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A Preliminary Study on Time Management in Undergraduate Industrial Design Students

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Abstract: *Time management is one of the most important factors affecting the learning process and outcome. The purpose of this study aims to explore the time management behaviors and attitudes of undergraduate industrial design students. The study applied a time management questionnaire to 646 students, ranging from sophomores to seniors, from seven universities in Taiwan. The findings are summarized as follows: 1) Most students recognize the importance and effectiveness of time management. 2) Most students are dissatisfied with the time management and methods used. 3) Female students have better planning and control of time than male students. 4) Degree of time management increases along with school year increment, however the ratio of completing tasks on time declines accordingly.*

Keywords: Design, time management, education.

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Introduction

Due to recent changes in the market environment, Taiwanese corporations are facing transformation from basic industrial and Original Equipment Manufacturing (OEM) based models to high-tech industries. Therefore, these companies are progressing to establish branding in which design plays a highly important role. For this reason, many colleges and universities establish design-related departments to commit to training and incubation of professional designers. The development of design professionalism not only includes learning from knowledge-based courses but also from many technical and practical courses that require hands-on operations (Hou 2006). Therefore, students become quite disoriented when it comes to managing learning time due to the necessary level of engagement in the course, assignments, leisure, and sleep activities, as well as facing considerable pressure (Yang, You, and Lin 2003). Design learning differs from general learning in that long-term thinking, training and development are required from the design process, and only through continuous development and integral thinking students will be able to propose innovative solutions (Wong and Siu 2012). Hence, time management becomes an issue meriting further discussion in terms of design learning. The purpose of this study aims to discuss the time management behaviours and attitudes of undergraduate industrial design students.

Literature Review

Time management

Time management comprises many issues, and the definition given by Wikipedia (Wikipedia 2012) is described below:

> "Time management is the act or process of planning and exercising conscious control over the amount of time spent on specific activities, especially to increase effectiveness, efficiency or productivity."

Time management involves action, planning, efficiency and effectiveness. For a project to succeed, time management is one of the most important factors (Ibbs and Kwak 2000). A good time management approach will improve project quality. From the perspective of education, students with good time management will experience better learning effects (Britton and Tesser 1991).

Time management allows users to manage and plan according to their knowledge, whereas good time management can effectively process things in the right order. Users can utilize schedules or task lists to confirm things that need to be done and to gradually complete goals. Time management can also be regarded as self-disciplined behavior to use time more effectively and to speed up completion time (Ceng and Shih 1994).

Time management is particularly important for students who are engaged in many daily activities, including classes, assignments, clubs, breaks, and meals. Students will inevitably encounter conflicts between various activities in their daily routines. In particular, students are frequently faced with the dilemma of assignments or tests – whether they should execute tasks according to priority of order or importance. Time management enables students to deal properly with all kinds of complicated situations (Dille and Söderlund 2011).

Time management of design students

Time management is related to student learning. In general, students with better time management will achieve higher academic performance (Claessens et al. 2007). The professional curriculum of the design major covers fields in engineering, aesthetics and business (Cheung 2012) while emphasizing "learning by doing" (Schön 1987). For this reason, students not only have to cope with varying course content during the learning process but they also need to complete various practical projects for core courses during their spare time. Design students spend a considerable amount of time on professional courses while frequently neglecting other courses or even complete assigments for design practice projects in other classes. It is quite common for students with a design major to take a leave of absence from other courses or even work all night for assignments. These students do not have time for association activities (Yang, You, and Lin 2003). Therefore, it is clear that time managemnet issues for students of design education are worthy of discussion.

Method

The study aims to discuss time management issues for students in industrial design education, in an attempt to gain insight into students' use of time management in the process of professional learning.

Subjects

The study objects ranged from sophomores to seniors in industrial design education from universities and colleges in Taiwan. The study adopted a questionnaire survey with a total of 652 respondents from seven departments and colleges. After deducting six invalid questionnaires, the number of valid questionnaires came to 646. Among the seven schools that responded, two were national universities, two were private universities, two were national universities of technology, and one was a private university of technology.

