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The “homework problem”: Time use evidence

Research problem

North American parents and commentators concerned with adolescent stress have repeatedly pointed to excessive homework or the “homework problem” as the underlying reason for adolescent stress, disruption of family relationships, and questionable academic results. Publications such as Kralovec and Buell's “The end of homework” (2000) and Bennett and Kalish's “The case against homework” (2006) have brought these concerns to the forefront of public discussion. The arguments against any reduction of homework usually point to longer hours of homework in other countries, particularly in Asia, and have been often summarised with statements such as “How can we compete with the Japanese and Koreans, if our kids don't do homework.” It is somewhat surprising, however, that the heated debate over the amounts and ill or positive effects of homework has been little informed by evidence about adolescent time use and its academic and well-being outcomes provided by time use research. In an attempt to clarify some of the above concerns this paper addresses five issues:

- (a) How do the homework loads of Canadian and U.S. students compare with the workloads of students in other countries for which time use evidence is available?
- (b) Have the homework loads of students in Canada and other industrial countries increased or declined over the past 10 to 20 years?
- (c) How does greater homework load affect the rest of teens' time use on school days and Sundays?
- (d) What are the academic implications of longer hours of homework?
- (e) How do longer hours of homework affect teens' sense of time pressure, feelings of stress, emotional well-being and health?

Data sources and method

Data reported in this paper are taken from national time use surveys conducted in the 1980s, 1990s and early 2000s by statistical agencies in countries that participated in the Comparative Study of Adolescent Time Use (CATUS), and in particular from Canada's time use surveys conducted in 1986, 1992, 1998/99 and 2005 (GSS Cycles 2,7,12 and 19). Further, data were taken from the *Ontario Survey of Adolescent Time Use and Well-Being (OATUS/ESM)* administered in 2001-2003 by the Research Group on Leisure and Cultural Development at the University of Waterloo.

The OATUS/ESM combined two data collection methods: time diaries and experience sampling self-reports (ESM). The time diary part of the survey was administered in 13 Ontario schools selected from different SES neighbourhoods, representative of the Ontario population. A time diary for the day preceding the survey was filled out in class. It was accompanied by questions about adolescents' academic performance, life-style preferences, relationship with parents, future aspirations, emotional well-being, and health.

Two hundred and nineteen teens, who participated in the time diary part of the study, and one of their parents, formed the sample for a subsequent ESM survey. Respondents were signalled by a pre-programmed wrist-watch eight times a day during the course of a week. At the time of the beep, they filled out a short self-report form. Questions in this self-report identified the respondent's main activity at the time of the beep, its precise timing (day and time of the beep), the location of the respondent, the company he/she was with, and a number of emotional and experiential states, such as feelings of time pressure, stress, fatigue, boredom, loneliness, desire to engage in something else, as well as interest in and importance attributed to the activity performed at the time of the beep. Analyses of means, bi-variate correlations and regressions were used in the examination of the aforementioned data.

Findings

Although concerns with students' workloads were originally voiced in the U.S. - from a comparative perspective - the workloads of American high school students' (56 min of homework on school days) do not appear particularly heavy. In 2003, U.S. students spent less time on homework than students from all countries that took part in the Comparative Study of Adolescent Time Use, save Finland (Table 1). Canadian students' homework loads in 2005 (1 hour and 10 minutes on school days) were higher than in the U.S. but did not differ substantially from homework loads reported by students in most other countries that took part in CATUS.

The amount of homework in most industrial countries has either changed little or declined over the past 15 years. In Canada, high school students aged 15 to 19 spent nine minutes less time doing homework in 1998 than in 1992, and in 2005 twenty-five minutes less than in 1998. It is possible however that some homework was moved to class time (time spent in school increased between 1998 and 2005 by 40 minutes).

