A Study of Time Management Practices and Perceived Productivity in Graduate Students

IMT 570: Analytic Methods for Information Professionals

Section A, Group 5

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ABSTRACT

This paper reports on a study of time management practices and the resulting perceived productivity. The purpose of the paper is to identify the time management tools and practices that graduate students use to manage time in their academic, personal and professional lives. Another aspect is understanding how these students interact with the information resources provided by the University of Washington. An online survey was carried out among 123 graduate students of the MSIM program in November 2016 which generated 58 responses. A follow-up semi-structured interview was conducted with 6 candidates to further explore unique time management practices and/or perceived productivity. Nominal, ordinal, and interval data, were collected and quantitative analyses such as ANOVA and cross-tabulation were utilized for the survey results. Qualitative thematic analysis was conducted for the interviews. The findings yield significant results regarding year in school, planning practices, type of time management tool used, and monochronicity/polychronicity. E.g. second-year MSIM students were more likely to feel in control of their time, and digital tools were more popular overall. The study concludes with a short primer of best practices for managing time in an academic environment, and provides directions for further research.

INDEX

ABSTRACT **1**

INTRODUCTION **3**

Literature Review 3

Research Framework 4

Operationalized Variables 4

Research Limitations Due to Scope 6

METHOD **6**

The Instruments - Survey & Interview 7

Survey Structure 7

Interview Structure 8

Sample Selection 8

Data Collection Procedures 10

Measures for Validity & Reliability 10

Ethical Considerations 11

FINDINGS & ANALYSES **12**

Quantitative Analysis - Survey 12

The Quantitative Findings 14

Qualitative Findings - Interview 21

DISCUSSION & CONCLUSIONS **23**

Discussion 23

Unexpected Outcomes 24

Limitations & Solutions 24

Potential Directions for Future Research 26

REFERENCES **27**

APPENDIX **28**

INTRODUCTION

The lives of various prolific personalities across the centuries have been documented and can be studied to uncover differences in attitudes and behaviors with respect to time management. Michael Jordan practiced hook shots for hours on end, even during off-seasons, to improve his game. Similarly, Indira Nooyi, CEO of Pepsi, put herself through graduate school at Yale, by working the graveyard shift on top of her daytime activities. On the other hand, Douglas Adams, author of the Hitchhiker's Guide to the Galaxy, was a serial procrastinator, famous for the adage- *"I love deadlines. I love the whooshing sound they make as they go by".* While all of the individuals mentioned above were productive in terms of producing results, they clearly exhibited different pathways to success. An important commonality between them is that they had the same amount of time each day to complete their chosen tasks. Time is a universal and finite resource for every human. Each day, just like Adams and Jordan, we make choices on how best to utilize time and allocate activities.

For a graduate student especially, time is a precious commodity to be spent wisely between various demanding pursuits. Students are constantly bombarded with tasks and deadlines in a relatively short span of time, oftentimes causing them to adopt time-management tools or practices to balance the activities.

Our study seeks to examine the time management tools and practices employed by graduate students at the University of Washington iSchool MSIM program, and the resulting cognitive notion of how productive they feel, especially in an environment of information overload. We also wish to understand how students utilize the resources provided by the iSchool, in the context of managing time.

Literature Review

There is plenty of research around time management concepts, of which two in particular prompted our research study. In one study conducted by Britton & Tesser (1991), two time management practices strongly predicted academic performance of 90 undergraduate students, as measured by their cumulative GPA after 4 years. The time management practices were more strongly indicative of future GPA than were the SAT scores, suggesting the importance of time management to academic success. Drawing upon this, we hoped to uncover the role of time management in the graduate realm, of which we ourselves are very much a part of, and encourage better practices based on the data we uncover.

In another study conducted by Kaufman-Scarborough & Lindquist (1999), they focused on people's monochronic versus polychronic tendencies in the workplace, illustrating how behaviors and attitudes varied depending on employee perception and valuation of time. We became interested in how students measured on this scale and were motivated us to uncover findings to help us propose a more inclusive and informed time management strategy that UW MSIM students could adopt to maximize perceived and measurable productivity and achieve positive emotional health.

To our knowledge, there is no published study on time management tools and practices linked to resulting productivity perceptions that also take into account polychronic or monochronic behaviours. Our research aimed to add to the above-mentioned studies by understanding self-assessed productivity in relation to time management practices. We wanted to know how students use existing information sources at UW, potentially helping UW to better utilize and maintain its systems.

Research Framework

To better target our research topic, our **research questions** are as follows:

a) **How do time management practices and resulting notions of productivity vary for graduate students across different behaviors and backgrounds?**

b) **How do graduate students utilize the information resources provided by the University of Washington to aid their time management?**

The purpose of our research is to study these behaviours and possible influences to identify time management best practices and workarounds adopted by students in a highly demanding environment filled with academic, professional, and social pursuits. We studied how different factors might contribute to the adoption of various time management tools and practices, and how these practices resulted in certain perceived productivity and measurable productivity levels, terms which we will define in the coming section.

Operationalized Variables

Before delving into our study, we have defined some crucial variables, specifically ***time management***, ***measurable productivity***, ***perceived productivity***, ***polychronicity***, ***monochronicity***, and the various spheres encountered in a graduate school setting.

Time Management: Dr. Kaur defined time management as the "ability to prioritize, schedule and execute personal responsibilities" (Kaur, 2016). A 1991 study "specifies several time-management components: choosing goals and subgoals, prioritizing the goals, generating tasks and subtasks from the goals, prioritizing the tasks, listing the tasks on a 'to-do' list, scheduling the tasks, and then carrying out the tasks" (Britton & Tesser, 1991). Our model of

the term is loosely based on these previous studies and was embedded as part of the online survey.

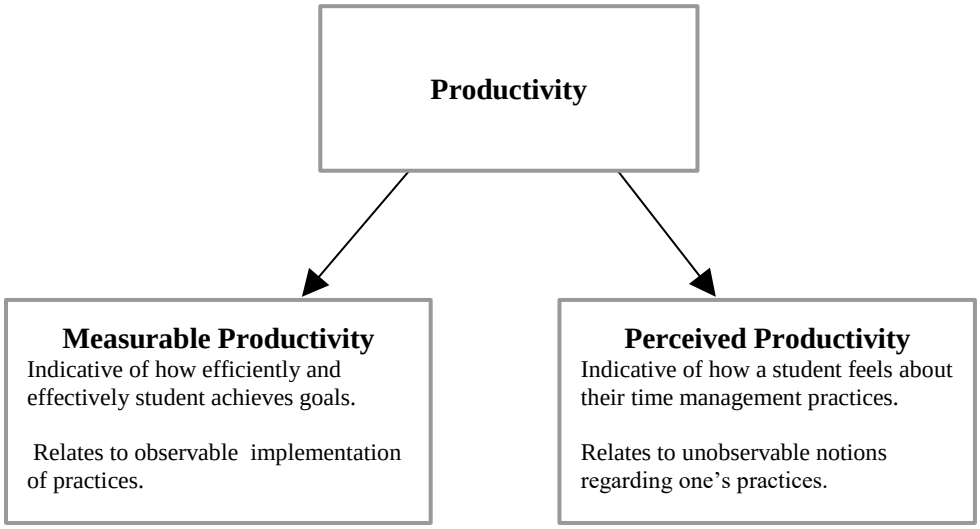


Fig 1: Types of Productivity

Productivity: A thorough definition of productivity recognizes that it can be divided into two parts: efficiency and effectiveness (Mackie, 2016). Efficiency refers to the level and quality of output service that can be obtained given fixed resources, while effectiveness refers to how well an individual meets the demands and goals.

Instead of trying to give it mathematical shape and a distinctly numerical value, we chose to measure more qualitatively on a value-based level. This is a guiding reason for why we have kept this study both qualitative and quantitative in nature, so that we may analyze findings from both perspectives.

An important distinction to make is the difference between a person's actual productivity and perception of productivity. Perceived productivity is inherently subjective and deals with squishy elements like belief and experience which are difficult to measure. Graduate students will naturally vary across the spectrum in productivity (both perceived and measurable), but we wish to avoid harsh terminology that buckets students into "highly productive" and "less productive" sets, emphasizing that productivity is not meant to indicate a an individual's worth. Therefore, we have purposefully chosen the terminologies "highly productive" and "potentially productive" for students that fall on opposite ends of the productivity spectrum in our research, which we use throughout our research study.

Measurable Productivity: We define measurable productivity as getting tasks done efficiently and effectively before deadlines with generally acceptable quality standards.

Perceived Productivity: We define perceived productivity as the subjective personal belief about one's own level of productivity, regardless of measurable productivity.

Polychronicity and Monochronicity: When defined as Laufman-Scarborough and Lindquist intended, polychronicity refers to the form of behavior wherein a person engages in two or more activities during the same block of time, while monochronicity refers to the form of behavior wherein a person engages in one activity at a time (Kaufman-Scarborough & Lindquist, 2007). The survey and interviews helped us identify how the data is spread across this spectrum, with Likert-scale questions such as *"Doing two or more activities at the same time is the most efficient way to use my time."* We believe this concept of working tendency reveals student attitude towards multi-tasking, which may influence the activities he or she engages in, thus influence the self-assessment of productivity.

There are various pulls from academic, professional, and personal spheres. However, there are many activities that can fall into multiple categories at once (e.g. social clubs within professional associations), which we have chosen to divide into one of the categories strictly. We shall provide explicit examples when asking questions regarding these activities so that it doesn't affect our analyses.

- **Academic Sphere**: School courses, independent courses and study, research projects, campus affiliations
- **Professional Sphere**: Career center events (job fair, info sessions), Full Time/Part Time jobs, internships.
- **Personal Sphere**: Social events (parties, celebration, outing), recreational events, family/friends

Research Limitations Due to Scope

The scope of our study does not extend to the upbringing, peer pressure, and self-esteem aspects of graduate students, which may be significant factors in determining the adopted time management tools and practices, and the resulting perceived productivity.

We chose to focus on fewer factors to not become bogged down by our own information overload and in hopes of finding clearer correlations and trends on the criteria we have established. Another limitation is the reliability of the participants, who may choose to answer questions dishonestly due to the potentially sensitive nature of the topic. This is because the ability to meet their goals may be strongly linked self-esteem. It is thus to be reiterated that we are not particularly interested in *why* the productivity varies, but rather *how* it varies.

METHOD

The research project is designed to be both **exploratory** and **descriptive** in nature. It is a mixed-methods study which employs both qualitative and quantitative techniques. The study is partly exploratory because we mainly intend to gain information regarding our topic rather than answer predetermined questions or hypotheses about our topic. The study is partly descriptive because we uncover characteristics associated with highly productive versus potentially productive individuals, which is reflected in certain clusters and patterns in the data. Together, these two methods allow us to make qualitative and conceptual distinctions as well as suggest associations and relationships.

On the quantitative analysis side, we uncovered statistically-significant associations using ANOVA and Chi-Square test. On the qualitative analysis side, we gathered data using interviews and identified patterns from transcriptions using emergent themes analysis.

Since our initial presentation, we changed a few things in the methods section including refining the interview questions and redefining the sample population size and sample population criteria for both survey and interview participants, which we will go into detail in their respective sections.