Data Collection and Analysis

To understand the time management of students in industrial design education, the study adopted The University Student Satisfaction and Time Management Questionnaires v.6 designed by Neill (2012). The questionnaire consists of learning satisfaction and time management; nonetheless, the study only adopted the questions on time management with detailed information as shown in Table 1. The questionnaire scale adopts a 5-point Likert Scale, where 1 represents "*this statement doesn't describe me at all; it isn't like me*" and 5 represents "*this statement describes me very well; it is very much like me*". The study first obtained consent from the targeted departments and assigned survey personnel to assist with issuing questionnaires in person or via the relevant teachers or graduate students from the schools. Each questionnaire took about 20–30 minutes to complete. The questionnaires were manually input into Microsoft Excel which was then sorted and proofread before conducting statistical analysis using Statistical Package for Social Science (SPSS) statistical software package.

Table 1. Time Management Questionnaire (Sourced from Neill (2012))

No.	Questions
1	My life is well organized.
2	I manage the way I use my time well.
3	I am clear about what I want to accomplish.
4	I do things in order of priority.
5	I use my time effectively.
6	I procrastinate over doing difficult tasks.
7	I accurately predict how long tasks will take.
8	I waste a lot of time.
9	I am on top of my important tasks at the moment.
10	I accomplish what needs to be done each day.
11	I do the most important tasks during my most energetic periods of the day.
12	I prepare a daily or weekly "to do" list.
13	I spend a lot of time mucking around.
14	I meet deadlines on time.
15	I easily get distracted from important tasks.
16	I get tasks done on time.
17	I find myself procrastinating over tasks that need to be done.
18	I have a weekly schedule on which I record fixed commitments.
19	I spend too much time on trivial matters.
20	I complete important tasks before they are due.
21	I often get interrupted when working on tasks.
22	I am in charge of how my time is spent.
23	I am satisfied with the way I use my time.
24	I find distractions to be very tempting.
25	I make and follow plans to achieve my goals.
26	I have a hard time concentrating.
27	I balance work, rest, and play.

The original design of the time management questionnaire consisted of 27 questions divided into three sections, as shown in Level 1 of Figure 1, namely *Time Management Effectiveness*, *Time Management Action* and *Procrastination*. To validate the survey results, the questions from the questionnaire underwent factor analysis to carry out classification validation. The analytical results showed that all questions could be divided into five factors, and these factors are named *Time Management Effectiveness*, *Attention*, *Time Management Action*, *Planning*, and *Procrastination* according to the content comprising the questions. The relationship between the five

factors and the original design constructs of the questionnaire is shown in Figure 1. Table 2 refers to the factor analysis results, where each factor's Cronbach's alpha (α) is also listed. The Cronbach's α of *Time Management Effectiveness* is 0.722, *Attention* is 0.831, *Time Management Action* is 0.753, *Planning* is 0.719, and *Procrastination* is 0.554. The overall Cronbach's α of the entire questionnaire is 0.670.

Figure 1. Time Management Scale Structure

Table 2. Time Management Scale Structure

	Factors				
No.	Effectiveness	Attention	Action	Planning	Procrastination
5	0.758	-.200	.228	.158	-.099
2	0.756	-.160	.193	.199	-.153
23	0.671	-.181	.201	.129	-.097
1	0.648	-.156	.264	.301	-.086
7	0.579	-.073	.223	.019	.087
8	-0.512	.429	.080	-.146	.401
4	0.479	-.170	.440	.183	-.146
27	0.425	.060	.305	-.077	.154
11	0.363	-.168	.275	.253	.050
24	-.136	0.805	-.108	-.037	.107
26	-.085	0.798	-.239	-.043	.002
15	-.060	0.778	-.203	-.099	.107
21	-.120	0.659	-.004	.084	.044
19	-.429	0.537	.167	.030	.317
13	-.233	0.504	-.008	-.328	.423
20	.086	.027	0.692	.059	-.169
3	.212	-.165	0.624	.128	-.002
16	.363	-.071	0.595	-.010	-.253
9	.222	-.236	0.578	.061	.236
22	.161	-.059	0.564	.234	-.060
10	.403	-.095	0.438	.081	-.193
18	.075	-.045	.077	0.86	-.008
12	.210	.013	.188	0.781	.000
25	.430	.003	.308	0.457	-.138
6	.183	.039	-.193	-.008	0.719
14	-.445	.273	-.046	-.110	0.554
17	-.363	.284	-.099	.089	0.509
Total	4.456	3.502	3.007	2.089	1.861
% of Variance	16.505	12.969	11.137	7.736	6.892
Cumulative %	16.505	29.474	40.611	48.347	55.24
Cronbach's α	0.722	0.831	0.753	0.719	0.554