Although the latest data suggest that Canadian students are not overburdened with homework, the "homework problem" continues to worry parents and educators concerned with the potential ill effects of long hours of homework on students' well-being and health. Teens' high levels of reported time pressure, obesity, growing frequency of emotional and behavioural problems are certainly causes for concern, but the question is: should homework be blamed? Is it the culprit? Analyses reported in Tables 3 to 7 attempt to answer this question by examining associations of longer hours of homework among Canadian teens with their other uses of time, academic performance, emotional well-being, and health.

Tables 3, 4 and 5 examine the effects of longer hours of homework on other daily activities. GSS and OATUS data show that longer hours of homework take time away from virtually all other daily activities, but most of it is taken away from watching television, computer and video games, socialising with friends, followed by physically active leisure, paid and domestic work. Reading books, use of the Internet, and contacts with parents are affected to a lesser degree. The losses are thus mostly among less structured and arguably developmentally less beneficial activities with the important exception of physically active leisure.

Contrary to the claims that longer hours of “homework” are of limited academic value, findings reported in Table 7 suggest that additional homework on school days and particularly on Sundays correlates with teens grade averages (correlations .21 and .37 respectively). This relationship is also sustained when homework is operationalised as percent of homework episodes reported by teens in ESM self-reports over the entire survey week ($r=.20$). In spite of teens' dislike of homework (see Tables 8 and 9), the relationship between the amount of time spent doing homework and students' academic performance is positive and this relationship holds true when controlled for gender, age and the day of the week (OATUS/ESM).

Analyses of GSS and OATUS time diary time data show that greater amounts of homework correlate consistently with teens' higher levels of perceived time pressure and stress (Tables 6 and 7). This relationship is also reflected in teens' ESM self-reports. When students were beeped, while doing homework, they reported higher levels of time pressure and stress. Also the greater the percentage of homework episodes reported during the ESM survey week, the greater the average level of time pressure and stress reported by students during the week.

The emotional and health effects of teens' longer hours of homework reported in Tables 6, 7 and 8 are not entirely clear or consistent. Heavier homework loads seem to be associated with less boredom, brighter perceptions of the future, less smoking, fewer bodily aches, and possibly lower levels of obesity, yet they also correlate with considerably higher levels of anxiety (composite of feeling worried, upset and tense), lower levels of affect (feeling good, happy and cheerful) and higher levels of loneliness and depression. It thus appears that the positive correlates of homework (in most instances these are *objective* outcomes) are not matched by teens' *subjective* feelings. In short, homework may be developmentally useful, but is perceived by adolescents as stressful and emotionally unattractive.

This is not an entirely new observation and it is likely consistent with how many of us felt during our school years. This pattern is well illustrated in Table 9. Homework, unlike free time, is accompanied by feelings of greater time pressure, stress and anxiety. It generates little interest ($r = -.06$) and is associated with a strong desire to do something else ($r = .17$). Free time activities, on the contrary, correlate with lower levels of perceived time pressure and stress ($r = -.17$ and $-.10$ respectively). They are associated with little anxiety, higher levels of affect, greater interest ($r = .27$), and no desire to do something else ($r = -.26$). There is however a “but” in this relationship. While enjoying free time

activities much more than homework, teens concede that these activities are less challenging ($r = -.08$) and less important ($r = -.11$) than homework.

A comparison of the experiential connotations of homework and time spent in class is also interesting. Homework is perceived by students as more challenging, more important and surprisingly even less boring than time spent in class. Although it is associated with higher levels of time pressure, it generates less desire to do something else than time spent in class. In other words, the “class time problem” may be more urgent than the “homework problem.”

The two important questions raised by the findings reported in this paper are: (1) notwithstanding positive academic effects of additional homework, can we dismiss its potential contribution to students' higher levels of time pressure and stress? (2) Are longer hours of homework at the root of teens' overall feelings of time pressure and stress?

