

Looking at Homework Differently

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Source: *The Elementary School Journal*, Vol. 100, No. 5, Special Issue: Non-Subject-Matter Outcomes of Schooling [II] (May, 2000), pp. 529-548

Published by: The University of Chicago Press

Stable URL: <http://www.jstor.org/stable/1002283>

Accessed: 12-01-2018 04:30 UTC

REFERENCES

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Looking at Homework Differently

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Abstract

At first glance, an article on homework may seem an odd addition to an ongoing discussion of non-subject-matter outcomes of schooling (see the May 1999 issue of the *Elementary School Journal*). What could be more associated traditionally with reading, writing, and arithmetic than homework? In this article I propose that times are changing. Homework involves important social, cultural, and educative issues. A new conceptualization of homework is not just an academic task but one that infiltrates family and peer dynamics and the nature of teaching in community organizations as well as in school. One unique role for homework in a modern era is to provide social communication and contact among peers, especially peers who live beyond the neighborhood school, thereby increasing a sense of community. Moreover, self-regulatory processes are an important factor in doing homework that teachers and parents alike can monitor and address directly. Students develop an aptitude for future homework from the regularities of homework ongoing.

Opportunity is missed by
most people because it is
dressed in overalls and looks
like work. (THOMAS EDISON)

Teachers have long assigned homework and always will; homework is a commonplace of schooling. It is not, however, a tradition to take for granted. Because children do homework outside school, it goes unsupervised by teachers. Home settings vary in support, and children also do homework in libraries, sometimes on buses, and in the homes of friends. The dynamics of homework are therefore different from the dynamics of other commonplaces of schooling such as teaching or testing. The requirement to do academic work in settings outside

school provides interesting opportunities to bring out the best and worst of school and these other settings.

It is time to take a new look at homework and move beyond debates on its effects on achievement. Homework is a clear case in which many aspects of society influence both process and outcome. In some families, parents assist their children with homework; books, magazines, siblings, and the Internet provide other resources. The telephone is available for discussing homework problems with friends. Even an unplanned trip to a museum or an intramural baseball game offers potential material for homework writing assignments and math games. Homework is not just text work or worksheets after all. The person-environment melding of homework changes both.

What School Does for Homework

Consider the properties that homework acquires because it comes from school, for better and for worse.

For Good

Homework is work, not play. Work generates a range of reaction, running the gamut from positive to negative. Generally, homework is not supposed to be fun, although the right combination of challenge and skill can make it gratifying. Some assignments even lead a student to experience what Csikszentmihalyi (1975) calls "flow," a feeling of effortless progress where the work seems almost to complete itself. Homework thus has natural reinforcing properties comparable to those of schoolwork, potentially both positive and negative. Teachers can design assignments to increase the likelihood of a positive response and will often offer the same kinds of incentives that motivate engagement in class.

The academic flavor of homework distinguishes it from other kinds of work (Doyle, 1983). Schoolwork involves literacy activities such as reading and writing and using abstract thinking and code to solve problems; it tends to be mental rather than

physical. Academic work also benefits from care and precision, requiring cognitive organization of objects and events. Learning goals are central, or perhaps goals to solidify or extend material already learned. Tasks are designed to accomplish such goals. Teachers assign tasks as part of a larger curriculum plan; completion and feedback have to occur before moving on. Teachers expect students to take on homework to the best of their abilities and to return their work as one means to gauge progress. Other tasks that children undertake, such as household chores or jobs that earn wages, have different cognitive and psychomotor requirements (Warton & Goodnow, 1991).

Children who do additional academic work outside school are likely to become acclimated to academic rigor. In the best of circumstances, students develop an aptitude for academic work through the extra practice and reinforcement of homework. Their inclination to engage in future academic work depends to some extent on their reinforcement history with homework. When children experience flow in doing homework, they persist long enough to become able learners and ultimately reach academic expertise.

Beyond individual students' work, a classroom is a self-contained academic community (Brown, 1997). Homework is an activity in which the whole class participates. Even when teachers seek to accommodate diverse student needs by giving students different assignments, no class member is exempt. The activity of doing homework is something that all members of a classroom community can discuss and come to understand on their own terms.

Shared understandings create the circumstances for different purposes, excuses, struggles, and complaints about homework. An enthusiastic subgroup can engage a reluctant student or prompt a teacher to change the frequency and nature of assignments. Community also invokes identification on the part of individuals. The com-

plaining members have as much to identify with in the community as those who enjoy doing homework. Because misery loves miserable company (Schacter & Singer, 1962), complaints can be bonding.

Just as these positive associations accompany the school-like properties of homework, so are there potentially negative outcomes that deserve somewhat fuller discussion.

For Ill

Schoolwork varies in cognitive complexity. Some assignments require understanding and manipulating symbolic expressions; in others, the student uses an algorithm from memory or shows evidence of having acquired some facts. The nature of homework varies similarly, with teachers preferring more or less complexity.

A certain amount of complexity is important in homework assignments; the kinds of work students do in school shape their beliefs about school learning. Overreliance on one type of assignment restricts students' perspectives on learning. A flood of routine review sheets is an easy target for criticism, but inventive assignments can be equally narrowing if overdone. Just as students should not settle into the belief that learning is all about memorization, drill, and practice, neither should they expect every homework assignment to involve the creativity and play of a game show.

Too much complexity leads to frustration. Frustration is the stress of complexity, causing anxiety and self-consciousness. A student who says he cannot do the homework or does not "get" the assignment displays a lack of efficacy for that task. Feelings of inefficacy experienced over tasks and time at best stall approach behavior; at worst, they cause chronic homework avoidance (Hoover-Dempsey & Sandler, 1995). In a cascade of difficulty, school achievements then suffer. A student can come to believe that her efforts make little difference in grades or other outcomes (Bandura, 1986). Learning to be helpless is as likely given this

scenario as learning to be industrious would be, given a carefully sequenced set of challenges with secondary rewards (Eisenberger, 1992).