Results

The time management questionnaire survey results for undergraduate industrial design students engaged in professional learning are shown in Table 3. The table includes descriptive statistics of genders and courses. In view of the overall student data, the three questions with the highest score in the time management questionnaire are ***Question 20****: I complete important tasks before they are due*. (M = 3.730, SD = 0.930), ***Question 22****: I am in charge of how my time is spent*. (M = 3.620, SD = 0.878) and ***Question 3****: I am clear about what I want to accomplish*. (M = 3.600, SD = 0.982). The three questions with the lowest scores were ***Question 23****: I am satisfied with the way I use my time*. (M = 2.760, SD = 0.996), ***Question 2****: I manage the way I use my time well*. (M = 2.810, SD = 1.017) and ***Question 26****: I have a hard time concentrating*. (M = 2.830, SD = 1.093).

Table 3. Descriptive Statistical results of Time Management Scale (Questions with a black background are questions with the highest scores and the questions with a gray background are the ones with lowest scores.)

	Total		Gender				Year of core courses					
			Female		Male		2nd		3rd		4th	
No.	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1	2.940	0.998	2.950	1.000	2.940	0.988	2.910	0.965	2.920	1.006	2.990	1.040
2	2.810	1.017	2.820	1.052	2.810	0.957	2.740	0.995	2.810	1.010	2.900	1.055
3	3.600	0.982	3.590	0.979	3.630	0.980	3.610	1.008	3.610	0.992	3.590	0.940
4	3.410	0.948	3.450	0.974	3.370	0.914	3.410	0.941	3.360	0.970	3.450	0.948
5	2.900	0.959	2.910	0.973	2.890	0.931	2.810	0.957	2.840	0.937	3.060	0.967
6	3.290	1.006	3.280	1.009	3.320	1.000	3.290	1.014	3.320	1.011	3.270	0.996
7	3.000	0.949	2.980	0.975	3.050	0.900	2.960	0.996	2.980	0.933	3.070	0.898
8	3.390	1.032	3.360	1.043	3.440	1.014	3.480	1.062	3.440	0.990	3.250	1.006
9	3.250	0.833	3.260	0.858	3.260	0.796	3.280	0.840	3.190	0.756	3.280	0.889
10	3.040	0.941	3.020	0.935	3.070	0.953	3.080	0.924	2.960	0.975	3.050	0.941
11	3.210	1.036	3.200	1.052	3.230	1.014	3.170	1.006	3.210	1.103	3.260	1.027
12	3.210	1.094	3.330	1.120	3.030	1.030	3.230	1.102	3.190	1.131	3.190	1.052
13	2.870	1.050	2.850	1.050	2.910	1.053	2.870	1.050	2.860	1.093	2.890	1.011
14	3.250	1.151	3.280	1.155	3.200	1.152	3.290	1.177	3.260	1.134	3.210	1.132
15	2.950	1.116	2.890	1.127	3.030	1.104	3.010	1.128	2.930	1.148	2.880	1.078
16	3.580	1.002	3.570	1.019	3.610	0.974	3.690	0.995	3.460	1.068	3.540	0.949
17	3.090	1.062	3.110	1.078	3.040	1.041	3.090	1.083	3.100	1.078	3.090	1.019
18	2.980	1.111	3.150	1.135	2.720	1.027	3.050	1.129	2.930	1.113	2.920	1.078
19	3.500	0.973	3.520	0.959	3.460	0.999	3.550	1.007	3.490	0.985	3.440	0.903
20	3.730	0.930	3.730	0.939	3.740	0.923	3.850	0.951	3.640	0.925	3.630	0.897

No.	Total		Gender				Year of core courses					
			Female		Male		2nd		3rd		4th	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
21	3.220	0.987	3.210	0.981	3.230	1.002	3.320	0.976	3.130	1.003	3.150	0.981
22	3.620	0.878	3.630	0.870	3.630	0.884	3.740	0.855	3.480	0.921	3.560	0.858
23	2.760	0.996	2.770	1.004	2.760	0.984	2.720	1.025	2.720	1.017	2.850	0.939
24	3.260	1.099	3.180	1.118	3.370	1.068	3.240	1.124	3.270	1.185	3.290	0.996
25	3.270	0.860	3.300	0.855	3.230	0.870	3.290	0.894	3.180	0.871	3.290	0.788
26	2.830	1.093	2.740	1.064	2.940	1.130	2.820	1.137	2.880	1.139	2.780	0.993
27	3.420	1.025	3.390	1.001	3.480	1.055	3.500	1.046	3.350	0.995	3.340	1.014

The results show that students of industrial design highly recognize the importance of time management while most students believe that good time management will help them to learn. Nonetheless, in view of the questions with the lowest scores, students may know the importance and effectiveness of time management, but the number of students who actually use good time management is relatively lower.

