STRUCTURE OF STUDENT TIME MANAGEMENT SCALE (STMS)

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ABSTRACT

With the aim of constructing a Student Time Management Scale (STMS), the initial version was administered and data were collected from 523 standard eleventh students. (Mean age = 15.64). The data obtained were subjected to Reliability and Factor analysis using PASW Statistical software version 18. From 42 items 14 were dropped, resulting in the retention of 28 items on final version. The scale had a Cronbach's Alpha reliability coefficient of 0.885. Factor analysis revealed that the items on final version loaded on 4 factors, which accounted for 39.419% of the total scale variance. The factors were 'Scheduling & Prioritizing', 'Planning & Goal Setting', 'Reviewing & Record Keeping' and 'Organizing & Controlling' of 7 items each and whose Cronbach's Alpha reliability coefficients were estimated to be 0.691, 0.697, 0.707 and 0.685 respectively. Students and teachers can use this scale for self development and guidance respectively.

Keywords: Time Management, Time Management Scale, Scale Development, Reliability Analysis, Factor Analysis.

INTRODUCTION

Time is the period during which an action or event occurs; it is also, a dimension representing a succession of such actions or events. Time is one of the fundamental quantities of the physical world, being similar to length and mass in this respect. The Oxford English Dictionary defines 'time' as "the indefinite continued progress of existence and events in the past, present, and future, regarded as a whole." The American Heritage Dictionary defines time as "a nonspatial linear continuum in which events occur in an apparently irreversible succession." The Latin word for time, 'tempus', came from the Greek 'temnein' meaning "to cut", thus signifying a division of the flowing duration. A famous analogy was one that compares the time of life to the passing of sand through an hourglass. The sand at the top is the future, and one tiny grain at a time, the future flows through the present into the past.

Different people may judge identical lengths of time quite differently. Time can "fly", that is, a long period of time can seem to go by very quickly. Likewise, time can seem to "drag", as in when one performs a boring task. The psychologist Jean Piaget called this form of time perception "lived time." Time also appears to pass more quickly as one gets older. For example, a day for a child seems to last longer than a day for an adult. One possible reason for this is that with increasing age, each segment of time is a decreasing percentage of the person's total experience. Everyone has the same amount of time in an hour, day, week or year. Some people manage their time better than others do and the difference is in planning, which requires self-discipline.

Time is a resource that must be managed in a forward-looking way. It is not like money that one can put in a bank and use at a later time. One must be prepared to use it when the available time arrives. Planning is very important in managing and learning to manage time to get the work done at the level of quality that one desire is an essential skill to learn to be productive and satisfying while allowing time for other important activities with family, friends, or simply to pursue own interests. Time Management is not doing the wrong things quicker; it is about doing the right things, at the right time.

Students complain on a regular basis, all throughout their day that they are flat-out tired. For most, they get the quantity of sleep, but they lack the quality of sleep. Their days are filled with so much stress, they are out of control, working harder but maybe not smarter, that it is difficult to get a full night's sleep. In order to manage time

successfully, having an awareness of the goals will assist in prioritizing one's activities. Time Management provides with the opportunity to create a schedule that works for self, not for others. This personal attention gives the flexibility to include the things that are most important.

Covey (1992) has offered a categorization scheme for the time management approaches that he reviewed: First generation: reminders based on clocks and watches, but with computer implementation possible; it can be used to alert a person when a task is to be done. Second generation: planning and preparation based on calendar and appointment books; includes setting goals. Third generation: planning, prioritizing, controlling (using a personal organizer, other paper-based objects, or computer or PDA-based systems) activities on a daily basis. This approach implies spending some time in clarifying values and priorities. Fourth generation: being efficient and proactive using any of the above tools; places goals and roles as the controlling element of the system and favors importance over urgency.

The two indispensable keys to Time Management are: (i) the ability to set priorities; and (ii) the ability to concentrate single-mindedly on one thing at a time. When thinking about Time Management, people tend to think of personal time management, loosely defined as managing their time to waste less time on doing the things they have to do so that they have more time to do the things they want to do. Therefore, Time Management is often thought of or presented as a set of time management skills; the theory being that once we mastered the Time Management skills, individuals will be more organized, efficient, and happier.

