.; Allen & Unwin: Crows Nest, Australia, 2017; pp. 3–20.
3. National Middle School Association. *This We Believe: Keys to Educating Young Adolescents*; National Middle School Association: Westerville, OH, USA, 2010.
4. National Forum to Accelerate Middle-Grades Reform. *Schools to Watch*. Available online: <https://www.middlegradesforum.org/schools-to-watch> (accessed on 5 July 2018).
5. Powell, S.D. *Introduction to Middle School*, 3rd ed.; Pearson: New York, NY, USA, 2015.
6. Jackson, A.W.; Davis, G.A. *Turning Points 2000: Educating Adolescents in the 21st Century*; Teachers College Press: New York, NY, USA, 2000.

7. Ellerbrock, C.R.; Falbe, K.N.; Franz, D.P. Middle grades schools and structures. In *Literature reviews in support of the Middle Level Education Research Agenda*; Mertens, S.B., Caskey, M.M., Eds.; Information Age Publishing: Charlotte, NC, USA, 2018.
8. Main, K. A Conflict in middle school teaching teams: friend or foe. *Aust. J. Middle Sch.* **2008**, *7*, pp. 12–16.
9. Cleveland, B. Addressing the spatial to catalyse socio-pedagogical reform in middle years education. In *The Translational Design of Schools*; Sense Publishers: Rotterdam, The Netherlands, 2016; pp. 27–49.
10. Arhar, J.M. Interdisciplinary teaming: A context for learning. In *Research to Guide Practice in Middle Grades Education*; Andrews, P.G., Ed.; Association for Middle Level Education: Westerville, OH, USA, 2013; pp. 615–632.
11. Department of Education, Training and Employment. Middle Schooling in Western Australian Public Schools: What's Working, What's Not and Why. Available online: <http://det.wa.edu.au/accountability/detcms/navigation/systemperformance> (accessed on 2 May 2018).
12. Gruhn, W.; Douglas, H. *The Modern Junior High School*, 2nd ed.; Ronald Press: New York, NY, USA, 1956.
13. Alexander, W. *The Exemplary Middle School*; Holt, Rinehart, and Winston: New York, NY, USA, 1968.
14. Lounsbury, J.H. Middle level education: A chronological history and a personal perspective. In *Research to Guide Practice in Middle Grades Education*; Andrews, P.G., Ed.; Association for Middle Level Education: Westerville, OH, USA, 2013; pp. 11–50.
15. Prosser, B. Unfinished but not yet exhausted: A review of Australian middle schooling. *Aust. J. Educ.* **2008**, *52*, 151–167. [CrossRef]
16. Barratt, R. *Shaping Middle Schooling in Australia: A Report of the National Middle Schooling Project*; Australian Curriculum Studies Association Inc.: Canberra, Australia, 1998.
17. Cormack, P.; Cumming, J. *From Alienation to Engagement: Opportunities for Reform in the Middle Years of Schooling*; Australian Curriculum Studies Association: Canberra, Australia, 1996.
18. *Schools Council in the Middle: Schooling for Young Adolescents*; Project Paper, 7; Schools Council, National Board of Employment, Education and Training: Canberra, Australia, 1993.
19. Main, K.; Bryer, F. Researching the middle years. In *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*; Pendergast, D., Bahr, N., Eds.; Allen and Unwin: Crows Nest, Australia, 2005; pp. 88–100.
20. Brennan, M.; Sachs, J. *Integrated Curriculum: Classroom Materials or the Middle Years*; Australian Curriculum Studies Association/National Schools Network: Geelong, Australia, 1998.
21. Cormack, P.; Johnson, B.; Peters, J.; Williams, D. About authentic assessment. In *Authentic Assessment: A Report on Classroom Research and Practice in the Middle*; Cormack, P., Ed.; Australian Curriculum Studies Association: Geelong, Australia, 1998.
22. Hill, P.W.; Russell, V.J. Systemic whole school reform of the middle years of schooling. In *Enhancing Educational Excellence, Equity and Efficiency*; Bosker, R.J., Creemers, P.M., Stringfield, S., Eds.; Kluwer Academic Publishing: Dordrecht, The Netherlands, 1999; pp. 167–196.