The Instruments - Survey & Interview

Our data collection instruments consisted of an online survey questionnaire using Google Forms, followed by semi-structured in-person interviews. The surveys were conducted prior to the interviews because as a largely exploratory study, we wanted to collect a large amount of data from which we would refine and tailor our interview questions in order to gain in-depth analysis of what variables drive an individual's perceived productivity. The survey helped us determine some interesting patterns to further pursue either through analyses or interviews. In addition, questions regarding feelings of productivity might be sensitive for some people to share in person, as some might attribute it to emotional or psychological feelings of lack of accomplishment, though we think this risk is minimal. Therefore, an online survey questionnaire was a good tool to initially gather a broad variety of data on user behavior and user perceptions.

Survey Structure

The survey questionnaire consisted of 30 questions, covering topics ranging from demographics to time management practices to self perception, and took an average of 5 minutes to complete. Our survey questions aimed at capturing key input and output variables important to our study. The sample population was incentivized by being added to a raffle for a $20 Amazon gift card. On November 20th, 2016 we reached out to our participants via email where we briefly introduced the purpose and content of the study, provided a brief ethical

consideration blurb about voluntary participation and privacy, and made available the survey link (snapshot of email attached in appendix). Clicking the link brought participants to our informed consent page (consent page snapshot attached in appendix) where we described the survey purpose, how the collected data will be used, the qualifying criteria for our survey sample population, emphasized that the survey employs voluntary participation, addressed privacy concerns (de-identification of data in our results, confidential storage), and perceived risks. We also included all our names and email addresses in case participants had questions. On November 28th, 2016, a reminder participation email was sent out to try to get more people to participate so we could collect more data.

Our question types included multiple choice, short answer, check all that apply, and five-point Likert scales. We utilized varied question types to keep participants engaged and interested, and to collect results that we may interpret in different ways. To ensure that each question received an answer, we made all questions required; however, there were options to not disclose answers (e.g. “Prefer Not to Answer”) and there was always the option to opt out of the survey at any time. There were no open-ended questions in the survey and all levels of measurement (nominal, ordinal and interval/ratio) were represented. The “messier” concepts like perceived productivity were measured at an ordinal level using questions like, "how constructive or unconstructive would you categorize your use of time in general?" A copy of our survey can be found in the appendix.

Interview Structure

The in-person interviews followed a semi-structured format, where we asked 5 pre-determined questions, from which we branched off and explored tangential information based on the responses the participants provided. This allowed us to collect the specific information we sought as well as further explore interesting themes uniquely provided by each interviewee. The interviews lasted an average of 10 minutes and all 4 researchers conducted interviews. Starting on November 26th, 2016, interview participation emails were sent out to selected individuals who opted to participate (snapshot of email attached in appendix). Participants were asked for permission to be audio recorded, copies of which were transcribed for analysis and kept under numbered headings in a secure drive and set to be destroyed on December 13th, 2016.

The interview initially consisted of 7 questions that were quite general in scope and without context, like asking about time management lessons learned, the types of tools used, and actions taken when they felt overwhelmed, which we thought would yield very basic and insignificant answers. As a result, we changed them to 5 questions that asked interviewees to elaborate on certain positive and negative experiences related to time management tools and practices, and asked them to draw upon those experiences to answer the remaining questions.

This would provide a context for them and allow them to think deeper and connect with their answers. A copy of our updated interview questions can found in the appendix.

Sample Selection

For our research study, we drew our research participants from the pool of volunteers in the UW iSchool, but focusing only on MSIM graduate students. By limiting the sampling population, we intended to observe students exposed to similar opportunities, courses, and subject matter area. We included mid-career, full-time, online, and in-person students in the sampling pool to get a more comprehensive view more representative of the entire MSIM graduate student population, many of whom are in different stages of life and with varying experiences. This inclusion resulted in varying information across the board. For example, online students rely heavily on digital technology in order to access materials, lectures, and participate in group projects, as opposed to in-person students who rely less heavily on online interactions. These differences resulted in limitations that led some participants to an inevitable inclination towards the use of digital tools and some to adopt certain planning and time management practices. However, it should be noted that though mid-career students were included in the sample, their low response rate resulted in our decision to discard their records in the analysis.

We excluded undergraduate students because we believe their experiences will be different - priority, lifestyle - from that of graduate students; by including their responses, our findings might become too broad. We excluded graduate students in other iSchool programs because we wished to focus on MSIM graduate resources and we believe our academic experiences and organizations are drastically different. We expected to see complex and a much broader data if we had included these students.

Our sampling frame for the survey was initially targeted at 120 total subjects from the MSIM program - 60 first year students and 60 second year students - using simple random sampling. However, due to time constraints and taking into account non-respondents, we decided to recruit all MSIM students (126 total). This way, we maximized responses and gave everyone an equal chance to participate. We received 58 total responses, which is a response rate of 47%. Of these, 31 expressed interest to be contacted for an interview. By starting out with a large pool, we accounted for possible “non-responders” and were be able to include more people across ethnicity, specializations, age, and experiences. This allowed us to obtain responses that were more representative of the population.

We initially targeted for 8 interviews who fell on either ends of the productivity scale based on their perceived productivity. However, after analyzing the selected survey results, we employed purposive sampling and selected 6 interviewees instead - 3 female and 3 male - who instead of being based solely on either spectrums, also exhibited interesting survey findings like

balancing a full-time job or being a former humanities major. We purposely sought these individuals out because they possessed unique findings that we wished to explore more of. We tried to select subjects across gender, age, specializations, and job status in order to gain a more comprehensive view. By performing purposive sampling, we intended to uncover results that help us identify what makes people highly productive or potentially productive. In the interview phase, we excluded responses categorized as being neither productive nor underproductive so that we were focusing on collecting results that will elaborate upon our study (aka those who were highly or potentially productive)

In a large-scale study, we propose starting out with at least a month of survey collection time, where we may adjust our sampling methods depending on the number of responses.

Data Collection Steps

Our data collection procedure consisted of these steps: emailing the survey link to all MSIMer's with terms and conditions, emailing reminders in 4 days, collecting responses in Google Form Excel sheet, de-identifying data, storing data in private location, performing basic analysis to select potential interview participants, emailing interviewees, conducting in-person interviews and recording audio, transcribing findings, and conducting final analysis. The survey addressed the first research question by allowing us to compare results related to time management practices and perceived productivity, giving us plenty of data to draw from. The survey and interview addressed the second research question, where we asked participants to rank the UW resources they use and specifically asked what they would like to see improve.

Measures for Validity & Reliability

We took the following measures to ensure that the data collection process was as reliable as possible for the subsequent analysis, and identified potential points for improvement in future full-scale studies:

1. We incentivized participation in both the survey and interviews with a $20 Amazon gift card raffle draw, in order to gather sufficient data to conduct relevant and more comprehensive analyses. The monetary incentive led to a high response rate and gave us a large dataset to work with. However, though this ensured we achieved a higher reliability rate in terms of the amount of data collected, it might have merely incentivized people to participate for the prize rather than for the sake of accurate responses. In a full-scale study, we will either keep the reward a secret until the data collection process has ended, or only incentivize if the response rate is significantly low. This way, we will better ensure the reliability of the data collected since respondents are participating due to pure subject interest.

2. To ensure that the survey instrument and participants' responses were reliable and not random, we asked similar questions in different ways, which allowed us to account for

possible large variations between a respondent's answers. If a discrepancy exists between the same questions for a large number of people, further analysis would be called upon to determine whether the inconsistency indicated a significant finding or whether it was a problem with the questions themselves.

3. Scales and questions were tested for bias, as all four of the researchers took the surveys and interviews themselves before administering them to the participants. By pre-testing the instruments, we were able to delete, refine, and add questions that better addressed the research questions. However, it would have been even more reliable to also test out the instruments on non-participants, to ensure the inclusion of fresh perspectives in order to further reduce possible bias. In a full-scale study, we will dedicate a week of testing out various versions of the surveys and interviews to ensure maximum reliability.

4. Responses for the survey were stored on a common, private Google Docs folder with identifiers removed, and locked against editing once the survey deadline arrived. This ensured that the collected data was not tampered with accidentally and that only the researchers had access to it.

5. To ensure that interview response recordings were reliable, we decided to first audio record the interviewees then manually transcribe the recordings afterwards. This allowed us to be more engaged in the interviews and ensured that participant responses were accurately recorded. In a full-scale study, we will transcribe using a transcription tool like Dedoose, then double-check manually, thus increasing analysis time and accuracy.

6. The analyses for survey and interview responses were stored in a common folder, so that only a single version of the latest analyses existed. The team worked together on the shared folder to update the copy, constantly staying in contact with one another. This ensured that data analyses were constant, up-to-date, and thus reliable.

7. Analysis for both qualitative and quantitative data was done in pairs so that individual bias was not present in the final insights.

Overall, due to the high response rate and additional measures taken, we expect there to be a decent level of reliability in the quantitative and qualitative analyses.

Ethical Considerations

To ensure our research met appropriate ethical guidelines, we took the following steps:

1. Before beginning surveys and interviews, participants were fully informed via email about the research topic, and informed that there were no anticipated health risks above the daily risks encountered.

2. Respondents were assured that participation is completely voluntary. They could decline participation or withdraw at any point of the research process without penalties.

3. A digital informed consent form was to be signed before survey participation may begin.

4. Audio recorded consent was collected before interviews may begin, and transcriptions will be taken but destroyed at the end of Autumn 2016 quarter.

5. Participants were notified that records collected from surveys and interviews would be de-identified and used solely for the purposes of this research and destroyed after the research has been culminated at the end of the Autumn 2016 quarter. To anonymize data identification, information was stored separately in a secure, confidential location and the email IDs were explicitly excluded from the findings. Audio recordings and participant names were de-identified to this form: “Audio #.” No sensitive information pertaining to the health and finances of a participant was collected during the survey. Chart with de-identified interview assignments is included in the appendix.

In a full-scale study, on top of the audio recorded consent for the interviews, a written consent form should also be used, since the interviews contain more identifying information than do the surveys.

FINDINGS & ANALYSES

Quantitative Analysis (Survey)

Survey Responses Summary

The survey data consisted of **58 responses** out of which 2 responses were from mid-career students. Since the response rate from mid-career students was low and they likely possess drastically different professional engagements from full-time students, both currently and previously, we decided to account for only the full-time responses. We also collected demographic data on our respondents like age, gender, ethnicity, educational background, and professional experience.

We had a roughly even gender-split with **54% (30) men and 46% (26) women**. The age range of our respondents varied from **21-36 years** with an **average age of 25.4** years, tilting our survey demographic towards the younger spectrum. For ethnicity, **82%** of the respondents identified themselves as Asian and **16%** as White.

In terms of educational background, **51%** of the respondents were from an engineering background, followed by Social Sciences (Economics, Law, Psychology) at **17.8%**, and Pure Sciences at **16%**, meaning that our findings might be skewed towards a certain perspective and way of solving problems. We also collected data on students' professional experience prior to joining the MSIM program and found it varied from **0-15** years with an average of **3.7** years, making our respondents relatively inexperienced.