Time management may be aided by a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, projects and goals complying with a due date. This set encompasses a wide scope of activities, and these include planning, allocating, setting goals, delegation, analysis of time spent, monitoring, organizing, scheduling, and prioritizing.

Time Management Skills

Time Management is something from which people can get all benefit in their personal lives as well as in their working lives together with their home and social lives. Those benefits show in a number of ways, including health, well-being and satisfaction with their lives overall. One should always manage time well, and feel in control of life, rather than let events control them. There is no single "method" of time management, either in business or personal life. However, there are various time management tips and techniques, practices and theories, which are worth knowing about. Personal time management skills include - Goal setting, Planning, Prioritizing, Decision-making, Delegating and Scheduling.

Goal Setting: Identifying goals and the unique purpose that gives direction to life, helps to accomplish success. The things accomplished will have more meaning because they link to the vision one had for his / her life. Planning: Planning determines which hours of the day are most productive and to set them aside for important work. It begins by strictly scheduling one's days and weeks and adding in each commitment as one make it (including social ones). Prioritize: Individuals always prioritize whether they think they do or not. When one say "I don't have time", one is really saying "I choose to do something else with my time." When assigning priority to one's tasks, consider the Value versus Urgency. Decision – Making: Decision-making involves mainly four steps – defining the problem, developing alternative solutions, making a decision and executing it and finally evaluating the outcome. Delegating: Delegating is entrusting a task or responsibility to a more junior person/ colleague. Scheduling: Time is a precious commodity; everyone gets an equal share but uses it very differently. Each one looks at time very differently. One's situation and needs influence one's time orientation, but one's time orientation and needs can be changed, leading to more success in life. Actually, once a time-utilization problem is admitted, scheduling one's time may not be as difficult as one may think since several hours are already "filled" with sleeping, eating, showering, working or classes, and other essentials. One only has to schedule the "unfilled," available hours.

Objectives of the Study

The objective of this study intended to achieve was to: (i) develop a STMS for higher secondary school students, (ii) determine the reliability of the scale and (iii) estimate the

factorial validity of the same.

Procedure Adopted for STMS Construction

For the construction of the scale, these five steps were followed.

- Item framing based on review literature and knowledge of the investigator.
- The scale was given to experts for evaluation.
- Checking the applicability with 30 students in preliminary try out.
- The items were selected on the basis of reliability Analysis.
- The selected items were subjected to the factor analysis with KMO sample adequacy.

Item Framing

The items were framed by referring to the concepts and definitions, few statements through review of literature on the subject and also by discussions with experts in the field. These measures include the Time Structure Questionnaire (TSQ) (Feather & Bond, 1983), the Time Management Behavior Scale (TMBS) (Macan, Shahani, Dipboye & Phillips, 1990), behaviorally anchored rating scales examining time urgency (Landy, Rastegary, Thayer & Colvin, 1991), time management scales designed specifically for use in university setting (Britton & Tesser, 1991), and scales assessing self-management practices such as focusing on priority tasks and being goal directed (Williams, Moore, Pettibone and Thomas, 1992). Mudrack (1997) evaluated TSQ and TMBS by analyzing item content, subscale score relibilities, and factor structures. These sources have provided the base for the development of STMS. Before constructing the tools, theoretical constructs were formed consisting of the 4 hypothetical factors namely Scheduling, Planning, Reviewing and Organizing. An item conveying the idea most clearly was retained, and the language of item was made simple and suitable to express the concept implied. This process of scrutiny and evaluation yielded 42 statements shown in Table 1.

Description of the Scale

It is a six-point scale with 42 statements initially. The students were requested to give responses based on their preferences against six options given namely, (i) Strongly Agree (ii) Agree (iii) Seldom Agree (iv) Seldom Disagree (v) Disagree and (vi) Strongly Disagree.

Scoring of the Scale

After obtaining the responses, they were scored. For the positive statements, 'Strongly Agree' response was awarded six points, 'Agree' was awarded five points, 'Seldom Agree' was awarded four points, 'Seldom Disagree' was awarded three points, 'Disagree' was awarded two points and 'Strongly Disagree' was awarded one point. For the negative statements, the scoring procedure was reversed. There are 15 negative statements i.e. statements 5, 11, 12, 13, 14, 17, 19, 20, 22, 23, 26, 27, 31, 38 and 42, rest of all the statements are positive in nature.

