WISCONSIN HOPE LAB

DATA BRIEF 16-03

What We're Learning: Student Time Use
A Data Update from the Wisconsin HOPE Lab

February 10, 2016

Juggling school, work, and family obligations is difficult for many students. Growing rates of employment among undergraduates, along with the greater prevalence of students with children and/or elder care responsibilities, contribute to concerns about effective time management for learners in higher education. Answering questions about students' daily schedules and time management requires good measurement tools, but these are hard to come by.

In fall 2014, the Wisconsin HOPE Lab successfully piloted a large-scale time use survey administered via a smartphone application. This is the first study to measure in this way how college students use their time and engage with their studies. The method overcomes limitations of traditional surveys by prompting students to report what they are doing at regular intervals over one weeks' time. Short, in-the-moment surveys ask what they are doing, where they are, who they are with, and how they are feeling about their activity. This approach provides a more accurate picture of how students spend their time and much richer data on how they experience their activities. It holds promise for better examining the links between time use, engagement with studies, and academic success.

The Method

Methods for studying time use are advancing, yet researchers continue to rely on traditional retrospective surveys in which people report on what they did during the prior day or week. Unfortunately, respondents often inaccurately report past activities. It is also difficult to collect

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information about multi-tasking, how engaged or excited respondents are in their activities, or with whom they spend their time. Retrospective surveys tend to rely on lists of activities selected in advance by researchers, potentially omitting important activities, such as time spent with family or friends.

The Wisconsin HOPE Lab time-use study pilot aimed to improve on the traditional approach by marshalling technology and utilizing a superior surveying methodology, known as the experience sampling method (ESM). ESM is widely considered the "gold standard" approach to collecting data on time use and subjective well-being. In ESM, individuals provide repeated in-the-moment reports on their daily activities. Unlike other time diaries, ESM allows researchers to tie subjective experiences to specific situations, and it limits the threat of retrospective reporting biases. This pilot improves upon other ESM studies, which usually rely on wristwatches and paper-and-pencil surveys, by employing a smartphone-based application to collect data on undergraduates' daily experiences.

The Pilot

Researchers recruited students enrolled at the 13 campuses of University of Wisconsin Colleges (a network of two-year liberal arts colleges), located across the state of Wisconsin and including UW Colleges Online. Students were invited to complete eight surveys per day over a seven-day period using their phones. Each survey presented students with an invitation to complete a brief questionnaire about what they were doing, where they were, who they were with, what they were thinking about, and how they were feeling about their activity. We also collected data on students' daily sleep and eating habits. Surveys were scheduled around the clock based on the assumption that college students often keep nontraditional schedules, but participants were instructed to ignore the survey reminder if they were sleeping. Students also completed brief online surveys at the beginning and end of the survey period. In the first online survey, they were asked to provide brief information about their background, demographic characteristics, and daily time use. On the last online survey, they reflected on the process of using the smartphone application (e.g., did they find the method burdensome, were there times they were less likely to complete surveys).

In total, 609 students completed the initial survey and 34% of that group (N=204) then participated in the daily ESM surveys. This response rate reflects typical challenges recruiting for a large-scale study that requires intensive data collection. The within-person response rate is higher: participants responded to 60% of ESM survey prompts sent during typical waking hours.[1] Even more encouraging was the positive evaluation participants gave the survey—all but 2 of 159 participants in the final survey said they would be willing to participate in a similar survey in the future.

[1] For this study, "typical waking hours" are defined as 6:00 am to 1:00 am

Among students who completed the initial survey and participated in the daily surveys, the average age of students in the sample was 22 and the modal age was 19. Seventy-three percent of the sample was female and 45% were Pell Grant recipients. The sample was 90% non-Hispanic white, 8% Hispanic, and 5% African American (multi-racial students appear in more than one category). The students varied considerably with respect to the number of semesters they had attended school. Approximately 15% of the sample had children, and approximately 70% of the sample had some work responsibilities.