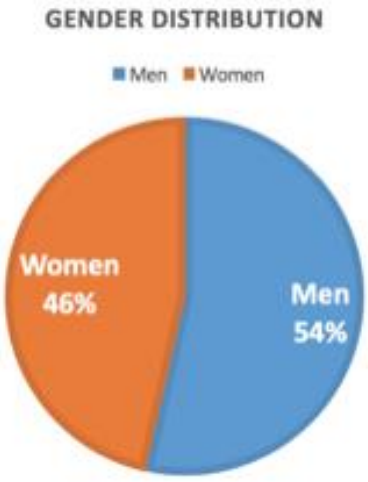


Fig 2: Gender Distribution of Survey responses

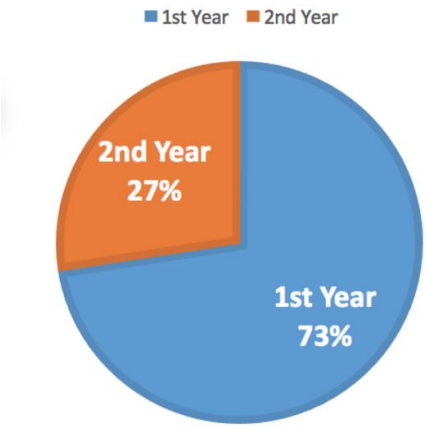


Fig 3: Survey responses by Year in program

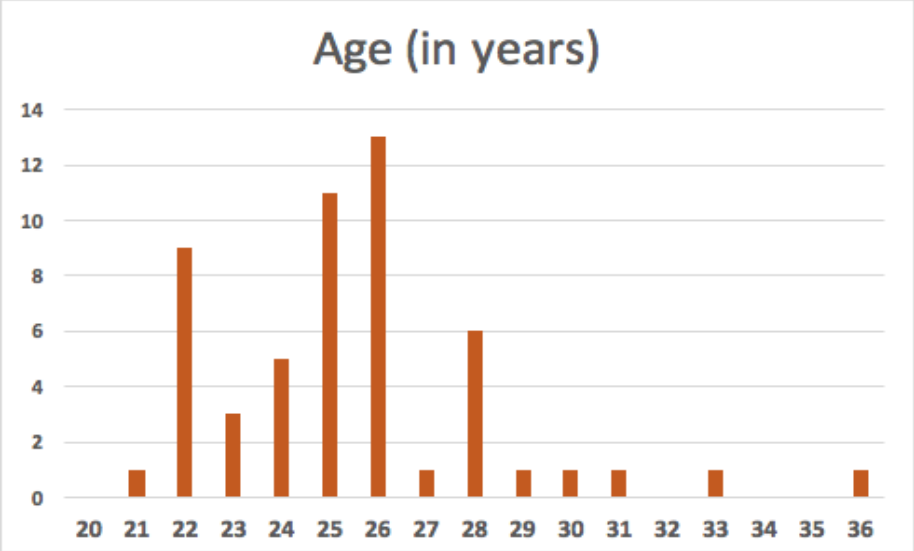


Fig 4: Survey responses by age of respondent

Quantitative Findings in Detail

1. Perception of Time control & Productivity

One of the variables we studied were people's perception of time control and their perceived productivity. We believe control of time gives us a good indicator of analyzing students who were occupied with several activities on a daily basis, of whether they were engaging in it willingly or not. We also measured people perceived and their measured level of productivity to understand whether there were any significant discrepancies in the psychology and output of our participants.

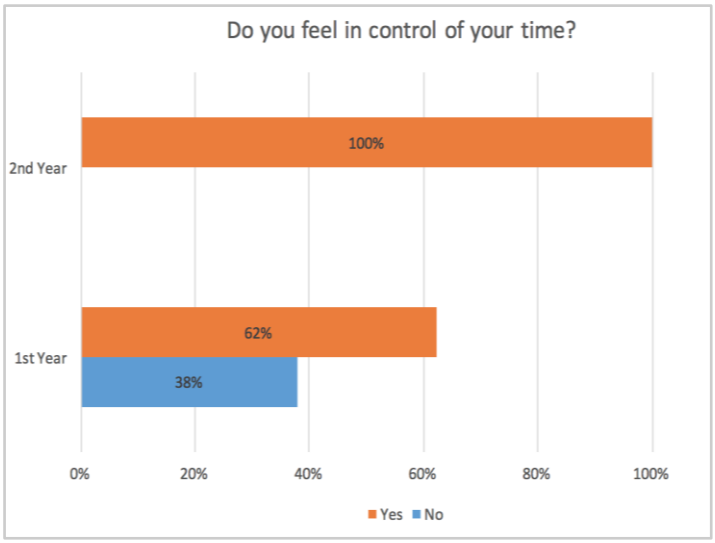


Fig 5: Perception of control over time vs. year in MSIM

Our survey showed **28%** of respondents saying they did not feel in control of their time. Running cross-tabulation results of this variable against several demographic variables and found a significant relationship with MSIM year. The data shows that **100%** of the respondents the students who felt a lack of control were 1st year students. (**p-value= 0.006889017, Chi sq. = 16.71 , Chi sq. critical (0.01) = 13.28)**

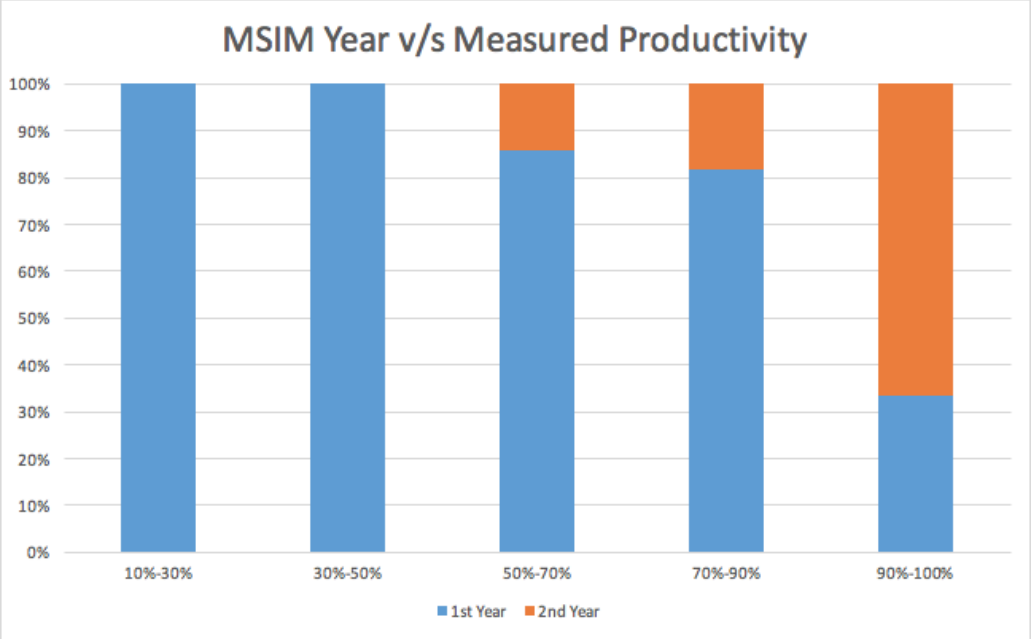
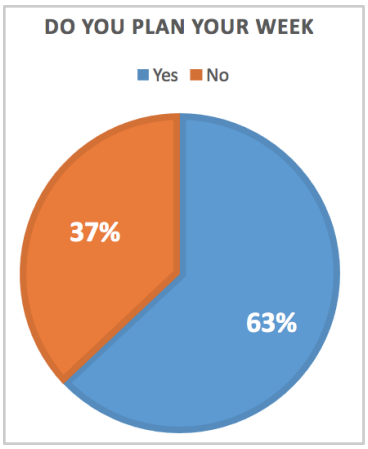


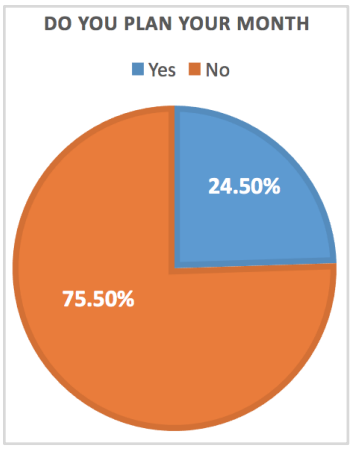
Fig 6: Average percentage of planned tasks completed vs. year in program

Regarding perceived productivity, our responses showed **51.7%** of respondent claiming they agreed or strongly agreed with the fact that they were making a constructive use of their time. Analyzing the data showed **64 %** of 2nd year students agreed that they weren't making a constructive use of their time v/s 45% of 1st year students. However this was not a significant result. (**p-value: 0.473, Chi-square =3.52, Chi-sq. critical (0.01) = 13.28**)

2. Planning Behavior and Measurable Productivity

One of the factors we considered in our survey was looking at students' planning behaviors and whether that has any impact on their productivity and perception of time control. We found **82%** of our respondents had set specific goals for themselves for this quarter. We also found **64%** people tend to plan out their week but the number drops to **25%** when it comes to month.





Figs 7 & 8: Planning habits of survey respondents (Monthly, and Weekly Planning)

We asked students to rate what % of their planned tasks they generally accomplish to gauge their measured productivity. The data showed however that **40%** of respondents who didn't plan their month accomplished less than **70%** of their tasks v/s 21% for people who planned their month.

However, this finding was not significant. Therefore, we can't say there is any relationship between whether planning had an effect on productivity of students. (**p-value: 0.25, Chi-sq= 2.97, Chi-s. critical =6.63**)