Expert Evaluation of Items

In order to establish the validity of the tool, the items were subjected to expert scrutiny. Three professors working in Department of Education, University of Madras were requested to assess the face and content validity.

Preliminary Try-out

The items were arranged in random order and administered to a sample of 30 students to check their applicability. The main aim of this is to check whether students understoo the given context, concept or idea presented in the statements. The students were encouraged to express their doubts freely.

Administration of the Scale

The investigator contacted the Principal or Headmaster/mistress of the selected schools and permission was obtained. The investigator requested eleventh class students to fill the scale. The time taken by the students for filling these scales was around 15 minutes. A total of 530 scales were administered on the selected sample. Out of these, only 523 were returned. Thus a return rate of 98.68% was achieved.

Sample

The data were collected from 523 subjects of standard eleven students of Thiruvallur District of Tamil Nadu, India, drawn from ten schools. Guilford (1954) argued that N should be at least 200, while Comrey and Lee (1992) provided the following guidance in determining the adequacy of sample size: 100= poor, 200 = fair, 300 =

S.No	Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Judgment
1	I use diary for planning my activities.	150.36	660.282	0.436	0.324	0.853	Selected
2	I write reminder notes every day.	150.02	658.114	0.448	0.309	0.852	Selected
3	I make a list of things to be done every day.	149.47	657.002	0.407	0.270	0.853	Selected
4	I keep record of completed tasks.	149.27	656.767	0.423	0.321	0.853	Selected
5	I get stuck in daily time scheduling.	149.42	665.080	0.311	0.251	0.855	Selected
6	I plan for tasks a week in advance.	149.27	655.482	0.407	0.272	0.853	Selected
7	I set priorities for my daily tasks.	149.93	663.115	0.324	0.215	0.855	Selected
8	I set deadlines for my tasks.	148.69	672.708	0.276	0.242	0.856	Not Selected
9	I have set short-term goals for my future.	148.85	655.947	0.467	0.368	0.852	Selected
10	I review my daily activities.	149.32	655.224	0.452	0.342	0.852	Selected
11	I feel I spend too much time on entertainment.	149.80	661.336	0.378	0.253	0.854	Selected
12	I take too many tasks at the same time.	149.14	656.290	0.438	0.331	0.852	Selected
13	I find it difficult to keep my schedule.	148.61	667.952	0.327	0.277	0.855	Selected
14	I feel unimportant tasks consume my time.	148.89	658.385	0.424	0.319	0.853	Selected
15	I have long-term goals in my mind.	149.72	656.676	0.410	0.275	0.853	Selected
16	I modify my short-term goals according to the demands.	150.25	653.069	0.436	0.344	0.852	Selected
17	My plans get cancelled at times.	149.36	656.849	0.408	0.332	0.853	Selected
18	I consider time has high value in life.	149.53	651.592	0.471	0.335	0.852	Selected
19	I postpone the tasks.	150.59	663.264	0.344	0.310	0.855	Selected
20	I think scheduling the task is waste of time.	149.69	656.017	0.422	0.343	0.853	Selected
21	I keep my dress ready for the next day.	150.06	665.570	0.294	0.271	0.856	Not Selected
22	I am bored with my daily activities.	149.67	654.412	0.421	0.306	0.853	Selected
23	I have difficulty in completing my tasks.	149.53	661.522	0.339	0.237	0.855	Selected
24	I have control over my daily routine works.	149.62	651.406	0.461	0.316	0.852	Selected
25	I keep my bag ready for the next day.	149.83	652.935	0.477	0.372	0.852	Selected
26	I give up easily, when I can't succeed in completing my tasks.	149.94	650.216	0.470	0.336	0.852	Selected
27	I adopt short cut ways to finish the tasks.	149.49	649.670	0.458	0.349	0.852	Selected
28	I am punctual to school.	149.16	653.895	0.412	0.354	0.853	Selected
29	I submit my home works, assignments etc. well in advance.	148.94	663.733	0.351	0.241	0.854	Selected
30	I allot time for my hobbies.	149.26	655.339	0.419	0.296	0.853	Selected
31	I get disturbed during my study time.	150.07	686.590	0.104	0.455	0.859	Not Selected
32	I schedule time for recreation and entertainment.	150.48	686.885	0.135	0.277	0.858	Not Selected
33	I ask suggestions from others to manage my time.	149.70	684.335	0.132	0.667	0.859	Not Selected
34	I distribute time for answering the questions accordingly in the examination.	150.32	679.389	0.23	0.258	0.857	Not Selected
35	I concentrate on only one thing at a time.	150.14	691.039	0.077	0.263	0.859	Not Selected
36	I distribute time to the different tasks that I have to accomplish.	150.31	685.045	0.161	0.333	0.858	Not Selected
37	I distribute time to study the different subject depending on the need and nature.	150.11	688.312	0.124	0.110	0.858	Not Selected
38	I look at the watch very often during the examination.	150.08	696.552	-0.012	0.171	0.860	Not Selected
39	I avoid studying half an hour before the examination.	150.31	695.643	-0.004	0.116	0.861	Not Selected
40	I tend to do the easy things first.	149.86	689.011	0.083	0.540	0.859	Not Selected
41	I am able to meet deadlines without rushing at the last minute.	149.83	685.654	0.117	0.583	0.859	Not Selected
42	I waste time in searching things.	150.04	694.154	0.021	0.244	0.860	Not Selected