Time Management and Gender

According to the statistical results by gender in Table 3, the three questions receiving the highest score for male and female students are identical, namely, ***Question 20****: I complete important tasks before they are due*. (Female M = 3.730, SD = 0.939, Male M = 3.740, SD = 0.923), ***Question 22****: I am in charge of how my time is spent*. (Female M = 3.630, SD = 0.870, Male M= 3.630, SD = 0.884) and ***Question 3****: I am clear about what I want to accomplish*. (Female M = 3.590, SD = 0.979, Male M = 3.630, SD = 0.980).

The three questions where male and female students received the lowest scores differed somewhat. The three questions for which the female students received the lowest scores were ***Question 26****: I have a hard time concentrating*. (M =2.740, SD = 1.064), ***Question 23****: I am satisfied with the way I use my time*. (M =2.770, SD = 1.004) and ***Question 2****: I manage the way I use my time well*. (M =2.820, SD = 1.052). Therefore, the female students are dissatisfied with their performance in terms of time management.

The three questions where the male students received the lowest scores were ***Question 18****: I have a weekly schedule on which I record fixed commitments*. (M = 2.720, SD = 1.027), ***Question 23****: I am satisfied with the way I use my time* (M = 2.760, SD = 0.984), and ***Question 2****: I manage the way to my time well*. (M =2.820, SD = 1.052). Only few male students have the habit of recording work to be executed while they are also dissatisfied with their time management and effective use of time.

To further understand differences in different gender responses, the study conducted analysis of variance (ANOVA) and listed those questions with a significant difference in scores according to gender, as shown in Table 4. The questions where male and female students showed significant difference in scores were ***Question 12****: I prepare a daily or weekly "to do" list*, where female students received higher scores for planning to-do-lists than male students, indicating that more female students plan work time in advance. In addition, on ***Question 18****: I have a weekly schedule on which I*

record fixed commitments, the results showed that female students have weekly timetables where they record and routinely execute work in a significantly higher ratio than male students. Furthermore, on ***Question 24****: I find distractions to be very tempting;* the statistics show that male students are more easily distracted than female students. This is borne out in ***Question 26****: I have a hard time concentrating* where the statistics show that male students find it harder to concentrate than female students. In general, female students are more diligent in making notes and time planning, and they also routinely record to-do lists in their schedule. Their attention is more focused than male students. Both male and female students are clear about their tasks and objectives and can complete work within the due date. However, they are both dissatisfied with the section on self-control of time, indicating that the male students could not effectively manage and use their time well.

Table 4. The ANOVA Test Results for Time Management Scores in Different Genders (* p < .05, ** p < .01, *** p < .001, F: Female, M: Male)

No.	Question	F	P	
12	I prepare a daily or weekly "to do" list.	11.533	.001**	F > M
18	I have a weekly schedule on which I record fixed commitments.	23.730	.000***	F > M
24	I find distractions to be very tempting.	4.642	.032*	M > F
26	I have a hard time concentrating.	5.159	.023*	M > F