GSS and OATUS findings do not provide definite answers to these questions, but they seem to suggest that homework *per se* is not the only, nor perhaps the main source of teens' life style and emotional imbalance. Data not reported in this paper (see Zuzanek, 2005) suggest that students often go to bed late on school days. On school days, by 11:30 p.m. over 26% of Ontario teens are still not in bed, and 14% go to bed after midnight. They leave for school early in the morning, often skipping the breakfast, and stay at school late (close to 30% finish classes at or past 3 pm), in part due to parents' employment obligations. Classes are not always challenging and schools tend to transfer part of the workload that ideally should be covered in school onto hours after school. Parents (or tutors) are expected to help out with homework but like their children they are often tired after coming home from work. Under these conditions homework may be perceived as excessive but it is hardly at the root of the strain. Pressures experienced by teens do not stem from homework alone but rather from the way society structures its employment, educational and temporal environment and opportunities. In other words we face not so much a “homework problem” but rather, in a broader sense, a societal time use problem.

References

Kralovec, E. and Buell, J. (2000). *The end of homework. How homework overburdens children, and limits learning*. Boston: Beacon Press.

Bennett, S. and Kalish, N. (2006). *The case against homework*. Bethel: Crown Publishers.

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Table 1**School related time of adolescents aged 15 to 19: Hours and minutes per school day**

	Australia (1997)	Belgium (1999)	Canada (1998)	Finland (1999/00)	France (1998)	Germany (2001/02)	NDL (2000)	Norway (2000)	UK (2000)	USA (2003)
<i>N=</i>	862	291	343	267	606	582	99	175	403	512
School related time	8:01	8:46	8:21	7:11	8:01	7:23	7:34	7:19	7:46	7:51
Attending classes / at school	5:31	6:02	6:26	5:35	n/a*	5:11	4:53	5:29	5:41	6:30
Homework on school days	1:25	1:42	1:10	0:45	n/a	1:08	1:30	0:56	0:58	0:55
Traveling to / from school	1:05	1:01	0:45	0:51	0:51	1:04	1:10	0:54	1:06	0:26

* Data unavailable

Table 2

Historical changes in school related time of adolescents aged 15 to 19: Hours and minutes per day averaged across the week

	Canada				Finland		Germany		Norway		
	1986	1992	1998	2005	87/88	99/00	1991	2001	1980	1990	2000
<i>N=</i>	506	456	414	600	717	658	962	931	285	238	160
School related time	6:03	5:38	5:09	5:25	4:41	4:23	4:32	4:48	4:58	5:15	5:31
Attending classes	3:54	3:27	3:12	3:52	3:24	3:10	.	3:11	3:25	3:45	3:52
Homework	1:37	1:38	1:29	1:04	0:50	0:43	.	0:51	0:58	0:53	0:59
Traveling to / from school	0:32	0:33	0:28	0:29	0:27	0:30	0:32	0:41	0:34	0:35	0:40

Table 3

Displacement effects of teens' homework on school days: GSS 2005 Time, in minutes, spent on daily and free time activities by students reporting different amounts of homework (minutes per day and bi-variate correlations)

	No homework reported	Less than 90 minutes of homework	More than 90 minutes of homework	
	Minutes on school days			Sign $p < .05$
Paid work	63	36	18	-.16
Domestic work	22	40	19	-.10
Sleep	475	504	511	.11
Free time	360	267	197	-.44
Watching TV	88	77	69	-.13
Computer & video games	25	12	4	-.13
Internet	32	40	25	-.09
Reading books	5	6	17	.11
Physically active leisure	46	33	16	-.17
Time spent in the presence of friends	350	255	217	-.19
Time spent in the presence of parents	69	96	98	.03

Table 4

Displacement effects of teens' homework on school days: OATUS 2003 Time, in minutes spent on daily and free time activities by students reporting different amounts of homework (minutes per day and bi-variate correlations)