Another potential by-product when tasks are too demanding is a form of disengagement called "state orientation." State orientation is a kind of self-consciousness in which the child becomes unable to take action (Kuhl, 1985). Instead of focusing on the task at hand, a person who is state oriented will engage in what Bandura (1982, p. 137) refers to as "repetitive perturbing ideation," ruminating about personal weaknesses rather than strengths. This is particularly likely to occur with low achievers. Butler (1999) obtained personal accounts from learning-disabled college students: "(One student said he) 'gets nervous,' loses concentration, feels stupid, does not want to finish, works slower, and becomes distracted" (p. 11). Overall, 49% of Butler's sample reported unpleasant emotional reactions while working through tasks.

Sometimes there are just too many assignments even for good students to handle at once. Teachers help students with homework management—asking that assignments be written down in a daily minder or requiring parents to initial assignment sheets as a way to indicate that their child has completed the work. Most teachers ask students to prioritize and avoid saving harder tasks for last, when inclination and energy fade. In the early grades, teachers also ask parents to provide an appropriate work space, minimize distractions, and make themselves available for questions that arise. Some teachers even want parents to sit down with the child for a regular period and help the child do the work.

Popular magazines and books offer tips for parents on how to handle homework (e.g., Klavan, 1992): set aside a regular time of day; use a kitchen timer to give the child a better sense of the time spent; bring an icy glass of water in as a simple reward. The idea is to establish a routine that the child associates with doing homework. Such rou-

tines can be comforting in the face of difficulty and often last a lifetime. Some individuals of highest accomplishment attribute their success to deliberately establishing effective work ethics and routines (see Zimmerman, 1998).

A risk in all this for a child is compulsivity and organization carried to an extreme. Few parents would view these effects negatively, perhaps, until the story is told to an analyst some years later when the child is a young adult plagued by chronic anxiety and unfinished tasks. As clinical psychologists will attest, an adult with too many things to do and not enough time may well overorganize, behave compulsively, display difficulty coping with stress, and even cause suffering in close relations (see also Horowitz, 1976; Lakein, 1973).

In contrast, homework can be too easy and bore students. The opposite of frustration, boredom is the stress of tedium, signaling the need to buckle down. Not all children read a sense of boredom in this way, however (Klinger, 1996). Often, boredom leads to distraction and feelings of constraint (Wolters, 1998). Daydreaming and fantasy may occur, or a child may openly resist: "Why do I have to sit here and do this? Why can't she give us something interesting? I hate homework; I hate my teacher; I hate school." Juggling the nature of assignments is a tricky but critical problem for teachers to address.

Beyond the nature of homework, there are surrounding expectations to consider. These include the expectations of teachers, parents, peers, and students themselves. Expectations exert powerful effects—often for ill. Parents and teachers can sabotage their own best efforts with children by plying them with expectations that every completed assignment must be perfect. Some children will stay up far later than they should doing homework, going beyond what is required, to meet the expectation of "all As." Relentless pursuit of perfection wreaks havoc on well-being (Boekaerts, 1993). In addition, there is a good chance

the child will adopt a tendency to work for grades and approval (or other rewards) rather than enjoy the experience of learning or the satisfaction of a job well done.

Research has shown that when students involve their egos in school and homework, seeking high grades rather than making the most of the material, they develop a work style that is ultimately maladaptive (Dweck, 1986; Entwistle, 1987). This style reflects a surface approach to learning and understanding subject matter rather than a search for deeper meanings and ways to extend knowledge. Some children even strive to display competence at the expense of others, establishing a kind of Machiavellian pattern of behavior (Entwistle, 1987). A peer group with similar styles and expectations can become highly competitive, leading even to dishonesty and cheating in the extreme (Hartshorne & May, 1928). Active effort avoidance, or "self-handicapping," is another possible outcome of rigidly held standards that are beyond a student's reach (Urdu, Midgley, & Anderman, 1998).

If homework always returns corrected by an adult, the teacher has no way of discerning what the student does or does not know. Beginners, those children who are just starting out in school, will benefit when adults check their homework. Adults provide models of what children will need to do for themselves as soon as possible. As experience builds, adult assistance fades into the background, making it clear that responsibility for both the completion and quality of homework lies with the child. The child will eventually establish personal standards similar to those modeled by parents and significant others (Zuckerman, 1994). Although quality work is always a good value for parents to express, expectations tempered to those the child can meet without frustration allow both parties to win.

Perhaps the most controversial thing a community creates is homework mythology and lore. Myths and lore can be positive and negative. Certainly, shared stories are

bonding, and some lore is favorable. There are grade-level projects that remain part of a curriculum for many years. These come to take on a life of their own—a third-grade unit on China or a fifth-grade play, for example. The details of such projects evolve over time as teachers tweak them and attend seminars to get new ideas. Different teachers interpret the same project differently. Yet, at their cores, these traditions remain just that. Inevitably, a few adults raised in the school system can tell stories about their own experiences with the difficulties and delights of grade-level projects!

However, lore can be problematic. Some teachers are known for their homework (usually, they are “homework terrors”) long before fearful children ever enter their classrooms. In addition, many homework myths have little connection with reality when examined under the eye of science (Corno, 1996). The tales children weave about homework today are ever more interesting, easily surpassing old stories about ravenous dogs. One teacher reported having heard, “Power outage; couldn’t get my sources off the web.” In addition, the parent party line can move lickety-split, for better or worse. A cascade of calls came in after first-grade parents in my own community spent half of an evening sorting through old pictures for their child’s “personal timeline project.”

Finally, the same classroom community that can coax a marginal student into the center has the potential to drag down standards for the whole class. When the majority of students boycott assignments, as happened recently in the Boston secondary schools, teachers throw up their hands in despair. If the whole class rallies against an assignment that requires more than a family feels their child can handle, vocal parents will soon gain alliance higher up. Parents are their child’s best advocates after all. Taken to advantage at school, effective parent advocacy can thwart a teacher’s plans to upgrade class standards almost overnight. Alternatively, of course, the system works

just as well for assignments that truly deserve to be banished from the home.

