

Is there actually a middle school plunge?

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Declaration:

This dissertation contains no material that has been accepted for the award of any other degree or diploma in any educational institution and, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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Name: Louisa Langsford

Date: 14/04/2022

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Abstract

The middle school plunge (West & Schwerdt, 2012) is a phenomenon based on the disparity in academic achievement that occurs when students transition from a primary school to a middle school. The purpose of this study was to determine if the middle school plunge exists, and if it did exist, what factors contributed to its effect on middle school students' learning other than the transition from primary to middle school. Furthermore, this study aimed to investigate how the effects of the middle school plunge could potentially be avoided or completely mitigated to improve the learning experience of middle school students. Education databases were used to find research papers and books published between 1993 to 2020 on the middle school plunge and middle school academic achievement and motivation. Based on the research, thematic analysis was then used to determine the key contributing factors to the middle school plunge. Six key themes were identified, which were the transition from primary to middle school, the effects of adolescence on learning, teachers' preconception of students' capacity for learning, peer and student-teacher relationships, the potential impacts of socio-economic status and the effects of school climate and culture. Based on these six key themes, a systematic literature review was employed to analyse and synthesise the information presented in the previously published literature. The systematic review determined that the middle school plunge does exist as students in years 7-9 are more likely to experience a drop in academic achievement and engagement, compared to primary and senior school students. This research study determined that it is necessary to not only consider the transition from primary to middle school but also the five additional aspects of middle school students' lives that affect their ability to be academically successful. Furthermore, the results determined that middle school students who are from disadvantaged socio-economic backgrounds are affected the most by the effects of the middle school plunge as they have compounded general factors such as the effects of adolescence and the transition from primary to middle school, which impede their abilities to achieve academically. Therefore, this research is significant as it helps to identify the ways students' learning is affected, which can help teachers to know how to alter their practice so that students who are more susceptible to the effects of the middle school plunge can be properly supported. This research paper suggested recommendations such as improving peer and student-teacher relationships to increase students'

feelings of belonging and sense of inclusion, which increases their willingness to actively engage in learning. Furthermore, it is recommended that teachers create tasks and assessments which have strong connections to students' real-life experiences to make learning relevant for them, which assists in increasing student engagement, and therefore academic achievement. Additionally, this research study highlighted the limited recent research into middle school students' education, therefore further research on the efficacy of middle school is recommended. This is so teachers are provided with more resources to help them improve their teaching practice for middle school students and reduce or completely mitigate the effects of the middle school plunge.

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Chapter 1: Introduction

Introduction

The disparity in engagement and academic achievement of middle school students is an issue affecting schools at local, national, and international levels. It is a phenomenon that West and Schwerdt (2012) have keyed as the “middle school plunge”. The middle school plunge describes the drop in academic achievement following the transition from primary school (R - Year 5 or 6) to a new middle school (Year 6 or 7 – 9) (West & Schwerdt, 2012, p. 3). It specifically outlines that in math and reading, academic achievement drops between 3.5 and 7 months of expected learning of the 10-month school year (West & Schwerdt, 2012, p. 3).

Statement of the goal of the dissertation

This research aims to determine if the middle school plunge exists at all, if it exists within its specific context, or if its definition should be inclusive of a wider range of factors that influence middle school students’ academic abilities. It was expected that literature would argue that the plunge does exist, but that there would be varying opinions to explain why. However, when considering extending the definition of the middle school plunge, it was important to understand whether the transition from primary to middle school affects achievement in subjects aside from reading and mathematics. Moreover, considering additional factors in students’ lives that influence this phenomenon, the extent of the effect of the middle school plunge on students’ achievement was clarified. Considering this paper determined the middle school plunge does exist, the research led to including additional contributing factors to this drop in academic achievement and engagement. Through this research, suggestions emerged within the teaching context about how academic achievement and engagement can be improved for middle school students. This included investigating effective teaching strategies and philosophies within the classroom to create inclusive and productive ways to cater to a range of student’s needs, which is important for development in their middle years’ schooling (Pendergast et al., 2017, p. 82). This research is important for current and future teachers as it provides further explanation as to why this phenomenon may be occurring, and what causes it, to improve middle school students’ learning experience. As a result of the research, teachers can explore

and utilise teaching tools and strategies that could prevent completely, or at least minimise, the effects of the middle school plunge.

Background

A preliminary perusal of recent literature revealed that there is evidence of middle school-aged students showing higher rates of disengagement and disparity in academic achievement (Pendergast, et al. 2017, p. 4). This is because moving into a middle school environment can be a difficult transition for students as they have to adjust to a learning environment that does not support them in the same way a primary classroom did (Hyman, 2015, p. 18). Having to adjust to being a more independent learner in a short period of time can have a significant impact on student's engagement in school and academic achievement. This is further supported by an experiment conducted in Arkansas, where students in a mathematics test were achieving proficient or above grades in grade 5, found that these grades dropped by 17% on one test and 20% on another by grade 6 (Dove, et al., 2010, p. 275). These articles indicate that there is research to support the concept of the middle school plunge in its specific context as it relates to mathematic achievement. Further research in this dissertation explains whether this is an accurate representation of all articles based on the middle school plunge, and if it is, if it can it be applied in a broader context, including other subject areas as well.

To determine this, additional factors needed to be considered as causes for the disparity in achievement and engagement for middle school students. This allowed a deeper understanding as to why the middle school plunge exists in a greater context. It also investigated causes that exist outside the parameters defined by West and Schwerdt's (2012) understanding of the phenomenon the middle school plunge. Once this was established, appropriate suggestions were made as to how to improve or mitigate the effects of the middle school plunge in a way that is useful for a wider community. Further preliminary research into the concept of disparity in academic achievement and engagement for middle school students led to reasons such as the effects of school transitions, effects of adolescence and the impact of school climate. Extended research is required to determine whether these issues can be seen as a

contribution to the middle school plunge in order to improve current teaching practice and the experience of middle school students.

Historical Background

In 1998, Alspaugh used data from 16 rural or small towns with ranging socio-economic backgrounds of students to study the achievement loss during students' transition to middle school. This research explored the decrease in academic achievement as a direct causation of students' transition from primary to middle school in Year 7. Although conducted in 1998, this research remains relevant to this study as it exemplifies the continuing dip in academic achievement for middle years students. This further demonstrates the gap in the literature that explores, in depth, the array of contributing factors to this phenomenon, and subsequent suggestions and improvements that could be made during these middle school years to improve students' experiences.

Definitions

Within this research, middle school refers to students "aged from around eleven to fifteen years and typically in Years 5-9 in schools" (Main, et al., 2017, p. 3). Middle school students are referred to as young adolescents as well as the middle years and middle years learners and/or students throughout this paper (Pendergast & Main 2013, p. 26). The creators of the term middle school plunge, West and Schwerdt (2012), defined the phenomenon as the drop in academic achievement that occurs when primary school children in America transition to a new middle school in year 6 or 7. West and Schwerdt (2012) take into consideration the sizes of schools, as well as their location, gender, and ethnicity and deduce that the results in academic achievement do not differ significantly (p. 4). Additionally, in this research paper, student achievement relates to students' academic performance in grade letter in all subjects. Furthermore, the use of engagement or academic engagement refers to students' investment, interest, and active involvement in their learning and in school activities (Tomaszewski, et al., 2020, p. 613; Pendergast, et al., 2017 p. 71).

Significance of the study

Considering the potentially negative ramifications the middle school plunge has for middle school students, (West & Schwerdt 2012; Main et al., 2017; Hyman. 2015; Dove, et al., 2010), it is important to understand the implications its existence may have for middle school students' future academic career. It is significantly important to determine the reasons for the existence of the middle school plunge to improve middle years students' school experience by mitigating, or preventing all together, its effect on learning. By understanding the causes of the middle school plunge and which groups of adolescents it effects, recommendations are made to improve teaching styles and curriculum assessment that would increase students' achievement and engagement. Additionally, research in middle years education has increased (Main, et al., 2017) as these years of adolescents' schooling are a critical period of learning in which students learn fundamental disciplines. However, during the middle years of education, adolescent students are at the greatest risk of disengagement from learning (MCEETYA, 2008, p. 12). Therefore, it is important to understand what causes this disengagement to avoid drops in academic achievement in the future. Furthermore, this research is significant as it allowed investigation into past literature which demonstrated the development of middle school and research into adolescents' learning. This gave insight into the changing philosophies behind adolescent education which allowed understanding of the complexities of middle years learning, and what can be done to improve it. Additionally, exploring the middle school plunge and middle school adolescence, brought into question whether it was time to relook the whole concept of middle school and how it is structured as there is not a great range of recent literature on this.

Rationale

The research question for this dissertation came about after completing a course called *Middle and Secondary Pedagogy* in my Master of Teaching degree. I came across the term reading Pendergast, et al.'s (2017) book *Teaching middle years: rethinking curriculum, pedagogy and assessment* in which I heard the term, middle school plunge, for the first time. After further research the significance of the term struck a chord for me as I saw similarities in the school I worked for as a school services officer (SSO). Considering I will inevitably teach middle school classes, soon

in placements and later as a teacher, it became increasingly interesting to me whether the middle school plunge actually existed in the classroom, and if it did, why. The interest in this new term I had learnt, the middle school plunge, in addition to working with middle school students who I saw struggle to engage and excel academically in school, influenced this research question completely.

Professional rationale

Considering the new complexities of adolescence in the current society, I believed the middle school plunge would be an important concept for all teachers to comprehend. With developing technology and its increased use in educational practice, and students' personal lives, the complexity of adolescence continues to grow. Students aged between 12-15 are still considered children legally yet, can access and are exposed to much more mature ideas and information on the internet that can have potentially negative influences on their behaviour. As a result, it is important for all teachers, especially newly minted teachers with minimal experience, to comprehend the complexities of middle years education to ensure students receive the best learning experience possible.

Scope of research

Research that discusses the impact of school or external life factors that may have negative implications for student's achievement will be included in this paper. As well as research that perhaps suggest the plunge does not exist. It is important to extend the research to cover a range of data that will prove or disprove the existence of the middle school plunge to create a valid conclusion. This research will be inclusive of international data as there is limited researched specifically in Australia, and the term middle school plunge was researched and created in America. Therefore, a wider conclusion can be drawn about the effects of the middle school plunge on a global level, as can the suggestions that will be made.

Roadmap of research

Following the introduction of this research paper, the methodology employed for the literature review is explained. It displays the methods, theories and approaches used to collect and analyse data, in particular the use of thematic analyses to create the

themes expanded upon in the literature review. The literature review subsequently follows the methodology to detail previous literature on the existence of the middle school plunge in an international context. Then the information from the literature review is analysed in the results chapter to determine the existence of the middle school plunge. Finally, the results of the patterns are interpreted allowing for potential suggestions and improvement that could be made within school communities to improve middle school students' learning experiences.

Chapter 2: Methodology

Theory/procedure used

This paper extended upon the existing research on the reality of the perceived middle school plunge in a wider context than its original definition. Initial research demonstrated that there was limited application of the term middle school plunge in situations that include external factors that affected academic engagement and achievement. Therefore, aside from the implications of the transition between primary and middle school, it was important to extend the research to understand how external factors could potentially impact middle school students' achievement. This dissertation employed a qualitative research design in which data was substantially collected from previous literature on this topic.

Based on an epistemological approach, this research on the middle school plunge was conducted using the qualitative design method of a systematic review. A qualitative design method was used to conduct this research as it is "a source of well-grounded, rich descriptions and explanations of processes in identifiable local contexts" (Miles, et al., 2014, p. 1). This type of research allowed for in-depth and detailed recounts of middle school students' experiences within school contexts that determined the outcome of the research question. Furthermore, by examining research articles which presented qualitative data, subjective data was utilised which more accurately represented the ideas of the researcher's participants. This resulted in more insightful data being collected which assisted in the depth of the literature review (Hammersley, 2013, p. 13).