	No homework reported	Less than 90 minutes of homework	More than 90 minutes of homework	Pearson "r"
	Minutes on school days			$p < .05$
Paid work	41	17	9	-.13
Domestic work	28	26	23	-.08
Sleep	468	480	456	-.21
Free time	379	331	249	-.47
Watching TV	101	84	60	-.23
Computer & video games	26	25	14	-.11
Internet	36	42	35	-.07
Reading books	15	18	14	-.06
Socialising with friends	105	71	47	-.24
Socialising with family	20	20	18	ns
Physically active leisure	36	41	32	-.10
Extracurricular activities	12	14	17	ns

Table 5

Displacement effects of teens' homework on Sundays: OATUS 2003 Time, in minutes, spent on daily and free time activities by students reporting different amounts of homework (minutes per day and bi-variate correlations)

	No homework reported	Less than 90 minutes of homework	More than 90 minutes of homework	Pearson "r"
	Minutes on school days			<i>p</i> <.05
Paid work	45	22	16	-.12
Domestic work	50	50	30	-.14
Sleep	587	631	607	.07
Free time	580	539	418	-.52
Watching TV	157	134	102	-.22
Computer & video games	52	43	26	-.15
Internet	50	61	75	.08
Reading books	22	26	28	ns
Socialising with friends	151	142	103	-.22
Socialising with family	18	19	10	-.12
Physically active leisure	73	73	34	-.19
Extracurricular activities	11	16	15	ns

Table 6

**Effects of school homework on teens' well-being: GSS 2005
(Bi-variate correlations and regressions controlling for teens' gender and age)**

	Pearson " <i>r</i> "	Beta
Time pressure	.16	.14
Perceived stress	.07	.14
Satisfied with time use	-.06	-.06
Self-assessed health	.04	.05

All relationships are significant at .005 level.

Table 7

**Effects of school day and Sunday homework on teens' well-being: OATUS 2003
(Bi-variate correlations and regressions controlling for teens' gender and age)**

	S c h o o l d a y s		S u n d a y s	
	Pearson “r”	Beta	Pearson “r”	Beta
Time pressure	.26	.23	.34	.30
Grade average	.21	.19	.37	.33
Importance of doing well at school	.21	.20	.18	.18
Often feel bored	-.10	-.10	-.16	-.16
Expect a bright future	.07	.06	[.06]	[.07]
Composite of lonely and depressed*	.07	ns	.14	.09
How physically fit compared to other kids	ns	ns	[.06]	[.06]

* *Alpha* = .71

All relationships are significant at .005 level, unless italicised (significant at .05 level) or in parentheses (approaching significance).

Table 8

**Effects of school homework on teens' well-being: ESM self-reports 2003
(Bi-variate correlations)**

	Episode of homework	Person-based homework*
<i>ESM self-reports</i> <i>N</i> =	9,371	219
Pressed for time	.14	.17
Stressed	.10	.10
Affect	-.07	-.10
Anxiety	.10	.17
Challenge of the activity	.25	.18
Concentrating well	.15	.08
Feeling body, stomach or head aches	ns	-.09
<i>Data from in-school and home administered questionnaires</i>		
How bright will your future be		.16
Body mass index		-.07
Grade average		.20
How physically fit are you		.14
Do you smoke		-.25

* Aggregated as percent of homework episodes reported by the respondent.

All relationships are significant at .005 level, unless italicised (significant at .05 level).

Table 9

**Experiential correlates of class time, homework and free time:
ESM self-reports 2003 (Bi-variate correlations)**

	Episodes of homework	Episodes in class	Episodes of free time
Feeling pressed for time	.14	.03	-.17
Feeling stressed	.10	.08	-.10
Affect (feeling good, happy, cheerful)	-.07	ns	.10
Anxiety (feeling worried, upset, tense)	.10	.03	-.10
Feeling bored	.03	.18	-.09
Activity perceived as challenging	.25	.18	-.08
Activity perceived as important	.09	-.03	-.11
Activity perceived as interesting	-.06	-.16	.27
Wish to be doing something else	.17	.28	-.26

All relationships are significant at .005 level, save the italicised ($p \leq .05$)