23. Pendergast, D. Middle Schooling. In *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*, 2nd ed.; Pendergast, D., Bahr, N., Eds.; Allen & Unwin: Sydney, Australia, 2010; pp. 3–22.
24. Dinham, S.; Rowe, K. Fantasy, Fashion and Fact: Middle Schools, Middle Schooling and Student Achievement. In Proceedings of the BERA, Edinburgh, UK, 3 September 2008.
25. Caskey, M.M.; Anfara, V.A., Jr. Research Summary: Developmental Characteristics of Young Adolescents. Available online: <http://www.amle.org/BrowsebyTopic/WhatsNew/WNDet.aspx?ArtMID=888&ArticleID=455> (accessed on 10 July 2018).
26. Nesin, G.; Brazee, E. Developmentally responsive middle grades schools: Needed now more than ever. In *Research to Guide Practice in Middle Grades Education*; Andrews, P.G., Ed.; Association for Middle Level Education: Westerville, OH, USA, 2013; pp. 469–493.
27. Main, K. Effective middle school teacher teams: A ternary model of interdependency rather than a catch phrase. *Teach. Teach.* **2012**, *18*, 75–88. [CrossRef]
28. George, P.S.; Alexander, W.M. *The Exemplary Middle School*, 3rd ed.; Wadsworth: Belmont, CA, USA, 2003.
29. Main, K. A Year Long Study of the Formation and Development of Middle Years' Teaching Teams. Unpublished Doctoral Dissertation, Griffith University, Australia, 2007.
30. Wraga, W.G. Interdisciplinary team teaching: Sampling the literature. In *We Gain More than We Give: Teaming in the Middle School*; Dickenson, T.S., Erb, T.O., Eds.; National Middle School Association: Columbus, OH, USA, 1997; pp. 325–344.



31. Kiefer, S.M.; Ellerbrock, C.R. *Caring and fun: Fostering an adolescent-centered community within an interdisciplinary team*. *MGRJ* **2012**, *7*, 1–17.
32. Wallace, J.J. Effects of interdisciplinary teaching team configuration upon the social bonding of middle school students. *Res. Middle Level Educ. Online* **2007**, *30*, 1–18. [[CrossRef](#)]
33. Flowers, N.; Mertens, S.B.; Mulhall, P.F. How teaming influences classroom practices. *Middle School J.* **2000**, *32*, 52–59. [[CrossRef](#)]
34. Flowers, N.; Mertens, S.B.; Mulhall, P.F. What makes interdisciplinary teams effective. *Middle School J.* **2000**, *31*, 53–56. [[CrossRef](#)]
35. Ellerbrock, C.R.; Kiefer, S.M. The interplay between adolescent needs and secondary school structures: Fostering developmentally responsive middle and high school environments across the transition. *High Sch. J.* **2013**, *96*, 170–194. [[CrossRef](#)]
36. Wilcox, K.C.; Angelis, J.I. *What Makes Middle Schools Work: A Report on Best Practices in New York State Middle Schools*; University at Albany: Albany, NY, USA, 2007.
37. Flowers, N.; Mertens, S.B.; Mulhall, P.F. *Applying Current Middle Grades Research to Improve Classroom and Schools*; National Middle School Association: Westerville, OH, USA, 2007.
38. Flowers, N.; Mertens, S.B.; Mulhall, P.F. Lessons learned from more than a decade of middle grades research. *Middle Sch. J.* **2003**, *35*, 55–59. [[CrossRef](#)]
39. Deci, E.L.; Ryan, R.M. *Intrinsic Motivation and Self-Determination in Human Behavior*; Plenum Press: New York, NY, USA, 1985.