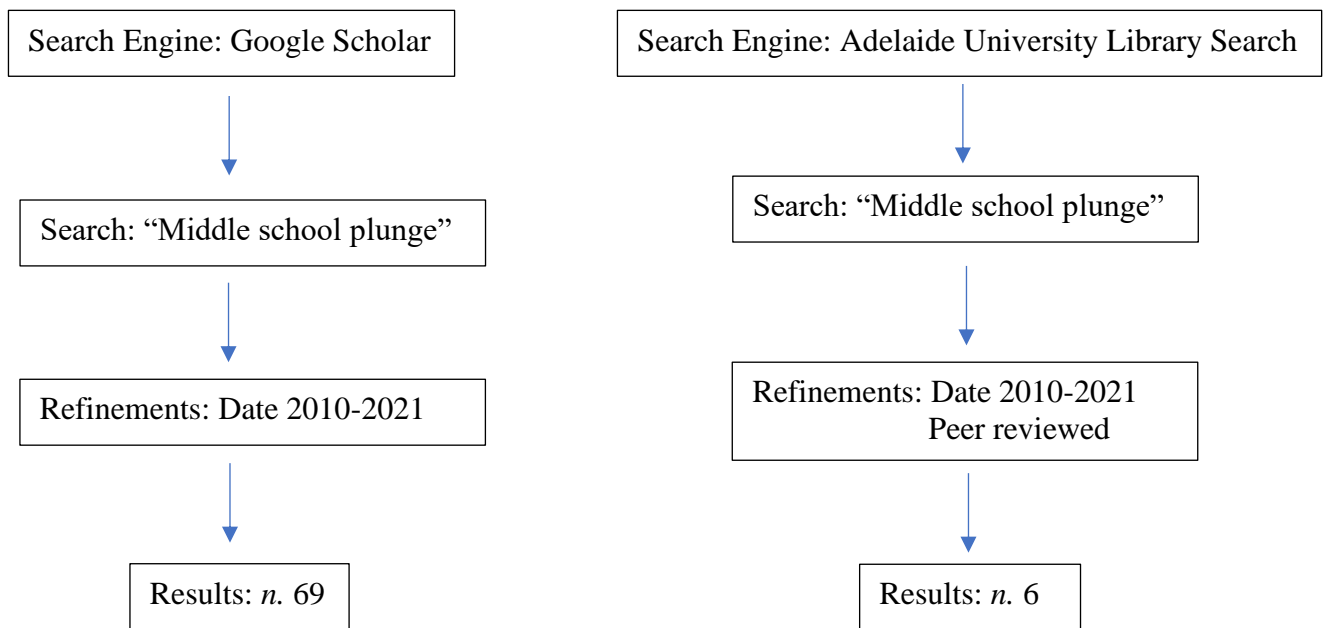
A social constructivist approach was utilised as the epistemology of the research which aimed to establish an understanding of the world through the lived experiences of people (Creswell & Creswell, 2018, p. 8). As a result, secondary research was collected which depicted the experience of middle school years students' achievement levels and engagement based on a range of factors beyond the transition from primary to middle school. Therefore, conclusions could be drawn, and suggestions could be made, based on the lived experiences of the students who are directly affected by the phenomenon of the middle school plunge. In this research paper, the aim was to understand how certain aspects of adolescents' lives had potentially negative

implications toward their middle school academic achievement and engagement. Researching through the social constructivist approach was conducive to a qualitative research design as it allows for in-depth and descriptive data to be analysed. This is especially useful as this approach focuses on the living situations and cultural settings of people’s lives to make considered interpretations about research (Creswell & Creswell, 2018, p. 8).

Data collection

To find the initial research for this dissertation, Google Scholar through the University library and the online Adelaide University Library were used. The flow chart below displays the limited results from the initial search.

Figure 1. Flow chart of initial research of the middle school plunge



The search terms were then narrowed and the data bases A+ Education and ProQuest Central were used to find relevant articles. However, these searches displayed limited search results, and an extended range of data bases, as well as the University Library and Google Scholar data bases, needed to be used to find sufficient results. An example of the search engines, search terms and refinements used through the searching process are presented in a table below.

Table 2. Table displaying examples of search engines, terms and refinements used

Search Engine	Search Terms	Refinements
ProQuest Central Search	Middle school plunge	1990-2021 Peer reviewed
A+ Education	Middle school AND engagement	
EBSCOhost Teacher Reference centre	Middle school AND academic achievement	
EBSCOhost Educational Research Complete	Middle school AND transition	
Eric Online	Middle school AND school climate	
Google Scholar	Middle school AND peer relationships	
Adelaide University Library		

It was important to have an inclusion criterion that would eliminate articles that were not relevant to answering the research question, ‘is there actually a middle school plunge?’. Therefore, search results included in the literature review of this dissertation were:

- International and Australian based research
- Peer reviewed articles
- Books/book chapters
- Primary school education – as it was important to draw connections
- Articles within 1990–2021 time-frame – was originally 2010-2021 but not enough data was available
- Grey literature (for background information)

However, articles that included the following terms or focuses were excluded to narrow the research and ensure relevance:

- Research for high school or tertiary education
- Non-English written texts (to avoid mis translation)

Data Analysis

Following the search for relevant literature, thematic analysis was used to understand trends and patterns in the research. Thematic analysis was used to identify, analyse, and organise themes that were embedded in the initial research (Braun & Clarke, 2006, p. 79). These themes were identified when they captured something important in relation to the research question and represented a pattern of responses (Braun & Clarke, 2006, p. 79-82). In particular, themes such as transitions, adolescence, school climate, socio-economic factors and peer relationships appeared to be influential on middle school students' academic achievement and engagement. Examples of the literature found within these themes are presented in table 3.

This research project used systematic literature review to gather data presented in previously published literature. Employing systematic literature reviews is an important way of summarising and critiquing past research, as well as being used to determine how to improve future practice and research (Fiegen, 2010, p. 386). By understanding previous literature on middle years education and factors that influence students' academic achievement and engagement, new conclusions were drawn to assist in understanding how the issue can be improved or mitigated to enhance learning for middle years students. Additionally, this allowed for identification of gaps in the literature and opportunities for further research on the effects, if any, middle school plunge has on adolescent learning. Furthermore, the systematic literature review requires a more rigorous approach to data collection as the purpose is to create an exhaustive compilation of research to answer a specific question (Hammersley, 2013, p. 15). Therefore, the research analysed and synthesised in this paper are in-depth and relevant to the research questions.

Limitations, Validity, Reliability, Assumptions

Throughout studying the existence and implications of the middle school plunge, it was important to consider any limitations that impacted the credibility of the paper. An initial limitation noted was attempting to find recent literature published in this field, however it was insufficient, making it considerably difficult to find out how the middle school plunge had been perceived in recent years. Therefore, it was necessary to expand the original search criteria to include older research to find relevant literature in the field of

the middle school plunge. It is important to note that this dissertation relied on evaluating previous literature to form and support arguments, and therefore did not produce a new set of data.

This paper evaluated and synthesised conclusions based on the literature to generate original ideas and understandings. This evaluation and synthesis further supported the validity of the research presented. The implementation of analysis and synthesis was necessary to prove succinct arguments, based on the consistencies interpreted from cross-referenced data, to answer the research question. The process of cross-referencing and condensing the research presented in the literature also contributed to the assessment of the validity of the articles utilised. Comparing research that presents the same results but are completed with different independent variables such as sample sizes and/or in another country or school, demonstrates strong validity of the results by highlighting accuracy of the outcomes (Burton & Bartlett, 2008, p. 27). Moreover, assessing the reliability of sources consulted to complete the literature review was important to ensure consistency of quality of research (Burton & Bartlett, 2008, p. 26). Credibility of authors and journals were assessed by researching previous papers that had been published by them, as well as the qualifications they held.

This paper began with the perception that the middle school plunge would exist due to personal experience in a classroom. However, before beginning this research the number of contributing factors that affect middle schooling were not understood. Considering the definition of the middle school plunge relating only to school transition, it was expected that there would be research supporting this, as well as perhaps two or three other major considerations such as socio-economic factors and the effects of adolescence. Therefore, it was interesting to find such extensive research about factors including teacher preconception of students' ability, school climate and peer-relationships had significant impact on middle school learning as well.

Ethical Considerations

The methodology for this research was based on a qualitative literature review so did not involve participants or primary data collection. However, ethical considerations

were still made based on the use of research collected. *Research Methods in Education* (Cohen, et al., 2017, p. 111-143) outline ethical considerations that are important within all qualitative research. This included the importance of the quality of the research as well as the way the researcher’s work is referenced. To ethically produce this dissertation using secondary sources of data, it was important that the research conducted was credible and reliable, as to not reproduce information that is misleading or incorrect (Cohen, et al., 2017, p. 112). Moreover, an important consideration is that the data gathered during research was used and presented in the way intended by the researcher (Cohen, et al., 2017, p. 115-116). It is imperative that the researcher’s data was not used out of context and as a result, misinterpreted which could have affected the readers’ perceptions of their research outcomes.

Data results

Table 3. Example of themes found in literature

Article	Author and Publication Date	Does it exist?	Themes	Evidence
'School Climate and Academic Achievement in Middle School'	Daily, Mann, Kristjansson, Smith and Zullig (2019)	Yes	Student Perception of School Climate	Daily, et al.'s (2019) research demonstrated that middle school students who reported positive levels to school climate achieved higher academically (p. 1770). Compared to the high school students who also undertook this study, it was evident that the correlation between positive perception of school climate and academic achievement was more prominent in middle school (Daily, et al., 2019, p. 177)

<p>'Academic Success Across the Transition from Primary to Secondary Schooling Among Lower-Income Adolescents: Understanding the Effects of Family Resources and Gender'</p>	<p>Serbin, Stack and Kingdon (2013)</p>	<p>Yes</p>	<p>Effects of Transition Potential implications of students' Socio-economic Status</p>	<p>Serbin, et al. (2013) found in their study that students' grades worsened after they transitioned to middle school (p. 1339). This research also demonstrated that students from more disadvantaged socio-economic families also obtained lower grades than those who did not (Serbin, et al., 2019, 1340).</p>
<p>'The transition from primary to secondary school: Teachers' perspectives'</p>	<p>Hopwood, Hay and Dymont (2016)</p>	<p>Yes</p>	<p>Effects of Transition</p>	<p>Hopwood, et al.'s (2016) research that suggest the transition from primary to middle school has a negative impact on students reading and spelling achievement and engagement as students are often ill-equipped for the change in their learning environment (p. 291).</p>
<p>'Understanding brain development: Investing in adolescents' cognitive and socio-emotional development'</p>	<p>Jansen and Kiefer (2020)</p>	<p>Yes</p>	<p>Effects of Adolescence</p>	<p>Jansen and Kiefer (2020) explore the effects of adolescents' cognitive development on learning. Their research suggests that the changes in middle school aged students cognitive and socio-emotional function that influence a shift in priorities, can</p>

				impede learning (p. 20).
Do teachers differ in the level of expectations of in the extent to which they differentiate in expectations? Relations between teacher-level expectations, teacher background and beliefs, and subsequent student performance	Timmermans and Rubie-Davis (2018)	Yes	Teacher preconception of students learning capabilities	The results demonstrated that the associated between expectations and performance were positive, meaning students who experienced high expectations from teachers achieved higher in mathematics results, and those who experienced low expectations, received lower mathematics results (Timmermans & Rubie-Davis, 2018, p. 250).
Transition to middle school: Academic achievement influenced by students' perception of self-efficacy motivation, peer relationships, student-teacher relationships, and parental influences	McCoy (2014)	Yes	Peer and student-teacher relationships	Evidently, the research presented a positive correlation between middle school students' perceived student-teacher relationships and their academic success. This was highlighted in the results which established that students who believed their teachers cared about, and listened to them, had increased academic achievement of 5.9% in the participants English class (McCoy, 2014, p. 75).