What Settings Outside School Do for Homework

Homework moves from school to home and vice versa. The homework situation affects both process and outcome for good and for ill.

For Good

Homework is a bridge for knowledge to travel back and forth between school and home. Hill (1994) speaks of the opportunity provided when work of the home is brought into school, rather than the other way around. Fishing trips, soccer games, community service projects, and church suppers are all experiences that children can apply to school lessons. The idea is to start with the child’s own interests, thus eliminating the need for enticements from a teacher. From planning a meal for 100 to comprehending the signs of domestic abuse, from scorekeeping on a spreadsheet to memorizing Latin names for saltwater fish, children learn things outside school that teachers would almost always applaud. Yet too rarely do teachers assign homework such as this. There is no good reason for a one-way homework bridge.

Students are spending more time alone than in the past. High school students reportedly spend as much as 20% of their time alone nowadays; roughly 60% of mothers hold jobs outside the home (Schneider & Stephenson, 1999). A homework community can develop among friends and provide a means for social communication and contact for youth who are home alone. Homework assignments that allow for Internet and telephone exchanges between and among students invite the development of natural, collaborative communities. The message exchange services today’s children download from the Internet might just as well be used for homework topics as anything else.

Other settings in which children do

homework also offer lessons. Working at a friend's house is not the same as working at home. The number of siblings in that home, the work space, and the presence of a friend matter. When the situation confers advantages for homework activities and outcomes, then working together occasionally is a nice diversion, a break from routine. Much as when adults collaborate successfully, some children will share complementary ideas so well that the experience of working together on a school project can generate feelings of flow. Homework then becomes anything but a grind.

As places of peace and quiet, libraries virtually guarantee concentration and, again, provide an option for a child whose own home can be distracting. Some museums, youth centers, and other facilities offer homework assistance or special programs to which children can be bussed after school. Fortunately, directors of such facilities are beginning to recognize the need to provide more academic services and support than has been the case traditionally (see section on after-school clubs and centers). For most children who need it, a little help with homework goes a long way.

Judicious assistance with homework in the early years can teach a child strategies for self-regulated learning, thus promoting self-regulatory skills and tendencies that evolve into persistent thinking and behavioral styles (Zimmerman & Schunk, 1989). Budgeting time, checking work, and prioritizing tasks are only a few aspects of self-regulated learning that homework might teach. Self-regulation also involves managing internal resources such as controlling disruptive emotions, bringing a positive attitude to the task, and tapping into a reserve of effective strategies for processing information and solving problems (Corno, 1994). Considerable research supports the value of this kind of effort for a variety of school and study tasks, an example of which I shall describe later on in this article.

The research shows how self-regulation can arise from doing homework (see also

Winne, 1995). Parents who help their children with homework, even just by being available to answer questions, can seize the opportunity to model and reinforce the mannerisms of a careful and dedicated learner. Indeed, adults who take time to do this make it possible for their children to see their parents as (more or less effective) learners. This base of comparison suggests all sorts of jumping-off points for a child—in one case, a personal goal; in another, a judgment that there is room for improvement. Modeling can come as well from available siblings.

A family's abilities to help children with schoolwork can cement or weaken a child's identification with espoused academic values and customs (McCaslin & Murdock, 1991; McDermott, Goldman, & Varenne, 1984). Through interpersonal contact with their children, parents of beginners can diffuse frustration, provide rewards for good work, and generally play positive roles in this new experience of doing homework.

A *Time* magazine cover story (Ratnesar, 1999) questioned the ethics of too much homework assistance and chastised parents who do work for their children. Of course, children have to see homework as their own responsibility (Warton & Goodnow, 1991). Yet there are significant emotional advantages to the right kind of help (Hoover-Dempsey & Sandler, 1995). Consider, for example, a fifth grader just finishing a complex diagram. The child notes a requirement to color the diagram. So she asks her third-grade sibling (who is far better at coloring), "Will you help me with this while I do my vocabulary work?" The third grader is delighted to be trusted and the fifth grader has streamlined the task, making it possible to move on. The wise parent will applaud both children for their resourcefulness, never minding that the coloring was done by the younger child.

For III

McCaslin and Murdock (1991) found that in homes where English is a second lan-

guage, it can be difficult for parents to help with homework that requires English. In contrast to the previous example where the home includes a welcome sibling-as-resource, when parents who want to help are unable it can be dispiriting for everyone involved. In McCaslin and Murdock's study, the child went so far as to try to hide his parents' limited knowledge of English from friends. The power of peers is also evident if a child avoids doing homework, as another study found, to remain loyal to friends who disapprove of displayed competence (McCaslin & Good, 1996).

Other discontinuities exist between school and home in some subcultures. For example, Au (1980) discovered a manner of storytelling that predominates in native Hawaiian homes. Her ethnographic research resulted in changes to a school reading program that made it more compatible with literacy traditions in the native culture. Before these changes allowed reading to occur in the "talk-story" pattern characteristic of Hawaiian homes, the school's average student read well below grade level; afterward, these same students showed marked gains in reading.

Certain homework traditions may create similar discontinuities in some homes. It is not hard to imagine historical traditions such as worksheets, flashcards, or sentences in which the child must use spelling words growing increasingly incompatible with literacy patterns defining the new millennium. In contrast, Internet conversations that provide a running account of students' collaborative interchange around a complex problem, presentations and exhibitions that students develop themselves using multimedia software, and audio- and videotapes that students produce, are examples of homework that make historical traditions obsolete. Moreover, today's educational reforms have a very different flavor that is oftentimes inconsistent with older homework traditions, as the last section of this article suggests.

