

Literature Review Homework

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January 2009

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LITERATURE REVIEW HOMEWORK

At a Glance

Although homework is assigned for a variety of academic and non-academic purposes, there is disagreement within the educational community about the value of homework and the amount of homework students should be assigned. This Literature Review summarizes the benefits and drawbacks of homework and examines how much time students should and actually do spend on homework. Issues such as whether school districts should develop a formal homework policy and how to involve parents in their children's homework assignments are also discussed. Strategies for increasing homework completion rates, including after-school homework centers, homework hotlines, and peer support programs, are provided. Issues teachers should consider when assigning homework, such as matching assignments to students' skill levels and learning styles, connecting homework to real life events, and providing feedback on homework assignments, are also reviewed. Research on homework's impact on student achievement is summarized. Finally, the role of grade level, income level, ethnicity, and gender in homework completion rates and the resulting effects on achievement is also reviewed.

For over 100 years, U.S. educators have debated the importance of homework and the amount of homework students should be assigned. In the early 1900s, many school districts banned homework, especially at the elementary level, in an effort to discourage rote learning. In the 1950s, the cold war and Russia's launch of the Sputnik satellite led to increased homework loads. In the late 1960s and throughout the 1970s, homework assignments again declined, but fears about the country's economic competitiveness created pressure on educators to assign more homework. During the 1980s and 1990s, the majority of the public supported homework. Today, however, there is increasing disagreement about the value of homework and how much homework to assign (Center for Public Education, 2007b; Brewster & Fager, 2000; Ratnesar, 1999).

Homework has been defined simply as "tasks assigned to students by school teachers that are meant to be carried out during non-school hours" (Cooper, 1989). But definitions of homework become more complicated when variations in the types of assignments given are considered: difficulty level; skill or subject area; completion deadline (short- or long-term); degree of individualization; social context (completed independently or with other students); mandatory or voluntary; and if it will be submitted for grading (Cooper, 2007; Coutts, 2004). Furthermore, teachers assign homework for many different reasons, although researchers have noted that most assignments usually serve multiple purposes. Common reasons for assigning homework include:

- Reinforcing material that has already been presented in class (National Education Association, 2008a; Center for Public Education, 2007a; Cooper, 2007; Pytel, 2007; Northwest Regional Educational Laboratory, 2005; Brewster & Fager, 2000; Paulu, 1998).
- Determining if students understand the lesson and have mastered the required skills (National Education Association, 2008a).
- Increasing students' skill proficiency (Northwest Regional Educational Laboratory, 2005).

- Introducing students to new material the teacher will present in the future (Center for Public Education, 2007b; Pytel, 2007; Northwest Regional Educational Laboratory, 2005).
- Applying previously learned skills to new situations or other areas of interest (Center for Public Education, 2007b; Cooper et al., 2006; Shellard & Turner, 2004; Hancock, 2001).
- Providing opportunities for students to identify and learn to use resources, such as the library, Internet, reference books, and other community resources (National Education Association, 2008b; Brewster & Fager, 2000; Milbourne & Haury, 1999; Paulu, 1998).
- Allowing students to use their unique talents and abilities to produce individualized and creative work products (Horowitz, 2005; Corno, 2000; Nuzum, 1998; Doyle & Barber, 1990).

Homework can also be assigned for non-instructional purposes, such as:

- Helping students improve their time management and organizational skills and develop perseverance, responsibility, self-confidence, and self-discipline (Hetherington, 2005; Epstein & Van Voorhis, 2001; Hancock, 2001; Brewster & Fager, 2000; Corno, 2000; Wood, 2000; Epstein, 1983).
- Improving communication between parents and their children on the importance of schoolwork and learning (Cooper et al. 2006; Epstein & Van Voorhis, 2001).
- Fulfilling school or district mandates, such as requirements for a specified amount of daily or weekly homework (Cooper et al., 2006; Epstein & Van Voorhis, 2001).

Metlife's 2007 *Survey of the American Teacher* focused on issues related to homework. The survey of 1,000 U.S. K-12 public school teachers found that teachers reported frequently assigning homework for the following reasons:

- to help students practice skills or prepare for tests (86%).
- to help students develop good working habits (80%).
- to develop students' critical thinking skills (67%).
- to motivate students to learn (65%).
- to assess students' skills and knowledge (63%).

Benefits of Homework

Proponents of homework believe it can benefit students when used appropriately. The most obvious benefit is that it will improve students' understanding of the material covered (Cooper et al., 2006; McPherson, 2005; Brewster & Fager, 2000). Advocates of homework claim it also:

- Serves as a diagnostic tool that allows teachers to regularly monitor their students' progress (West Allegheny School District, n.d.)
- Eases time constraints on the amount of curricular material that can be covered in class (Plato, 2000; Thomas, 1992).
- Teaches students that learning also takes place outside of the classroom (Horowitz, 2005; McPherson, 2005).
- Provides educators with a cost-effective way to extend the school day by several hours (Bluestein, 2006a; Horowitz, 2005; Cooper, 1994a).

- Helps students develop good study habits, such as goal setting, following directions, organizing materials, planning ahead, and budgeting time, as well as strategies for dealing with mistakes, difficulties, and distractions (Center for Public Education, 2007b; Cooper et al., 2006; Bempechat, 2004; Corno & Xu, 2004; West Allegheny School District, n.d.).
- Fosters student initiative and independence (Horowitz, 2005; Plato, 2000; Cooper, 1994a).
- Helps students develop positive attitudes toward school and a sense of personal responsibility (Center for Public Education, 2007b; Cooper, 2007; McPherson, 2005).
- Promotes greater parental appreciation of and involvement in schooling (Cooper et al., 2006; McPherson, 2005; Cooper, 1994a).

Drawbacks of Homework

Critics say it is questionable whether homework, done at the end of a long day when motivation and concentration are low, has any benefits at all (Leone, 2005; James, 2000). Arguments against homework include:

- Homework provides few, if any, academic benefits to students who don't possess the skills needed to complete the assignment. Conversely, students who have already mastered the skills derive little or no benefit from completing the assignment (Kohn, 2006a; Moorman & Haller, 2006a).
- Homework provides teachers with little information about students' true educational level or progress. Since homework is not completed under teachers' guidance, they are often unaware of mistakes students make when completing assignments and have no control over who actually completes the work (Kralovec & Buell, 2001).
- Homework overload can cause students to lose interest in the academic material and become physically and emotionally fatigued (Skaggs, 2007; Cooper et al., 2006; Moorman & Haller, 2006a; McPherson, 2005; Brewster & Fager, 2000; Kralovec & Buell, 2000; Cooper, 1994a). The *MetLife Survey of the American Teacher* (2007), which included a survey of 2,101 grades 3-12 students, reported that 89 percent of students said they felt stressed about doing homework.
- Mismatches in homework assigned and student readiness can result in frustration and contribute to negative attitudes' toward school (Horowitz, 2005).
- Kralovec & Buell (2000) stated that students "can't do independent learning because they're too busy doing work assigned by someone else." Similarly, Moorman and Haller (2006a) stated that pleasure reading and reading for meaning are two of the casualties of homework because "who wants to pick up a book and read after doing an hour or two of homework?"
- Homework assignments limit the time available for other activities, such as sports and community involvement (Cooper et al., 2006; Moorman & Haller, 2006a; McPherson, 2005; Coutts, 2004; Kralovec & Buell, 2000).
- Excessive homework often creates tension between parents and their children because it takes away from family time (Clemmitt, 2007; Moorman & Haller, 2006a; Checkley, 2003; McEntire, 2001). Cooper (2001) stated that "homework is a source of complaint and friction between home and school more often than any other teaching activity." The *MetLife Survey of the American Teacher*, which included a survey of over 500 parents, found that almost 30 percent agreed homework was a major source of stress and disagreement in their family.

- Homework may encourage cheating (Canadian Council on Learning 2008; McPherson, 2005; Cooper, 1994a; Thomas, 1992). Kralovec & Buell (2000) reported on a survey that found 80 percent of high-achieving high school students admitted to cheating by copying other students' homework, downloading material from the Internet, or having their parents complete the homework.
- Homework can widen social inequalities. Compared to their higher income peers, students from lower income homes are more likely to work after school and less likely to have an environment conducive to studying (Canadian Council on Learning, 2008; Cooper et al., 2006; McPherson, 2005; Cooper, 1994a; Thomas, 1992).