An extension of these key themes are discussed in the next chapter in the literature review.

Chapter 3: Literature Review

Introduction

The idea of a middle school plunge existing is certainly not a new one, (Alspaugh, 1998; Eccles & Wingfield, 1997, West & Schwerdt, 2012) however, a specified search for the term on google scholar showed only 68 results of published work related to this in the last 16 years. Similarly, a search for the term on the Adelaide University Library displayed only 16 results beginning in 2012. This indicated a gap in current research of the middle school plunge specifically. These limited search results indicated a need for further research in middle schooling, to improve the learning experience for middle school children. This literature review begins with looking at what the middle school is and what academic engagement is, before presenting the findings of the causes of the middle school plunge.

Furthermore, the 2018 Program for International Student Assessment (PISA) paper insights and interpretations (Schleicher, 2018) for OECD (Organisation for Economic Co-operation and Development) countries, outlined issues for middle school aged students through their transition from primary to middle school. The aim of the PISA report was to “measure 15-year-olds’ ability to use their reading, mathematics and science knowledge and skills to meet real-life challenges” (PISA, 2018). The report was therefore aiming to assess higher order thinking and application of students’ knowledge. Across the 38 OECD countries, PISA discovered that on average only 77% of students attained a Level 2 proficiency (being able to read and comprehend texts of moderate length) in reading. Evidently, this report exemplified that there are gaps in middle year’s learning education that implicate students’ abilities to achieve academically and engage effectively. Determining these gaps in the research is significant in order to understand what needs to be extended and filled in order to improve middle years learning. Following the literature review, suggestion have been made for further research and changes in educational practices to improve or mitigate completely the effects of this phenomenon.

What is middle school?

The middle school movement was introduced into the American school system in around 1963 and gained momentum and status in the 1970s (Schaefer, et al., 2016,

p. 5). Around this time, flexible scheduling was introduced along with the increased perception of importance of understanding how adolescent students learn best (Schaefer, et al., 2016, p. 6). In Australia, however, the introduction of middle school varies from the early 20th century in New South Wales, until 2006 in the Northern Territory. New South Wales introduced the middle school as junior secondary school, which aimed to retain students' attendance to receive what was called a school certificate, representing some form of formal school education (Government of New South Wales, p. 3).

Over the last 10 years, schools in Australia have made a significant change to move year 7 students from primary to middle school. Pendergast (2015) explained that educators believed this age group of students, around 13, are ready for and benefit from greater independence and access to more specialist resources such as science laboratories and science teachers (p. 10). This indicates educators have increased awareness, today, towards the complexity of middle school, then they did when middle schools began.

What is academic engagement?

Engagement can be interpreted in a myriad of ways, especially in the context of education. However, within this research paper, academic achievement is defined as the level of student participation in academic and non-academic related activities as well as their commitment to "learning, belonging and identification at school" (Audas & Willms, 2002; Christen, et al., 2008).

What is this so called middle school plunge? What does it look like?

The middle school plunge is the increasing disparity in achievement in students' academic performance after their transition from primary to middle school. Often, this transition occurs from Year 6 to Year 7, although in some cases from Year 7 to Year 8. The plunge defined by West and Schwerdt (2012), was characterised by drops in achievement for both reading and maths of between 3.5 and 7 months of expected learning of the 10-month school year (West & Schwerdt, 2012, p. 3). Further research described the middle school plunge as something that was affected by a range of

external aspects of middle years student's lives, that differ from that just of the transition from primary to middle school, as explained by West and Schwerdt (2012).

So, what then potentially causes it?

The middle school plunge can be caused by a range of factors which decrease students' engagement in school, and as a result academic achievement. These include the transition from primary to middle school, the effects of adolescence, teacher pre-conception of student ability, peer relationships, potential implications of socio-economic background and school climate. Each of these factors impacts middle school learners' quality of education disproportionately to that of primary or senior school learners, therefore it is necessary to understand why, and how to mitigate this.

The transition from primary to middle school

West and Schwerdt (2012) based the middle school plunge on the academic disparity during the period of students transitioning from a primary to a middle school in which there was a transition from year 5 to 6 or 6 to 7 in a campus, compared to students who attended a K-8/R-8 school. Their research demonstrated that students in K-8 schools displayed less academic disparity, which led West and Schwerdt to suggest that the change in school environment, or possibly being the youngest grade in the school, negatively impacted students' academic performance (2012, p. 2). West and Schwedt's (2012) theory was also supported by Hopwood, et al.'s (2016) research which suggested that the transition from primary to middle school had a negative impact on students reading and spelling achievement and engagement (p. 291). Hopwood, et al.'s research involved literacy testing 244 students from Tasmanian Government schools in both primary and secondary school to compare their achievement results. Data was collected at seven different schools and demonstrated a statistically significant drop in the student's reading achievement and development after their transition from Year 6 to 7. According to Hopwood, et al.'s (2016) findings, it was evident that this transition often ill-equips students for the change in learning environment as it includes different approaches to learning and teaching which often lead students' achievement levels to drop. Evidently, the inadequate preparation of primary school students transitioning to middle school had significant negative implications on their literacy skills, supporting the research presented by West and Schwerdt (2012) on their research on the middle school plunge.

Alspaugh's (1998) research also supported the existence of the middle school plunge and displayed complementary results to that of Hopwood, et al. (2016) as they explained the increased drop in academic achievement of students transitioning from primary to secondary school. Therefore, although the research is over twenty years old, the results prove relevant to the issues surrounding the middle school plunge are still being researched in recent years. Alspaugh conducted research using 48 school districts to collect data, which included primary schools, secondary schools, and K-8 schools, and compared the results of students' Missouri Mastery and Achievement Test (MMAT). Using a two-way analysis of variants (ANOVA) Alspaugh's (1998) research determined that there was a significant loss of academic achievement for students who transitioned from a primary to middle school, compared to those who attended a K-8 school (p. 22). This research therefore aligns with West and Schwerdt's specific definition of the middle school plunge relating to the difference in achievement from students attending K-8 schools and students who transition to a middle school. Additionally, this highlighted that the transition itself from primary to middle school is a considerable catalyst of the middle school plunge considering students in K-8 schools did not experience significant academic achievement decline in Alspaugh's (1998) research.

Furthermore, in Hanewald's (2013) literature review, the issue of adolescents' struggle when transitioning from primary to middle schools was highlighted as the transition is seen as "an important crossroads". This was because middle years students are required to move away from "a small, self-contained classroom to a large, more heterogenous" learning environment with increased expectations (p. 64). Furthermore, Becker and Luther's (2002) literature review outlined an additional aspect to transition that may have exacerbated middle years students' academic achievement decrease as they also must adjust from being the leaders of the primary school to becoming, what Becker and Luther call, "underclassmen" once in middle school (p. 200). For young adolescents who are developing socially and emotionally, this has potential to affect their self-esteem which is a factor that often leads to decreased academic motivation (Becker & Luther, 2002, p. 200). This is because there is a correlation between students who present low self-esteem, and therefore low perception of their own academic ability, which leads to decreased academic motivation and

achievement (Becker & Luther, 2002, p. 200). Although Becker and Luther (2002) presented information from almost 20 years ago, this literature review demonstrated the continued significance of this study and was also supported by recent research. Therefore, the significant change in environment and hierarchy in the school structure when transitioning from a primary to middle school, evidently had negative implications on middle school students' academic achievement.

Relating to West and Schwerdt's (2012) consideration of lowered reading and mathematics abilities through the transition to middle school, Cauley and Jovanovich's (2006) research article found that after transitioning from primary to middle school, 38% of American students displayed lower performance on literacy tasks. Comparably, the 2018 PISA report on average across OECD countries indicated that only 77% of students attained Level 2 proficiency in reading (p. 17). A Level 2 proficiency means these students can read and comprehend the purpose of a text of moderate length, and complete tasks that they are explicitly directed to complete (PISA, 2018, p. 17). However, the basic level of reading proficiency varied greatly from 90% in China to less than 10% in Cambodia, and Mathematics varied even more from 98% in China and 2% in Zambia (PISA, 2018, p. 17). As a result, it was evident that the 30% of adolescents who are not reaching this basic level of reading and comprehension, as well as maths, experienced a significant difference in academic achievement. This research further brought into question the number of middle school students aged around 15 who do not have adequate reading and comprehension abilities outside of these countries. Therefore, it was evident that the difficulty of school transition is heightened for these students, and negatively impacts their academic engagement and abilities.

In contrast to the PISA findings above, Erb (2006) claims that although there is a decline in achievement in middle school student's grades, the separation of grade levels has no impact on the issue. This claim is based on his research that the phasing out of middle schools relates to the inability to meet standards rather than the failing of the middle school grade configuration (p. 6). Erb (2006) in this journal article reviews literature which outlines the issues present in both middle and K-8 schools, highlighting that schools in Philadelphia, Denver and Cincinnati were failing to cultivate an appropriate learning community, which was irrespective of the transition to a middle

school (p. 6). Additionally, Erb (2006) highlights the importance of teacher preparedness, claiming that once teachers implement quality teaching approaches, students thrive in the middle school environment and structure (p. 7). Therefore, it is evident that in some instances, the transition from primary to middle school does not affect the academic achievement of adolescents.

Overall, the effect of transitioning from primary to middle school negatively impacts middle school students' academic achievement and motivation. This is a result of the significant adjustments students must make to feel comfortable with new teaching and learning structures, in a completely new environment. Therefore, the middle school plunge, as outlined by West and Schwerdt (2012), does exist.

Effects of adolescence on learning

Factors contributing to West and Schwerdt's (2012) definition of the middle school plunge was extended as research exemplified that the effects of adolescence on learning impacted student achievement and engagement. Through the transition from primary to middle school, not only do students experience significant change through the school environment, but they also experience significant physical, emotional, social, and cognitive changes, and at different rates as well, into adolescence (Pendergast, 2017, p. 82). Pendergast (2017) highlighted the importance of educators understanding the wants and needs of adolescent learners. This is so teachers can tailor middle years learning to be conducive with adolescent's developmental changes, and to inform curriculum planning to keep them challenged and engaged (Pendergast, 2017, p. 44-48).

Serbin, et al. (2013) likened this transition for adolescents to the transitional theory of developing organisms which are required to adapt to the effects of change both physiologically and behaviourally (p. 1332). In the instance of students transitioning from primary to middle school, although physiologically students do not change, they are required to adapt their behaviour to a new and changing learning environment at the same time as experiencing hormonal transitions. The compounding effect of experiencing these transitions simultaneously, often led to more vulnerable students, like those from disadvantaged socioeconomic backgrounds, to be more negatively

impacted by the changes (Serbin, et al., 2013, p. 1332). Serbin et al. (2013) explains that changes that occur from primary to middle school include new curricula and skill requirements, physical environments, and different structures of academic, social, and emotional support (p. 1332). Considering this, in conjunction with the change in adolescents' cognition and emotional regulation, there is a significant strain on academic achievement and engagement (Serbin, et al., 2013, p. 1332). Understanding the effects of these significant changes toward middle school students' academic achievement implied that teaching practice in both primary school and middle school could be improved to better cater for this. This is because changes could be made to the transition process to decrease these effects on middle school students. For example, at least one school in Adelaide for instance, has altered their year 7 program so students have a core group teacher for half of their lessons, and then attend other classrooms for lessons with specialised teachers for the other half. By making the transition from primary to middle school less drastic, students have greater opportunities to develop socially and cognitively without the impacted stress of a complete change in their learning environment and structure.