Finally, coping with distraction may be

one of the most documentable aspects of doing homework in the early grades. The distractions that working at home present include noisy siblings, telephone interruptions, and television. Some parents permit their children to listen to music while they do homework, hoping the music will serve as white noise. Whether this works is unclear. What is clear is that distracted children upset a household.

The evening schedule is so tight in some homes that when homework sessions stretch past a family's comfort zone, all sorts of emotions erupt. Parents as well as children can experience psychological distress—crying and yelling and other angry outbursts—as a direct result of elementary school homework. If this occurs night after night, then homework time can be something everyone dreads. There is, however, observation and interview evidence that learning to handle distraction is one potential outcome of elementary school homework to which both parents and teachers can aspire (see the section that follows).

In older children, a more intractable aspect of the distraction problem is that one's own thoughts can be distracting. Generally, children wish to be doing something other than homework with their after-school time. In one study, over two-thirds of sixth graders polled said that homework was their least favorite after-school activity (Xu & Corno, 1998; see also Leone & Richards, 1989). Even a focused student can be carried away by distracting thoughts.

Some research suggests that when teachers add fantasy or curiosity elements to assignments to embellish motivation, they can inadvertently divert student attention from important content. Rather than doing the hard, intellectual work in an assignment, students are "seduced" by a task's entertaining details (Harp & Mayer, 1998). When there are competing goals, giving priority to those less favored is a sophisticated act of volition that develops with age and experience (Corno, 1994; Kuhl & Kraska, 1989). Overall, there may be

fewer distractions at home than in school, where some number of other children sit nearby. Nevertheless, maintaining undivided attention is an important issue to deal with in homework as children mature.

Refocusing Attention on the Promise of Homework

Theoretical Background

New theory in educational psychology calls attention to the opportunities and constraints inherent in given learning or performance situations. Homework is a case in point. A situation presents itself; the learner engages with it. The student seizes some learning opportunities and misses others. Sometimes the student struggles with boundaries, attempting to move beyond or reshape them. At other times, it seems best to yield to situational constraints. The interchange between person and situation alters both, each being influenced by the other (Greeno, Collins, & Resnick, 1996).

In the case of homework, the situation includes the assigned task as well as the environment in which homework is completed. The outer environment, as we have seen, mirrors the myriad influences of society writ large. The homework task reflects what is salutary and less so about school. Homework challenges the child to come to grips with the good and bad in a relatively short time. He or she engages to a greater or lesser extent with assigned tasks and struggles to cope with the environment in which they are completed. Again, this process changes all three—tasks, environment, and child. Case study data of children doing homework provide one illustration of the theory.

Case Study Evidence

The goal of several case studies was to identify parent-child interactions that lead to self-responsible completion of different types of homework. Xu and Corno (1998; see also Xu, 1994) conducted qualitative observations and interviews with six families just beginning to get substantive homework

in the third grade. These case studies illustrate the issues and struggles of beginning homework and the ways that parent-child involvement mediates completion. Young students will acclimate to homework—some rather quickly—during the course of their first few experiences. As early experiences evolve into parent-assisted routines, a child can manage even challenging assignments.

Like other reference tasks for school—reading books, writing, listening to a speaker—the general situation of doing homework, apart from specific homework tasks, offers both affordances and constraints for developing academic aptitudes. For example, the situation offers a number of affordances for self-regulated behavior. When cues are picked up by the child, then self-regulated behavior is more likely to occur—it is also more likely to be noted and discussed, evaluated and reinforced, as well as demanded, the next time. Our data illustrate parental actions, verbalizations, and organizational features in home environments that promote self-responsible completion of homework with beginners.

These observations were made in middle-class, two-parent, professional families in New York City. At least one parent in each family regularly took the time to help the child deal with homework. In addition, all of the children were described by their teachers as “above-average” achievers in the public school attended. Thus, our data suggest more of what is possible under favorable home circumstances than what is likely the norm. Many family circumstances will provide less support for homework than those we observed, and yet what some families do certainly can be useful models for others (McCaslin & Murdock, 1991; McDermott et al., 1984, for case study data from different samples).

Our group of six families volunteered to be videotaped and interviewed for this study. Children of both sexes and several cultural backgrounds were represented (white, African American, Latin American,

and Asian American). Students, all of whom were 8 years old at the time of the study, attended the same public school, but some had different third-grade teachers and thus different homework assignments. In terms of management constraints and demands, for example, nightly work is not the same as weekly packets, and worksheets are not the same as projects.

We interviewed students and parents, as well as each teacher, and videotaped two homework sessions per family. We also conducted stimulated-recall interviews with parents following each homework session. The preobservation interviews asked families to describe how they did homework, what the typical session entailed, and the kinds of affective responses the child had toward assigned homework that year. They also answered open-ended questions about values placed on homework and beliefs about what homework was supposed to accomplish. Finally, families answered questions about ways their child might be learning to use self-regulation strategies (such as goal setting, resource management, self-monitoring, and emotion control).

Taping took place at the families' convenience, with no more than a month delay between sessions. Parents and children were asked to "do homework as they usually did," and at the usual location and time of day. Each of the families said they had experience with videotaping and that this would not be an intrusion into their homework routines. In the stimulated-recall interviews following the videotapings, we asked parents to stop the tape whenever they wanted to comment. The tape stopped also at points where parents made gestures or statements that we sought for various reasons to discuss. To elicit stylistic rather than sporadic responses, we asked parents to ground their comments about these homework sessions in the context of other homework sessions they had with this child.

Teachers spoke about their reasons for giving homework, their expectations, the

types of assignments made and feedback given, and each child's academic history. Data transcribed from tapes formed separate case studies. Parents read the case studies, and their comments were used to revise text in the few instances where corrections were requested. A cross-case analysis using the constant comparative method permitted interpretations based on the full data set. Converging lines of inquiry from the three subsamples yielded conclusions that are more general.