Public Perceptions of Homework

According to most recent surveys, the majority of parents, students, and teachers in the U.S. feel the homework load is about right. Most have positive attitudes toward homework and believe it is helping students do well in school. Of those parents who say they want to change the amount of homework their children receive, more say they would like to see the amount of homework increased, rather than decreased.

Parents' Perceptions

The 2006 Associated Press-America Online Learning Services Poll surveyed 1,085 U.S. parents on their attitudes toward homework. Over half (57 percent) of parents reported they felt the amount of homework assigned to their children was "about right;" 23 percent of parents said their children were assigned "too little" homework; and 19 percent said their children were assigned "too much" homework (Table 1) (Associated Press-America Online, 2006).

The 2006 Public Agenda survey of 1,379 U.S. parents reported that 68 percent of parents said their children were getting "about the right amount" of homework; 20 percent said their children were getting "too little" homework; and 11 percent said their children were getting "too much" homework (Table 1) (Johnson et al., 2006).

According to the Public Agenda survey, 50 percent of parents reported having serious arguments with their children over assignments where there was yelling or crying. This frustration led to 22 percent of parents admitting to having done their children's homework themselves (Johnson et al. 2006).

The 2007 *MetLife Survey of the American Teacher* polled 501 parents and found that 60 percent of parents believed their children's teachers assigned the right amount of homework; 25 percent thought too little was assigned; and 15 percent thought too much was assigned (Table 1). The MetLife survey also reported that the majority of parents believed homework was important or very important (81 percent) and that doing homework helped their children learn more in school (89 percent). Parents who didn't believe homework was important were more likely than other parents to think their children were assigned too much homework; think homework was just busywork; and report that the time their children spent doing homework got in the way of their family spending time together (MetLife, 2007).

According to the MetLife survey, minority parents had greater expectations for homework. Black and Hispanic parents were more likely than White parents to believe doing homework was important and to strongly agree that doing homework helped students learn more in school. Overall, only 29 percent of parents said homework was a major source of stress and disagreement in their family, although White parents were more likely to say homework was a source of stress than Black and Hispanic parents (MetLife, 2007).

Table 1. Parents' Perceptions of the Amount of Homework Assigned to Their Children.

Survey	About Right	Too Little	Too Much
Associated Press-America Online Poll	57%	23%	19%
Public Agenda Survey	68%	20%	11%
MetLife Survey of the American Teacher	60%	25%	15%

Teachers' Perceptions

According to the 2006 Associated Press-America Online Learning Services Poll of 810 U.S. teachers, 63 percent said the amount of homework assigned was "about right;" 25 percent said "too little" homework was assigned; and 12 percent said "too much" homework was assigned (Associated Press-America Online, 2006).

The 2007 *MetLife Survey of the American Teacher* interviewed 1,000 public school teachers and reported that 83 percent believed doing homework was important or very important and 91 percent agreed doing homework helped students learn more in school (MetLife, 2007).

The MetLife survey also found that highly experienced teachers (21 or more years of experience) were more likely than new teachers (5 years of experience or less) to believe doing homework was important and to strongly agree that homework helped students learn more in school. Highly experienced teachers were also more likely to report using homework to develop students' interests and to feel extremely or very prepared to create engaging homework assignments (MetLife, 2007).

Students' Perceptions

The 2006 Public Agenda Survey of 1,342 students in grades 6-12 reported that 72 percent of students said they were getting "about the right amount" of homework; 21 percent of students believed they had "too much homework;" and 7 percent said they had "too little homework" (Johnson et al., 2006).

The 2007 *MetLife Survey of the American Teacher* surveyed 2,101 students in grades 3-12. Seventy-seven percent of students agreed that homework was important or very important and 69 percent believed homework helped them learn more in school. Students who didn't think homework was important were more likely to get Cs or below, not plan to attend college, and rate the quality of education they received as only fair or poor. Black students were more likely than White or Hispanic students to agree that homework was very important (MetLife, 2007).

Those more likely to feel stressed about homework included secondary school students, White or Hispanic (as opposed to Black) students, students who earned C's or below, students who rated their school quality as poor or fair (as opposed to excellent or good), students who said they did not have an adult at their school they could turn to for help, and students who reported not getting enough sleep (MetLife, 2007).

How Much Time Do Students Actually Spend on Homework?

Researchers have concluded that, despite media reports of students overburdened with homework, the average American student across all grade levels completes less than one hour of homework per night, an amount that has not changed substantially in at least 20 years. While some students, such as those enrolled in advanced programs, have significantly larger homework loads, reports of a widespread homework problem appear to be greatly overstated (Center for Public Education, 2006c; Linver et al., 2005; Shellard & Turner, 2004; Brown Center on Education Policy, 2003; Gill & Schlossman, 2003).

- The *Metlife Survey of the American Teacher* (2007) included a survey of 2,101 grades 3-12 students. The majority of students (55 percent) said they completed less than one hour of homework on a typical school night. Only 9 percent of students reported spending more than two hours per night on homework.
- According to a national survey of 2,900 randomly selected American children conducted by researchers at the University of Michigan (Hofferth & Sandberg, 2000), the amount of time spent on homework increased from 1 hour and 53 minutes per week in 1981 to 2 hours and 16 minutes per week in 1997 (an increase of 23 minutes per week or less than five minutes per day). However, much of the overall increase was due to a large increase in the amount of time 6-8 year olds spent on homework. This age group more than doubled their homework load, from 52 minutes per week in 1981 to 128 minutes per

week in 1997 (an increase of 76 minutes per week or 15 minutes per day). For students at other age groups, changes in homework loads were insignificant. Furthermore, among the 6-8 year old group, the number of students completing any homework at all increased markedly: only 34 percent reported completing homework in 1981, while 55 percent reported completing homework in 1997.

- Researchers at the University of California (Sax et al., 2002) surveyed college freshmen nationwide and asked them about their previous year's study habits. Sixty-six percent reported that, as college-bound high school seniors, they had done no more than one hour of homework per night and none on weekends.
- Survey data from administrations of the National Assessment of Educational Progress (NAEP) indicated that, across all three age groups surveyed (ages 9, 13, and 17), the percentage of students completing one hour or more of homework per day declined from 1984 to 1999. Overall, the typical amount of homework reported for American children was less than one hour per day. At age 9, 83 percent of students reported having less than one hour of homework per day; at ages 13 and 17, 66 and 65 percent of students, respectively, reported having less than one hour of homework per day. Only a small percent of students reported spending over two hours per day on homework (5 percent at age 9; 8 percent at age 13; and 12 percent at age 17) (Brown Center on Education Policy, 2003).
- Homework surveys have found that anywhere from 25 to 50 percent of students report having no homework at all (Clemmitt, 2007; Brown Center on Education Policy, 2003; Hofferth & Sandberg, 2000).
- The amount of time spent completing homework assignments does not increase as students move to higher grade levels. Most 17 year old students do no more homework than most 13 year olds (Gill & Schlossman, 2003). Shellard and Turner (2004) reported that the likelihood a student will have homework assigned on any particular day is essentially the same at age 9 (74 percent), age 13 (76 percent), and age 17 (74 percent).
- A survey of senior high school students asked which activities they engaged in for five or more hours per week. While 76 percent, 58 percent, and 50 percent said they spent five or more hours per week socializing with friends, working for pay, and exercising or playing sports, respectively, only 33 percent said they spent five or more hours per week studying or doing homework (Brown Center on Education Policy, 2003).

In conclusion, most researchers have determined that reports of a widespread homework problem are largely anecdotal and seriously overstated (National Education Association, 2008b; Gill, 2004; Gill & Schlossman, 2003). Skinner (2004) noted that "while some parents and families may have serious homework problems, these appear to be private problems, hardly in need of national or even local solutions."

International Homework Comparisons

Using 2003 Trends in International Mathematics and Science Study (TIMSS) survey data, Mullis, Martin, Gonzalez, and Chrostowski (2004) constructed an index representing the time students reported spending on math homework. Students were assigned to low, medium, and high levels on the basis of the frequency and amount of math homework assigned each week. Students at the high level were assigned more than 30 minutes of homework at least three to four times per week; students at the low level were assigned no more than 30 minutes of homework twice a week; and the medium level included all other combinations of responses. The researchers found that, in general, fourth grade students reported being assigned less math homework than did students at grade 8. As can be seen in Table 2, the percent of U.S. students in the high level of the homework category was lower than the international average at grade 4, but higher at grade 8. At grade 4, countries with the greatest percentage of students in the high level of the category included Singapore and Russia. At grade 8, countries with the greatest emphasis on homework (with 50 percent or more of their students at the high level of the category) included Romania, Italy, and Russia.