Table 1. Items and Item-Total Statistics

good, 500 = very good, 1,000 or more = excellent. Thus for the present study, sample size (N=523) was considered very good as far as factor analysis was concerned.

Reliability Analysis

For selecting the valid items required for the factor analysis, item-total correlation coefficients were calculated. Then it

was decided to select items which are significant at 0.001 level with r > 0.3. Thus reliability analysis yielded 28 out of 42 items. The reliability analysis led to the removal of 14 items from STMS, initial version, as shown in Table 1. The Cronbach's Alpha, Spearman-Brown split half and Guttman split half reliability results for final version were compared and given in Table 3.

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy

For the present study KMO measure of sampling adequacy was employed so as to identify the validity of the scale, which was found to be 0.899. For the df of 378 the Approx. Chi-Square value for Barlett's Test of Sphericity was identified as 3.307E3, which was found to be significant at 0.001 level. This estimation proved to be appropriate for the factor analysis.

Factor Analysis

After reliability analyses, the number of items subjected to the factor analysis was 28. The investigator had decided to go with the 4 factors on the basis of the Eigen value more than 1, which coincides with the 4 hypothetical factors namely Scheduling, Planning, Reviewing and Organizing. Principal Component Analysis with varimax (with Kaiser Normalization) rotation and forced solution of four factors was executed that produced the final version, which converged in 10 iterations and shown in Table 2.

Results

Fourteen items were dropped, resulting in the retention of 28 items on final version. The scale had a Cronbach's Alpha reliability coefficient of 0.885. Factor analysis revealed that the items on final version of STMS loaded on 4 factors, which accounted for 39.419% of the total scale variance. Factors I, II, III and IV had 7, 7, 6 and 8 items respectively as such. Besides factor loadings the nature of items were given more consideration in classifying under above mentioned four factors and finally the factors were labeled as 'Scheduling & Prioritizing', 'Planning & Goal Setting', 'Reviewing & Record Keeping' and 'Organizing & Controlling' of 7 items each in accordance with the