In addition to Serbin, et al.'s (2013) research on transitions, throughout her research, Hyman (2015) determined that a student's negative perception of ability negatively impacts grades. This is supported by Roeser and Eccles (1998), who's longitudinal research on middle school students' perception of academic ability, engagement in school, and psychological well-being, explain that students are often already overwhelmed by the significant social and emotional changes in adolescence, which is then exacerbated by the change in their learning environment (p. 125). The 2018 PISA report also highlighted that well-being is closely related to students' academic achievement and found that students who are bullied are more likely to skip school and present lower reading levels (p. 47). Therefore, implementing classroom practice to support and protect students' well-being is necessary in improve their academic achievement an engagement.

Hyman (2015) conducted an online survey of 40 questions with 61 students from two K-8 schools and 75 students from one year 6-8 schools, of which 44.85% were male and 55.15% were female, and turned the answers into percentages. Notably relevant to this study was the results from student's perception of their middle school transition

compared to their achievement performance. Hyman's (2015) research demonstrated students in middle school cared less about their grades compared to primary school students which also resulted in lower academic achievement (p. 68). This lack of care can be attributed to middle school students' decreased engagement in school as their priorities shift, becoming more friendship oriented, and less focused on academic achievement and engagement (Pendergast, 2017, p. 52).

Roeser and Eccles' (1998) research gathered data from year 7 and 8 students from 23 schools in America, with varying socio-economic backgrounds, ethnicities, and an equal number of male and female participants (p. 132). Data was collected using face to face interviews and self-administered questionnaires. These related to students' perception of their home and school environment, peer relationships, perception of academic ability, school behaviour and mental health, as well as student grade point averages (GPAs), absences from years 7-8 and standardised testing reports from primary school (Roeser & Eccles, 1998, p. 132). The aim of their research was to determine how students adjusted both academically and psychologically in middle school. Specifically, this focused on how students' behaviour, motivation and psychological wellbeing adjusted in middle school, and what perceptions they had of their learning capabilities (Roeser & Eccles, 1998, p. 132). The impacts of students' psychological adjustments within this research were focused on as it highlighted the significance of adolescents' mental health issues, and the correlation it has with academic achievement and motivation. Roeser and Eccles (1998) determined that there was a positive correlation to students who experienced depressive feelings and low self-esteem and decreased academic achievement and engagement (p.140). This was often expressed by students skipping school and truancy through years 7 and 8 (p. 140). Therefore, it is evident that the wellbeing of middle school students is an important aspect to consider when discussing the effects of the middle school plunge on adolescents. Tobia, et al. (2018) argue in their research that adolescents experience higher rates of mental health issues compared to primary school students (p. 846). As a result, it is necessary to understand the effects of student wellbeing and perception of school climate to comprehend the effects of the middle school plunge. Although Roeser and Eccles published this research in 1998, it is supported by recent research by Jansen and Kiefer (2020) and therefore exemplifies the ongoing importance of the effects of adolescence on middle school students' learning.

Jansen and Kiefer's (2020) research on understanding adolescent's cognitive and social development also highlighted a drop in academic achievement for middle school students. This is because social factors are high motivational elements for risk-taking, resulting in disengagement of learning, due to the fear of rejection and the importance of peer acceptance and respect (p. 20). However, this research suggested that these risk-taking tendencies could also be conducive to learning if harnessed in an appropriate way in the teaching context (Jansen & Kiefer, 2020, p. 20). This demonstrated that although there is cognitive development occurring in middle school aged students that can impede learning and academic achievement, there are solutions to enhance these attributes of adolescence to benefit learning opportunities.

Teacher preconception of student capacity for learning

An important aspect of middle school students' learning to consider is their teachers' preconception of students' capacity for learning. Research suggests that teachers' perceptions and expectations of students' academic ability considerably impact the potential of students' academic success.

The concept of the Teacher Expectancy Effect (TEE) was introduced by Rosenthal and Jacobson in their book *Pygmalion in the Classroom: teacher expectation and pupils' intellectual development*, published in 1968. Rosenthal and Jacobson's research found that student achievement is directly in line with expectations (Szumski, Karwowski, 2019, p. 2). Therefore, this concept, often referred to as the Pygmalion Effect, is continually studied by researchers in educational psychology to determine the accuracy of this research. Szumski and Karwowski (2019), explored this concept to understand the role of teacher expectations of math students' academic self-concept, and class context. The aim of their research was to examine the relationship between teachers' expectations of students' potential, and of whole classes as well (Szumski & Karwowski, 2019, p. 3). Their longitudinal study consisted of 1488 middle school student in 108 math classes, attending 40 schools across Poland. Teachers described their perception ability and potential of all students in the class based on questions on Likert scale. Overall, Szumski and Karwowski's (2019) research supported the notion of the Pygmalion Effect as they found an even stronger

correlation between positive teacher expectations related to both individual student academic achievement, and whole class academic achievement (p. 8). Therefore, Szumski and Karwowski's (2019) study exemplifies that the expectations teachers have for students significantly impacts their academic achievement, not only as individual learners, but as whole classes.

Timmermans and Rubie-Davis (2018) undertook research in New Zealand schools to understand the effects of teachers' expectations on students' academic achievement. The participants included both teachers and students aged 10-12, mainly in year 7 classes, from three different schools of varying socio-economic areas. In the first three weeks of term, teachers completed a survey stating their expectations of students, then students were given standardised mathematics at the beginning and end of the year to assess their achievement levels (Timmermans & Rubie-Davis, 2018, p. 245). Further data was collected through questionnaires throughout the year, from both the teachers and the students, based on teacher expectations and students' mathematic performance. The teacher expectations were completed based on five aspects including judgement of students' current maths achievement, what they would be achieving at the end of the year, if they would receive a good school report, if students would be successful that year and if they would have a successful school career, graded on a Likert scale of 1-7 (Timmermans & Rubie-Davis, 2018, p. 247). The results demonstrated that the association between expectations and performance were positive, meaning students who experienced high expectations from teachers achieved higher mathematics results than those who experienced low teacher expectations (Timmermans & Rubie-Davis, 2018, p. 250). However, some results displayed almost no correlation between performance and expectations as teachers held the same expectations for all students, regardless of beginning of year test results (Timmermans & Rubie-Davis, 2018, p. 251). Therefore, this research demonstrates that teachers having preconceptions of students' achievement capabilities to be academically successful can have negative implications for students who they perceive to be less capable. If teachers assume students have a capped ability to achieve academically, this research exemplifies that they will struggle to, or not be able to, improve above that level. Therefore, it is evident that this aspect of middle school students' learning is considered a contributing factor to the middle school

plunge as students' learning capabilities are negatively implicated by teachers' low preconceptions.

De Boer, et al.'s (2010) research on teacher expectation bias in Dutch schools also demonstrated a correlation between teacher expectation and student academic achievement. De Boer, et al. (2010) tracked the achievement of 11,040 students at 112 schools over five consecutive years after they started middle school (p. 170-171). The students in this study were streamed into different levels of education after primary school based on their teachers' expectations of their potential for future education. Teachers' expectations were based on students' IQ levels, prior achievement, and academic motivation. This meant students who had more successful previous achievements and demonstrated higher academic motivation, would be streamed into an educational system that was designed to lead to university education (de Boer, et al., 2010, p. 172). Whereas, students who did not present with these variables, were streamed to lower-level education institutions. De Boer, et al.'s (2010) research discovered that for 33.03% of students, the teacher expectations were accurate and therefore, it could be argued that there was not teacher bias (p. 175). However, for the remaining 66.97% of students whose teachers' expectations were inaccurate, teaching bias impacted their potential academic success. Over the five-year study, the results ultimately demonstrated that students with the low teacher expectations had the lowest academic performance, and this increased as teacher expectation became more positive (de Boer, et al., 2010, p. 175).

Overall, the implications of teacher expectations on students' academic achievement are a significant aspect of the middle school plunge. This is because negative teacher preconceptions evidently hinder students' academic achievement as their opportunities to improve become limited. Additionally, this is an important aspect of middle school students' drop in academic achievement and engagement to consider as contributing of the middle school plunge. This is because these research articles demonstrated that if teachers have positive perceptions and expectations of students' academic abilities, they are more likely to be academically successful.

Peer and Student-Teacher Relationships

The middle school plunge as defined by West and Schwerdt (2012), is also negatively impacted by the student-student and student-teacher relationships. During middle school years, these relationships have a significant impact on adolescents' experience at school. Pendergast (2017) explains that adolescents' social allegiances shift from being family oriented to more peer group focused during middle school (p. 52). Therefore, it is important to acknowledge that this shift is a crucial time in which adolescents learn to have more complex relationships with peers and teachers (Pendergast, 2017, p. 52). Therefore, these relationships have significant impact on adolescent's lives and impact their academic achievement and motivation.

This is supported by McCoy (2014) who found in his doctoral thesis that there was a correlation between peer and student-teacher relationships and middle school students' academic achievement. McCoy's (2014) research paper included 277 year 7 participants, both male and female, from various cultural backgrounds. These participants undertook a range of surveys that compared their experiences in English and Maths from year 6 to year 7 (p. 50). The results of McCoy's (2014) research portrayed the highest positive responses for questions about peer relationships demonstrating their importance for middle school students. Additionally, McCoy's (2014) paper indicates the implications of student-teacher relationships on middle school students' academic achievement and engagement. Evidently, the research presented a positive correlation between middle school students' perceived student-teacher relationships and their academic success. This was highlighted in the results which established that students who believed their teachers cared about, and listened to them, had increased academic achievement of 5.9% in the participants English class (McCoy, 2014, p. 75). Additionally, the research demonstrated that students felt connections to their teachers were weaker in middle school than primary school (McCoy, 2014, p. 75). A connection can be made here to the effects of transition which described the issues related to the change in learning and teaching structures. Students having to interact with multiple teachers a day in middle school, as opposed to one core teacher in primary school, can make it difficult for students to build relationships with their teachers. McCoy's (2014) research highlights the importance of relationships for middle school students, and the negative implications they can

have an academic achievement and engagement, when these needs are not met for students.

Comparably, Scales, et al., (2020) discovered a correlation between positive student-teacher relationships, and as a result, increased motivation, and academic achievement. Scales et al.'s (2020) research included participants from a middle school in America for students in years 6 to 8, with varying ethnicities and socio-economic backgrounds. Their study determined that students who felt stronger relationships with their teachers were more likely to be academically motivated, and therefore, received higher grades than those who did not (Scales, et al., 2020, p. 661). Therefore, it is evident that students' relationships with their teachers have considerable impacts on their willingness to engage, and as a result, their academic achievement. If classrooms can foster substantial connections between peers and their teachers, students' academic engagement will increase and positively influence their academic achievement, which will assist in mitigating effects of the middle school plunge. Pendergast, et al., (2015) suggests that students require not only individualised support, but also benefit from "centralised methods" such a 'form' or 'mentor' type teacher to assist in students' learning environment (p. 13). Again, a connection can be drawn between the importance of student-teacher relationships and the transition from primary to middle school. The importance of middle school students having a core, or as Pendergast et al. (2015) suggested, a mentor, type teacher would be considerably beneficial for middle school students. Again, a connection can be made to the difficulties students' have after the transition to middle schools and they must engage with multiple teachers. Middle school students having a mentor teacher, and perhaps extra mentor time compared to other year levels, could help them to cope better, especially in the early stages of this transition. By implementing these teacher support strategies for middle school students, this Pendergast, et al. (2015) argues they will be more engaged in learning and therefore, receive better grades.

Moreover, Hyman (2015) discovered in his research the peer and student-teacher relationships had significant impact on middle school students' academic achievement and engagement. The data demonstrated that 30% of students in this research believed they were bullied or intimidated by their peers, which made it difficult for them to concentrate in class (Hyman, 2015, p. 83). This indicates that feeling safe and

accepted amongst peers is an important aspect of academic engagement for middle school students. Additionally, participants who felt their teachers cared about them and liked them were more motivated to work hard in class and achieve good grades (Hyman, 2015, p. 64). Therefore, this supports Scales et al.'s (2020) research which also determined that positive perceptions of student-teacher relationships indirectly improve middle school students' academic achievement through their increased motivation to study and engage in lessons.