Table 2. Percent of Students in the TIMSS High Homework Category.

Grade 4		Grade 8	
International Average	18%	International Average	26%
United States	12%	United States	31%
Singapore	40%	Romania	68%
Russia	38%	Italy	54%
Italy	24%	Russia	53%
Norway	12%	Lebanon	42%
Japan	8%	Norway	26%
Scotland	6%	The Netherlands	19%
England	4%	Japan	6%
The Netherlands	1%	Sweden	4%

Source: Mullis, Martin, Gonzalez, & Chrostowski, 2004

LeTendre and Akiba (2007) used 2003 TIMSS survey data to study the amount of time spent on homework by students internationally. They found that the percent of American elementary students who spent four or more hours per day on homework was about the same as the average student internationally. Overall, 9 percent of elementary students reported spending four or more hours per day on homework. In the U.S., 8 percent of elementary students reported spending four or more hours per day on homework (Table 3). The percent of elementary students completing four or more hours of homework per day ranged from 1 percent (Japan) to 18 percent (Iran).

At the middle school level, the percent of American students spending four or more hours per day on homework was half that of the average foreign student. Ten percent of middle school students internationally reported spending four or more hours per day on homework. In the U.S., five percent of middle school students reported spending four or more hours per day on homework (Table 3). The percent of middle school students spending four or more hours per day on homework ranged from 1 percent (Japan) to 24 percent (Lebanon) (LeTendre & Akiba, 2007).

Table 3. Percent of TIMSS Students Spending Four or More Hours Per Day on Homework.

Elementary School Level		Middle School Level	
International Average	9%	International Average	10%
United States	8%	United States	5%
Iran	18%	Lebanon	24%
Philippines	12%	South Africa	22%
Italy	10%	Russia	15%
Hong Kong	9%	Italy	14%
Singapore	5%	Israel	9%
Russia	5%	Singapore	8%
England	4%	Sweden	3%
The Netherlands	3%	England	3%
Japan	1%	Japan	1%

Source: LeTendre & Akiba (2007).

LeTendre and Akiba (2007) compared the 2003 TIMSS math scores of students in over 40 countries with the amount of homework they reported completing each night. They found that many countries with the highest scoring students, such as Japan, the Czech Republic, and Denmark, had teachers who assigned little homework, while countries with low average scores, such as Thailand, Greece, and Iran, had teachers who assigned a great deal of homework.

Overall, then, most U.S. students do not appear to be doing significantly greater amounts of homework than their international peers. Clemmitt (2007) noted that it is difficult to make international homework comparisons because cultures have different ideas about what they consider homework. For example, children in China may come home without homework assignments but spend all evening studying. In addition, different countries have different views about the purpose of homework. While homework is seen as one element of course grades in the majority of U.S. classrooms, other countries use homework predominantly for practice and preparation purposes. Eighty-two percent of U.S. teachers reported grading homework, compared to 14 percent of teachers in Japan and 6 percent of teachers in Germany (Moorman & Haller, 2006b).

How Much Time Should Students Spend on Homework?

One of the more contentious issues in the homework debate is the amount of time students should spend on homework. Available research indicates that the optimum amount of time is between 1 ½ to 2 ½ hours per night for high school students and about one hour per night for middle school students (Center for Public Education, 2007a). There is less research on the optimum amount of time elementary students should devote to homework, but available studies suggest that smaller amounts of homework (no more than 20 minutes per night) may help to develop study skills and work habits, but do not directly affect achievement (Cooper, 2008; National Education Association, 2008a; Center for Public Education, 2007c).

Research conducted on the amount of homework most beneficial to students has led many researchers, the National Education Association, and the Parent Teacher Association to recommend the “10 minute rule” for determining how much homework to assign. The “10 minute rule” is a general guideline that suggests 10 minutes of homework per grade level per night (for example, 30 minutes per day for third graders and 120 minutes per day for twelfth graders) (McPherson, 2005; Northwest Regional Educational Laboratory, 2005; Shellard & Turner, 2004; Cooper, 2001; Cooper et al., 1998).

Most researchers recommend that teachers take a middle ground and assign a moderate amount of homework (Clemmitt, 2007; Cooper et al., 2006; Cooper, 2001; Milbourne & Haury, 1999). Alfie Kohn (2006b), however, has suggested that U.S. schools adopt a no-homework policy, with teachers assigning homework only when they can demonstrate the assignments will benefit students. Some researchers have suggested that the quality, not quantity of homework completed is key to students’ increased academic achievement. Nuzum (1998) stated that focusing on the quantity of homework ignores the more important goal of ensuring the homework assigned is meaningful. She stressed that homework’s effectiveness depends more heavily on factors other than the amount assigned or completed, such as the type and quality of assignment given and students’ skills and understanding of the assignment. Linver, Brooks-Gunn, and Roth (2005) stated that if students are assigned creative and challenging tasks, homework is more likely to have a positive impact on learning.

There is evidence that the relationship between time spent on homework and academic achievement may be curvilinear. This finding suggests that homework may have a greater impact on student achievement when teachers assign moderate amounts of homework, rather than very little or a great deal of homework (Center for Public Education, 2007a; McPherson, 2005; The State of Queensland, 2004; Sharp, 2001; Keys et al., 1997). The following studies illustrate the curvilinear relationship between time spent on homework and achievement:

- Mikk (2006) compared students’ 2003 Trends in International Mathematics and Science Study (TIMSS) math scores with the amount of time they reported doing homework. He found that students who reported spending between 60-90 minutes per day on homework received the highest average math scores. Students who said they spent more than 90 minutes or less than 60 minutes per day on homework received lower scores.
- Beaton and colleagues (1996a and 1996b) compared the amount of time students reported spending on homework and their 1995 TIMSS math and science scores. Representative samples of eighth grade students were drawn from the 41 countries that participated in the TIMSS assessment. The

researchers found that in many countries, the highest scores were associated with moderate amounts of homework (one to three hours per day), while students who completed less than one hour or more than three hours of homework per day received lower scores.

- TIMSS researchers compared students' 1999 science scores with the amount of time they spent studying out of school. They found that students who reported studying for one hour or less per day received the lowest TIMSS scores. However, students who reported studying between one to three hours per day received scores that were as high or higher than students who reported studying more than three hours per day (International Association for the Evaluation of Educational Achievement, 2001).
- The National Center for Education Statistics (2008) found that fourth grade students who reported completing between 15 minutes and two hours of homework per night had higher 2004 National Assessment of Educational Progress (NAEP) reading scores than those who reported completing no homework or more than two hours of homework per night. At grades 8 and 12, however, students' reading scores increased as the amount of reported homework increased.
- Skaggs (2007) examined NAEP reading scores and found that fourth grade students who spent over one hour per night on homework and students who did not complete any homework received the same average reading score. In math, students who reported spending one-half hour on homework scored about the same as students who completed no homework. Students who averaged 45 minutes or more of homework each night actually scored lower than students who did no homework. Skaggs suggested that these findings might be explained by the fact that elementary teachers often assign homework to develop students' time management skills. Since time management skills are rarely measured on standardized tests, it is difficult to attribute these students' test scores to the amount of time they spent on homework.
- Lam (1996) used National Education Longitudinal Study data to compare the amount of time spent on homework to the achievement test scores of over 8,000 twelfth grade students. Students who reported doing homework were found to have higher achievement scores than students who did not do any homework. The strongest relationship between homework and achievement was found among students who reported doing 7-12 hours of homework per week, followed by students who reported doing 13-20 hours per week. Students who reported doing more than 20 hours a week earned achievement test scores equal to those who reported doing between 1-6 hours of homework per week.

Should School Districts Establish Formal Homework Policies?

Homework policies define a standard set of expectations for homework. Many researchers agree that districts should have a formal policy on homework that is developed with input from teachers, administrators, students, and parents. They argue that teachers need a policy to guide them with assignments; students need to know the types and quantity of homework that will be assigned; and parents have the right to know why each assignment is given (Skaggs, 2007; Northwest Regional Educational Laboratory, 2005; Brewster & Fager, 2000; O'Rourke-Ferrara, 1998; Thomas, 1992; Davis et al., n.d.).

Those in favor of formal districtwide homework policies recommend that they clearly specify what kind of homework is most effective; how much homework is appropriate at each grade level; who will be responsible for deciding how much homework to assign; how the scheduling of homework will be coordinated among different teachers; and parents' responsibilities regarding homework (Skaggs, 2007; Cooper, 2001; Eddy, 1984).