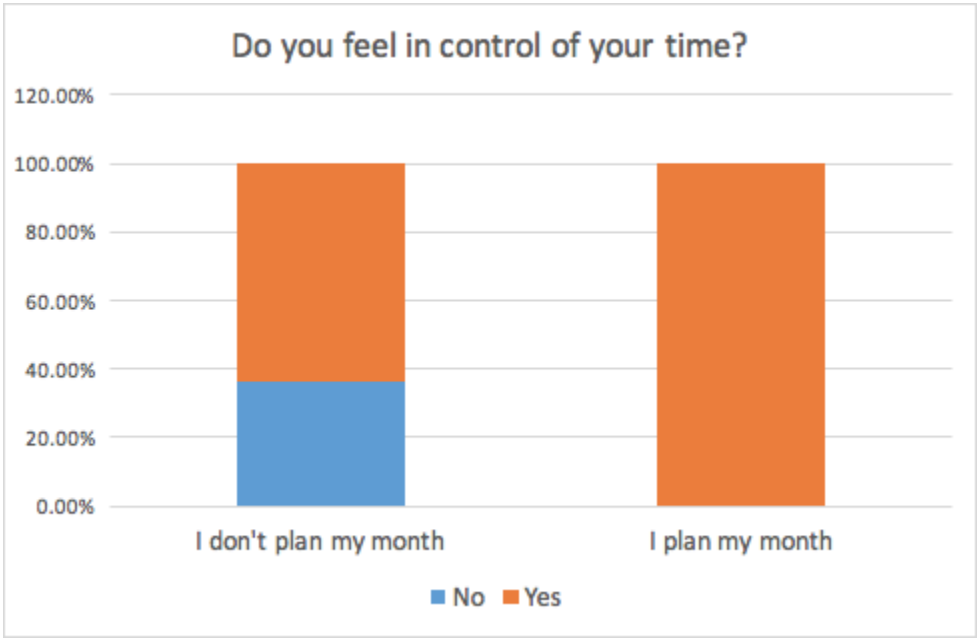
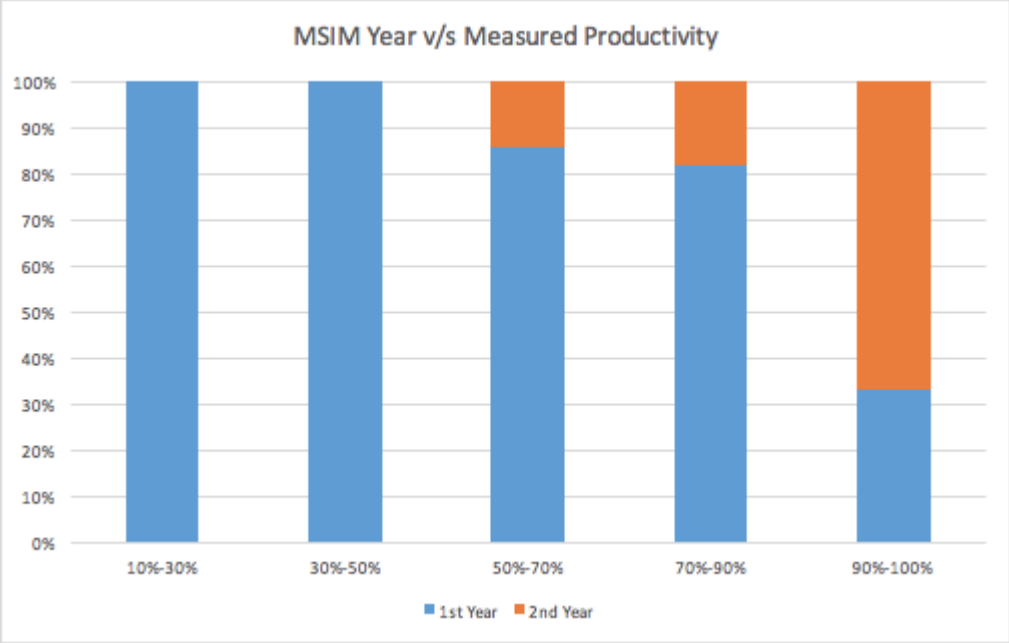


Fig 9: Monthly planning habit vs. feeling in control of time

However, we did find a significant relationship between planning month and student's control of time. In fact **100%** of the respondents who planned their month said they felt in control of their time. (**p-value= 0.0084**)

We also discovered that MSIM year was related to measurable productivity. Our data shows 2nd year students (**57%** of them) were twice as likely to say they completed 90-100% of their planned tasks. (**P Value: 0.0152, Chi square- 12.3, df=4, Chi square critical (0.05) - 9.48**)



Figs 10: Average percentage of planned tasks completed vs. year in MSIM program

3. Working Styles and Productivity

Looking at working styles we also tried to look at whether being a polychronic or a monochronic has an impact on productivity and deadline setting pattern. The data shows a majority of students (**61%**) consider their working habits to be a mix of monochronic and polychronic, with a significant minority (**31%**) leaning towards monochronic tendency.

We also asked students whether they considered polychronic working styles correlated with productive behavior. Our responses show **54%** disagreed with the fact that doing multiple activities at once was efficient with only **20%** agreeing.

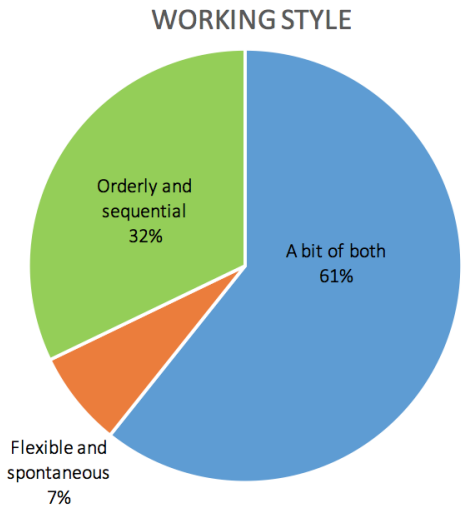


Fig 11: How respondents classify their working style

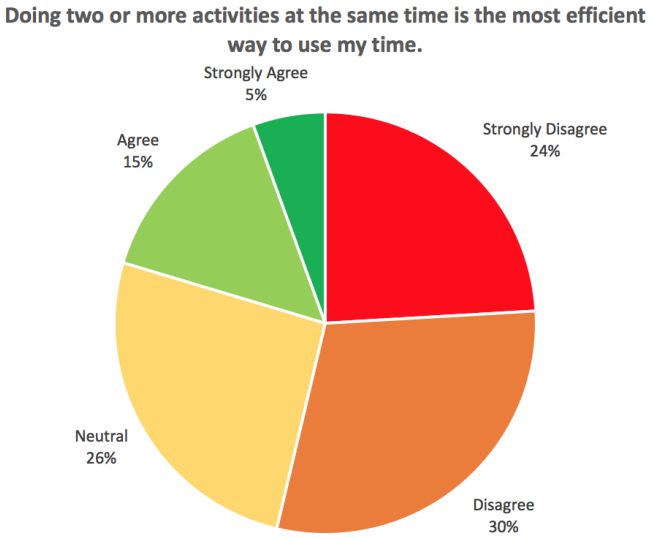


Fig 12: Respondent's views on multi-tasking

While it was expected that monochrons (**84.3%**) would disagree with multitasking as being efficient, interestingly, **50%** of polychrons and **44%** of people with mixed behaviors also identified multitasking as being inefficient. Based on this we can conclude that people's working habits are not always related with efficiency in mind, especially when it comes to multitasking.

Looking at deadline patterns, we also found a significant relationship of working styles with whether one was working on an assignment the night before. In fact **100%** of people who reported not working on assignments the night before were monochrons (**p-value= 0.011, Chi-square: 8.86, Chi-square critical (0.05): 5.99**)

Therefore, the evidence suggests that orderly and sequential people are less likely to be working on assignment on the night before the assignment, suggesting the following nonexclusive conclusions:

1. Monochrons prefer completing tasks in advance.
2. Polychrons prefer working on multiple tasks so they are likely to work incrementally till the last day.
3. Polychrons may have a higher tendency to procrastinate than monochrons.

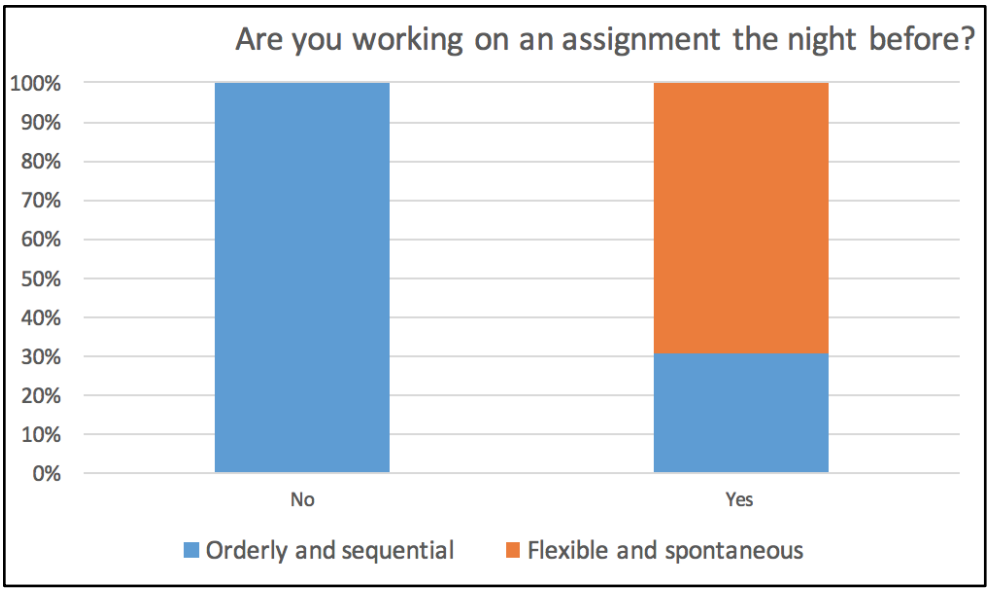


Fig 13: Working style of respondents vs. attitude towards assignment deadline

We also reviewed the relationship between deadline setting behavior and gender and found **96%** of women often or more than often set deadlines for themselves v/s only **63%** of men. While this finding was not significant (**p-value: 0.201, Chi-square: 5.9, Chi Square critical (0.05): 9.49**), the gap in the gender could have further implications on probing it in depth.

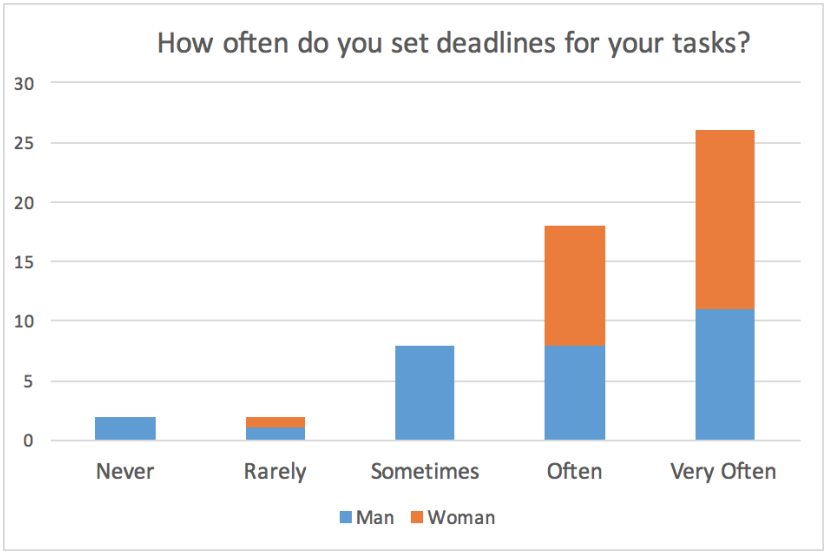


Fig 14: Deadline setting behavior vs. gender

4. Planning Tools and Information Channels

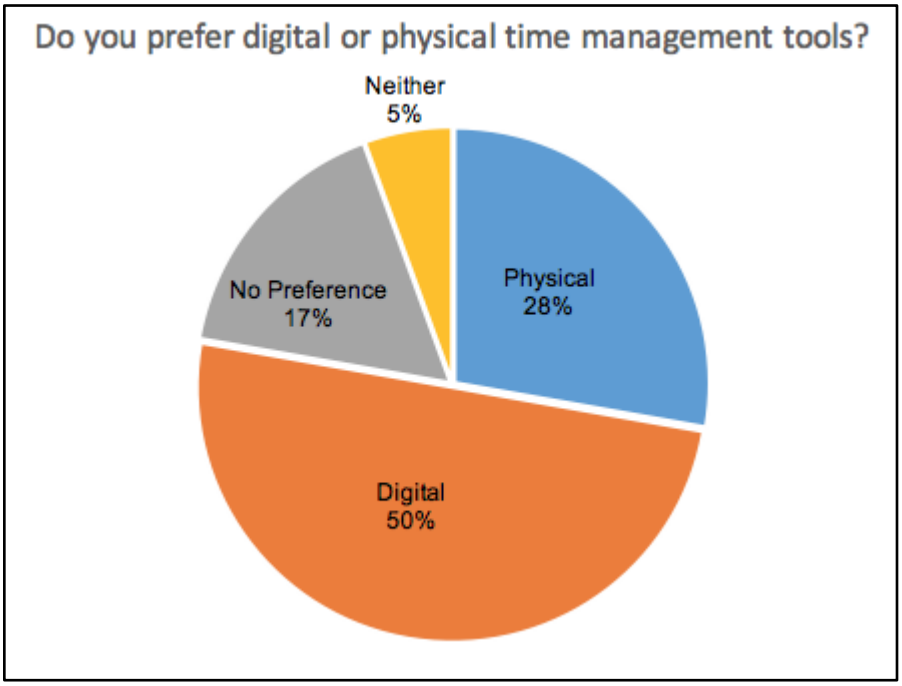


Fig 15: Preference for digital or physical tools among survey respondents

Finally, we also analyzed what kind of platforms students employ for planning their activities, keeping themselves up-to-date for events like career fairs, social events, classes etc.