Similarly to Hyman (2015), Wentzel, et al. (2017) conducted research to examine the correlation between peer and student-teacher relationships. Their research participants included 169 students from 6 different middle schools in 15 different classrooms, Maths, Science, English, including both males and females from with a variety of ethnicities and from various socio-economic backgrounds (Wentzel, et al., 2017, p. 37). Wentzel, et al.'s (2017) research found that middle school students' academic achievement self-efficacy and academic engagement and student-teacher relationships (p. 37). This further supports Hyman's (2015) and Scales et al.'s (2020) research that exemplifies the correlation between student-teacher relationships and middle school students' academic achievement and engagement.

Overall, it is evident that there is a strong correlation between students' perceptions of peer and student-teacher relationships and their academic achievement and motivation. Therefore, the relationships students cultivate in schools have considerable impact on their learning and is an attributing factor to the middle school plunge if students perceive these negatively.

The potential impact of socio-economic status on the middle years

Socio-economic backgrounds appear to contribute to the plunge in academic achievement in middle years education as described by West and Schwerdt's (2012) middle school plunge concept. Socio-economic background refers to where a persons' income, education and occupation place them relation to society (Gogoi, 2014, p. 127). Within this chapter, terms such as advantaged and disadvantaged socio-economic status (SES) will be used to describe groups of participants in research. Becker and Luther (2002) explain that students from disadvantaged socio-economic backgrounds

show a substantial drop in academic achievement in middle school years (p. 198). Becker and Luther (2002) highlighted that these students often experienced lower expectations for achievement and as a result, were exposed to a negative learning environment that impeded their academic motivation and academic capabilities (p. 201). This demonstrates a connection with teacher preconceptions to students' capacity for learning as previously discussed. Making this connection indicates that the effect of teachers' expectations of achievement are exacerbated for students from disadvantaged socio-economic backgrounds.

Tomaszewski et al.'s (2020) article on student engagement in relation to SES also concluded that students who came from disadvantaged SES backgrounds did not achieve as highly in maths or English as those who didn't (p. 611-612). In addition to this, based on their research in an Australian school's NAPLAN results, Tomaszewski, et al. (2020) discovered that students from disadvantaged socio-economic backgrounds performed worse in mathematics and reading testing than average to students from advantaged socio-economic backgrounds, and displayed lower levels of engagement (p. 622-623). Tomaszewski, et al.'s (2020) research therefore further supported West and Schwerdt's (2012) theory of the middle school plunge which related directly to middle school students' mathematics and literacy achievement. However, Tomaszewski, et al.'s (2020) research also countered West and Schwerdt's (2012) definition of the middle school plunge as their research highlighted the implications of students' SES backgrounds on middle years academic achievement and engagement, not just transition.

McLoyd, et al.'s (2009) research reiterated Tomaszewski, et al.'s (2020) sentiment, which demonstrated that students from disadvantaged SES backgrounds did not experience academic success the way students from advantaged SES backgrounds did (p. 485). This was a result of disadvantaged socio-economic students who often found it more difficult to engage in learning, had lower attendance rates and typically did not have academically or economically successful family members or peers (p. 485). Not only did research demonstrate that disadvantaged SES led to poorer academic achievement, students with this background also demonstrated lower cognitive function from a very young age, which impeded academic achievement and

is one of the “most consistent predictors of high school dropout (McLoyd, et al., 2009, p. 490).

Furthermore, Serbin, et al. (2013) conducted research based on transition theory to predict and understand how students', between year 5-6 to years 7-8 from disadvantaged socio-cultural areas in French-speaking Quebec, academic achievement was influenced (p. 1334). Serbin, et al. (2013) found that students who came from disadvantaged socio-economic backgrounds often suffered the most post transition as they typically had under-developed social and academic skills prior to the transition (p. 1343). These students often received less support from family, which, when combined with a difficult transition to school, led to lower academic success (Serbin, et al., 2013, p. 1343). Considering Serbin, et al., (2013) presented research from middle school participants in French speaking Quebec and Tomaszewski et al. (2020) presented information from Australia, there is evidence that the issue of the middle school plunge occurred and can be applied as an issue internationally.

Gogoi's (2014) research assessed the implications socio-economic background has on students' academic achievement motivation. By splitting the middle school research participants, comprised of 50 girls and 50 boys, into Upper, Middle and Lower socio-economic classes, it became evident that students from a socio-economically disadvantaged background experienced the most substantial negative implications towards academic achievement motivation (Gogoi, 2014, p. 127). However, the research demonstrated the middle-class subjects displayed the greatest desire for academic achievement motivation and upper-class closely second (Gogoi, 2014, p. 127). However, there was only a small sample size and the number of participants for each class background differed. As a result, the researcher acknowledged that this should be considered in terms of validity of the outcome. However, this data was supported by research which also demonstrated that students from socio-economically disadvantaged backgrounds experienced negative implications towards academic achievement and motivation (Serbin, et al., 2013; Tomaszewski et al., 2020; McLoyd, et al., 2009) and therefore was useful data for this paper.

On the other hand, research from the Liu, et al. (2020) highlighted the positive correlation between students in middle school from socio-economically advantaged

backgrounds and academic achievement. Liu, et al. (2020) collected data through a systematic literature review which aimed to determine the correlation between student and family SES and academic achievement in China (P. 56). Overall, Liu, et al. (2020) discovered in the data they analysed in the literature from 1989-2016 demonstrated that there was a positive relationship between middle school students from advantaged SES backgrounds and academic achievement (Liu, et al., 2020, p. 59). Similarly, the 2018 PISA report found that the reading gap between the 10% most socio-economically advantaged and 10% most socio-economically disadvantaged students in France, Germany, Hungary, Israel, Peru, and the Slovak Republic had the equivalent of over four years differences in ability (p.19). Students from socio-economically advantaged backgrounds often have greater opportunities and resources accessible to them earlier on in life, which give them a greater ability to succeed in school (PISA, 2018, p. 20). Therefore, considering the research spanning across Europe and Asia, it is evident that students who are socio-economically advantaged backgrounds are more likely to have greater academic achievement and motivation in middle school than socio-economically disadvantaged students.

Not only does the SES of students impact their capacity for academic success, but the schools' socio-economic context can also have a considerable impact as well. There are often gaps in the resources available to students who are attending a government school, compared to an independent school which can affect socio-economically disadvantaged students' ability to be academically successful (Schleicher, 2019, p. 20). Schleicher (2019) in the PISA (2018) interpretations and findings, explained that the in countries like Hungary, Peru, Argentina, and Bulgaria, socio-economically disadvantaged students have a one-in-eight chance of attending the schools that their advantaged counterparts do (p. 20). However, Schleicher (2019) explains there is a positive correlation between investment in education and average student performance, to a certain extent, then it is dependent on how the money is allocated for education resources (p. 20). Therefore, adaptations in the allocation of money in education is an important consideration when considering the how to mitigate the effects of students' disadvantaged socio-economic backgrounds on their education.

Therefore, it can be argued that the effects of the middle school plunge, as defined by West and Schwerdt (2012), is impacted significantly by the effects of middle school

students' socio-economic status. This is because socio-economically disadvantaged students often have lower engagement in their education due to nonconductive homelives to education and lower cognitive function. Furthermore, the literature demonstrated that students from disadvantaged SES are more likely to attend schools in socio-disadvantaged areas, meaning they are provided with less resources and opportunities to be as academically successful as those from advantaged SES backgrounds.

School Climate and Culture

School climate can be interpreted and defined in a myriad of ways, however, within the context of this research, it related to the “quality and consistency of interpersonal interactions with the school community that influence children’s cognitive, social and psychological development” which includes student perception of their school environment, sense of belonging and safety (Haynes, et al., 1997, p. 322). When considering attributing factors to West and Schwerdt’s (2012) middle school plunge, school climate became a considerably evident aspect contributing to middle years academic achievement and motivation. This was highlighted by PISA (2018), which found that parents believed school safety, school climate and school reputation was “the most important criteria when choosing a school for their child” (p. 48). Therefore, it is evident that in order to mitigate the effects of the middle school plunge, issues surrounding school climate and students’ sense of belonging need to be addressed.

Goodenow’s (1993) research suggested that middle school students, more so than primary or high school students, were dependent on feelings of connectedness to their educational environment (p. 24). Goodenow (1993) gathered data through a School Opinion Questionnaire for Science, English, Maths and Social Studies which were randomly assigned to 355 year 6 to 8 students (p. 28). The questionnaire aimed to understand students’ motivation in their specific class and their perceptions of the quality of the class for them, and subsequent sense of belonging (Goodenow, 1993, p. 28). Goodenow (1993) created a Class Belonging and Support Scale to assess students’ perceptions of belonging on a 28 question, 5-point Likert scale (p. 29). Once students had completed their questionnaire relating to their specific subject, teachers attached the students’ final grade for that subject, as well as an effort grade (Goodenow, 1993, p. 29). The results of Goodenow’s (1993) research determined that

there was a positive correlation between positive perception of sense of belonging and support from teachers, and academic success (p. 32). Therefore, this supports the concept that negative perception of school climate impacts students' academic achievement and engagement.

Daily et al.'s (2019) research on school climate and academic achievement supported Goodenow's (1993) research as it showed that a positive school environment led to improved academic performance (p. 177-178). Daily, et al.'s research consisted of 1358 year 6-8 students and 2040 year 9-12 students sampled from three middle schools and two high schools in America (p. 174). The aim of Daily's research was to understand the correlation between students' perception of their school climate, and their final grades (A-F) from their previous school year in Mathematics and English. Students' perception of school climate was rated on a 5-point Likert type scale from Strongly Disagree to Strongly Agree (Daily, et al., 2019, p. 174). This Likert scale included 10 aspects of school climate such as physical environment, social environment, academic support, academic satisfaction, order and safety, and opportunities for student engagement (Daily, et al., 2019, p. 174). Given the scope of this research, the data gathered from 1154 respondents from the three middle schools would be focused on, along with the aforementioned aspects of school climate as they were the most relevant. The results of Daily, et al.'s (2019) research determined that the effect of school climate on academic achievement had prominent implications for middle school aged students, who's grades displayed a greater increase based on positive perception of school climate (p. 178). Therefore, it is evident that a stronger focus on creating a school environment that is safe and welcoming, is necessary to mitigate the drop in academic achievement and engagement experienced by middle school students.

Bell, et al. (2019) also highlighted the effects of school climate on middle school student's grades. Bell, et al.'s (2019) research explored the effects of social-normative expectations on school climate in a Latino middle school language arts class. The results showed that a negative perception of school climate and increased social normative expectations decreased final grades by 0.6 compared to those with a positive perception (Bell, et al., 2019, p. 385). While this research is limited to Latino middle school students in a language arts class, it is supported by both Goodenow's

(1993) research and Daily, et al.'s (2019) research, which implies that it was indicative of a wider population. Scale, et al. (2020) discovered in their research that students with strong relationships with their teachers had increased feelings of belonging and more positive perceptions of school climate (p. 661). Therefore, by improving and supporting student-teacher relationships in the classroom, teachers will increase students' perceptions of school climate and assist in mitigating the effects of the middle school plunge.

Overall, the climate and culture of a school has significant impacts on middle school students' ability to engage in their education. It is important to note that school climate and culture can be influenced by teachers, indicating there is a connection between this and students' perceptions of their relationships with teachers. Goodenow's (1993) research demonstrated that feelings of belonging and support from teachers, as an aspect of school climate and culture, had an influence on their engagement and achievement. Therefore, if there is greater focus on improving the learning environment for middle school students to ensure that they feel calm and safe, their academic engagement will increase, and therefore improve their academic achievement.