The Center for Public Education (2007c), however, has recommended that districts refrain from establishing formal homework policies and instead develop guidelines at the individual school level. The Center does not advocate the creation of formal districtwide homework policies because research findings on the

impact of homework on students' academic achievement have been inconclusive and the optimum amount of time students should spend on homework has not yet been clearly established.

Some educators have cautioned that when districts set up homework policies in advance, they are admitting homework is not dictated by the lesson or by students' needs, but by a predetermined schedule (Moorman & Haller, 2006c; Northwest Regional Educational Laboratory, 2005; Thomas, 1992). Moorman and Haller (2006c) stated that policies governing the amount of homework to be assigned insure that homework will be given whether or not it's appropriate. They suggested that a commitment to daily homework increases the odds that it will be meaningless and repetitive. Kohn (2006c) asserted that homework policies communicate to students and parents that "we've decided ahead of time that children will have to do *something* every night (or several times a week). Later on we'll figure out what to make them do." Some studies have found that the most effective teachers vary homework assignments according to the task at hand. Many of these teachers view formal policies as undermining their curricular goals and personal teaching style (Corno, 1996; Adoption Media, n.d.).

Parent Involvement in Homework

Most parents help their children with their assigned homework. *MetLife's Survey of the American Teacher* (2007) found that 73 percent of the 501 parents surveyed had reviewed, proofed, or checked homework during the past school year (84 percent of elementary parents and 61 percent of secondary parents).

Researchers agree that parents should be somewhat, but not overly, involved in their children's homework. For example, parents should monitor homework; offer guidance, not answers, when asked for help; provide a quiet, well-lit place for their children to study; ensure that the required materials (books, paper, and pencils) are available; and help with time and workload management (Bempechat, 2004; Cooper & Gersten, 2002; Cromwell, 1998).

Research has produced mixed findings on the impact of parents' homework involvement on student achievement. However, parent involvement in homework has consistently been shown to have a positive effect on students' homework completion rates and parents' attitudes toward their children's schools (Center for Public Education, 2007a; Marzano & Pickering, 2007; Pytel, 2007; Northwest Regional Educational Laboratory, 2005; Sharp, 2001). Several studies that examined the impact of parent involvement on homework completion rates, student achievement, and parent and student attitudes are summarized below.

- Van Voorhis (2003) conducted a study to determine if parents' involvement in science homework had a positive impact on homework completion rates and science achievement. Over 250 grades 6-8 students participated in the study. The treatment group consisted of students in the *Teachers Involve Parents in Schoolwork* (TIPS) program. TIPS encourages parents to be interested in and responsive to their children's homework, but they are not asked to teach specific skills. The control group received similar content homework but without instructions to involve their parents. Results indicated that students in the treatment group were more likely to complete and return assignments and that their assignments were more likely to be accurate. Treatment group students also earned significantly higher science report card grades.
- Balli, Wedman, and Demo (1997) studied the extent to which parent involvement predicted student achievement in mathematics. The researchers compared 74 students at a midwestern middle school who were taught by the same teacher and completed the same homework assignments. Treatment group students received assignments that prompted them to involve a parent, while control students received no prompts. Treatment group students reported significantly more parent involvement with their math homework, but higher levels of parent involvement were not associated with higher math achievement test scores. The researchers also found that student achievement was more closely associated with parents' educational levels than with their homework involvement. Students whose parents held a four-year college degree received significantly higher math test scores than students whose parents did not hold a degree, regardless of the amount of parent involvement in homework.

Parents reported their homework involvement led to increased companionship with their children and a greater awareness of what their children were learning in school. Students' perceptions of their parents' involvement were mixed, with some saying their parents helped too much or confused their understanding of the concepts, and others expressing gratitude for their parents' assistance.

- Pezdek, Berry, & Renno (2002) studied students in grades 4-6 at a Los Angeles elementary school. They reported no significant correlation between how many hours per week parents helped their children with math homework and students' scores on a locally developed math achievement test. A replication study, conducted at two adjacent elementary schools, produced similar findings.
- Researchers have concluded that parents' attitudes toward homework have a direct impact on their children's attitudes toward homework (Bempechat, 2004; Cooper et al., 1998). Epstein and Van Voorhis (2001) stated that parents who are not supportive of teachers' homework policies communicate their dissatisfaction to their children, who are then likely to share their parents' negative attitudes. Epstein & Van Voorhis (2001) also maintained that negative attitudes convey the message that parents have low expectations and don't believe their children are capable of meeting academic standards. Fortunately, the majority of parents appear to have positive attitudes about their children's homework. *MetLife's Survey of the American Teacher* (2007) found that 87 percent of parents reported that helping with homework provided an opportunity for them to talk and spend time with their children.
- While homework gives parents the opportunity to reinforce learning and become involved in their children's education, several studies have discovered drawbacks associated with parental involvement. Parents have been found to become over-involved in their children's homework, use instructional techniques that differ from those used by the teacher, or negatively affect their children's sense of independence (Clemmitt, 2007; Cooper, 2007; Cooper et al., 2006; Shellard & Turner, 2004; Checkley, 1997).

Strategies for Increasing Homework Completion Rates

Many students need extra support with both the academic and logistical aspects of homework (Kralovec & Buell, 2001; Paulu, 1998; West Allegheny School District, n.d.). Researchers have suggested several strategies that may help to increase homework completion rates:

- **After-school homework centers.** After-school homework centers provide students with an environment conducive to study, access to qualified staff and technological resources, and the opportunity to develop good study habits. They also remove the burden on parents to supervise homework (Bafile, 2005; Simplicio, 2005; Kralovec & Buell, 2001; Sharp, 2001; Silvis, 2001; Dierson, 2000; Forster, 2000; Train et al., 2000; Paulu, 1998). After-school homework centers appear to be especially beneficial in communities with high levels of poverty and unemployment (The State of Queensland, 2004; Glazer & Williams, 2001). Studies have indicated that after-school homework programs improve students' motivation, self-confidence, and study habits, although they have not been consistently found to increase students' academic performance (Center for Public Education, 2007c). Cooper (2007) noted that it is difficult to determine if after-school homework centers lead to higher levels of achievement because many of the programs provide other academic activities in addition to homework assistance.
- **Organizational tools.** Many teachers use tools such as homework assignment notebooks and homework completion graphs to help students organize and prioritize their assignments (Bafile, 2005; Hopkins, 2005; Northwest Regional Educational Laboratory, 2005; Shellard & Turner, 2004; Hancock, 2001; Dierson, 2000; Checkley, 1997). Overall, most studies have indicated that some organizational tools help to increase homework completion rates, although they appear to be most effective for those students who are already motivated to complete their homework.

- Anliker, Aydt, Kellams, and Rothlisberger (1997) compared the homework completion rates of students who used assignment notebooks, grade record sheets, and homework pink slips (forms used to document incomplete or missing homework) to the homework completion rates of students who had not used these tools the previous year. They found that the percent of students who completed at least 75 percent of their homework increased significantly. In general, however, the researchers concluded that homework tools helped students who were already motivated to succeed, but did not have much effect on the homework completion rates of students who were not highly motivated.
- Fraser, Mallek, Sigourney, and Watland (1999) studied a program designed to increase students' homework completion rates. The intervention included individual homework contracts, a homework check-in system supported by incentives, individual student-teacher conferences emphasizing homework responsibilities, and involvement of parents in the homework process. Following implementation of the intervention, homework completion rates increased significantly at elementary schools, but not at high schools. Students with low completion rates prior to the intervention did not demonstrate increased completion rates, in spite of the strategies introduced.
- Dierson (2000) studied an intervention targeting students who had failed to complete their homework assignments. Students were provided with strategies to improve their homework completion rates, including assignment notebooks, homework graphs, after-school study sessions, and optional homework activities. Dierson concluded that each strategy varied in its ability to increase homework completion rates: homework options led to large increases in homework completion rates; students reported that assignment notebooks were of great assistance in reminding them to do homework; and neither homework graphs nor after-school study sessions resulted in increased homework completion rates.
- Bryan & Sullivan-Burstein (1998) examined the effect of organizational tools on homework completion rates. They found that three strategies resulted in significant increases in homework completion rates: homework planners; homework completion graphs; and "real life" assignments plus rewards. The organizational tools had a greatest effect on the homework completion rates of students with learning disabilities and average-achieving students with previously documented homework completion problems.
- Chavous (1996) studied the impact of homework calendars on elementary student and teacher attitudes toward homework. Homework calendars, sent to parents on a monthly basis, also included lists of daily activities parents could complete with their children. Pre and post surveys indicated no significant change in teachers' attitudes toward assigning homework. However, students' attitudes toward homework were significantly more positive following distribution of the homework calendars.
- **Homework hotlines.** Some researchers have suggested that homework hotlines help to increase homework completion rates by providing assistance to students who forgot to bring their assignment notebook home or were out sick. Districts that have established hotlines ask teachers to record assignments for each subject. Students or parents can call the hotline 24 hours a day to hear the recording. In addition to recorded information, many hotlines schedule teachers or other knowledgeable staff to provide live assistance and answer homework-related questions (Skaggs, 2007; Bafile, 2005; Glazer & Williams, 2001; Hancock, 2001; Dierson, 2000; Forster, 2000; Paulu, 1998).