In terms of information channels we asked students about the frequency of usage of email, Facebook, word of mouth, UW websites and Canvas. Based on the responses, e-mail (**53.5%**) and Canvas (**48.2%**) were the most often utilized mediums, followed by word of mouth (**35.7%**), UW websites (**30.3%**) and Facebook (**16.1%**) (Note: Respondents were asked on frequency of usage of these channels individually on a scale from Never to Very Often, hence the percentages don't add up to 100)We also collected data on what kind of tools do students use for planning their daily/weekly/monthly tasks and their preference for physical tools like paper and pen, post-it notes v/s digital tools like phones, online calendars etc. Our findings showed:

a. Digital calendars are the most popular organizing tool with **78.5 %** usage rate.
b. **56.1%** of respondents use notebooks.
c. Digital tool usage is **87.5%** v/s Physical Tools usage is **69.6%**
d. **50%** of respondents prefer digital tools v/s **28%** physical tools.
e. **28.5%** don't use any physical planning tools like calendar, lists etc. v/s

We did not find any relationship between tool usage and independent factors like gender & age. Overall conclusion is people are still platform agnostic with planning. The high usage of online calendars and notebooks and post-it notes for physical planning suggest people prefer to use paper and pen for writing down personal tasks while using calendars for organizing their events

Qualitative Findings - Interview

For the interview transcription findings, we employed qualitative emergent thematic analysis, where we read through the transcriptions and identified phrases across interviewees that are linked by a common theme or idea. Once we identified these similar findings, we color-coded them for easier comparison and identification of the most common themes. Using the color-coded sheet, we identified 5 of the most common trends and came up with shortened headings for them. The interviewee names were de-identified and instead referred to as "Interviewee 1," "Interviewee 2," etc.

We employed this analysis method because we believe it captures the words and themes that categorize them into main ideas, addressing the research question of "what time management tools and practices are used?" We opted out of a codebook because we only had 6 interviewees, which did not yield enough data for a comprehensive codebook. The initial and final emergent thematic coding are both attached in the appendix. Our most significant findings are numbered below:

1**. Taking on too many tasks:** Our results indicate that interviewees tended to distinguish between takings on too many tasks versus the inability to effectively manage time, with all of them identifying with the former.

> **"I think a lot of it has more to do with taking on too many tasks rather than the inability to manage the time."**

This shows that perceived productivity may be linked more to having too many things on one's plate and not being able to pay equal attention to all, which results in a sense of lack of accomplishment.

2. **Prioritize Tasks**: Related to the first point, interviewees have a habit of prioritizing tasks according either to the proximity to the deadline or how many points the assignments are worth (the more the assignment is worth, the more time is spent on it).

> **"I will do the stuff first for which deadline comes first."**

This shows that participants understand one aspect of time management, by allotting more time and care to more important tasks, rather than to all tasks, further aligning with the first finding that there is a distinction between task number versus not being able to time manage.

3. **Combine Physical and Digital Tools:** Several interviewees also bring up that combining digital and physical tools helps them to better manage time, allowing them to digitally keep track of many events while physically taking notes or managing tasks to help with remembering and making sure the tasks get done.

> **"I do both… the paper sheet for me to remind myself hey you need to get this done and I can check it off."**

This finding is interesting as it proposes that adopting both tools to complement each other may prove to be an effective time management practice.

4. **UW Canvas:** Our results indicate that the main and sometimes only UW information system utilized by students is Canvas, where they go to access assignment deadlines which they put on their own calendars.

> **"I mainly use Canvas… and there's a list of assignments due, I use that."**

This suggests that UW should invest more time on maintaining and improving Canvas since it attracts a large user base. It might also suggest that UW needs to upgrade or perform better user experience research on its other services, like the UW event calendars.

5. **Centralized Service:** With regards to UW resources and other time management tools, an overall unifying idea was that a unified information source would be much appreciated and would make UW MSIM students' time management practices much easier.

> **"If all of these could be presented to me in one portal that would make my work much easier."**

This suggests that students find other UW resources to contain valuable information, but are deterred by the complexity and inaccessibility encountered. It might be valuable for UW to consider integrating these other resources into Canvas, which already sees much use.

DISCUSSION & CONCLUSIONS

Our overall research yielded several significant outcomes in understanding what factors affect student perceived productivity. The following are our findings described in the context of our two research questions:

1. **How do time management practices and resulting notions of productivity vary for graduate students across different behaviors and backgrounds?**

   Our most significant findings show:

   a. Student's year in the iSchool seems to play a significant factor in their general productivity and sense of control. The evidence suggests that first year students are still adjusting to the work-life of being a graduate student and are overwhelmed on several fronts like academic work and internship search. This is also supported by our qualitative study where first year students mentioned that there is an overwhelming sense of taking on too many tasks and responsibilities. This often leads to prioritizing tasks based on deadlines which leads to spending less time on tasks which are personally more important or of interest, creating a decreased sense of productivity. Second year MSIM students, on the other hand, feel much more in control of their time, perhaps because they are accustomed to the work-life of graduate studies.

   b. The perception of the loss of time control might have a direct correlation with planning. Our data shows that students who planned their month felt more in control of their time and on an average scored higher on measurable productivity. We can conclude that planning can have a positive impact on an MSIM student's performance.

   c. In terms of working patterns, most MSIM students tend to be a mix of polychrons and monochrons, with a significant minority who are monochrons. While there is no significant relationship between working habits and productivity, most people tend to view polychronic behavior as inefficient. In addition, monochronic behavior has a higher likelihood of allowing students to complete their tasks well in advance.

2. **How do graduate students utilize the information resources provided by the University of Washington to aid their time management?**

a. While there are several channels for accessing information about events, tasks, and deadlines, students prefer more traditional means like **emails**, **word of mouth** and the popular **Canvas**. Our assumption of information overload was proven correct in our interviews, where students lamented the vast number of resources they have to access to keep up-to-date on their activities. A common theme of improvement suggested would be to have a **centralized** portal or calendar for students to manage their academic, career-related, and extracurricular activities.

b. Students are utilizing a wide array of both physical and digital tools for planning their tasks and schedules. While students have a preference for digital tools - with **digital calendar** being the most popular- physical tools like **notebooks** and **Post-it notes** are still being used by a significant population in conjunction with digital tools. The data tells us students prefer using digital calendars for organizing their schedule but prefer using traditional tools like **pen and paper** for writing out task lists. Based on our interviews and quantitative data, we conclude that physical and digital tools are not used in isolation with each other but are often **complementary** in nature.

Based on our conclusions we have identified some simple, **best practices** compiled from our analyses:

1. **With time, things will get better**: First year students will take time to adjust to the environment of a graduate school. It is expected that they will be overwhelmed initially and feel a lack of control and unable to accomplish everything they set out to do. However, as time goes, students will adjust and become more efficient at accomplishing tasks.

2. **Be more monochronic:** Planning out your schedule and taking on tasks in an orderly and sequential manner will increase your chances of finishing them on time and achieve a higher rate of productivity.

3. **Calendars are great, but don't forget the pen and paper:** While new technologies like digital calendars are excellent tools for organizing your schedule, do not underestimate good old post-it notes and paper for writing down your tasks. Physically writing down things can have a positive impact on your commitment level as they are always around you to see.

Below are some **unexpected outcomes** stemming from our analyses:

1. We tried to examine the relationship between the time a person spends working part time and whether or not the person believes that he/she meets deadlines successfully. The data does not present enough evidence to support this claim. This finding is counterintuitive to the general assumption that a person working for a larger number of part time hours would have a greater difficulty in meeting deadlines. (ANOVA) **p-value- 0.669**

2. We tried to examine the relationship between the time a person spends doing leisure activities and whether or not the person believes that he/she is constructive with time use. The general intuitive belief is that people who spend more time doing leisure activities feel that they have not used their time productively. The data does not present enough evidence to support this claim. (ANOVA) **p-value- 0.41.**

Limitations & Solutions

Below, we have identified some limitations that might have affected our findings, and also described how any changes to be made in a future full-scale study:

1. **Possible Hidden Variables**: Psychological and social factors like self-esteem and peer pressure were not considered, which might have played significant roles in student decisions to adopt certain time management practices. By omitting these factors, we might have failed to attribute the findings to more specific causes. In a full-scale study, we will include survey questions that address these topics.

2. **Intended Audience**: By limiting the sample to graduate students from the UW MSIM program, the results may not be wholly generalizable to UW grad students in other programs, UW undergrad, and students from other universities. This sample population may vary greatly across programs, education level, and universities. In a full-scale study, we will conduct the same survey for 10-15 universities dispersed across the U.S. and the world, like Japan and England.

3. **Definition of Productivity:** Productivity is both subjective and objective, so the metrics used here may not necessarily be the most accurate measure. Though we defined our version of the word, we failed to include these definitions in the surveys, which might have led to some confusion between the two productivity types. In a full-scale study, we will include all definitions before the surveys are given.

4. **Productivity & Academic Achievement:** Our study cannot be used to predict academic achievement. Since our participants are graduate students, we assume many of them

relate productivity with academic achievement, rather than to academic, personal, and professional life. By failing to address this distinction prior to taking the surveys, some questions might have been answered incorrectly. In a full-scale study, we will make sure distinctions are made to the participants.

5. **Measuring Actual Productivity:** Our measure of efficiency in achieving goals was self-assessed, which might be subject to bias. In a full-scale study, we will address this by conducting a prolonged field study to observe.

6. **Redundant Questions:** There were certain questions that were not as informative, and did not capture interesting phenomena about the research questions, merely adding extra variables to consider. In a full-scale study, we will limit the number of questions to ensure quality responses, and ensure all questions help address the research questions.

7. **Low Response Rate From Mid-Career Students:** Our responses consisted mostly of full-time students, possibly skewing the findings. Thus, our findings are more applicable towards full-time than mid-career students. In a full-scale study, we will make sure we collect/analyze responses from full-time and mid-career students, even if we need to employ a different sampling method (quota sampling).