Adults and children gave different interpretations of the purposes and requirements of homework. Their management of homework tasks reflected these interpretations. Although parents and teachers shared similar views about the diverse purposes and utilities of homework, their third graders' understandings of homework were relatively more naive. The students saw homework as more schoolwork that had to be done for adult approval or to prove to the teacher that they were listening in class. The possibilities that homework might help develop important personal attributes or responsible academic behavior, or even that it might complement rather than just reinforce school learning were not among these third graders' musings on the meaning of homework.

This result supports Cooper's (1989) contention that understanding the complexities of homework is a stretch for younger students just beginning to cope with school. It is not too great a leap to suggest that homework is "an adult thing" to children, who do it much out of compliance at first. Action undertaken for largely extrinsic reasons is notoriously susceptible to several kinds of interference. There were interruptions from siblings playing nearby, distractions by conversations between adults, and the interference of children's own ruminating thoughts and self-appraisals. One hypothesis is that it seems harder to protect intentions to work when the work is motivated by external demands.

Unsurprisingly, then, doing homework

presented a challenge for both the parents and children in this sample. In each of the cases, homework became a nightly commitment that limited both the child's and the parents' participation in other activities deemed more enjoyable or equally pressing, as the case may be. Working parents had multiple attention demands during homework time; tired children wanted to do almost anything but homework after school. When homework still was not finished by 10:00 at night, it was an emotionally draining event. As one mother remarked, there was "homework hysteria."

Parents in all six families expressed the need to oversee their children's homework at this stage, although some teachers did not request it. Most parents were not helping with the substance of homework so much as they were helping to manage the tasks. We observed various effective and not so effective management strategies.

Effective strategies evoked organizing and action control. For example, some parents established rules and procedures for doing homework; others helped their children develop their own homework routines. All the families guided the children in basics such as finding supplies and a proper work space, prioritizing tasks, and monitoring time. In some of the cases, parents also modeled, explained, and encouraged various volitional control strategies—for example, the use of highly regarded incentives as dangling carrots to completion, the adoption of a task-oriented work style as difficulty levels raised stress. Parents were also observed demonstrating ways to handle both positive and negative emotions—a "high five" for a good job and a breather and reassessment when frustrated.

These parents successfully coordinated a number of strategies for helping their children "do homework." They alternated between allowing their children the freedom to make their own decisions about homework on the one hand, and making decisions *for* the children on the other. The nature of the assignment often dictated the

degree of parent intervention. Projects, for example, tended to draw in parents even as they protested. Weekly homework packets worked well for self-starting students—those who left harder assignments until the end of the week swam upstream with their parents.

Our strong conclusion from these data was that everyday experiences with homework, as mediated by parents, provided clear opportunities for children to learn to cope with many aspects of personal responsibility. The need to complete sustained, externally imposed academic tasks in a familiar social setting (home) led to difficulties and distractions. However, as children became more experienced with homework and their teacher's expectations and more knowledgeable about types of assignments and their requirements, they began to take over more and more of the management of homework themselves.

This was true also as the children became better aware of intrinsic reasons for completing homework. To develop confidence, for satisfaction, or to reach the kind of understanding that allows discussion and communication with others about a topic—these intrinsic reasons for doing homework became clearer with rich assignments to which children could connect. Teachers who drew a child's attention to outcomes such as these helped with focus and distraction as well.

The third graders displayed improvements over the course of our investigation that ranged from the development of better, more efficient work space environments to systems of time management that would rival those "on the job." Also evident was the use of overt self-speech (children spoke to themselves aloud) as a means for focusing attention, amplifying motivation, and controlling negative emotions (see McCaslin & Good, 1996).

These improvements followed a developmental trajectory predictable from modern theories of volition (Corno, 1993; Kuhl & Kraska, 1989). It was relatively easy for

children to become proficient with setting the environment, but monitoring motivation and controlling emotion in the face of difficulty were harder for both children and parents. When parents understand that self-regulation in homework, and in analogous tasks, is a developmental function, they can better adjust their expectations. At the same time, doing homework provides opportunities for students to observe, practice, and experience the consequences of using volitional strategies. It therefore has the potential to attune children to self-responsibility in advance of when they might get there on their own developmental timelines.

Adult mediation of homework may be a necessary condition for hurrying up the volitional clock for many beginners. This may involve parents, as in our study, but nothing prevents the same effect from occurring with a teacher, a tutor, an older sibling, or even a computer tutorial. Epstein's (1989) research on profitable ways parents can become involved in homework speaks to this as well. In short, experience with homework, of itself, does not teach children responsibility. However, better-mediated experiences on the part of parents or tutors may yet bring the myth that "homework shapes responsibility" a bit closer to reality.

Some Valuable Experimental Data

Case study data tell only part of the homework story. To refocus on the promise of homework, other kinds of evidence need attention.

The policy recommendation to give more homework to young children sounds vapid when weighed against results from quantitative studies that highlight the many nuances involved in gauging homework's effects. Particularly for beginning elementary school children, as Cooper (1989) has said, shorter assignments that are easily completed help to foster favorable attitudes toward the whole enterprise of schooling. Both cognitive and affective outcomes can be influenced by how teachers handle homework. Teacher feedback on homework

that leads children to understand the source of their errors, but also encourages taking a second try, has been shown in experiments to boost motivation and learning (see, e.g., Elawar & Corno, 1985). Finally, if students could be helped to view even some homework as closing critical gaps in their academic experience, they stand to see the value of injecting meaning into daily work. They might also experience the important role that interest plays in persistence.

An older field experiment asked, What if parents of young children could use homework to teach their children what school is all about? Corno (1980) gave some 400 third graders a homework Learning Skills Program (LSP) that taught them about what it means to learn in a classroom setting, where teachers present material that students must discuss and come to understand. This group represented half of a larger sample of classrooms; each classroom received the program by random assignment or served as a control.