Barrett and Neal (1992) studied the effects of a telephone assistance program on the academic achievement of fifth grade students at three southeastern elementary schools. Treatment group students were told a homework hotline was available to assist them in any aspect of their homework assignments. Control group students did not have access to the hotline. The researchers found no relationship between participation in the hotline program and academic achievement, as measured by both class grades and achievement test scores. The frequency of calling the hotline also had no effect on students'

achievement. It should be noted that only 26 percent of treatment group students used the hotline. Therefore, the study's results, based on comparisons between all treatment and control group students, may not have been valid. One of this study's most interesting findings may have been that fifth grade students were unlikely to use a telephone hotline as a resource when working on their homework.

- **Homework web sites.** Some schools have developed homework assistance web sites. The sites include a list of homework assignments, describe the grading system used to assess homework, explain connections between homework assignments and academic standards, provide online homework resources, offer access to online homework groups, and allow students to ask questions online (Salend et al., 2004; Silvis, 2001; Chaika, 2000b). Some schools have also established a Homework TV channel that allows students to watch a teacher answer homework questions or solve problems on their television sets (Chaika, 2000a).
- **Tutors.** Many schools use tutors to provide students with homework assistance. National Honor Society students serve as tutors in some schools and other schools ask students from local universities to tutor students several times a week (Glazer & Williams, 2001; Hancock, 2001; Forster, 2000; Paulu, 1998).
- **Peer support programs.** Peer support programs have been used in many schools to increase homework completion rates. Teachers pair up students who are at similar achievement levels or ask more advanced students to provide assistance to lower-performing students. Some teachers also give struggling students the telephone numbers of more advanced students who are available to discuss homework assignments (Bafile, 2005; Shellard & Turner, 2004; Paulu, 1998).

Recommendations for Teachers Assigning Homework

In order to increase both homework completion rates and the meaningfulness of assignments, researchers have recommended that teachers consider the following issues when assigning homework:

- **Assign homework that has a clear purpose.** Researchers agree that teachers should make the purpose of each homework assignment clear to all students. They emphasize that students must fully understand what they are supposed to learn and accomplish from doing the homework in order to benefit from the assignment (Northwest Regional Educational Laboratory, 2005; Shellard & Turner, 2004; Brewster & Fager, 2000; Chaika, 2000b; Nuzum, 1998; Paulu, 1998; Doyle & Barber, 1990; West Allegheny School District, n.d.).
- **Communicate expectations to both students and parents.** Expectations for homework should be clearly communicated to students and parents. At the beginning of the school year, teachers should inform students and parents how much homework will be assigned, which days homework will be collected, the role of homework in determining student progress, the consequences for late or incomplete homework, and how parents should support the completion of assignments (Horowitz, 2005; Brewster & Fager, 2000; Marzano et al, 2000; Nuzum, 1998; Paulu, 1998; Monona Grove School District, n.d.).
- **Use homework to enrich the classroom curriculum.** Homework should be linked to what students are learning in class and serve to extend classroom studies and activities. Homework should not be used to teach complex skills, but should focus on the integration of skills already possessed by the student (Plato, 2000; Paulu, 1998; Tavares, 1998; Cooper, 1994a; Davis et al., n.d.).
- **Match assignments to students' skill levels.** Teachers should make sure students fully grasp the concepts and skills needed to complete their homework assignments. When homework is designed at the appropriate difficulty level, students are able to complete assignments independently with a relatively high success rate, but still find the assignments challenging (Marzano & Pickering, 2007; Shellard & Turner, 2004; Davis et al., n.d.; West Allegheny School District, n.d.).

- **Match assignments to students' learning styles.** Studies have suggested that students are more likely to complete homework successfully when assignments are matched to their preferred learning styles (Northwest Regional Educational Laboratory, 2005; Dierson, 2000; Nuzum, 1998; Paulu, 1998; West Allegheny School District, n.d.).

There is evidence that students have individual preferences or homework styles, which relate to aspects of the environment and mode of learning. Examples of learning preferences include structured vs. unstructured assignments; quiet vs. background noise; dim vs. bright light; auditory, visual, or tactile learning; and working alone vs. with peers. Studies have found that providing conditions appropriate to individual homework styles improves student attitudes toward homework and can have a positive influence on homework completion rates (Hong et al., 2004; The State of Queensland, 2004; Sharp, 2001; Geiser, 1999).

Hong and Milgram (1999) conducted a cross-cultural study on preferred homework styles. Comparisons of students from a western U.S. metropolitan area and students from Seoul, Korea found statistically significant differences in 12 aspects of preferred homework style. U.S. students preferred to work with music or background sounds; eat or drink and move around; and learn with adults. They also preferred auditory learning and were more self-motivated, parent-motivated, and teacher-motivated when completing their homework. Korean students preferred visual learning; a brightly lit room; sitting at a desk and chair; and studying in the same place.

- **Assign a variety of homework.** Researchers agree that teachers should assign a variety of homework assignments throughout the course of the school year to prevent homework from becoming boring. Since it is almost impossible for all assignments to interest all students, a mix of approaches increases the chances that every student will have some homework they enjoy (Horowitz, 2005; Brewster & Fager, 2000; Paulu, 1998; West Allegheny School District, n.d.).
- **Keep drill work to a minimum.** Experts also agree that busywork, such as copying information or filling in worksheets, has little value. Homework is more meaningful to students when they are required to use higher level thinking skills, such as drawing conclusions, making comparisons, analyzing, and evaluating (Bluestein, 2006b; Moorman & Haller, 2006c; O'Rourke-Ferrara, 1998).
- **Prepare homework assignments carefully.** Brown (in Plato, 2000) warned that the "traditional doggy bag assignment" (in which students simply finish up work that was left undone during the school day) is "one of the most ineffective homework assignments which can be given." McBeath (1996) observed that in many cases: "While learning *in* school had apparently become more varied, more differentiated and more imaginative, learning *out* of school seemed to be stuck in a time warp. Classroom learning was often stimulating and inventive . . . Homework tasks were not given the same thought as to the needs and context of the learner nor to coherence and progression of learning."
- **Connect homework to real life events or activities in the home and community.** Students often complain they cannot relate to assignments involving events that took place in the distant past. Assignments should be relevant and interesting to students and allow them to draw on their family, cultural, and community experiences (Coutts, 2004; Bryan & Sullivan-Burstein, 1998; Nuzum, 1998; Paulu, 1998; Checkley, 1997).
- **Teach students the skills they need to complete assignments.** Teachers should help students develop their study skills, such as note-taking, outlining, organizing, and researching (West Allegheny School District, n.d.). Teachers should also encourage and teach good study habits, such as setting a regular time to study that fits in with the family schedule; removing distractions (television and telephone calls); and gathering necessary supplies (Paulu, 1998).
- **Monitor the amount of homework assigned.** Homework loads must be appropriate to students' age levels and not take too much time away from family activities. Teachers should be aware of students'

home life situations and adjust homework, when necessary, to meet students' unique circumstances (Marzano & Pickering, 2007; Hancock, 2001; Davis et al., n.d.). They should also monitor how long it takes students to complete assignments. If assignments take too long, this may signal that students need more instruction in order to complete them successfully (Bluestein, 2006b; Paulu, 1998).