8. **Information Overload:** We assumed that an environment of information overload exists in graduate school, however we did not address this assumption explicitly in our interviews and surveys. Stress due to information overload was mentioned briefly during multiple interviews, and in a full-scale study, this factor can be made explicit.

Potential Directions for Future Research

1. A comprehensive study of UW information resources and how students utilize them can be done to better understand the needs of the students and address shortcomings. Centralization of all the UW resources was mentioned as a suggestion by several interviewees and delving into improving the user experience of accessing and organizing events, deadlines and activities through a single channel can save a lot of time and have a potential uptick in student productivity.

2. A targeted study of the time management practices of mid-career and full-time MSIM students would be useful in understanding how a job affects time management practices in the program cohort.

3. A detailed study of polychronic and monochronic behavior with respect to procrastination and planning tendencies can help us understand whether such

behaviors have psychological factors behind them or other factors like cultural, environmental and whether they can be modified.

4. Information Overload as a background factor was not inspected and an investigation of the ways in which students are stressed due to cognitive overload can be further studied to strengthen our assumptions. Understanding how information overload and stress can have a psychological impact on students and affect their productivity can be helpful to understand.

5. Further qualitative studies of students can uncover reasons for the differences in a student's perceived productivity and their goal-achievement behavior. Do students consistently underestimate themselves, or are there other factors at play like culture and

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APPENDIX

1. Survey Participation Email

Hi there!

You have been selected to be a part of a study on **Time-Management Practices of Graduate School Students**. This study is being conducted for the course *IMT 570: Analytic Methods for Informational Professionals*.

The UW iSchool provides many opportunities that places time-restrictions on all of us. How we manage these constraints and juggle our personal lives is unique to us. Your answers will help better understand the information overload and time crunch that students at the University of Washington Information School face, and will inform a primer on the best practices that students find beneficial and identify barriers to productivity.

The online survey (*link provided below*) takes around 10-15 minutes to complete.

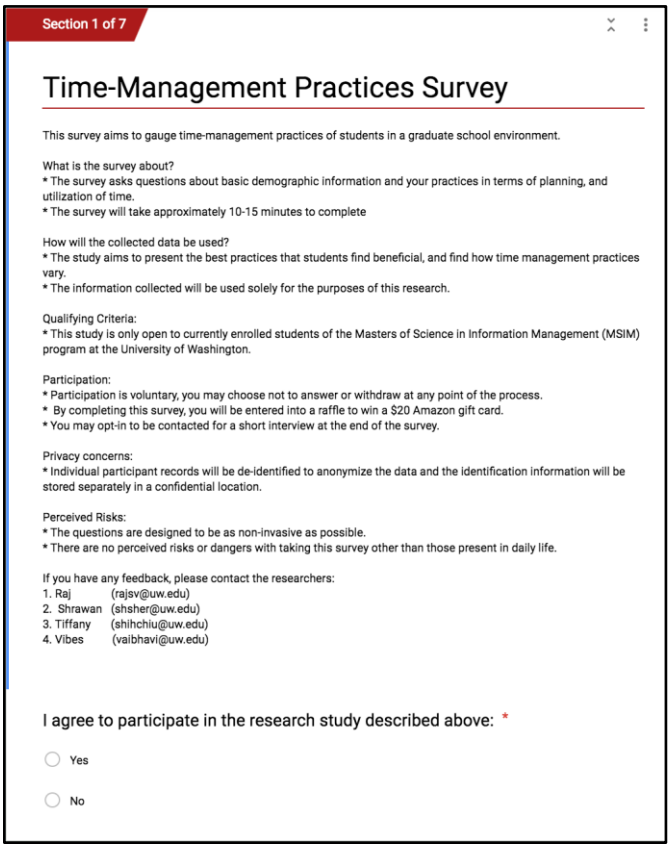
- Participation in the study is entirely voluntary, you are free to terminate it at any stage.
- No personal data will be stored without your permission. We respect your privacy.
- You may opt-in to be contacted for a 20-25 minute interview at the end of the survey.

Your time is precious, and we hope to engage with your thoughts! Hence, completing the survey qualifies your name for a lucky draw with a **20$ Amazon Gift Card** prize. Participation in an in-person interview qualifies your name twice overall for the lucky draw.

If interested, please go to the following link: Time-Management Practices Study

Thank you,
Raj, Shrawan, Tiffany, Vaibhavi
(MSIM Class of 2018)

2. Informed Consent Page



Section 1 of 7

Time-Management Practices Survey

This survey aims to gauge time-management practices of students in a graduate school environment.

What is the survey about?
* The survey asks questions about basic demographic information and your practices in terms of planning, and utilization of time.
* The survey will take approximately 10-15 minutes to complete

How will the collected data be used?
* The study aims to present the best practices that students find beneficial, and find how time management practices vary.
* The information collected will be used solely for the purposes of this research.

Qualifying Criteria:
* This study is only open to currently enrolled students of the Masters of Science in Information Management (MSIM) program at the University of Washington.

Participation:
* Participation is voluntary, you may choose not to answer or withdraw at any point of the process.
* By completing this survey, you will be entered into a raffle to win a $20 Amazon gift card.
* You may opt-in to be contacted for a short interview at the end of the survey.

Privacy concerns:
* Individual participant records will be de-identified to anonymize the data and the identification information will be stored separately in a confidential location.

Perceived Risks:
* The questions are designed to be as non-invasive as possible.
* There are no perceived risks or dangers with taking this survey other than those present in daily life.

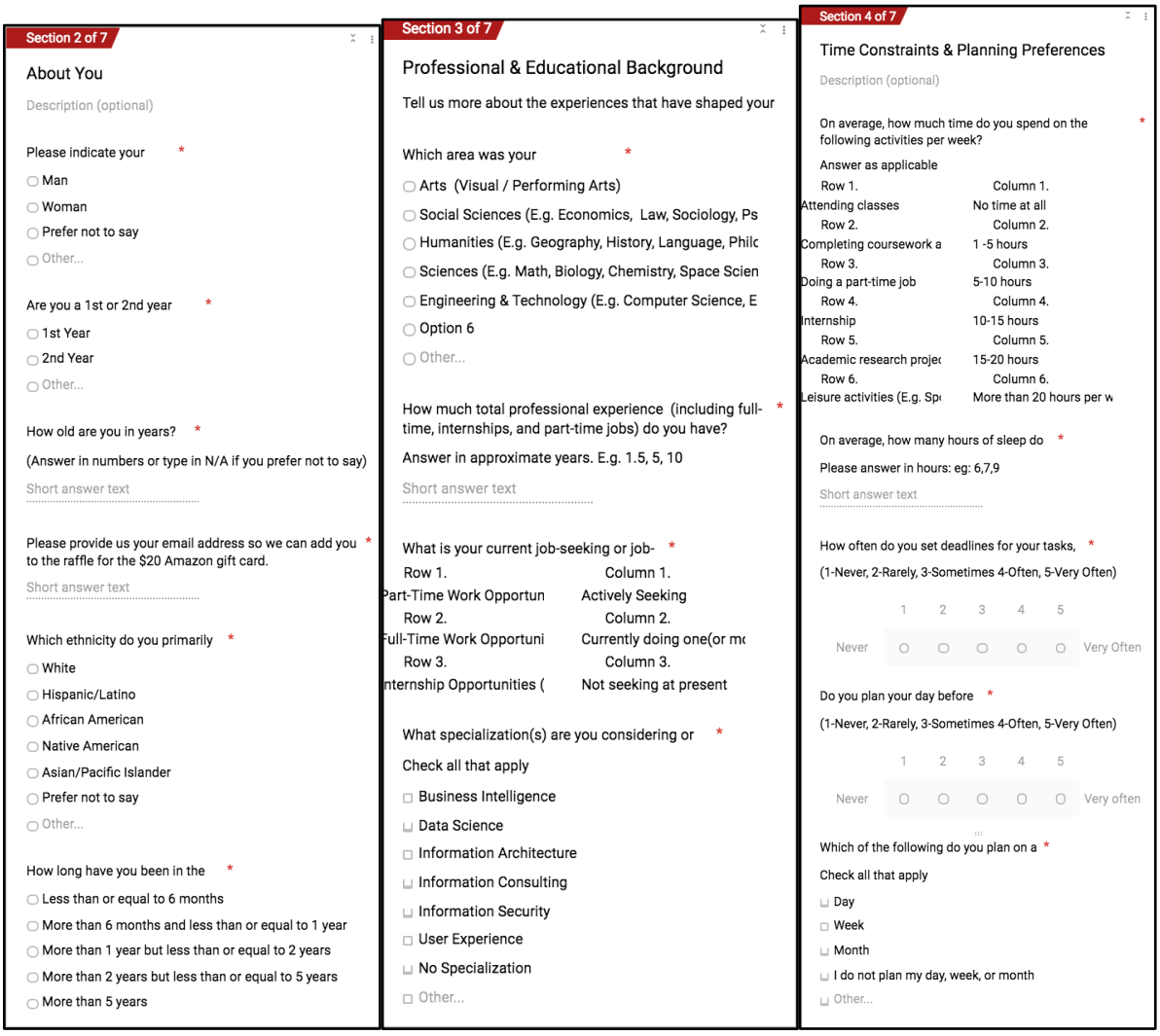
If you have any feedback, please contact the researchers:
1. Raj (rajsv@uw.edu)
2. Shrawan (shsher@uw.edu)
3. Tiffany (shihchiu@uw.edu)
4. Vibes (vaibhavi@uw.edu)

I agree to participate in the research study described above: *

Yes

No

3. Survey Copy



Section 2 of 7

About You

Description (optional)

Please indicate your *

- Man
- Woman
- Prefer not to say
- Other...

Are you a 1st or 2nd year *

- 1st Year
- 2nd Year
- Other...

How old are you in years? *

(Answer in numbers or type in N/A if you prefer not to say)

Short answer text

Please provide us your email address so we can add you to the raffle for the $20 Amazon gift card. *

Short answer text

Which ethnicity do you primarily *

- White
- Hispanic/Latino
- African American
- Native American
- Asian/Pacific Islander
- Prefer not to say
- Other...

How long have you been in the *

- Less than or equal to 6 months
- More than 6 months and less than or equal to 1 year
- More than 1 year but less than or equal to 2 years
- More than 2 years but less than or equal to 5 years
- More than 5 years

Section 3 of 7

Professional & Educational Background

Tell us more about the experiences that have shaped your

Which area was your *

- Arts (Visual / Performing Arts)
- Social Sciences (E.g. Economics, Law, Sociology, Ps
- Humanities (E.g. Geography, History, Language, Philc
- Sciences (E.g. Math, Biology, Chemistry, Space Scien
- Engineering & Technology (E.g. Computer Science, E
- Option 6
- Other...

How much total professional experience (including full-time, internships, and part-time jobs) do you have? *

Answer in approximate years. E.g. 1.5, 5, 10

Short answer text

What is your current job-seeking or job- *

Row 1.	Column 1.
Part-Time Work Opportun	Actively Seeking
Row 2.	Column 2.
Full-Time Work Opportuni	Currently doing one(or mc
Row 3.	Column 3.
Internship Opportunities (	Not seeking at present

What specialization(s) are you considering or *

Check all that apply

- Business Intelligence
- Data Science
- Information Architecture
- Information Consulting
- Information Security
- User Experience
- No Specialization
- Other...