In one of four structured exercises for LSP Unit 1: Making Ideas Orderly, students learned to define the concept of a review. They were taught that teachers often go back over material, and why, and they learned words teachers use to cue students before reviewing (e.g., "Let's look again at what this says" "So what did we learn from this story?"). Similar exercises defined the concept of summarizing and taught students why and how teachers summarize. Still others discussed the concepts of goal setting and emphasizing important points. Students saw how to distinguish a lesson goal from an activity ("Today we are going to work with manipulatives [activity] so you can solve area problems" [goal]). They learned ways that teachers mark importance in lessons with other verbal cues (e.g., "This is going to be on the test," and "Remember these three key things").

In four exercises for LSP Unit 2: Participating in Class, students also learned how to ask questions like those teachers ask (e.g., "Wh" and "How" questions; Palincsar &

Brown, 1984). They learned how to volunteer and why teachers reward volunteering and going beyond expectations. They learned about other ways that students can show teachers their intentions to become full participants in the classroom community (answering when called on, talking to learn).

The program wove these classroom organizing and participation skills into lessons taught to the children by their parents, using age-appropriate reading passages and discussion questions similar to those of regular reading homework. Students took pretests and posttests on vocabulary, reading comprehension, and reasoning, as well as knowledge of the keywords taught in the program (e.g., review, summary, goal, volunteering, etc.). Posttests immediately followed each class's completion of the exercises and were given again 6 months later. We compared the performance of students who received the program to that of students who simply completed teachers' regularly assigned reading homework during the same 8-week period.

Students who completed at least six of the eight program exercises had scores on reading achievement and vocabulary tests significantly higher than those of students who did not receive the program. Their scores were also significantly higher than those of students who completed fewer than six program exercises. Although there was a relationship between completion of LSP exercises and the mean ability level of a class (correlation = .42), causal modeling analyses showed that highly supportive teachers were able to moderate this relationship. In classes where teachers reported making efforts to support the program (see examples later in this section), the completion-ability correlations were negligible. With average ability and motivation levels at pretest taken into account, the size of the achievement effects (as estimated by effect size coefficients for adjusted means within classes) ranged from a large effect of 1.09 on a program concepts test to a moderate effect

of .64 on reading comprehension (Corno, 1980, p. 286).

This experiment shows that some kinds of homework can promote student achievement in the elementary school directly. The kind of homework involved had the advantage of structured parental assistance in reading and a central goal to demystify classroom learning for all students.

Non-subject-matter outcomes were measured in this study as well. A follow-up report (Corno, Mitman, & Hedges, 1981) found positive effects favoring students who completed the program on attitudinal outcomes such as self-esteem, liking for school, and feelings of anxiety (effects similar in magnitude to the academic effects). One explanation is that when students are taught how to learn in school and why some learning-related behavior might be particularly important, they gain a better understanding of their own role in relation to that of teachers and the material to be learned. They see how they can, themselves, address classroom demands and expectations head-on.

This study also suggests that when students understand what teachers do to help them learn in school—when they can observe and label specific learning cues such as summaries and reviews—then they become able to cue themselves similarly. Such preparation becomes particularly important as students move up the grade ladder. Once teachers assume that their students possess sufficient classroom learning skills, they no longer provide the kinds of verbal cues observed in earlier grades. In the absence of effective reviews, summaries, and goals that teachers provide, students have to fend for themselves.

Thus, a classroom learning skills program would capitalize on this window of opportunity by helping students to (a) internalize those aspects of teacher behavior that organize concepts for meaningful retention and transfer, and (b) assume responsibility for participating effectively in class. When confronted with incomplete instruc-

tion, students who have met these goals are able to fill in the holes for themselves (Snow, 1996). An important resource is then at their disposal for use beyond school. Having the means (a "way") to learn might well foster the "will" to learn in students (Corno, Collins, & Capper, 1982). Such nascent capabilities underlie the constructive mastery orientation and deep learning style that some students develop in later years.

Teachers can take it upon themselves to teach these and other learning skills. Harvey (1982) was the teacher of one third-grade class involved in the LSP experiment. In addition to sending home the parent-student exercises, Harvey's deliberate efforts to support the program also involved discussion and reinforcement of LSP concepts in class. She wrote LSP cues on bookmarks in her teacher edition textbooks to provide daily reminders of the LSP concepts. She then repeated the concepts and asked students to help her use them when she taught lessons and made assignments.

Harvey also devised a system to ensure that LSP packets arrived home and that completed packets came back to school. She praised children who returned the packets on schedule and occasionally gave them lollipops for doing so. Students whose assigned packets were overdue received calls at home. Not surprisingly, Harvey's classroom completion rate was exceptionally high. One unexpected non-subject-matter outcome of this incentive program was an increase in students' volunteering initiative. Noticeably more students offered to help with the daily operations in Harvey's classroom after completing LSP lessons—for example, help with transitions, cleanups, and taking on leadership duties for projects.

What Should Teachers Do?

Given all of the variables that families must negotiate with homework, a teacher has to set priorities. Homework does give teachers a sense of how well their students comprehend curricular material and where the problems are. It provides opportunities

for teachers to tailor their feedback to individual errors as well. However, the evidence supports a lighter load for younger students just beginning in school. According to the thorough research review by Cooper (1989), prior to sixth grade, homework has a small effect on subject-matter learning. However, the early grades can be a good time to teach time management and effective work habits.

A teacher can also use homework to help young children begin to learn on their own, by giving them a few basic classroom learning tools. Whatever teachers can do to demystify classroom teaching and learning for their students seems likely to be valuable. Tacit knowledge about schooling, including its rules and rewards, otherwise becomes the exclusive domain of those few young children advantaged enough to discern such things without much assistance. Parents' roles deserve clarification in this.

For older students, better assignments challenge them to develop expertise—in subject areas and also in studying and interacting with others. If teachers want youth to keep on learning on their own, then homework should communicate this. Having a part in a play or being a member of a debate team develops particular knowledge and skills. But the homework that accompanies such situations allows a teacher to emphasize attitudes, values, and other skills that are necessary in these contexts. Musical theater and debates both benefit, for example, when participants know how to finish what they begin, to persist in spite of difficulty, and remain focused during a performance.