- **Don't use homework as a punishment.** Most researchers agree that teachers should avoid using homework as a punishment because it communicates to students that homework is a negative activity that should be avoided, instead of a challenging activity that increases learning (Silvis, 2001; Plato, 2000; O'Rourke-Ferrara, 1998; Paulu, 1998; Tavares, 1998; Cooper, 1994a; Davis et al., n.d.; West Allegheny School District, n.d.). Some experts do, however, advocate rewarding students for completing their homework (Bafile, 2005; Northwest Regional Educational Laboratory, 2005; Shellard & Turner, 2004; Bryan & Sullivan-Burstein, 1998).
- **Establish a flexible homework completion policy.** Several researchers have suggested that teachers build some flexibility into their homework collection policies. Because any student can have a bad night, teachers might consider giving students one free excuse, discarding the lowest or missing score on a series of assignments, or requiring only a certain percentage of assignments to be turned in on time (Bluestein, 2006b; Battle-Bailey, 2003; Dierson, 2000; Forster, 2000; Tavares, 1998):
- **Don't assign homework at the end of class.** Teachers should take the time to explain homework instructions to students and give them an opportunity to ask questions before the end of class. When possible, students should be given time to start their homework in class to ensure they understand the assignment (Brewster & Fager, 2000). There are many skills students can learn as they receive assignments, such as following directions, taking notes from oral instructions, asking for clarification, identifying a goal, and planning and organizing their work (Nuzum, 1998). In addition, when students are always assigned homework at the end of class, it sends the message that homework is an afterthought (Nuzum, 1998; Tavares, 1998).
- **Decide whether to differentiate homework assignments.** Some experts believe that individualized assignments increase students' success with homework. Moorman and Haller (2006c) stated that: "Thirty unique children should not be given the same homework assignment. This one-size-fits-all approach to homework is not effective in helping children to learn." Researchers are careful to point out that this doesn't mean that teachers should create different homework assignments for every student every day. Rather, they should consider varying the difficulty level and assignment type for those students who are not likely to benefit from the assignment as given (Bluestein, 2006b; Kohn, 2006b; Dierson, 2000; Wood, 2000; West Allegheny School District, n.d.).

In addition to giving students different assignments, the same assignment given to all students can be individualized, for example, by adjusting the length of the assignment to fit students' skill levels or modifying the manner in which the assignment is completed (such as dictating instead of writing or having a parent read a chapter instead of the student reading it him or herself) (Wood, 2000). Teachers can also permit students to choose from among several homework activities that require a similar understanding of the material (Paulu, 1998; Tavares, 1998).

One of the nation's foremost homework experts, however, has recommended that all students in a class be responsible for the same assignments, with only rare exceptions (Cooper, 1994a). Cooper maintained that developing individualized homework assignments takes a considerable amount of teacher time and does not appear to raise student achievement enough to justify the additional time required.

Nelson, Epstein, Bursuck, Jayanthi, and Sawyer (1998) surveyed 211 seventh and eighth grade students at a midwestern middle school. Students were asked to rate 17 possible homework adaptations (variations in homework assignments, instructions, and feedback strategies). The lowest overall rating was given for differentiated homework assignments. Students felt the practice was unfair and would negatively

affect their self-concept. The researchers cautioned that results of their study may not be generalizable to other groups of students because their sample was not randomly selected and did not represent a wide range of student characteristics. They acknowledged that more research into the subject of homework differentiation is needed.

- **Provide feedback.** Most researchers agree that homework has a greater impact on student learning when teachers provide prompt comments and criticism of students' homework. Feedback corrects misunderstandings, highlights errors in thinking, and lets students know where they excelled and where they need to work harder (Northwest Regional Educational Laboratory, 2005; Shellard & Turner, 2004; Walberg and Paik, 2004; Paulu & Perkinson, 1995; West Allegheny School District, n.d.). Paulu (1998) stated that feedback is most helpful when teachers offer specific suggestions on how the homework can be improved and discuss problems and solutions with students.

Since teachers don't have enough time to give extensive feedback on every assignment, some researchers have suggested they provide other opportunities for students to receive feedback. Some teachers, for example, ask students to share homework with the class to exchange feedback and other teachers keep assignments in a portfolio to be examined at a later time (Moorman & Haller, 2006c; Shellard & Turner, 2004; Paulu, 1998).

- **Decide whether or not to grade homework assignments.** One area of controversy is whether or not to grade students' homework. Some experts maintain that graded homework has a more powerful effect than homework that is assigned but not graded (Shellard & Turner, 2004; Dierson, 2000; Davis et al., n.d.). Walberg's (1999) meta-analysis found that graded homework generated much larger effect sizes than ungraded homework, indicating that grading homework had a more positive impact on academic performance.

Other researchers have recommended that homework not be graded. Cooper (1994a), for example, stated that teachers should only collect homework, check it for completeness, and give intermittent instructional feedback. Mikk (2006) compared students' 2003 TIMSS math scores with teachers' reported homework grading practices. He found that the more teachers used homework to contribute to students' grades, the lower the students' TIMSS scores. More research is clearly needed to determine if grading homework has a positive impact on student performance.

- **Coordinate with other teachers.** At the secondary level, teachers should coordinate with other teachers to ensure that the amount of homework assigned is reasonable and that students are not overwhelmed with long assignments for several classes all on one night (Simplicio, 2005; Brewster & Fager, 2000; Paulu, 1998; Monona Grove School District, n.d.; West Allegheny School District, n.d.). The *MetLife Survey of the American Teacher* (2007), which surveyed 1,000 U.S. public school teachers, reported that 36 percent of teachers said they spoke only a few times a year or less to their students' other teachers about how much homework they were assigning. In an effort to increase collaboration, many schools have started requiring teachers to hold weekly meetings to coordinate homework assignments (Keates, 2007).
- **Involve parents.** Parents should rarely be asked to play a formal instructional role in homework. Instead, they should facilitate and monitor homework completion by helping their children understand directions; being available to respond to simple questions; offering positive feedback; providing a consistent time and place for homework completion; and contacting the teacher if there is a homework problem they can't resolve (Northwest Regional Educational Laboratory, 2005; Walker et al., 2004; Paulu, 1998; Cooper, 1994a).

To increase parents' homework involvement and maximize their positive impact, teachers should:

- Provide parents with written information about homework policies and purposes (Walker et al., 2004; Battle-Bailey, 2003; Silvis, 2001; Paulu, 1998).

- Explain the role parents are expected to play in students' homework completion (Brewster & Fager, 2000).
- Be sure expectations are realistic, given parents' skills and schedules (Battle-Bailey, 2003; Silvis, 2001; Brewster & Fager, 2000).

Research Limitations

Before considering studies on homework's effect on student achievement, the reader should be aware of the following research limitations:

- Homework has been a difficult variable to study directly, uncontaminated by other variables. Homework assignments are influenced by more factors than any other instructional strategy. Student ability, motivation, and grade level may all influence homework's effect. In addition, there is considerable variation in whether, when, and how students complete assignments, as well as the home conditions in which they work on their assignments (Cooper et al., 2006; McPherson, 2005).
- The majority of studies are correlational, not causal. Therefore, the association between the amount of homework completed and achievement may be the result of other, unstudied factors. High-achieving students, for example, may do more homework because they enjoy studying and take more challenging courses that require them to complete more homework. Conversely, low-achieving students may spend more time on homework because they are struggling with the material, not because the homework is causing their learning problems (Center for Public Education, 2007b; Trautwein et al., 2007; Hetherington, 2005; Leone, 2005; Linver et al., 2005; Brown Center on Education Policy, 2003).
- Most studies have relied on student or parent reports of the amount of time spent on homework, but these reports may be inaccurate. Students may exaggerate the amount of time they spent on homework and parents may underestimate the time their children spent on homework. Parents are unlikely to report homework they didn't observe their children completing (for example, while they were still at work, when children completed homework during school hours, or when children studied behind closed doors) (Cooper et al., 2006; Keith & Benson, 1992).
- Trautwein, Lüdtke, and Pieper (2007) stated that "given the practical significance of homework for students, teachers, and parents alike, the quality and quantity of empirical research on the subject is surprisingly uneven. The available body of research findings on homework is complex, fragmented, and contradictory. In fact, the recommendations that scientists and practitioners make about homework assignment and completion are often based on their own experience or on speculation rather than on sound scientific evidence."

Research: Homework and Student Achievement

Keeping the above limitations in mind, this literature review summarizes the research conducted on homework's impact on student achievement. In general, research on homework has produced inconsistent results. There is no conclusive evidence that homework increases academic achievement. Some studies have found homework has a positive impact under certain conditions and for certain students; some have found homework has no effect on academic achievement; and others have found homework has a negative effect on achievement (Center for Public Education 2007a; McPherson, 2005; Bempechat, 2004; McEntire, 2001). As discussed in the following section, homework has consistently been found to have a greater impact on the academic achievement of students at the higher grade levels. Some studies have also concluded that homework is related to higher class grades and scores on teacher-made tests, but not to performance on standardized achievement tests (Krashen, 2005; Cooper et al., 1998; Cooper, 1989).