Section 4 of 7

Time Constraints & Planning Preferences

Description (optional)

On average, how much time do you spend on the following activities per week? *

Answer as applicable

Row 1.	Column 1.
Attending classes	No time at all
Row 2.	Column 2.
Completing coursework a	1 -5 hours
Row 3.	Column 3.
Doing a part-time job	5-10 hours
Row 4.	Column 4.
Internship	10-15 hours
Row 5.	Column 5.
Academic research projec	15-20 hours
Row 6.	Column 6.
Leisure activities (E.g. Sp	More than 20 hours per w

On average, how many hours of sleep do *

Please answer in hours: eg: 6,7,9

Short answer text

How often do you set deadlines for your tasks, *

(1-Never, 2-Rarely, 3-Sometimes 4-Often, 5-Very Often)

	1	2	3	4	5	
Never	○	○	○	○	○	Very Often

Do you plan your day before *

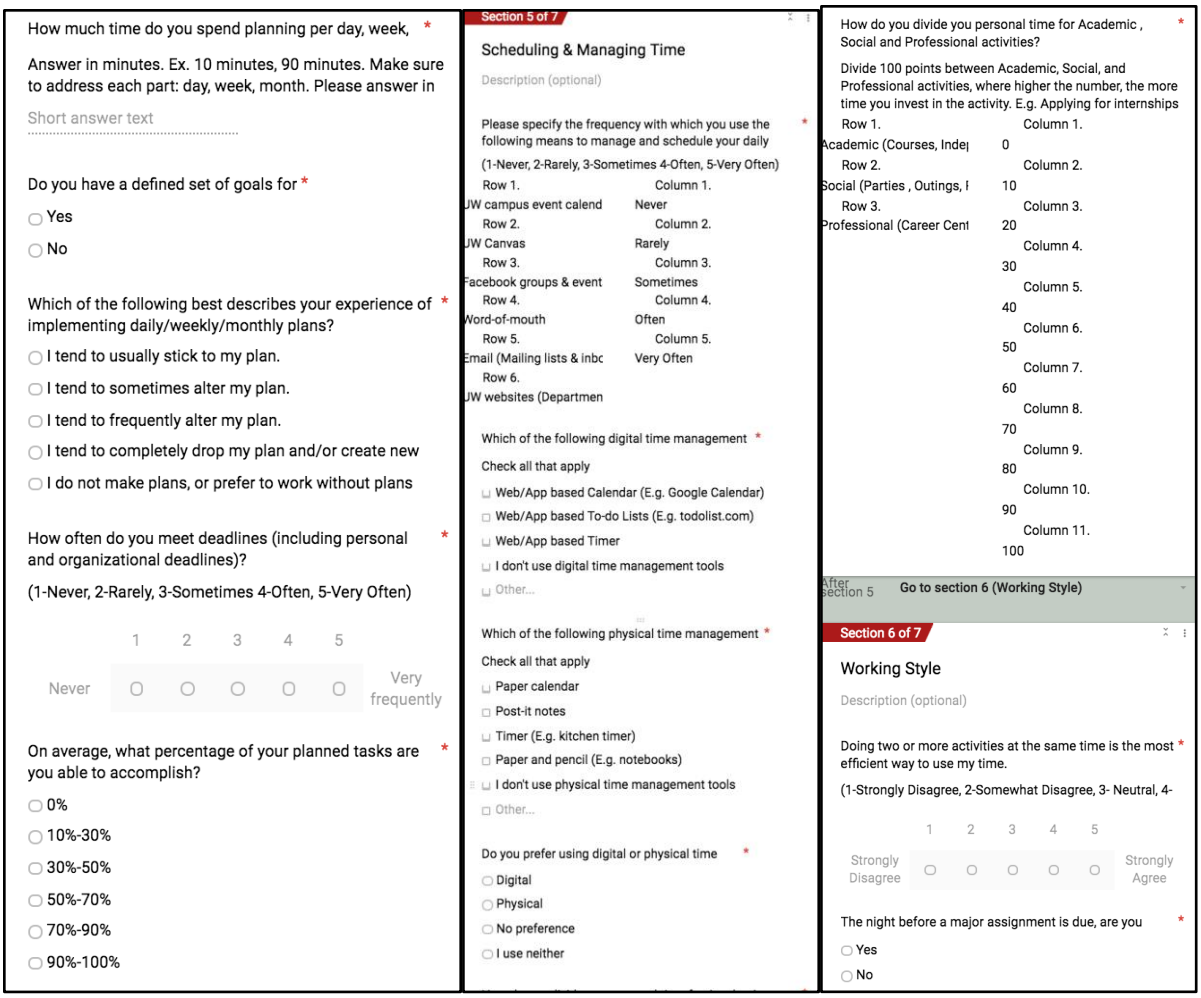
(1-Never, 2-Rarely, 3-Sometimes 4-Often, 5-Very Often)

	1	2	3	4	5	
Never	○	○	○	○	○	Very often

Which of the following do you plan on a *

Check all that apply

- Day
- Week
- Month
- I do not plan my day, week, or month
- Other...



How much time do you spend planning per day, week, *

Answer in minutes. Ex. 10 minutes, 90 minutes. Make sure to address each part: day, week, month. Please answer in

Short answer text

Do you have a defined set of goals for *

- Yes
- No

Which of the following best describes your experience of implementing daily/weekly/monthly plans? *

- I tend to usually stick to my plan.
- I tend to sometimes alter my plan.
- I tend to frequently alter my plan.
- I tend to completely drop my plan and/or create new
- I do not make plans, or prefer to work without plans

How often do you meet deadlines (including personal and organizational deadlines)? *

(1-Never, 2-Rarely, 3-Sometimes 4-Often, 5-Very Often)

	1	2	3	4	5	
Never	○	○	○	○	○	Very frequently

On average, what percentage of your planned tasks are you able to accomplish? *

- 0%
- 10%-30%
- 30%-50%
- 50%-70%
- 70%-90%
- 90%-100%

Section 5 of 7

Scheduling & Managing Time

Description (optional)

Please specify the frequency with which you use the following means to manage and schedule your daily * (1-Never, 2-Rarely, 3-Sometimes 4-Often, 5-Very Often)

	Column 1.
Row 1.	
UW campus event calend	Never
Row 2.	Column 2.
UW Canvas	Rarely
Row 3.	Column 3.
Facebook groups & event	Sometimes
Row 4.	Column 4.
Word-of-mouth	Often
Row 5.	Column 5.
Email (Mailing lists & inbc	Very Often
Row 6.	
UW websites (Departmen	

Which of the following digital time management * Check all that apply

- Web/App based Calendar (E.g. Google Calendar)
- Web/App based To-do Lists (E.g. todolist.com)
- Web/App based Timer
- I don't use digital time management tools
- Other...

Which of the following physical time management * Check all that apply

- Paper calendar
- Post-it notes
- Timer (E.g. kitchen timer)
- Paper and pencil (E.g. notebooks)
- I don't use physical time management tools
- Other...

Do you prefer using digital or physical time *

- Digital
- Physical
- No preference
- I use neither

How do you divide you personal time for Academic , Social and Professional activities? *

Divide 100 points between Academic, Social, and Professional activities, where higher the number, the more time you invest in the activity. E.g. Applying for internships

	Column 1.
Row 1.	
Academic (Courses, Inde	0
Row 2.	Column 2.
Social (Parties , Outings, I	10
Row 3.	Column 3.
Professional (Career Cent	20
	Column 4.
	30
	Column 5.
	40
	Column 6.
	50
	Column 7.
	60
	Column 8.
	70
	Column 9.
	80
	Column 10.
	90
	Column 11.
	100

After Section 5 Go to section 6 (Working Style)

Section 6 of 7

Working Style

Description (optional)

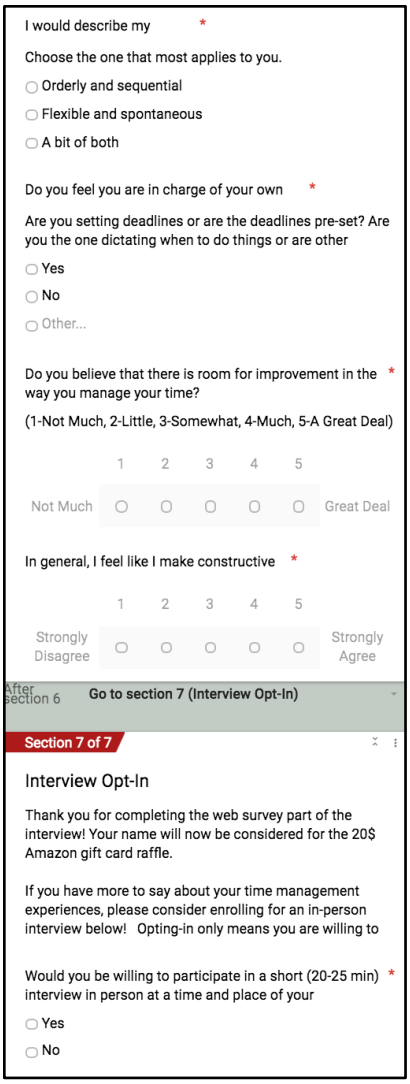
Doing two or more activities at the same time is the most efficient way to use my time. *

(1-Strongly Disagree, 2-Somewhat Disagree, 3- Neutral, 4-

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

The night before a major assignment is due, are you *

- Yes
- No



I would describe my *

Choose the one that most applies to you.

- Orderly and sequential
- Flexible and spontaneous
- A bit of both

Do you feel you are in charge of your own *

Are you setting deadlines or are the deadlines pre-set? Are you the one dictating when to do things or are other

- Yes
- No
- Other...

Do you believe that there is room for improvement in the way you manage your time? *

(1-Not Much, 2-Little, 3-Somewhat, 4-Much, 5-A Great Deal)

	1	2	3	4	5	
Not Much	○	○	○	○	○	Great Deal

In general, I feel like I make constructive *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

After section 6 — Go to section 7 (Interview Opt-In)

Section 7 of 7

Interview Opt-In

Thank you for completing the web survey part of the interview! Your name will now be considered for the 20$ Amazon gift card raffle.

If you have more to say about your time management experiences, please consider enrolling for an in-person interview below! Opting-in only means you are willing to

Would you be willing to participate in a short (20-25 min) interview in person at a time and place of your *

- Yes
- No

4. Interview Participation Email

Thank you for your participation in our Time Management Practices survey for IMT 570!

At the end of the survey, you had indicated your willingness to participate in a short one-on-one interview, and we have selected you as an interviewee.

As an interview participant, you will be asked to meet with a researcher (me!) in a one-on-one interview at a location and time of your preference, between this Sunday (11/27) and Tuesday (11/29).

The meeting may be in-person or a Google Hangout/Skype. The interview should not take more than 25 minutes. You will be asked to provide permission for us to voice record the interview content. The information you provide in the interview will be kept confidential and destroyed at the end of the study on December 17th, 2016. Participation in the interview is voluntary, but contribution will be greatly appreciated.