How Students Spend Their Time

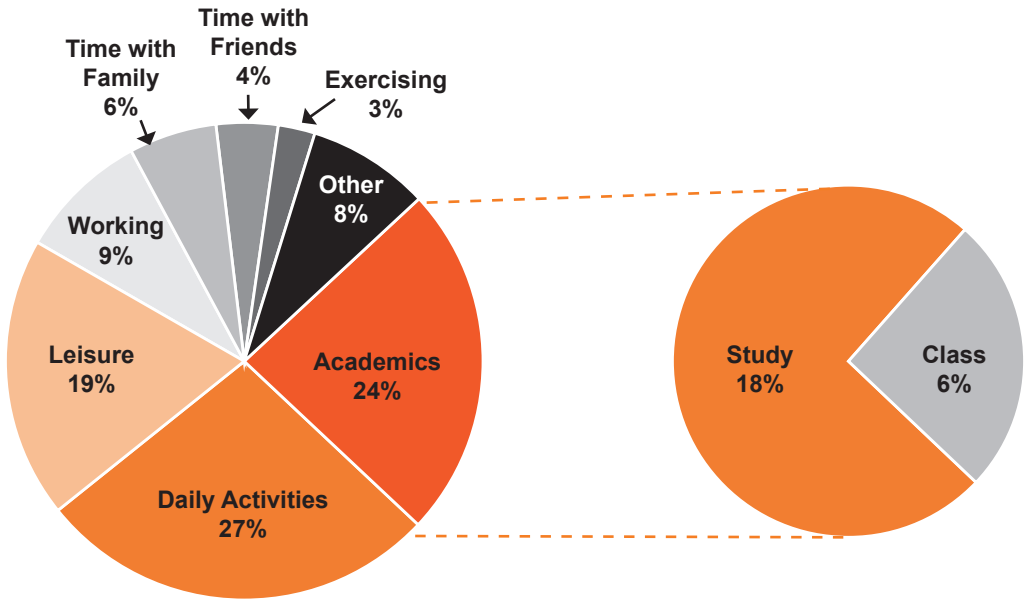
A summary of how students in the study spent their time is presented in Figure 1. This summary is based on open-ended responses provided by participants to the question "As you were beeped, what were you doing?" Open responses were coded into distinct activity categories.[2] Then the percentage of total responses in each activity category was calculated for each student and averaged across the ESM survey participant sample.

On average, students spent 24% of their time on academic activities, approximately 30 hours per week.[3] This includes time spent in class as well as study time and other school-related activities. Studies were second only to "daily activities" on which students spent 27% of their time (34 hours per week); including things like cooking, cleaning, and other self-care. The third largest use of student time was leisure at 19% of their time (24 hours per week) which included things like TV, movies, and "going out." Students also spent a considerable amount of time working. Work time averaged 9% of students' time or approximately 11 hours per week, though time spent working varied widely, ranging from 0 to 63 hours per week.

[2] To increase interrater reliability, approximately 25% of time use responses were double-coded, with the two coders agreeing on approximately 98% of coding decisions.

[3] Hours per week estimates are derived by multiplying the percentage of responses in a given activity by 126 waking hours per week (18 hours per day).

Figure 1: Distribution of Student Time Use Across Activities: One Week Period



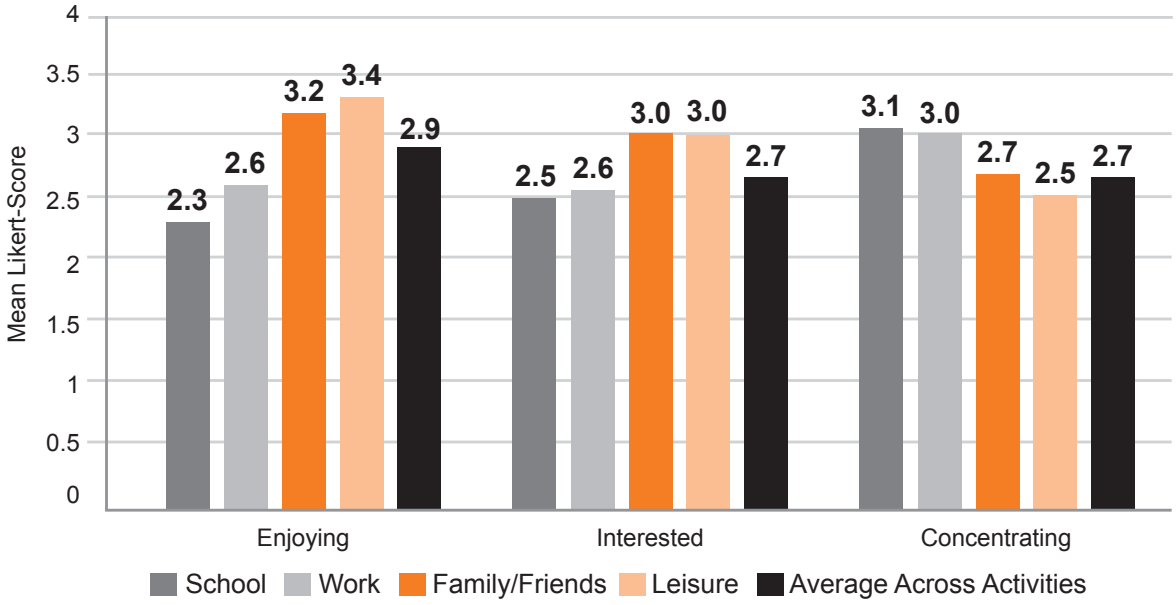
Note: Open-ended responses were provided by participants to the question "As you were beeped, what were you doing?" Open responses were coded into distinct activity categories. Then the percentage of total responses in each activity category was calculated for each student and averaged across the ESM survey participant sample.