40. Deci, E.L.; Ryan, R.M. The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychol. Inquiry* **2000**, *11*, 227–268. [[CrossRef](#)]
41. Strahan, D.; Hedt, M. Teaching and teaming more responsively: Case studies in professional growth at the middle level. *Res. Middle Level Educ. Online* **2009**, *32*, 1–14. [[CrossRef](#)]
42. McEwin, C.K.; Greene, M.W. Results and recommendation from the 2009 national surveys of randomly selected and highly successful middle level schools. *Middle Sch. J.* **2010**, *42*, 49–63. [[CrossRef](#)]
43. Huss, J.A.; Eastep, S. A tri-state study: Is the middle school movement thriving . . . or barely surviving? *Res. Middle Level Educ. Online* **2011**, *34*, 1–13. [[CrossRef](#)]
44. George, P.S. *Special Report: The Status of Programs in Florida’s Middle Schools*; Florida League of Middle Schools: Clermont, FL, USA, 2007.
45. Meeks, G.B.; Stepka, T.H. State-wide middle level implementation: Lessons learned. *Res. Middle Level Educ. Online* **2004**, *29*, 1–17. [[CrossRef](#)]
46. McEwin, C.K.; Dickinson, T.S.; Jenkins, D.M. *America’s Middle Schools in the New Century: Status and Progress*; National Middle School Association: Westerville, OH, USA, 2003.
47. Valentine, J.W.; Clark, D.C.; Hackmann, D.G.; Petzco, V.N. *Leadership in Middle Level Schools, Vol. I: A National Study of Middle Level Leaders and School Programs*; National Association of Secondary School Principals: Reston, VA, USA, 2002.
48. Cleveland, B.W. *Engaging Spaces: Innovative Learning Environments, Pedagogies and Student Engagement in the Middle Years of School*; University of Melbourne, Faculty of Architecture, Building and Planning: Melbourne, Australia, 2011.
49. Pendergast, D.; Flanagan, R.; Land, R.; Bahr, M.; Mitchell, J.; Weir, K.; Noblett, G.; Cain, M.; Misich, T.; Carrington, V.; et al. *Developing Lifelong Learners in the Middle Years of Schooling*; Ministerial Council on Education, Employment, Training, and Youth Affairs (MCEETYA): Canberra, Australia, 2005.
50. Snyder, T.D.; de Brey, C.; Dillow, S.A. *Digest of Education Statistics 2015 (NCES 2016-014)*; National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education: Washington, DC, USA, 2016.
51. Beane, J.; Lipka, R. Guess again: Will changing the grades save middle level education? *Educ. Leadersh.* **2006**, *63*, 26–30.
52. Australian Bureau of Statistics. *Schools Australia, 2017*. Available online: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4221.0> (accessed on 17 June 2018).
53. Australian Curriculum and Assessment Authority. *National Report on Schooling: 2016*. Available online: <https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia-2016>. (accessed on 17 June 2018).

54. Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), Student Learning and Support Services Taskforce. *National Declaration on Educational Goals for Young Australians*; MCEETYA: Canberra, Australia, 2008.
55. Betebenner, D.W.; Howe, K.R.; Foster, S.S. On school choice and test-based accountability. *Educ. Policy Anal. Arch.* **2005**, *13*, 1–22. [CrossRef]
56. Magnet Schools of America. What are Magnet Schools. Available online: <http://magnet.edu/about/what-are-magnet-schools> (accessed on 4 April 2018).
57. National Alliance for Public Charter Schools. Estimated Charter Public School Enrollment, 2016–2017. Available online: [http://www.publiccharters.org/sites/default/files/migrated/wp-content/uploads/2017/01/EER\\_Report\\_V5.pdf](http://www.publiccharters.org/sites/default/files/migrated/wp-content/uploads/2017/01/EER_Report_V5.pdf). (accessed on 4 April 2018).
58. National Charter School Resource Center. What is a Charter School? Available online: <https://charterschoolcenter.ed.gov> (accessed on 4 April 2018).
59. Clark, M.A.; Gleason, P.M.; Tuttle, C.C.; Silverberg, M.K. Do charter schools improve student achievement? *Educ. Eval. Policy Anal.* **2015**, *37*, 419–436. [CrossRef]
60. Umpstead, R.; Jankens, B.; Gil, P.O.; Weiss, L.; Umpstead, B. School choice in Spain and in the United States. *Glob. Educ. Rev.* **2016**, *3*, 84–102.