Gaps in the literature

This research paper covered literature regarding the effects of students transitioning from primary to middle school, as explored by West and Schwerdt (2012), as well as five other contributing factors to the middle school plunge. However, this research identifies that there are gaps in recent information about the middle school plunge as a concept. Although it was explored by Main, et al. (2017), there is not significant analyses or evaluation of the middle school plunge in recent literature. Therefore, this paper aimed to extend the research of the middle school plunge beyond the implications of transitioning from a primary to middle school, and investigated in which contexts it exists, and to whom it applies. This was done by making connections between the themes to understand how they can have compounding implications for adolescent students, and by beginning to explore ways to mitigate this.

Chapter 4: Discussion

Introduction

The aim of this research was to determine if the middle school plunge, as West and Schwerdt (2012) defined it, existed and if so, what caused it. It was important to explore the multiple facets of middle school aged students' lives in and out of school to understand what aspects of life had the greatest impact on their learning. This is important to know and understand as educators because it can have considerable impacts on teaching practice. Throughout the research five key themes emerged, being the implications of the transition from primary to middle school, effects of adolescence, implications of socio-economic background, student-teacher, and peer relationships as well as teacher pre-conception of student ability, and school climate. Each of these themes exemplified the significance of external factors that influence middle school students' academic achievement and engagement, both negatively and positively. The result of this research paper has therefore led to greater knowledge and understanding of the middle school plunge, as it has determined that there is more than one cause for it. As a result, suggestions can be made to improve the effects of the middle school plunge on middle school students' academic engagement and achievement, which, in turn, improves their learning experience.

There were some limitations to this dissertation as there was such limited research available on the middle school plunge specifically. Additionally, once the search terms were expanded, there was limited recent literature available for the themes found. This meant that the study had to rely on older research to analyse its significance to current teaching and learning practices. However, the minimal recent literature that was available, did show connections to the older literature, which allowed conclusions to be drawn based on the ongoing significance of the study of middle school education.

So, does the middle school plunge actually exist?

The research analysed in this dissertation supports the notion that the middle school plunge does exist (Hanewald, 2013; Serbin, et al., 2013; Pendergast, et al., 2017). The literature review supported that the middle school plunge does exist, defined by West and Schwerdt (2012), as the transition from primary to middle school significantly impacts middle school students' academic achievement and motivation. However, this

research paper also determined that the middle school plunge existed because of five additional key factors which impeded middle school students' ability to be academically successful and engaged. It is evident that each of these factors compound one another, which is what makes middle school education so complex. Although this research paper did not find or present data that countered the existence of the middle school plunge, it did exemplify the contrasting literature that present different causes for the plunge. There were some connections made between the key themes, however, they each countered each other as they argued different causes for the drop in academic achievement and engagement in middle schools.

This research has led to greater depth of understanding of the causes of the middle school plunge. The initial search of the term presented limited results, indicating more research on the term itself and expanding its definition, is required. Although the literature analysed in this paper argued that there was a drop in academic achievement and engagement in middle schools, the term middle school plunge, was only seen three articles (West & Schwerdt, 2012; Hyman, 2015; Main, et al., 2017). This therefore substantiated the previous research on the phenomenon and provides new perspectives of it's the broader implications the term could have. The importance of this research is exemplified by the four additional causes found that negatively impact the effects of the middle school plunge, which are not included in its definition by West and Schwerdt (2012).

In terms of subjects, most literature presented findings from reading and mathematics (PISA, 2018; Timmermans & Rubie-Davis, 2018; Hopwood, et al., 2016), G Goodenow's (1993) and Wentzel, et al.'s (2017) research also conducted research about the drop in academic achievement and engagement in science and social studies. This indicates that this plunge described by West and Schwerdt (2012) could also be extended beyond, not only what aspects contribute to the middle school plunge, but also on the impacts beyond reading and maths achievement.

Is one aspect more prominent than another?

Although each key point is a significant aspect that negatively impacts the effects of the middle school plunge, some aspects presented more information or seemed to

present more notable changes than others. Aside from the transition from primary to middle school, two considerably prevalent aspects were teachers' preconceptions of students' capability of learning and the effects of adolescence. It became evident that these factors had a significant impact on middle school students' academic achievement and engagement as they presented flow on effects into other aspects of their lives. The cognitive, social, and emotional changes that occur during adolescence create significant issues for middle school students' capability to engage properly in school (Roeser & Eccles, 1998; Jansen & Kiefer, 2020). This is especially evident if teaching practices are not catered to engage students at their emotional and social cognitive levels. In addition to this, teachers' preconception of students' learning capabilities also proved to have the potential to not only negatively impact middle school students' academic achievement, but also their continuing academic career (Timmermans & Rubie-Davis, 2018; de Boer et al., 2010).

However, though the research did not portray this, it could be argued that not all adolescents experience the middle school plunge. This does not mean it does not exist, although it could mean that it only exists for some people. Considering some middle school students' grades do not decline after their transition from primary to middle school, it seems to indicate that it affects some students more than others. This seems to be regardless of whether they are experiencing the same changes of school environment and personal development in adolescence. This idea is explored in more depth in the following discussion point.

Is one group of people more affected by this phenomenon than another?

Throughout this dissertation, it became clear that among adolescent middle school students, those from disadvantaged socio-economic groups were disproportionately impacted by the middle school plunge. Throughout the initial research process this theme showed up the most frequently and proved to have a significant amount of research available. The impacts of socio-economic status of middle school students' families led to significant loss of academic achievement and motivation. This is because these students often had lower attendance rates, did not have academically successful family members, typically had negative learning environments at home, lowered academic expectations and presented with lower cognitive functioning

(McLoyd, et al. 2009; Becker & Luther, 2002; Tomaszewski, et al. 2020). This is especially important to consider as Liu, et al. (2020) found that socio-economically advantaged middle school children did not experience academic loss at the same rate as the socio-economically disadvantaged students. Therefore, conducting further research regarding how to increase the engagement of students from disadvantaged SES backgrounds is a necessary next step in mitigating the effects of the middle school plunge for these adolescents. This could also indicate that the other factors that contribute to the middle school plunge require further research as well, as they may be just as significant, but there is less research to support that. Although this research reveals socio-economic factors led to decreased academic performance and engagement, it is unlikely that teachers can change this situation in a students' life to improve their learning experience. However, they should be provided with opportunities and resources that comes from engaging and quality teaching practices, which hold reasonable expectation of achievement for these students, to encourage them to be engaged in the learning. The 2018 PISA report does indicate however that allocation of money in education is a significantly important consideration that has the potential to improve the middle school learning experience for students from disadvantaged socio-economic backgrounds.

The initial stages of this research did not present data which compared the academic achievement of middle school males and to females, nor was comparing race prevalent either, so it was not included in this paper. This does not necessarily mean that these are not factors that potentially impact certain students more than others, it just identifies another area of research that could be explored to discern which middle school students require the most support. Therefore, the considerations of gender and race would be important to consider in future research to determine people within those groups are affected by the middle school plunge more than the other.

Why is this important to understand?

It is important to understand that the middle school plunge exists, and what causes it, considering the implication these years of education have for students' futures. The studies analysed in the literature review implied that the effects of the middle school plunge influence students' future academic achievement and engagement, and

therefore, academic career (Timmermans & Rubie-Davis, 2018; de Boer et al., 2010). Therefore, by understanding what causes the middle school plunge, and what specific aspects of adolescents' lives impact their ability to actively engage in learning and achieve academic excellence, there are opportunities for education staff to mitigate the effects to improve students' learning.

Additionally, it would be helpful for pre-service teachers to learn about this phenomenon, so they are equipped with the tools and skills necessary to support middle school students' learning. It is important pre-service teachers are aware of these complexities before starting professional experience and entering the work force to ensure quality teaching of middle school students.

This study has therefore led to greater knowledge and understanding of the middle school plunge as it has highlighted the importance of considering more than just the effects of the transition from primary to middle school. Considering the initial assumptions for this dissertation was that the plunge did exist, it was interesting to discover just how prevalent it is in teaching and learning internationally. Furthermore, making connections to research over 20 years old about the drops in academic achievement and engagement teachers continue to experience, demonstrated the importance of continued development of adolescent educational practices.

Can the effects of the middle school plunge be mitigated? How?

The effects of the middle school plunge, as defined as West and Schwerdt can be mitigated through tailoring aspects of teaching practice for middle school students (MCEETYA, 2008, p. 12). However, considering aspects such as students' SES and social, emotional, and cognitive changes they experience as adolescence, the drop in academic achievement and engagement cannot be completely mitigated. This does not mean that they cannot be improved though. As this dissertation explained, there are considerable connections between each key influencing factor of middle school students learning experience. Therefore, by implementing teaching practices and improvements to school structure that will mitigate the other effects, the implications of SES and adolescence on academic achievement and engagement may be reduced.

Overall, this dissertation suggests four recommendations for teachers to implement that could improve middle school students' academic achievement and engagement. First, research suggests that supporting students' development of peer and student-teacher relationships would improve their academic engagement, and as a result, their academic achievement as well. Secondly, considering the disengagement of adolescent students in their education, increasing the relevancy of their learning to their real-life contexts will help to mitigate the negative implications of the middle school plunge. Thirdly, improving the process of the transition from primary to middle school would support teachers' abilities to put into practice the necessary steps to mitigate effects of the middle school plunge. Finally, it is recommended that further research is conducted on the middle school plunge to understand, in more depth, the cause of the phenomenon and the potential effects on students' future academic careers. The following chapter of this dissertation expands on these conclusions and recommendations.

Chapter 5: Conclusions and Recommendations

Conclusion

This paper began on the premise that there was a middle school plunge based on background knowledge of the concept and personal experience witnessing the phenomenon in a school. However, this dissertation aimed to determine to what extent, and in which context, it existed. The research question was 'Is there actually a middle school plunge?' and evidently, this paper determined that there is. The central idea, once the existence of the phenomenon was confirmed, was to examine what caused it. Through the research process, and presented in the literature review, six key factors were identified as negative implications for middle school students' academic achievement and engagement. It was interesting to note that many of the key findings could be connected, and compounding factors could be noted to determine who was affected the most by the middle school plunge.

The impacts of students' socio-economic backgrounds, teacher preconception of students' learning capabilities and their relationships with peers and teachers were three aspects that had the greatest implications for students' learning, apart from the transition from primary to middle school. Although schools and teachers cannot control the SES of students, there are ways to provide schools in disadvantaged socio-economic areas more facilities and resources which would give students in these areas greater learning opportunities.

Although there were limitations to the study, such as not being able to collect primary data, it still presents useful information for future researchers to consider when studying the middle school plunge. Therefore, this study significantly contributes to the body of research in education as it draws together six of the most significant causes of the middle school plunge. This can help educators to better understand middle school students' school experiences and help them understand how to potentially adapt their teaching styles to improve these students' academic achievement and engagement.

More broadly, this research paper indicates the complexities of middle school education, and the continued need for its' improvement. Considering literature in this

research went back over 20 years, it is evident that middle school education has been required to be continually developed and modified over the years to suit adolescents' learning needs but is still not perfected. As a result of this research, the changes in middle school education are outlined, and suggestions for potential improvements are made.

Overall, although various causes of the middle school plunge seem to fall on the quality of teacher practice, it is evident that the structure of middle schools need to change for significant improvements in middle school academic achievement and engagement to occur. If there were improvements made to the structure of middle school classes, teachers would be better supported to then improve middle school students learning experiences and mitigate the effects of the middle school plunge.

Recommendations

1. Encouraging positive peer and student-teacher relationships

The first recommendation this dissertation makes is to implement more collaborative teaching approaches in teaching practice to build strong connectedness and improve student peer relationships, and student teacher relationships. Wilhelm, et al. (2019) argued that strengthening relationships by building a sense of community within classrooms supports students in their learning (p. 79). It would be helpful to implement strategies within the classroom to create a sense of community amongst a cohort, cultivated by teachers, as early as possible to see the benefits of improved engagement in learning (Wilhelm, et al., 2019, p. 79). An effective way of achieving this could be to set class-norms by asking students to first think individually, and then discuss with partners, what they perceive a community to be, how a community acts and how this would look in the classroom (Wilhelm, et al., 2019, p. 86). This is a useful way of having students consider themselves and others needs within the classroom and helps them to feel heard and understood by the teacher. It is therefore an effective strategy to mitigate implications of the middle school plunge by strengthening the relationships between peers and peers and their teachers.