Studies that have investigated homework's impact on achievement are summarized below:

- Cooper (2008) analyzed studies that compared students who completed homework with those who completed no homework. Across five studies, the average homework completer had higher scores on unit tests (class tests administered at the conclusion of a topic) compared to 73 percent of the students who completed no homework.
- Townsend (1995) conducted a study to determine if homework influenced the acquisition of vocabulary knowledge and understanding. Results indicated that third grade students who completed homework received significantly higher scores on a teacher-made test designed to assess acquisition of new vocabulary when compared to students in the control group.
- Pelletier and Normore (2007) conducted a study to determine if there was a relationship between the amount of homework completed by third grade students, their classroom test scores, and their achievement test scores. They found that students who completed more homework, as a percentage of the amount of homework assigned, received significantly higher classroom test scores and standardized achievement test scores.
- The Public Schools of North Carolina (1999) reported that grade 10 students who spent more time completing homework received higher North Carolina High School Comprehensive Test reading and math scores. After adjusting for differences due to gender, ethnicity, and parents' educational level, the data revealed that students who reported spending at least three hours per week doing homework scored above the state average in both reading and math.
- Cooper, Lindsay, Nye, and Greathouse (1998) investigated the relationship between student achievement and the amount of homework assigned in three U.S. school districts. They concluded that the amount of homework assigned by teachers was not significantly related to students' standardized achievement test scores at either the upper or lower grades.
- Pezdek, Berry, and Renno (2002) studied the relationship between the amount of homework completed and fourth through sixth graders' scores on a locally developed mathematics achievement test. The study was conducted at one elementary school. They found that students' math performance was not related to the number of hours per week they spent doing math homework. A replication study at two additional elementary schools found a small but significant relationship between students' math achievement and the number of hours per week they spent doing math homework. The researchers concluded that spending more time on math homework only modestly improved students' math performance, suggesting that math homework assignments provided elementary students with little added value beyond the instruction and practice provided in the classroom.
- Swank (1999) compared the weekly math quiz scores of fourth grade students who completed homework with those who did not complete homework. She found no significant differences in math achievement scores between students in the two homework groups and concluded homework was only a limited tool for increasing students' academic success. It should be noted that results of this study were based on a small sample (less than 50 students) and included almost exclusively White, non-Hispanic students.
- Hofferth and Sandberg (2000) compared time diaries completed by the parents of 2,818 children under age 13 and compared them to children's achievement test scores. They found that studying time was not associated with higher test scores. Of three activities (reading for pleasure, studying, and watching television), only reading for pleasure was linked to higher test scores.
- Mikk (2006) examined the relationship between homework and the TIMSS 2003 grade 8 math scores of students from 46 countries. The study compared students whose teachers reported assigning a high amount of homework with those whose teachers reported assigning less homework. No relationship was found between the amount of homework teachers assigned and students' TIMSS math scores.
- Researchers from the Organisation for Economic Co-operation and Development (2002) studied the relationship between the amount of time spent on homework and 15 year old students' 2000 Programme

for International Student Assessment (PISA) reading scores. Analyses were based on the scores of students from 31 countries, including the U.S. The researchers reported a low correlation (0.18) between the amount of time students said they spent on homework and their average PISA scores. A higher correlation (0.28) was found between the amount of time students said they spent on homework and their self-reported reading engagement (motivation to read and time spent reading) (Kirsch et al., 2002).

- Eren and Henderson (2007) used data from the National Education Longitudinal Study to determine if the amount of time spent on homework had an effect on over 25,000 students' math achievement scores. They found that additional homework was most effective for high and low achievers, but had no impact on average achievers' test scores. The authors suggested that average achievers may have already been exerting their maximum effort on homework, whereas low and high achievers were capable of additional effort and therefore benefitted from additional homework.

Research: Homework and Student Achievement, by Grade Level

Studies involving students at different grade levels suggest that homework may be more effective for older students. Numerous studies have reported little correlation between homework and academic achievement at the elementary level, whereas homework appears to have increasing benefits as students progress through the grade levels (Pelletier & Normore, 2007; McPherson, 2005; Chaika, 2000b; Cooper et al., 1998).

The Center for Public Education (2007b) concluded that:

“homework appears to provide more academic benefits to older students than to younger students, for whom the benefits seem to lie in nonacademic realms, such as in improving study skills and learning structure and responsibility. The amount of homework provided to younger students may therefore be less important than simply assigning something to help them establish routines and learn personal responsibility.”

Researchers have suggested that homework may be unrelated to elementary students' academic achievement because younger children tend to have less effective study habits, have shorter attention spans, and be more easily distracted than older students (Cooper, 2008; Center for Public Education, 2007b; Hoover-Dempsey et al., 2001).

Despite the fact that studies have found homework has little impact on achievement at the early grade levels, most researchers believe homework should still be assigned to elementary students (Pytel, 2007; Northwest Regional Educational Laboratory, 2005; Bempechat, 2004). Cooper, Lindsay, Nye, and Greathouse (1998) stated that “although the benefits of study at home for young children may not be immediately evident, we support assigning homework to younger elementary school children due to its potential long-term developmental impact, for it helps elementary schoolers develop proper study skills, which, in turn, influence grades.”

Studies that have examined homework's impact on achievement, based on the grade level in which it is assigned, are summarized below:

- Cooper (1989) reviewed 20 studies that compared the achievement of students who received homework with the achievement of students completing no homework. Fourteen studies found results favoring homework and six studies favored no homework. Cooper reported that homework's impact increased as students' grade level increased: six percentile points at grades 4-6; 12 percentile points at grades 7-9; and 24 percentile points at grades 10-12.
- Cooper (1989) reviewed 50 studies that correlated the time students reported spending on homework with their achievement. Forty-three studies found that students who reported completing more homework had higher levels of achievement; seven studies showed the opposite. The effect was greatest for high school students, weaker for middle level students, and nearly nonexistent for elementary school students.

- Nine studies reviewed by Cooper (1989) considered the relationship between homework and academic performance, by grade level, in greater depth. The studies found no relationship between the amount of time spent on homework and academic performance for elementary students. At the middle school level, achievement continued to improve until homework assignments lasted between one and two hours per night, after which performance began to decline. For high school students, the line of progress continued to increase up to the highest point measured (more than two hours per night).
- Cooper, Robinson, and Patall (2006) synthesized 69 studies that examined the relationship between homework and academic achievement. They found that, with only rare exceptions, the relationship between the amount of homework students completed and their achievement outcomes was positive and statistically significant, with stronger correlations at grades 7-12 than at grades K-6.
- Leone and Richards (1989) studied the association between how much time students spent on homework and their class grades. They found a positive association between the amount of homework completed and students' classroom grades at grades 6-10, but a negative association at the lower grade levels.

Research: Homework Completed at Home Versus in School

Several studies have compared the effectiveness of homework completed in school versus homework completed at home. It appears that homework completed at home has a greater effect on achievement, especially at the higher grade levels.

- Keith and Diamond (2004) used data from the National Education Longitudinal Study to compare the high school grades and achievement test scores of students who completed homework at home to the grades and test scores of students who completed their homework in school. The researchers found that students who spent more time doing homework outside of school had higher classroom grades and achievement test scores, while homework completed in school had no direct relationship with grades or test scores.
- Cooper (1994b) compared homework with in-class supervised study. At the elementary level, in-class supervised study had a greater impact on students' achievement than homework. At the middle and senior high school levels, however, homework had a stronger impact on students' achievement than supervised in-class study.
- The Public Schools of North Carolina (1999) issued a report that included possible explanations for why homework completed in school might be less effective than homework completed at home, including: when homework is done at home, parents may offer assistance or their presence may help students stay on-task; spending time in school working on homework may take away from instructional time; and schools may not provide an environment that allows students to concentrate fully on their homework assignments.

Research: Homework and Family Income Level

Students from low income homes may not benefit as much from homework as those from higher income homes. Some researchers have argued that homework actually increases the achievement gap between students from affluent and poor families. Children from higher income families have more resources, such as computers with Internet access, and tend to have better educated parents who can help them complete assignments. Children from lower income homes are more likely to have after-school jobs or other family responsibilities and lack an adequate environment for doing homework (Center for Public Education, 2007b; Center for Public Education, 2007c; Marzano & Pickering, 2007; Hancock, 2001; Kralovec & Buell, 2001; Silvis, 2001; James, 2000; Plato, 2000; Lenard, 1997).