61. National Center for Educational Statistics. Number and Percentage of Homeschooled Students Ages 5 through 17 with a Grade Equivalent of Kindergarten through 12th Grade, by Selected Child, Parent, and Household Characteristics: Selected Years, 1999 through 2016. Available online: [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_206.10.asp](https://nces.ed.gov/programs/digest/d17/tables/dt17_206.10.asp) (accessed on 13 September 2018).
62. National Center for Educational Statistics. Number and Percentage Distribution of Private School Students, by Grade and Private School Typology: United States, 2015–16. Available online: <https://nces.ed.gov/surveys/pss/tables/TABLE06fl.asp> (accessed on 13 September 2018).
63. Lounsbury, J.H. Deferred but not deterred: A middle school manifesto. *Middle Sch. J.* **2009**, *5*, 31–36. [CrossRef]
64. Gruber, C.; Onwuegbuzie, A.J. Effects of block scheduling on academic achievement among high school students. *High Sch. J.* **2001**, *84*, 32–42. [CrossRef]
65. McEwin, C.K.; Greene, M.W. *The Status of Programs and Practices in America's Middle Schools: Results from two National Studies*; Association for Middle Level Education: Westerville, OH, USA, 2011.
66. Zelkowski, J. Secondary mathematics: Four credits, block schedules, continuous enrollment? What Maximizes College Readiness? *Math. Educ.* **2010**, *20*, 8–21.
67. Biesinger, K.; Crippen, K.; Muis, K. The impact of block scheduling on student motivation and classroom practice in mathematics. *NASSP Bull.* **2008**, *92*, 191–208. [CrossRef]
68. Zepeda, S.J.; Mayers, R.S. An analysis of research on block scheduling. *Rev. Educ. Res.* **2006**, *76*, 137–170. [CrossRef]
69. Lare, D.; Jablonski, A.M.; Salvaterra, M. Block scheduling: Is it cost effective? *NASSP Bull.* **2002**, *86*, 54–71. [CrossRef]
70. National Council of Teachers of Mathematics. *Principles to Actions: Ensuring Mathematical Success for All Students*; National Council of Teachers of Mathematics: Reston, VA, USA, 2014.
71. Brown, D.F. Middle level teachers' perceptions of the impact of block scheduling on instruction and learning. *Res. Middle Level Educ. Online* **2001**, *24*, 1–13. [CrossRef]
72. Dexter, K.M.; Tai, R.H.; Sadler, P.M. Traditional and block scheduling for college science preparation: A comparison of college science success of students who report different high school scheduling plans. *High Sch. J.* **2006**, *89*, 22–33. [CrossRef]
73. Rice, J.K.; Croninger, R.G.; Roellke, C.F. The effect of block scheduling high school mathematics courses on student achievement and teachers' use of time: Implications for educational productivity. *Econ. Educ. Rev.* **2002**, *21*, 599–607. [CrossRef]
74. Banicky, L. *Block Scheduling: A Review of the Literature*; Report from the Department of Educational Leadership and Assessment No 10; Virginia Department of Education: Richmond, VI, USA, 2012.
75. Juvonen, J.; Le, V.; Kaganoff, T.; Augustine, C.; Constant, L. *Focus on the Wonder Years: Challenges Facing the American Middle School*; Rand: Santa Monica, CA, USA, 2004.
76. Mattox, K.; Hancock, D.R.; Queen, J.A. The effect of block scheduling on middle school students' mathematics achievement. *NASSP Bull.* **2005**, *89*, 3–13. [CrossRef]

77. Fisher, K. *Schools as 'Prisons of Learning' or, as a 'Pedagogy of Architectural Encounters': A Manifesto for a Critical Psychological Spatiality of Learning*; Flinders University of South Australia: Adelaide, Australia, 2002.
78. Pendergast, D.; Bahr, N. *Teaching Middle Years: Rethinking Curriculum, Pedagogy and Assessment*; Allen and Unwin: Sydney, Australia, 2005.



© 2018 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).