Time Management and Courses

From the perspective of courses, the results listed in Table 3 show that the three questions receiving the highest scores by sophomores were ***Question 20****: I complete important tasks before they are due*. (M = 3.850, SD = 0.951), ***Question 22****: I am in charge of how my time is spent*. (M = 3.740, SD = 0.885) and ***Question 16****: I get tasks done on time*. (M = 3.690, SD = 0.995). The three questions receiving the lowest scores were ***Question 23****: I am satisfied with the way I use my time*. (M = 2.720, SD = 1.025), ***Question 2****: I manage the way I use my time well*. (M = 2.740, SD = 0.995) and ***Question 5****: I use my time effectively*. (M = 2.810, SD = 0.957). The three questions receiving the highest scores from the juniors were ***Question 20****: I complete important tasks before they are due*. (M = 3.640, SD = 0.925), ***Question 3:*** *I am clear about what I want to accomplish*. (M = 3.610, SD = 0.992) and ***Question 19:*** *I spend too much time on trivial matters*. (M = 3.490, SD = 0.985). The three questions receiving the lowest scores were ***Question 23****: I am satisfied with the way I use my time*. (M = 2.720, SD = 1.017). ***Question 2:*** *I manage the way I use my time well*. (M = 2.810, SD = 0.1.010) and ***Question 5****: I use my time effectively*. (M = 2.840, SD = 0.937). The three questions receiving the highest scores from seniors were ***Question 20****: I complete important tasks before they are due*. (M = 3.630, SD = 0.897), ***Question 3:*** *I am clear about what I want to accomplish*. (M = 3.590, SD = 0.940) and ***Question 22:*** *I am in charge of how my time is spent* (M = 3.560, SD = 0.858). The three questions receiving the lowest scores were ***Question 26:*** *I have a hard time concentrating*. (M = 2.780, SD = 0.993), ***Question 23****: I am satisfied with the way I use my time*. (M = 2.850, SD = 0.939) and ***Question 15:*** *I easily get distracted from important tasks*. (M = 2.880, SD = 1.078).

From the results above, it can be inferred that the students tend to have better time management as they grow. However, their awareness of achieving goals declines

accordingly, which could be due to special themes and graduation project production from senior learning courses, where the scope of teaching curriculum topics is more general. As a result, students can select their main topics and plans based on their preference. Questions for sophomore and junior students are mostly drafted by teachers for single product design or design competitions; hence, sophomore and junior students have a smaller and clearer scope of topics and objectives compared with senior students.

The results of ANOVA test analysis and Duncan's multiple range test of time management in different courses is shown in Table 5. This only lists those topics showing a significant difference, described as follows. ***Question 5****: I use my time effectively*. The results show that seniors use time more effectively than sophomore and junior students. **Question 16:** I get tasks done on time. The results show that sophomore students complete work on time more than juniors. ***Question 20****: I complete important tasks before they are due*. The results show that sophomore and junior students can complete important tasks on time while senior students are less likely to complete important tasks; in other words they experience delays. ***Question 22****: I am in charge of how my time is spent*. The results show that sophomore and junior students have more autonomy in their time use; that is, they are more actively scheduling their time while seniors have a lower sense of autonomy over their use of time. In general, students believe that their utilization of time management improves over time; however, they could not complete work or important tasks on time. The results indicate that there are certain conflicts in self-identifying by students. By inference, the results show that the progress of professional course of sophomores and juniors is arranged by the teacher. Therefore, students find it easier to control the amount of time for tasks and hence can complete their important tasks more easily than seniors.

Table 5. The ANOVA test results for time management scores of different courses (* p < .05, ** p < .01, 2: Second year, 3: Third year, 4: Fourth year)

No.	Question	F	p	Duncan
5	I use my time effectively.	4.355	.013*	(2,3) < (4)
16	I get tasks done on time.	3.107	.045*	(2,3) ≥ (3,4)
20	I complete important tasks before they are due.	4.136	.016*	(2,3) > (4)
22	I am in charge of how my time is spent.	5.232	.006**	(2,3) > (4)

Concluding remarks

The purpose of this study is to investigate undergraduate industrial design students' attitudes and behaviors toward time management. The research findings show that most students are clear about their objectives of work and tasks while completing them timeously. Nonetheless, the students are less efficient in terms of time control; they are also dissatisfied with their method of time use and they can easily be distracted.

Time Management and Gender

The difference in attitudes and behaviors of time management for different genders are differentiated in five factors from the questionnaire for discussion. The results of the survey show that female students tend to be more effective in time management

than male students. In other words, female students organize and plan their time to effectively manage and use time, in addition to completing projects in the order of priority. Male students perceive that they need to take care of work, leisure and entertainment. In terms of attention, male students are more likely to be faced with distraction and could more easily be interrupted during work. Female students also record their daily or weekly to-do list on the calendar and will work one by one through tasks until completion. As for delays, the female students are most likely to face delays. Male students often process difficult things at the last minute while female students may not be able to solve difficult things in the middle and get stuck with, which may ultimately cause delay in completing tasks.