Moreover, if teachers cue older students with critical questions when evaluating homework, then students will begin to learn the value of asking evaluative questions for themselves: How could you improve the delivery of that line? Have you checked the logic of that argument? What is the point of this paragraph? Can you think of another way to get the message across or to convey emotion to an audience? Such

questions anticipate what a good critic would say about any performance, and encourage students to evaluate their work by similar standards.

Theory says that the teacher becomes a partner in helping children see what it means to participate in both an academic and a social community. In both cases, there is need for a game plan and participants have to get a sense of how much time to spend on tasks. Someone has to monitor the time spent. Each community member supports but does not do the work of others. Whether the situation involves a class project or team fund-raising, when frustrations occur, leaders (teachers or others) can provide valuable demonstrations of how to take a breather and how to back up and try again. They can cheer on progress made. An astute leader also shares a few personal anecdotes about homework, especially those with happy endings. Whether in a classroom or an extracurricular community, there is room for a family to state frankly that they are spending more time than they can tolerate on homework, and then to discuss options with those in authority.

Homework does not have to be unimaginative "drill on skills" or even just extended class work. Homework should provide opportunities for children to make meaning for themselves out of the material. Teachers can help with this by talking with their students about homework and encouraging them to look at assignments in light of things they already know. Students' own interests and experiences, the activities in which they choose to engage in their free time, are all potential homework topics that can be used as an integral part of class lessons. The trend today is away from worksheets toward more creative homework assignments—projects, exhibitions, and other so-called "authentic" experiences.

Homework Innovations

In this section I briefly describe a selection of homework innovations that reflect this trend. Teachers, working without funding

assistance in their own classrooms, developed some of these innovations. Some inspired ideas are coming about as teacher-researcher collaborations become more frequent (Clark & Moss, 1996; Corno & Randi, 1999). Other noteworthy discoveries I have taken out of context, embedded as they are within new program designs at the forefront of contemporary educational reforms. Finally, a few innovations derived from research investigations not even focused on homework applications. Each forces a different look at the old concept of homework.

Culture as Springboard

Moll and his colleagues (Moll, Amanti, Neff, & Gonzalez, 1992) entered working-class Mexican and Mexican-American communities in Arizona to develop teaching innovations that drew on "funds of knowledge" from home. They identified resources in households and the larger community that families used to develop culturally essential knowledge and work skills in children. These included, for example, information about farming and animal management, knowledge about construction and building, and related business matters historically endemic to the Mexican-American border populations. Rather than emphasizing cultural artifacts, crafts, or dance, the idea was to equip children with strategic knowledge about activities essential for household functioning and regional productivity.

Classroom teachers collaborated in the research, using the home-based data to develop academically rigorous instructional innovations that bridged gaps between the homes and classrooms of these students. The result was a series of units on cooking candy, equipment maintenance, ranching, farming, and masonry. Teachers used the topics as springboards for instruction and assignments involving inquiry and active learning. Homework encouraged students to use their social contacts outside school to access new knowledge for further devel-

opment and study (Moll et al., p. 138). The students brought work from home into the classroom and vice versa.

Another variation on this theme revitalizes an older idea of using popular culture to tune into teens. A recent news article (Vigue, 1999) describes the novel homework developed by some high school teachers in Boston. One poetry assignment asked students to examine the emotions evoked by words of their favorite popular songs. Students discussed why they played these songs so frequently and considered them in relation to the poetry of Robert Frost. In another task, a creative writing and literature teacher had students categorize compact disks by the images on their covers; the class then discussed the cultural messages conveyed. This teacher used the compact disk lesson to teach students to be careful consumers of the advertising and other messages around them. These are lessons in social semiotics, not examples of teachers trying to be hip.

Using culture as a springboard can also mean learning more about other cultures. A former Williams College professor, Robert Gaudino, developed an unusual semester abroad program that some alumni dubbed a life-changing experience (see Zernike, 1999). In "Williams-at-home," students live for a time with families and work on farms, in factories, or in stores in Appalachia, the Midwest, and the Deep South. Before this experience, the students take course work on the history and culture of the area they will live in; afterward their course work includes assignments requiring deep reflection on what they have learned and how it connects to their own lives. This project could be adapted for secondary schools.

After-School Clubs and Centers

I previously mentioned another revival occurring in after-school clubs and centers. The most effective youth organizations in inner-city settings have a number of common characteristics (McLaughlin, Irby, & Langman, 1994). They have energetic and

resourceful administrators, secure meeting places, recruited assistants (even former gang members), and donated computers, books, and tutoring. Capitalizing on the interests of the youth they serve, the "wizards" who run the organizations orchestrate film productions, art shows, and concerts. These activities develop participants' self-management and presentation skills through a process of creation and performance. The performances put participants in touch with schooled concepts at the same time that they provide experiential feedback and rewards. Youth can then see that their experiences somewhere in between school and games can serve important intellectual as well as social functions.

The Boston school system has one example of a city-run after-school program that is becoming more academic (Hart, 1999). Staff in the city's centers are being given extensive training in ways to "boost literacy activities, math games, and how to use computers to enhance learning" (p. B5). Students will find trade books used in school literature classes on clubhouse bookshelves, and they can read after school and have discussions with club staff. In addition, some city museums will provide computer and other workshops after school.

Homework for Understanding

The movement to encourage teaching subject matter "for understanding" rather than simple memorization and recitation leads to nontraditional forms of homework (see Perkins, 1993). School projects are increasingly interdisciplinary and inquiry oriented, involving work pushed out over weeks or longer. Many such projects result in products that are highly creative, reflecting a level of performance beyond students' years. For example, Tovey (1997) writes of a high school teacher whose students worked together to produce a newsletter giving advice to the next class about taking the SAT and college applications.