Thank you and I look forward to a favorable response!

Best Regards,

Shih-Hsuan (Tiffany) Chiu
Master of Science in Information Management Candidate '18
University of Washington Information School
661-236-1665
shihchiu@uw.edu

5. Updated Interview Questions

1. a) Describe briefly a time when you juggled multiple tasks and deadlines and **succeeded**.
   b) What tools & practices helped you in this case?

2. a) Briefly describe a time when you juggled multiple tasks and deadlines and **failed**.
b) What tools or practices might have helped you better deal in this case?

3. How would you **plan for a week**? How do you balance: academics, professional, and social events?(Write/ calendars/what kind of job, internship, load)

4. Name a habit (or more) that you try to practice which you feel makes you feel most **productive /unproductive**?

5. How do you use the **UW information system** ? Are there any changes you can suggest that would help manage your time better?

6. De-identified Interview Assignments

Name of Audio File	Interviewer
Audio 1	Vibes
Audio 2	Vibes
Audio 3	Shrawan
Audio 4	Shrawan
Audio 5	Tiffany
Audio 7	Raj

7. Initial Emergent Thematic Coding

Interviewee 1:
1. Difference: Not being able to manage time vs. taking on too many tasks
2. Crossing things off
3. Branches out to time manage for teams
    a. Use both physical and digital
4. "Strict" time management schedule - plans for the week ahead every Sunday
5. Sacrifices blocked off social times to stay ahead as well as keep up
6. Prefers to be efficient and finish all assignments quickly
7. Only uses UW Canvas a few times a week to check for deadlines

Interviewee 2:
1. "Strict" time management schedule - sets 15 min every day for certain tasks
2. Prefers not to plan - more fluid planning style
3. Spends too much time on each activity, leading to feelings of unproductivity
4. Uses many UW tools and wishes for one unified porta

Interviewee 3:
1. Taking on too many tasks, but finishing each on time; not time management issue
2. Likes checklists - act of writing/typing it down and crossing it out
3. Adapted to available tools
    a. Use both physical and digital
4. Digital mobile calendar is ideal because it syncs with other devices - easy, efficient
5. Uses Canvas for assignment deadlines
6. Takes more care in time managing for teams
7. Enjoys information presented in list format

Interviewee 4:
1. Prioritizes tasks based on urgency and importance
2. Likes working on small bits of a task over time so it is not too overwhelming
3. Underestimates time it takes to finish tasks
4. Digital calendar and paper sheet to check things off - likes checking things off
    a. Uses both digital and physical to manage
5. Takes on too many tasks
6. Mainly use Canvas for deadlines
7. Wishes for one unified calendar

Interviewee 5:
1. Prioritize according to deadline, always finishes tasks
2. Digital tools from different companies
3. Focuses on efficiency
4. Wants Canvas to incorporate into Google Calendar seamlesssly - have one unified portal

Interviewee 6:
1. Prioritize according to deadline, but tends to procrastinate until right before deadline
2. Uses physical notebook and pen, but does not plan
3. Tends to go with the flow/not plan
4. Doesn't perform tasks efficiently, gets sidetracked by activities and breaks
    a. Wants and needs to improve personal habit
5. Wants to centralize services

8. Final Emergent Thematic Coding

Too Many Tasks

"I think a lot of it has more to do with taking on too many tasks rather than the inability to manage the time."

"...juggling...i had 24 other projects I was working on at the same time… But I got them all done…"

Combine Digital with Physical Tools

"I do both… the paper sheet for me to remind myself hey you need to get this done and I can check it off…"

"I had a little post-it note with all my reading assignments… I cross it out as I'm done reading."

UW Canvas

"I mainly use Canvas… and there's a list of assignments due, I use that…"

"Canvas for coursework where it gives you deadlines or assignments coming up…"

Unified Portal

"I would like to centralize all these services."

"If all of these could be presented to me in one portal, that would make my work much easier."

"I would prefer to have one information source to access all relevant information rather than referring to multiple sources."

Prioritize Tasks

"I will do the stuff first for which deadline comes first."

9. Survey Consent Form

Time-Management Practices Survey

This survey aims to gauge time-management practices of students in a graduate school environment.

What is the survey about?
* The survey asks questions about basic demographic information and your practices in terms of planning, and utilization of time.
* The survey will take approximately 10-15 minutes to complete

How will the collected data be used?
* The study aims to present the best practices that students find beneficial, and find how time management practices vary.
* The information collected will be used solely for the purposes of this research.

Qualifying Criteria:
* This study is only open to currently enrolled students of the Masters of Science in Information Management (MSIM) program at the University of Washington.

Participation:
* Participation is voluntary, you may choose not to answer or withdraw at any point of the process.
* By completing this survey, you will be entered into a raffle to win a $20 Amazon gift card.
* You may opt-in to be contacted for a short interview at the end of the survey.

Privacy concerns:
* Individual participant records will be de-identified to anonymize the data and the identification information will be stored separately in a confidential location.

Perceived Risks:
* The questions are designed to be as non-invasive as possible.
* There are no perceived risks or dangers with taking this survey other than those present in daily life.

If you have any feedback, please contact the researchers:
1. Raj (rajsv@uw.edu)
2. Shrawan (shsher@uw.edu)
3. Tiffany (shihchiu@uw.edu)
4. Vibes (vaibhavi@uw.edu)

By clicking yes below, you agree to the terms & conditions and provide your informed consent.

I agree to participate in the research study described above: *

- ○ Yes
- ○ No

10. Survey Email

Thank you for your participation in our Time Management Practices survey for IMT 570!

At the end of the survey, you had indicated your willingness to participate in a short one-on-one interview, and we have selected you as an interviewee.

As an interview participant, you will be asked to meet with a researcher (me!) in a one-on-one interview at a location and time of your preference, between this Sunday (11/27) and Tuesday (11/29).

The meeting may be in-person or a Google Hangout/Skype. The interview should not take more than 25 minutes. You will be asked to provide permission for us to voice record the interview content. The information you provide in the interview will be kept confidential and destroyed at the end of the study on December 17th, 2016. Participation in the interview is voluntary, but contribution will be greatly appreciated.

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11. Interview Audio Files

Name of Audio File	Interviewer
Audio 1	Vibes
Audio 2	Vibes
Audio 3	Shrawan
Audio 4	Shrawan
Audio 5	Tiffany
Audio 7	Raj

12. Survey Questions

Demographics

1. What ethnicity are you?
    - This question reveals cultural and experiential differences that might explain tool and practice adoption choices.
    - Participant Options: Caucasian, Hispanic or Latino, African American, Native American or American Indian, Asian/Pacific Islander, Other _____
2. What gender do you identify with?
    - Participant Options: Male, Female, Prefer Not to Answer
    - The option “Prefer Not to Answer” includes any other identifications and allows people to participate who do not wish to disclose their gender identity.

3. How old are you? _____ years
    - This question allows for manual input because there might be a broad range of ages for graduate students. Some students might have just finished undergrad while others might have been in the workforce for a long time (ex. fresh grads vs. mid-career professionals).

Details related to Background

4. How long have you lived in the states?
    - Participant Options: Less than or equal to 6 months, More than 6 months and less than or equal to 1 year, More than 1 but less than or equal to 2 years, More than 2 but less than or equal to 5 years, More than 5 years
5. What was your undergrad major area?
    - Participant Options: Humanities/Arts/History, Business/Economics/Finance, Engineering & Sciences (CompSci,Math,Bio etc), Other _____
6. How much professional experience have you had (full-time and/or part-time)?
7. What specialization(s) are you considering or currently pursuing? (check all that apply)
    - Participant Options: Business Intelligence, Information Architecture, Information Security, Information Consulting, Data Science, User Experience (UX), Not Decided, No Specialization
8. What is your job-seeking or job status (employment, internship, part-time, full-time)?

Seeking one or more of part-time/full-time/internship opportunities /
Not seeking any part-time/full-time/internship opportunities/

9. On average, how much time do you spend on the following activities per week (as applicable)
    - Attending classes - ____ hrs
    - Finishing assignments - ____ hrs
    - Part-time campus jobs - _____ hrs
    - Internships - _____ hrs
    - Full-time job - _____ hrs
    - Academic research projects (with/without credit) - _____ hrs
10. How many hours of sleep on average do you get per day: _____ hrs

Short Term Planning

11. Do you set deadlines for your tasks, events, meetings?
    - Likert Scale
12. Do you plan your day before you start it?
    - Participant Options: Equal Ordinal Ranges revolving around these - Often, Sometimes, Never

13. Do you plan your day, week, month? (choose all that apply)
14. How much time do you spend planning per day, week, month (in minutes)?

Long Term Goals

15. Do you have a set of goals for the entire quarter/year?

Results of Implementation

16. How often do you meet deadlines (includes personal deadlines and organization deadlines)?
    - Using the word "often" is leading but the participant options will represent all spectrums
17. The night before a major assignment is due, are you usually still working on it?
18. What percentage of your tasks are you able to accomplish?
19. Do you tend to stick to your plan or change it?

Time Management Tools

20. Which of the following digital time management tools do you use (ex. online calendar, online to-do lists, apps, I don't use any time management tools, option to input own tools)?
21. Which of the following physical time management tools do you use (ex. paper calendar, post-it-notes,I don't use any time management tools, option to input own tools)?
22. Do you prefer using physical or digital time management tools (ex. post-it notes vs. mobile apps)?

Usage of UW Information Overload/Stressors:

23. In the academic sphere, which sources of information do you use for scheduling/ planning your time in the academic sphere: (Ranking from 1 to 7, with 1 being most used and 7 being least used)
    - UW Campus Calendar for events
    - Official / Unofficial Facebook group for events
    - Word-of mouth
    - UW email
    - UW subscription mailing
    - UW internal websites - datalab, department websites
    - Career center - HuskyJobs & iCareers
24. How often do you feel information overload?

25. Which sphere do you use time management techniques the most in? (divide 100 points between these three; ex. 50 academic, 40 social, 10 professional)
    - Professional ___
    - Academic ___
    - Social ___

Attitude Towards Time: Polychronic vs. Monochronic:

26. Doing two or more activities at the same time is the most efficient way to use my time.
    - Strongly (dis)agree, Somewhat (dis)agree, Neither agree nor disagree,
27. You would describe your working style as: (choose one)
    - Orderly and sequential
    - Flexible and spontaneous
    - Bit of Both

Perceptions about Self Use of Time:

28. Do you feel you are in charge of your own time, by and large (ex. Are you setting the deadlines or are the deadlines pre-set?)?
29. Do you believe that there is room for improvement in the way you manage your time?
30. Do you feel like you make constructive or unconstructive use of your time?

13. Interview Questions

1. a) Describe briefly a time when you juggled multiple tasks and deadlines and **succeeded**.
   b) What tools & practices helped you in this case?

2. a) Briefly describe a time when you juggled multiple tasks and deadlines and **failed**.
b) What tools or practices might have helped you better deal in this case?

3. How would you **plan for a week**? How do you balance: academics, professional, and social events?(Write/ calendars/what kind of job, internship, load)

4. Name a habit (or more) that you try to practice which you feel makes you feel most **productive /unproductive**?

5. How do you use the **UW information system** ? Are there any changes you can suggest that would help manage your time better?