In general, a higher proportion of female students carry out time management than male students. The main similarity between the male and female students is the clarity in achieving goals as well as completing tasks before the due date. However, neither male nor female students are satisfied with their time use and could not manage and use time effectively.

Time Management and Year of Study

From the perspective of the year of study, students of higher grade can use time more effectively. Senior students have fewer elective courses than lower grade students. Hence, they have considerable more flexibility and freedom in choosing electives. Students can take into consideration their daily routines for the scheduling of core courses. In view of the five factors of time management, students with more seniority present higher effectiveness in time management and they will have better organization and planning skills to enable them to effectively utilize time. In terms of attention, students with higher grade tend to be more focused while spending less time on errands or allowing themselves to be interrupted during work. In terms of action though, students with higher grade have lower accomplishment in terms of timely completion of work and completion of important tasks before the due date. Furthermore, in terms of planning, students of higher grade are less likely to routinely record to-do lists or draft plans. In sum, students of higher grade identify with effective time management. But for some reason, they could not complete work on time despite having plans for time management.

In terms of course content and teaching objectives, the teaching objective for sophomore design courses mainly focuses on teaching students to learn design through the process. Teachers have standardized the design process in terms of course arrangement, where students only need to follow each process, and implement relevant design operations and tasks. So, most students can complete the goals on time. When they become juniors, the focus of courses will change. The learning objective of the course transforms from learning design procedures toward an emphasis on capability in design practices. The project themes and implementation are different from those of the sophomores. Students are encouraged to move toward independent thinking in the course and have more flexibility in terms of design and speed requirements. The senior courses are mostly project-based design, where students are required to complete graduation projects independently. Students can control the theme and progress by themselves. This could lead students to understand time management, although the many uncertain factors stemming from project design could make it hard to follow the original schedule and therefore impede progress to complete all tasks on time.

Design students are faced with many problems in learning. Time management is one of the most important factors. This study emphasizes time management attitudes and behaviors. The research results show the following propositions which merits further discussion. For example, is there any relationship between time management and learning outcome? Does time pressure affect the attitude and behavior of time management? There are many issues which should be explored in design education, and further research is clearly required.

References

Britton, Bruce K., and Abraham Tesser. 1991. "Effects of time-management practices on college grades." *Journal of Educational Psychology* no. 83 (3):405-410.

Ceng, Shi-Qiang, and Yon-Gqi Shih. 1994. *Time management*: National Open University.

Cheung, Ming. 2012. "When mind, heart, and hands meet: communication design and designers." *International Journal of Technology and Design Education* no. 22 (4):489-511. doi: 10.1007/s10798-011-9155-7.

Claessens, Brigitte J.C., Wendelien van Eerde, Christel G. Rutte, and Robert A. Roe. 2007. "A review of the time management literature." *Personnel Review* no. 36 (2):255-276. doi: Doi 10.1108/00483480710726136.

Dille, Therese, and Jonas Söderlund. 2011. "Managing inter-institutional projects: The significance of isochronism, timing norms and temporal misfits." *International Journal of Project Management* no. 29 (4):480-490. doi: 10.1016/j.ijproman.2011.02.007.

Hou, Shih Kuang. 2006. "The Current State and Development of Industrial Design Education in Taiwan." *Journal of Educational Resources and Research* no. 69:93-102.

Ibbs, C. William, and Young Hoon Kwak. 2000. "Assessing project management maturity." *the Project Management Institute* no. 31 (1):32-43.

Neill, James. 2012. *The University Student Satisfaction and Time Management Questionnaire v.6*. university of canberra, Feb 25, 2012 2012 [cited Mar 12 2012]. Available from http://ucspace.canberra.edu.au/display/7126/TUSSTMQ6.

Schön, Donald A. 1987. *Educating the reflective practitioner*: Jossey-Bass San Francisco.

Wikipedia. 2012. *Time Management*. Wikipedia 2012 [cited March 13 2012]. Available from http://en.wikipedia.org/wiki/Time_management.

Wong, Yi Lin, and Kin Wai Michael Siu. 2012. "A model of creative design process for fostering creativity of students in design education." *International Journal of Technology and Design Education* no. 22 (4):437-450. doi: 10.1007/s10798-011-9162-8.

Yang, Ming-Ying, Man-Lai You, and Sheng-Houng Lin. 2003. "Preliminary Study of Learning Situations and Career Issues for University ID Students." *Journal of Design* no. 8 (3):75-89.