Of course, these initial estimates may underrepresent the amount of time students spend on any given activity, including their studies. This could happen if they list different primary activities and conceptualize their studies as a secondary activity. Participants commonly reported more than one activity, particularly when engaged in leisure time, in daily activities, or when multi-tasking between school and leisure (e.g., "Watching Netflix and reading an article for class"). There is also the possibility that students systematically underreport on activities like working or being in class, where it might be more difficult to respond to survey prompts. e are conducting additional analyses to explore these issues.

How Do Students Feel About These Activities?

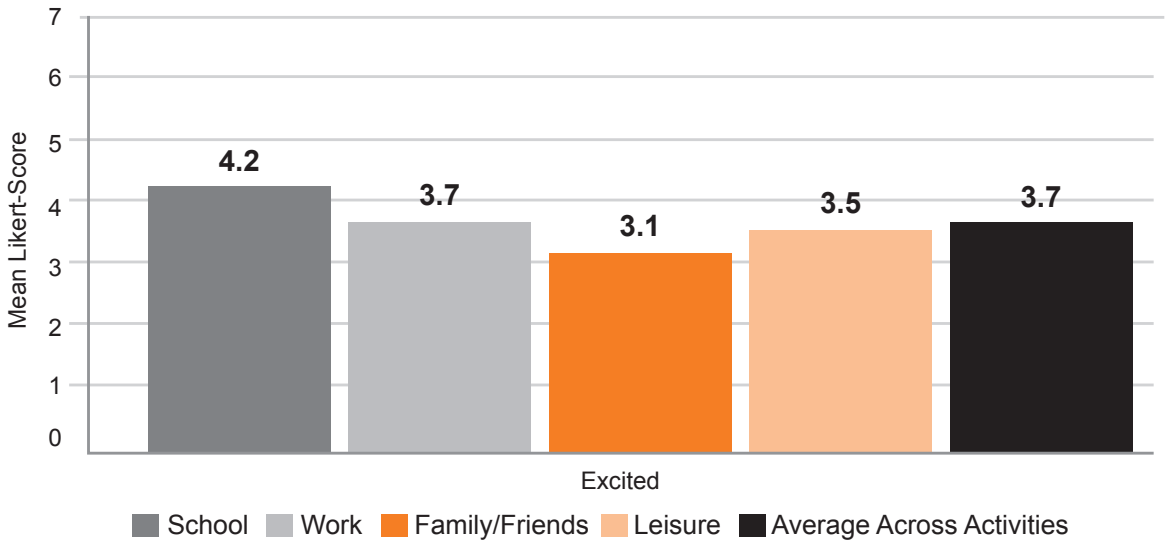
ESM survey prompts also included questions about students' engagement or affect in the midst of what they were doing. Affect was measured along four dimensions: enjoyment, interest, concentration, and excitement. Students appear to be concentrating more and feeling more excited when in school, as compared to other activities (see Figures 2a and 2b).

Figure 2a: Mean Affect by Student Activity (Enjoying, Interested, Concentrating)



Note: 1) Responses for each item are on 4-point Likert scale from 1=not at all to 4=very much. 2) All differences are statistically significant at the 0.05 level.

Figure 2b: Mean Affect by Student Activity (Excited)



Note: 1) Responses for "Excited" are on a 7-point Likert scale from 1=very bored to 7=very excited. 2) All differences are statistically significant at the 0.05 level.

Next Steps

This brief provides a first look at how students spend their time. There is much more data to explore from this pilot study. The Wisconsin HOPE Lab will be delving deeper into information from the smartphone surveys and comparing it to reports of time use on the pre- and post-surveys to see how well these data align and where they diverge. Analyses will also delve into the intersection between place and activity to identify ways in which students multitask (e.g., checking their personal email at work, studying at home while watching TV). Subgroup patterns will be examined to find if there are differences in time use along several dimensions, including socioeconomic and racial groups, as well as according to students' grades. And other analyses will examine who students spend their time with, focusing on how patterns of time with friends, family, colleagues, and alone vary by work and school responsibilities. Finally, participants reported their daily sleep and eating habits, which we will examine relative to their emotions and academic performance.