Items	Communalities Extraction	Factor 1	Factor 2	Factor 3	Factor 4
I postpone the tasks.	**0.466**	**0.662**			
I give up easily, when I can't succeed in completing my tasks.	**0.443**	**0.605**			
I use diary for planning my activities.	**0.424**	**0.559**		0.307	
I modify my short - term goals according to the demands.	**0.392**	0.530			**0.300**
I keep my bag ready for the next day.	**0.375**	**0.493**			
I set priorities for my daily tasks.	**0.280**	**0.437**			
I write reminder notes every day.	**0.360**	**0.415**		0.332	
I keep record of completed tasks.	**0.514**		0.569	**0.419**	
I make a list of things to be done every day.	**0.397**		**0.530**		
I plan for tasks a week in advance.	**0.356**		**0.529**		
I have long - term goals in my mind.	**0.373**		**0.528**		
My plans get cancelled at times.	**0.441**		**0.515**		0.409
I get stuck in daily time scheduling.	**0.368**		**0.507**		
I consider time has high value in life.	**0.351**		**0.413**		
I review my daily activities.	**0.457**			**0.628**	
I find it difficult to keep my schedule.	**0.469**			**0.616**	
I take too many tasks at the same time.	**0.464**			**0.606**	
I have set short - term goals for my future.	**0.401**		**0.350**	0.467	
I feel I spend too much time on entertainment.	**0.325**	0.364		**0.431**	
I am punctual to school.	**0.299**			**0.380**	
I have difficulty in completing my tasks.	**0.371**				**0.575**
I am bored with my daily activities.	**0.415**				**0.573**
I think scheduling the task is waste of time.	**0.464**	**0.332**			0.509
I allot time for my hobbies.	**0.391**		0.387		**0.479**
I submit my home works, assignments etc. well in advance.	**0.354**		0.366		**0.462**
I feel unimportant tasks consume my time.	**0.396**			**0.404**	0.448
I have control over my daily routine works.	**0.344**	0.363			**0.376**
I adopt short cut ways to finish the tasks.	**0.348**		0.342		**0.366**
Total (28)		7	7	7	7

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 10 iterations. **Rotation Sum of Squares Variance: Total %: 39.419, Factor 1%: 10.708, Factor 2%: 9.886, Factor 3%: 9.727, Factor 4%: 9.098**

Table 2. Rotated Component Matrix

Factors	Items	Cronbach's Alpha	Spearman -Brown Split Half	Guttman Split Half
Factor 1-Scheduling & Prioritizing	7	0.691	0.657	0.638
Factor 2-Planning & Goal Setting	7	0.697	0.687	0.672
Factor 3-Reviewing & Record Keeping	7	0.707	0.685	0.674
Factor 4-Organizing & Controlling	7	0.685	0.673	0.662
Time Management Scale	28	0.885	0.842	0.840

Table 3. Reliability Analysis

hypothetical factors already kept in mind while constructing the scale.

Implications

In student's life, time is very precious and should be managed with utmost care. It can be very well stated that if a student manages his/ her time well, then it is obvious that he/ she can organize most of the activities efficiently and effectively. This scale will be very useful in self analyzing their time management. Once they identify the areas where they lack, then there is every chance that they can go for improvement. Moreover, it is recommended that the teachers of higher secondary school can very well make use of this scale for giving guidance and orientation towards personal management for their students.

Conclusion

After the statistical treatment of reliability and factor analysis, 28 out of 42 items were retained. It was concluded that the 28 items in STMS in its present (final version) form was capable of effectively measuring student time management along with its four factors viz 'Scheduling & Prioritizing', 'Planning & Goal Setting', 'Reviewing & Record Keeping' and 'Organizing & Controlling' among higher secondary students. Students and teachers can use this scale for self development and guidance respectively.

References

[1]. **Britton, B. K., & Tesser, A. (1991).** Effects of time-management practices on college grades. *Journal of Educational Psychology*, 83, 405-410.

[2]. **Comrey, A. L. & Lee, H. B. (1992).** *A first course in factor analysis.* Hillsdale, New Jersey: Erlbaum.

[3]. **Covey, S. (1992).** *Principle-centered leadership.* NewYork, NY:Fireside.

[4]. **Feather, N. T, & Bond, M. J. (1983).** Time structure and purposeful activity among employed and unemployed university graduates. *Journal of Occupational Psychology*, 56, 241-254.

[5]. **Guilford, J. P. (1954).** *Psychometric methods* (2nd ed.). New York: McGraw Hill.

[6]. **Landy, F. J., Rastegary, H., Thayer, J., & Colvin, C. (1991).** Time urgency: The construct and its measurement. *Journal of Applied Psychology*, 76, 644-657.

[7]. **Macan, T H., Shahani, C., Dipboye, R. L., & Phillips, A. R (1990).** College students' time management: Correlations with academic performance and stress. *Journal of Educational Psychology,* 82, 760-768.

[8]. **Mudrack, P. E. (1997).** The structure of perceptions of time. *Educational and Psychological Measurement,* 57, 222-240.

[9]. **Williams, R. L., Moore, C. A., Pettibone, I J., & Thomas, S. P. (1992).** Construction and validation of a brief self-report scale of self-management practices. *Journal of Research in Personality,* 26, 216-234.

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