The studies reviewed below illustrate that no definitive conclusions can be drawn regarding the effect of family income level on homework.

- Using time diaries completed by the parents of 2,818 children under age 13, Hofferth and Sandberg (2000) looked at the relationship between time spent on homework and family background characteristics. They found that family income was not related to the amount of time students spent studying. Children of better-educated parents, however, were found to spend more time studying than children of less-educated parents.
- Linver, Brooks-Gunn, and Roth (2005) used time diaries to study homework habits of 2,024 students in grades 1-12. They found that students in higher income families reported completing more homework. However, students living with two parents were less likely to report doing any homework than students living with one parent.
- Zick and Allen (1996) used anecdotal data from the time diaries of 313 two-parent and single-mother families to examine differences in how students spent their time in the following three areas: schoolwork, housework, and paid employment. They found that students in single-parent homes reported spending less time on homework than those in two-parent homes.
- Beaton and colleagues (1996a and 1996b) compared the 1995 TIMSS math and science scores of students who had access to a dictionary, desk or table, and computer with those who had no access to the three study aids. Representative samples of eighth grade students were drawn from the 41 countries that participated in the TIMSS assessment. The researchers found that in most countries, students with access to all three study aids received higher TIMSS math and science scores than those without access to the study aids.

Research: Homework and Ethnicity

Several studies have investigated the relationship between homework and ethnicity. Some researchers have concluded that ethnicity and income level are interrelated. For example, both minority and low-income children are more likely to attend schools that don't assign as much homework (Linver et al., 2005) and parents who are not fluent in English or whose educational backgrounds are limited may not be able to provide their children with much homework assistance (Silvis, 2001).

The studies summarized below reported mixed findings with regard to the relationship between homework and ethnicity. It does appear, however, that Asian students spend more time completing homework than students in other ethnic groups and that their increased homework time often results in higher levels of academic achievement.

- Hofferth and Sandberg (2000) examined time diaries completed by the parents of 2,818 children under age 13 and found that Black, Hispanic, and Asian children spent more time studying than White children.
- Linver, Brooks-Gunn, and Roth (2005) studied time diaries completed by 2,024 students in grades 1-12. They found that at all grade levels, Black and Hispanic students were less likely to do any homework than White students. However, a comparison of students completing any homework at all indicated that Black and Hispanic students spent more time doing homework than White students.
- Mau and Lynn (1999) investigated motivational differences between ethnic groups, based on reports of the amount of homework completed each week. The researchers used data from the National Education Longitudinal Study, representing over 25,000 students in grades 10 and 12. They found that Asian students reported spending the most time on homework, followed by White and Hispanic students. The least amount of time was reported by Black students.
- Keith & Benson (1992) used data from the "High School and Beyond" national data set to examine the influence of homework on students' classroom grades across ethnic groups. They concluded that homework had a stronger impact on Asian students' grades than on the grades of students in other ethnic groups. Not only did Asian students report completing more homework on average, but each

hour of homework they completed had a greater impact on learning. The researchers suggested that other factors, such as parent support at home, may have helped to strengthen homework's effects.

- Chaika (2000b) reported on studies conducted by Carol Huntsinger that compared the homework habits of Chinese American and European American students. Chinese American first graders spent over 20 minutes per night on math homework, some of which their parents assigned, while European American students averaged just five minutes per night. The larger amount of homework completed by Chinese American children translated into higher achievement test scores. In a longitudinal companion study of Chinese American and European American students, disparities in the amount of homework completed continued through grade 11.

Research: Homework and Gender

Although historically most studies have reported that girls do more homework than boys (Sharp, 2001; Bonyun, 1992), Linver, Brooks-Gunn, and Roth's (2005) examination of over 2,000 students' time diaries found that boys and girls tended to report spending the same amount of time doing homework. At the high school level, however, girls were more likely than boys to complete homework assignments.

Research: Non-Academic Benefits of Homework

Most researchers believe homework has non-academic benefits, especially for younger students. They claim that homework promotes improved attitudes toward school, demonstrates that learning can take place outside of the classroom, teaches students how to manage time, helps students develop good study habits, and encourages students' sense of personal responsibility and self-discipline (Center for Public Education, 2007a; Cooper, 2007; Corno & Xu, 2004; The State of Queensland, 2004; Cooper, 1994a).

Some researchers, however, contend there is no evidence to support the widely accepted assumption that homework yields non-academic benefits (Kohn, 2006c; Adoption Media, n.d). Kralovec and Buell (2000) stated "there has been no research done on whether homework teaches responsibility, self-discipline, or motivation. That's just a value judgment." Forster (2000) maintained that before homework is assigned for its non-academic benefits, more research needs to be conducted on these outcomes.

M-DCPS Homework Policy

The School Board of Miami-Dade County, Florida recognizes regular, purposeful homework as an essential component of the instructional process in Miami-Dade County Public Schools.

School Board Rule requires that schools consider the following guidelines as daily averages:

Grade Level	Total Daily Average (All Subjects)
K-1	30 minutes
2-3	45 minutes
4-5	60 minutes
6-8	75 minutes
9-12	120 minutes

All students should spend an additional 30 minutes reading.

Teachers are responsible for:

- teaching independent study skills
- making specific assignments
- checking, reviewing, and evaluating students' homework in accordance with a system that is clearly explained to the class

- giving feedback on homework assignments in a timely manner
- making instructions related to homework clear
- when necessary, providing a period of questioning or supervised study to insure that students understand the assignment

Teachers are directed to consider the following factors when assigning homework:

- grade level of student
- maturity level of student
- instructional needs of student
- level and degree of difficulty of the subject being studied
- purpose of the assignment and its relation to the objectives of the course under study
- length of the assignment and the amount of time required to complete it
- homework demands made in other subject areas

Each school is expected to advise parents in writing about the school's homework policy at the beginning of the school year. This explanation should include the nature of homework assignments and suggestions as to how parents can cooperate in the completion of assignments.

Summary

Although homework is assigned for a variety of academic and non-academic purposes, there is disagreement within the educational community about the value of homework and the amount of homework students should be assigned. According to recent surveys, the majority of parents, students, and teachers have positive attitudes toward homework and believe the homework load is about right. Researchers have concluded that, despite media reports of students overburdened with homework, the average American student across all grade levels does less than one hour of homework per night. In addition, most U.S. students do not appear to be doing significantly greater amounts of homework than their international peers.

Estimates on the optimum amount of time students should spend on homework vary, but research indicates that high school students should spend about 1 ½ to 2 ½ hours on homework per night and middle school students should spend about one hour per night. Smaller amounts of homework (no more than 20 minutes per night) help elementary students develop effective work habits and study skills, but do not appear to directly affect achievement. Many educators have adopted the "10 minute rule" (10 minutes of homework per grade level per night) as a general guideline for deciding how much homework to assign. Others have maintained that the quality of homework assigned is more important than the quantity completed.

Experts disagree on whether districts should establish formal homework policies. Some maintain parents and students have the right to know the types and quantity of homework teachers will assign, while others contend formal policies lead to homework assignments that are determined by a pre-set schedule, instead of students' academic needs.

Most researchers agree that parents should be somewhat, but not overly, involved in their children's homework. Research has produced mixed findings on the impact of parents' homework involvement on students' achievement. However, parent involvement in homework has consistently been found to have a positive effect on students' homework completion rates and parents' attitudes toward their children's schools.

Strategies for increasing homework completion rates, such as after-school homework centers, homework hotlines, and peer support programs, were also summarized. Issues for teachers to consider when assigning homework, including matching assignments to students' skill levels and learning styles, connecting homework to real life events, and providing feedback on assignments, were discussed.

The recommendations that researchers and practitioners make about homework assignment and completion are often based on their own experience or on speculation rather than on sound scientific evidence. Research conducted on homework's impact on student achievement has produced inconsistent findings. Some studies have found homework has a positive impact on achievement under certain conditions and for certain students; some have found homework has no effect on academic achievement; and others have found homework has a negative effect on achievement. Studies have consistently found, however, that homework has a greater impact on the academic achievement of students at the higher grade levels. Research on the role of income level, ethnicity, and gender in homework completion rates and the resulting effects on achievement has also produced mixed findings. Some researchers have suggested that students from lower income families do not benefit as much from homework as those from higher income families, since they tend to have access to fewer educational resources and often lack a home environment conducive to studying.

All reports distributed by Research Services can be accessed at <http://drs.dadeschools.net>.

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