Elementary teachers at Pine Hill School in suburban Massachusetts have their

classes design and complete a community service project, such as cleaning up the local pond for summer use. Inevitably such a task becomes more than picking up rubbish; there are geese to be dealt with, for example, and eroded sand to be replaced. Such observations lead to study of pond ecology and wildlife. The students work in pairs to document their efforts in computer-based, multimedia presentations that include photographs, music, graphics, and original written text. Again, these presentations are beyond what most adults would (or could) prepare, given the same assignment. This is true for their content as well as their delivery.

Homework gets at understanding when it requires students to make meaning out of material, to explain why, to build a persuasive case, to find and solve problems, to transfer thoughts and ideas to new contexts, and to personalize (Perkins, 1993). It seems harder to make this kind of headway in some subjects, such as mathematics. However, new ideas for mathematics homework exist in programs such as the University of Chicago's mathematics curriculum, *Everyday Mathematics* (Bell et al., 1999). In this program, elementary-level children bring home "study links" that often require adult or sibling involvement in solving problems or math puzzles.

Raphel (1998) developed a mathematics homework program for the intermediate school. Students compute the distributions of various animals in animal crackers, or calculate how long it would take the school to consume one million cartons of milk, and work out the number of possible answers to multiplication problems from 1×1 to 9×9 . Students also complete a "personal estimation project," collecting data in the home—how many times the refrigerator door opens in a day, or how many cars pass by their house in 15 minutes, or the number of catalogs sent as junk mail in a week. With the data they obtain, students write about their projects, use statistics, and draw conclusions. Many more examples of home-

work from this program help students to use the kind of language mathematicians use, and experience the way that mathematicians use numbers in reasoning and problem solving.

Using Homework to Develop Writers

A recent *New York Times Magazine* article profiled British novelist Penelope Fitzgerald, who continues to produce acclaimed fiction at age 82 (see Lubow, 1999). Ms. Fitzgerald's daughter, Maria, was quoted as saying, "The impression I get about her upbringing is that it was incredibly competitive. You were supposed to be intensely clever. She and her brother were expected to go to the dinner table and hold their own with the distinguished figures of the day. She says it was ghastly, really, but I think it had a great effect." Ms. Fitzgerald herself said further of the games she played with her brothers at dinner, "You had pieces of paper and pencil and you wrote extracts of books and reviews for and against—we made it all up" (p. 32).

The childhood of a writer is a great gift of material to mine. This is the strong message Calkins (1994) sends in describing her widely adopted program for developing young writers. Calkins refers to the importance of "making memoir out of the pieces of our lives" (p. 399), much in the style of the author and columnist, Donald M. Murray. Calkins shows how a parent's simple question "So what were the highlights of this summer?" can lead a child to "begin spinning experience into memories" (p. 399).

The "What I Did Last Summer" essay is a routine homework assignment, sometimes derided and often caricatured by children today. But Calkins is onto something with her concept of bringing "emblematic moments" from home into the written work of school (p. 407). She asks, for example, that students bring home notebooks and record "very specific observations about a single person in their lives." The assignment is to select one detail about that par-

ent, or brother, or soccer coach that seems to "say it all" (p. 407). Other assignments involve writing about meaningful settings like one's home or a favorite playground. Using old photographs, students reveal how a specific photograph conveys the essence of some important message about who the person pictured is or will become.

These "select and reveal" homework assignments engage a process of writing a cut above the ordinary. Calkins explains how a writing teacher can tweak and refine students' notebook entries with careful, pointed questions. "Take your photograph, what do you see there? Wonder? Feel? Remember?" (p. 409). The result is a document that evolves from a fifth grader's descriptive beginnings into what Calkins calls "pearling an image" (p. 411). Calkins's book gives many creative examples of the kinds of homework that lead children to inspired writing.

Conclusion

What students take from doing homework includes knowledge and skills stretched across the home-school environment, interpersonal and self-regulation styles and mannerisms, and an identification with an academic and social community of others who do homework. Under the right circumstances, a student also experiences a certain satisfaction with homework completed—satisfaction for good effort invested, but more importantly, a sense of oneself as a student. I have argued that the circumstances of homework are an important influence on student attitudes toward school. This kind of confidence grows when a student moves into the inner circle to share in the tacit knowledge that permits full and meaningful involvement in school.

This tacit knowledge includes the rules of participation for students, parents, and teachers as well. What any one student comes to understand about a given homework assignment is not separate from the situation, existing as has so often been thought "in the student's head" (Stanford

Aptitude Seminar, forthcoming). Rather, a student's own understanding is joined with the situation in which the homework was assigned—by a particular teacher, with pertinent goals, for a given group of students who will complete the assignment under certain circumstances. By virtue of a shared context, an individual student who participates in homework activities, in turn, affects other students in the same classroom community.

Students engaged by their homework strengthen their capabilities to participate further in homework activities of similar and different types. They develop an aptitude for future homework from the regularities of homework ongoing. Over time, students recognize and deal with the staples of all homework, that is, the need to complete an assignment using and finding resources. There are also regular boundaries surrounding homework such as time and resource limitations. Eventually students adjust to these boundaries and even begin to push against them. The situation invites students to sample these affordances, thereby aiding homework completion.

A student's facility with homework increases especially as he or she comes to internalize the social supports and problem-solving demands present in many of the innovative homework trends just described. The challenges of other kinds of homework ultimately then come within reach. A student can handle the common homework traditions—the worksheets, the copied sentences, and so on. In addition, this student can take on the kind of homework that adults impose on themselves whenever there is need to learn something new. Another homework myth that may ultimately withstand scientific scrutiny is that it pays to do your homework.

Note

I would like to thank Tom Good and Carol Hamilton for valuable comments on an earlier

draft. Stanford Extension Emeritus LJC should see some fruits of his labors here. Many fine examples derive from the good teachers and students at Pine Hill School in Sherborn, Massachusetts. Thanks to all!

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