Comparably to McCoy, (2014), Roseth, et al. (2008) determined that positive peer-relationships coincided with increased academic achievement. Through their study, Roseth, et al. (2018) compared the effects of students engaging in cooperative learning practices, and individualistic or competitive learning practices through analysis of literature over a span of approximately 30 years. This allowed the researchers to determine how philosophies around these teaching and learning styles were modified over time. The results of their research determined that employing cooperative learning practices not only improved positive perception of peer relationships but increased these students' academic achievement and engagement (Roseth, et al., 2018, p. 237). Therefore, it is recommended to implement cooperative learning practices in the classroom to improve middle school students learning experience and mitigate the effects of the middle school plunge caused by negative peer and student-teacher relationships.

Miller and Desberg (2009) state that creating a connection with students requires teachers to get to know them personally by inquiring about their personal interests and issues in their lives, to show interest in them (p. 25). If teachers can attempt to spend more time to speak to students individually and show real interest in their personal interests, opinions and beliefs, students are more likely to make stronger connections with teachers, and therefore be more academically engaged and achieve higher grades (Hyman, 2015; Wentzel, et al., 2017; Pendergast, et al., 2015).

Not only does learning to work collaboratively as a community, by implementing group work for example, benefit the relationships students' have with their peers and their teachers, but it benefits them in the long run (Scales, et al., 2020). Learning to work in groups and be respectful members of a community, students will have greater skills outside of school for opportunities in the workplace, and potentially in their home life (Gay, 2002, p. 109). It builds students' social skills, which are critical during this time, as Pendergast (2017) noted that increased importance of peer relationships during this time for adolescents (p. 50). Therefore, it would be helpful if teachers implemented these strategies to support their students who are developing emotionally and socially.

2. Adapt learning toward adolescent students' interests

Research suggests that adapting middle school students' learning to be perceived as relevant in their real-life context increases engagement and academic achievement. For example, Wilhelm, et al. (2019) argues that teaching students in a way that is applicable to their real-life contexts is a significantly useful tool to use when attempting to engage them in schoolwork (p.15).

Eccles' (2011) research supports Wilhelm, et al. (2019), outlining that students who do not perceive school learning and curriculum as necessary or relevant to their real-life world are more likely to be disengaged in learning (p. 226). This research suggests that by introducing work that is relevant for adolescents' real-life, both culturally and socially, it increases their intrinsic motivation to learn, therefore improving their engagement in class (Eccles, 2011, p. 226). Therefore, this literature demonstrates the importance again of school climate as an implication for student's academic achievement, as well as perceived relevance of curriculum.

This is considerably important as in most countries middle school students do not have the option to choose the subjects they study. This means middle school teachers are often teaching subjects that students are not interested in and do not want to continue to study. Although there is no way to completely mitigate covering topics students are disinterested in, this research aims to present strategies that will make engaging students easier. For example, by modifying assessment tasks to make connections with be perceived as relevant to middle school students' real-life context, Eccles (2011) explains they are more likely to engage in the subject content, and indirectly, improve academically. Additionally, modifying the ways in which students are able to present their work is a useful way to better engage them in their learning tasks. Some students find it more engaging to create something visual to demonstrate their learning, whereas prefer to complete essays. Allowing students various options to demonstrate their learning in a way that is interesting for them, can help to increase their academic engagement.

In their research, Jansen and Kiefer (2020) emphasised utilising adolescents increased risk taking behaviour as a teaching and learning tool. They recommend helping students to take adaptive risks by encouraging safe and healthy

experimentation in the classroom and community, through games and simulations that involve risk and reward (Jansen & Kiefer, 2020, p. 23). In turn, creating a healthy environment for students to take these risks, allows students to feel safe in their learning environment and actively engage more in class as they are less afraid of embarrassment (Jansen & Kiefer, 2020, p. 23). Therefore, not only is it important for the content students are learning to be relevant to their real-life context, but it is important that the teaching styles implement support their cognitive and developmental stages to ensure they engage in learning (Harpaz, 2016, p. 67).

Miller and Desberg (2009), also support the notion that relevancy to adolescents' real-life contexts is essential in engaging them in their learning (p. 30). In their book *Understanding and engaging adolescents*, Miller and Desberg (2009) argue that just telling students that the skills you are teaching will come in handy one day is not enough to keep them interested (p. 30). This is because students live in the current time and unless it is relevant or useful to them in that current stage of life, they will often be unengaged and uninterested in learning about it (Miller & Desberg, 2009, p. 30). Before students can learn, education psychology suggests it is imperative to have their attention (Miller & Desberg, 2009, p. 30). Therefore, you must know your audience, the students, to know what will interest and entice them in the learning (Miller & Desberg, 2009, p. 30). This then coincides with supporting and developing strong relationships in the class because the better the teacher knows the students; the more tailored and interesting assignments can be for them.

3. Improve the transition process from primary to middle school

As suggested in the discussion, much of the onus of the middle school plunge is placed on teachers to improve their practice. However, it is recommended that the transition process and the structure of middle school classes are improved, with help of all teaching and education staff within each school system, to mitigate the effects of the middle school plunge. Not only would this benefit students as the significant changes experienced in the transition period would be lessened, but it would support teachers and provide them with the resources they require to implement teaching strategies that will improve middle school students' learning experience.

As mentioned in the literature review, an example of one school, for instance, in Adelaide that implemented a core group teacher for students in middle school to better transition them to a new school environment. Research shows that the transition to middle school is overwhelming for students for a myriad of reasons, most of which are outlined in this research paper, but there are processes that school systems can make to mitigate this. This could include introducing this structure for middle school students, or as mentioned in the literature review, ensuring middle school students have a strong mentor teacher. Lindt and Blair (2016) suggest that providing strong mentorship for middle school students has a potential for positive academic influence (p. 35). This is because students feel as though they have someone who is looking out for them and cares about them (Lindt & Blair, 2016, p. 35), which the literature review identified as a considerably important aspect of students' engagement in learning. Lindt and Blair (2016) implemented a mentor program for middle school students where students met their mentor once a week for 30 minutes. Although students initially found these interactions awkward, after about three sessions they began to create rapport with their mentors and felt comfortable sharing both good and bad things they were experiencing in school (Lindt & Blair, 2016, p.37). This was beneficial for the students as they were able to open up about their concerns in a safe place, where most of them discovered they were not alone, and felt they were able to better overcome their problems (Lindt & Blair, 2016, p. 37). Evidently introducing mentor type programs in schools would be a useful tool to support middle school students in their transition from primary to middle school, as well as improving their student-teacher relationships, which will improve academic achievement and engagement.

In the transition from primary to middle school paragraph in the literature review, Hopwood, et al.'s (2016) research found that teachers lack structures to properly transition students and their families for the change that will occur when the move to middle school (p. 295). Their research found that 60% of primary school teachers and 42% of middle school teachers did nothing to support their students through the transition (Hopwood, et al., 2016, p. 295). In this research by Hopwood, et al. (2016) primary school teachers said they viewed their role in transition as a passive one as they just talked about and talked through what middle school might be like, and the expectations there may be (p. 296). Secondary teachers in Hopwood, et al.'s (2016) study said that they believed it was their responsibility to organise the events,

programmes and activities to help primary school students make this transition (p. 297). This study exemplifies the importance of there being a joint process between both primary and middle school teachers to prepare middle school students for their transition. Evidently leaving the responsibility on one group of people alone does not provide adequate support for the significant change the students experience. The Alice Springs Document (2019) highlights the importance of recognising the education leaders “at all levels and all learning environments across the profession play a critical role in supporting and fostering quality teaching and learning” (p. 11). The teachers of students transitioning from primary to middle school should be not solely responsible for making the process run smoothly. This exemplifies the need for there to be support systems in place from department heads and education staff to ensure that the transition experience is easier for middle school students to adjust to.

In addition to increased educational staff support, and restructuring of middle school classes, Hopwood, et al. (2016) identifies the importance of curriculum continuity. In their research, primary and middle school teachers agreed that implementing curriculum continuity would be a considerably helpful tool to mitigate the drop in academic achievement engagement that occurs in middle school (p. 299). This is so students retain a sense of familiarity from primary school, into middle school, so they feel more comfortable to learn in a new environment (Hopwood, et al., 2016, p. 299). Further incorporating small aspects of the primary school structure into the first years of middle school, can help make the adjustment smoother for adolescents. Especially considering the effects of adolescence already impacts their ability to learn and is impossible to avoid, if changes could be made to the structure of students’ transition, it would be significantly helpful for their academic engagement and achievement.

4. Conduct further research on adolescent learning

The final recommendation this dissertation presents is for further research into adolescent teaching styles and the structure of middle schools. Considering the limited research on the middle school plunge sourced through the process of the literature review, it seems necessary to continue this research. Additionally, deeper research into each of the contributing factors outlined in this research paper would be considerably useful to better understand how to mitigate their effects.

Considering the research presented demonstrating the varying factors that influence middle school students' academic achievement and engagement in negative ways, further research is required to expand the definition of the middle school plunge. Although the middle school plunge only outlines the effects of transition on academic achievement, it is evident that there are significant contributing factors that should be included in this definition. By expanding this definition and drawing greater attention towards the significant complexities of middle school education educators can better understand how to teach adolescent students. Further research on how each of these aspects of the middle school plunge affect each other would be considerably useful. It is important to understand this to know which students are most significantly impacted so improvements can be targeted for these groups.

Furthermore, as highlighted in the conclusion, it is important for further research to be conducted on engaging students from disadvantage socio-economic backgrounds. Considering this research paper highlights students from this group as one of the most impacted by the effects of the middle school plunge (Becker & Luther, 2002; Gogoi, 2014; Tomaszewski, et al., 2020). It is important to research strategies and potential programmes to put in place that would increase these students' attendance and therefore, engagement and academic achievement. Additionally, further research on Schleicher's (2019) argument that the allocation of money in schools can have a positive correlation with academic achievement. If Governments and schools themselves, know how to distribute their money in the most effective way, they can help socio-economically disadvantaged students catch up to their peers.

Overall, this dissertation presents an in-depth study of middle years education, and the impact teachers can have on students' learning. It presents potential causes for the middle school plunge and provides recommendations to improve middle school students' learning experiences. This research highlights the importance of understanding the complexities of adolescents, and how they learn, to help teachers determine the most effective strategies to teach these students. Moreover, this dissertation exemplifies the significant positive impact teachers can have on students' lives, by providing them with a safe, interesting, and inclusive community to learn and thrive in, as students and members of the wider community.

References

- Alice Springs (Mparntwe) Education Declaration (December 2019)
[https://www.acara.edu.au/docs/default-source/corporate-publications/alice-springs-\(mparntwe\)-education-declaration.pdf](https://www.acara.edu.au/docs/default-source/corporate-publications/alice-springs-(mparntwe)-education-declaration.pdf)
- Alspaugh, J. W. (1998). Achievement Loss Associated With the Transition to Middle School and High School. *Journal of Educational Research*, 92(1), 20.
<http://proxy.library.adelaide.edu.au/login?url=https://www.proquest.com/scholarly-journals/achievement-loss-associated-with-transition/docview/1290546295/se-2?accountid=8203>
- Bell, P. J., White, G. W., Hatchimonji, D. R., Stepney, C. T., Linsky, A. V., Vaid, E., & Elias, M. J. (2019). Social-Normative Expectations Mediates School Climate's Association With Academic Achievement in Latino Middle School Students. *Education and Urban Society*, 51(3), 374-394.
<https://doi.org/10.1177/0013124517719972>
- Bronwyn E. Becker & Suniya S. Luthar (2002) Social-Emotional Factors Affecting Achievement Outcomes Among Disadvantaged Students: Closing the Achievement Gap, *Educational Psychologist*, 37(4), 197-214, DOI: 10.1207/S15326985EP3704_1
- Braun, V., Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Burton, D., & Bartlett, S. (2008). *Practitioner research for teachers*. Sage Publications
- Cauley, K. M., Jovanovich, D. (2006). Developing an Effective Transition Program for Students Entering Middle School or High School. *The Clearing House*, 80(1), 15-25
- Creswell, D. Creswell J. (2018). *Research design : qualitative, quantitative, and mixed methods approaches*. SAGE Publications, Inc.
- Daily, S. M., Mann, M. J., Kristjansson, A. L., Smith, M. L., & Zullig, K. J. (2019). School Climate and Academic Achievement in Middle and High School Students. *Journal of School Health*, 89(3), 173-180.
<https://doi.org/https://doi.org/10.1111/josh.12726>
- de Boer, Bosker, R. J., & van der Werf, M. P. C. (2010). Sustainability of Teacher Expectation Bias Effects on Long-Term Student Performance. *Journal of Educational Psychology*, 102(1), 168–179. <https://doi.org/10.1037/a0017289>
- Dove, M. J., Pearson, L. C., & Hooper, H. (2010). Relationship Between Grade Span Configuration and Academic Achievement: The Journal of Secondary Gifted Education. *Journal of Advanced Academics*, 21(2), 272-298,349-352
<https://www.proquest.com/docview/222724975/fulltextPDF/BD39AFEC05B54D7CP/Q/1?accountid=8203#>

Eccles, J. S., Wigfield, A. (1997). Young adolescent development. In *What current research says to the middle school practitioner*, ed. J. L. Irvin, 15-29. Columbus, OH: National Middle School Association

Erb, T. O. (2006). Middle school models are working in many grade configurations to boost student performance. *American Secondary Education*, 34(3), 4-13.
<http://proxy.library.adelaide.edu.au/login?url=https://www.proquest.com/scholarly-journals/middle-school-models-are-working-many-grade/docview/195184341/se-2?accountid=8203>

Fiegen, A. M. (2010) Systematic review of research methods: the case of business instructions. *Reference Services Review*, 38(3), 385-397

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53, 106-116.
<https://link.gale.com/apps/doc/A83732906/AONE?u=adelaide&sid=bookmark-AONE&xid=fdd4ff8b>

Goodenow, C. (1993). Classroom Belonging among Early Adolescent Students: Relationships to Motivation and Achievement. *The Journal of Early Adolescence*, 13(1), 21-43. <https://doi.org/10.1177/0272431693013001002>

Gogoi, K. P. (2014) Factors affecting academic achievement motivation in high school students. *International Journal of Education and Management Studies*, 4(2), 126-129.
<http://proxy.library.adelaide.edu.au/login?url=https://www.proquest.com/scholarly-journals/factors-affecting-academic-achievement-motivation/docview/1680503838/se-2?accountid=8203>

Hammersley. (2013). Defining qualitative research. In *What is Qualitative Research?* (p. 1–20). Bloomsbury Publishing Plc.
<https://doi.org/10.5040/9781849666084.ch-001>

Hanewald, R. (2013). Transition between primary and secondary school : why is important and how it can be supported. *Australian Journal of Teacher Education*, 38(1), 62-74
<https://searchinformitorg.proxy.library.adelaide.edu.au/doi/10.3316/aeipt.198906>

Haynes, N. M., Emmons, C., & Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of educational and psychological consultation*, 8(3), 321-329. https://doi.org/10.1207/s1532768xjepc0803_4

Hopwood, B., Hay, I., & Dymont, J. (2016). The transition from primary to secondary school: Teachers' perspectives. *Australian Educational Researcher*, 43(3), 289-307.
<https://doi.org/http://dx.doi.org/10.1007/s13384-016-0200-0>

Hopwood, B., Hay, I., Dymont, D., (2017). Students' reading achievement during the transition from primary to secondary school. *Australian Journal of Language and Literature*, 40(1), 46-58.

Hyman, L. "Middle school plunge: a mixed-methods study exploring 6th grade students' perceptions of their transition to middle school experiences and its influences on school achievement and performance for urban youth" (2015). Theses and Dissertations. 323. <https://rdw.rowan.edu/etd/323>

Jansen, K., & Kiefer, S. M. (2020). Understanding brain development: Investing in young adolescents' cognitive and social-emotional development. *Middle School Journal*, 51(4), 18-25. <https://doi.org/10.1080/00940771.2020.1787749>

Karalar, H., Sidekli, S., & Yildirim, B. (2021). STEM in Transition from Primary School to Middle School: Primary School Students' Attitudes. *International Electronic Journal of Elementary Education*, 13(5), 687-697. <https://doi.org/http://dx.doi.org/10.26822/iejee.2021.221>

Liu, J., Peng, P., & Luo, L. (2020). The Relation Between Family Socioeconomic Status and Academic Achievement in China: A Meta-analysis. *Educational Psychology Review*, 32(1), 49-76. <https://doi.org/http://dx.doi.org/10.1007/s10648-019-09494-0>

Main, K., Bahr, N., & Pendergast, D. (2017). *Teaching Middle Years : Rethinking Curriculum, Pedagogy and Assessment*. Taylor & Francis Group. <http://ebookcentral.proquest.com/lib/adelaide/detail.action?docID=6215107>

Miller, & Desberg, P. (2009). *Understanding and engaging adolescents*. Corwin, a SAGE Company. <https://ebookcentral.proquest.com/lib/adelaide/reader.action?docID=1104897&ppg=138>

Ministerial Council on Education, Employment, Training and Youth Affairs. (2008). *Melbourne Declaration on Educational Goals for Young Australians*. http://www.curriculum.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf

McLoyd, V. C., Kaplan, R., Purtell, K. M., Bagley, E., Hardaway, C. R., & Smalls, C. (2009). Poverty and socioeconomic disadvantage in adolescence. In R. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (3rd ed.). New York: John Wiley.

McCoy, W. (2014). *Transition to middle school: Academic achievement influenced by students perception of self-efficacy motivation, peer relationships, student-teacher relationships, and parental influences* (Publication Number 3580203) [Ed.D., California State University, Fullerton]. ProQuest One Academic. Ann Arbor. <http://proxy.library.adelaide.edu.au/login?url=https://www.proquest.com/dissertations-theses/transition-middle-school-academic-achievement/docview/1524004544/se-2>

Pendergast, D., Main, K. (2013). The middle years of schooling association's representations of young adolescents: Particularising the adolescent. *Social Alternatives*, 32(2), 25-30 <https://search.informit-org.proxy.library.adelaide.edu.au/doi/10.3316/ielapa.821940183690933>

Pendergast, D. (2015). Moving Year 7 to secondary, the Junior Secondary initiative and the 6 Guiding Principles: Reforming middle years teaching and learning in schools in Queensland. *Pendergast Journal of the Home Economics Institute of Australia*, 22(1), 1-18
<https://search.informit.org/doi/epdf/10.3316/informit.377619925934412>

Perkins, K. A. (2015). *Middle school teachers' perceptions of students' ability as predictors of high school honors course enrollment among african American youth*. Available from ProQuest One Academic.
<http://proxy.library.adelaide.edu.au/login?url=https://www.proquest.com/dissertations-theses/middle-school-teachers-perceptions-students/docview/1758252395/se-2?accountid=8203>

Schleicher, A. (2019). *PISA 2018 Insights and Interpretations*.
<https://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf>

OECD. (2018). *PISA – PISA*. Oecd.org. <https://www.oecd.org/pisa/>

Roseth, C. J., Johnson, D. W. & Johnson, R. T. (2008). Promoting Early Adolescents' Achievement and Peer Relationships. *Psychological Bulletin*, 134 (2), 223-246. doi: 10.1037/0033-2909.134.2.223.

Roeser, R. W., & Eccles, J. S. (1998). Adolescents' Perceptions of Middle School: Relation to Longitudinal Changes in Academic and Psychological Adjustment. *Journal of research on adolescence*, 8(1), 123-158.
https://doi.org/10.1207/s15327795jra0801_6

Schaefer, M. B., Malu, K. F., & Yoon, B. (2016). An Historical Overview of the Middle School Movement, 1963–2015. *RMLE Online*, 39(5), 1-27.
<https://doi.org/10.1080/19404476.2016.1165036>

Scales, Van Boekel, M., Pekel, K., Syvertsen, A. K., & Roehlkepartain, E. C. (2020). Effects of developmental relationships with teachers on middle-school students' motivation and performance. *Psychology in the Schools*, 57(4), 646–677.
<https://doi.org/10.1002/pits.22350>

Serbin, L. A., Stack, D. M., & Kingdon, D. (2013). Academic Success Across the Transition from Primary to Secondary Schooling Among Lower-Income Adolescents: Understanding the Effects of Family Resources and Gender. *Journal of Youth and Adolescence*, 42(9), 1331-1347. <https://doi.org/http://dx.doi.org/10.1007/s10964-0139987-4>

Szumski, G., & Karwowski, M. (2019). Exploring the Pygmalion effect: The role of teacher expectations, academic self-concept, and class context in students' math achievement. *Contemporary Educational Psychology*, 59, 101787.
<https://doi.org/https://doi.org/10.1016/j.cedpsych.2019.101787>

Timmermans, A. C., & Rubie-Davies, C. M. (2018). Do teachers differ in the level of expectations or in the extent to which they differentiate in expectations?

Relations between teacher-level expectations, teacher background and beliefs, and subsequent student performance. *Educational Research and Evaluation*, 24(3-5), 241-263. <https://doi.org/10.1080/13803611.2018.1550837>

Tobia, Greco, A., Steca, P., & Marzocchi, G. M. (2018). Children's Wellbeing at School: A Multi-dimensional and Multi-informant Approach. *Journal of Happiness Studies*, 20(3), 841–861. <https://doi.org/10.1007/s10902-018-9974-2>
[https://nswcurriculumreform.nesa.nsw.edu.au/pdfs/phase-3/final-report/chapter/1 -
The Context.pdf](https://nswcurriculumreform.nesa.nsw.edu.au/pdfs/phase-3/final-report/chapter/1-_The_Context.pdf)

Tomaszewski, W., Xiang, N., & Western, M. (2020). Student engagement as a mediator of the effects of socio-economic status on academic performance among secondary school students in Australia. *British educational research journal*, 46(3), 610-630. <https://doi.org/10.1002/berj.3599>

West, M., & Schwerdt, G. (2012, Spring). The Middle School Plunge. *Education Next*, 12(2). <https://www.proquest.com/docview/1237824244?accountid=8203#>

Wilhelm, Jeffrey D., et al. *Planning Powerful Instruction, Grades 6-12 : 7 Must-Make Moves to Transform How We Teach--and How Students Learn*, SAGE Publications, 2019. *ProQuest Ebook Central*,
<http://ebookcentral.proquest.com/lib/adelaide/detail.action?docID=6261844>.

Wentzel. (n.d.). Teacher-Student Relationships and Adolescent Competence at School. In *Interpersonal Relationships in Education* (pp. 19–35). SensePublishers. https://doi.org/10.1007/978-94-6091-939-8_2

Wentzel, K. R., Muenks, K., McNeish, D., & Russell, S. (2017) Peer and teacher supports in relation to motivation and effort: A multi-level study. *Contemporary Educational Psychology*, 49, 32-45.
<https://doi.org/https://doi.org/10.1016/j.cedpsych.2016.11.002>

Yoram Harpaz. (2016). *Teaching and learning in a community of thinking*. Springer
<https://link.springer.com/book/10.1007/978-94-007-6940-3>