Omani Students' Application of the Second Standard for Technology Coaches in Internship Program

Ahmed Y. Abdelraheem* & Talal S. Amir
Sultan Qaboos University, Sultanate of Oman

Abstract: The aim of this study was to investigate the extent to which Omani students apply International Society for Technology in Education (ISTE) second standard for technology coaches and its relation with gender, training institution type, student's specialization, GPA and cohort. A questionnaire of twenty three items to measure the components of the second standard was derived from these components and used. A sample of 171 students was used to collect data. Onsite supervisors were used to evaluate students' application of the second standard. The results indicate that the overall performance of the students reflects a reasonable and acceptable performance but does not reach the target and desirable performance. Statistical analysis shows no significant differences due to gender, and cohort but there were significant differences due to students' specialization, institution type and students' GPA. The study concludes with some recommendations to improve the weak components and revise the procedures and processes of the internship program.

Keywords: ISTE standards, internship, technology coaches, Omani students.

تطبيق الطلبة العمانيين للمعيار الثاني لمدربي التكنولوجيا في برنامج الإلحاق المهني

أحمد يوسف عبد الرحيم* و طلال شعبان عامر

جامعة السلطان قابوس، سلطنة عمان

مستخلص: هدفت هذه الدراسة إلى تقصي مدى تطبيق الطلبة العمانيين للمعيار الثاني للجمعية العالمية للتكنولوجيا في التربية لمدربي التكنولوجيا وعلاقة ذلك بنوع الطلبة ونوع مؤسسة تدريبهم وتخصصهم ومعدلاتهم التراكمية وسنة تخرجهم. تم استخدام استبانة مكونة من ٢٣ فقرة أشتقت من مكونات المعيار الثاني. كما تم استخدام عينة مكونة من ١٧١ طالبا وطالبة. وكذلك تم استخدام المشرفين المقيمين لتقييم تطبيق الطلبة لهذا المعيار. أشارت النتائج إلى أن الأداء العام للطلبة كان معقولا ومقبولا ولكنه لم يحقق الهدف المطلوب. وقد أظهر التحليل الإحصائي عدم وجود فروق في المتوسطات ناتجة عن نوع الطلبة وسنة التخرج بينما أظهر فروقاً ناتجة عن تخصص الطالب ونوع مؤسسة التدريب والمعدل التراكمي للطلبة واختتمت الدراسة بتوصيات لتحسين مواضع الضعف ومراجعة الإجراءات والطرق الخاصة ببرنامج الإلحاق المهني.

الكلمات المفتاحية: معايير الجمعية العالمية للتكنولوجيا في التربية، الالحاق المهني، مدربي التكنولوجيا، الطلبة العمانيين.

*ahmedyar@squ.edu.om

The history of student internships originated in the U.S. in the early twentieth century (Driscoll, 2006). According to Thiel and Hartley (1997) the university of Cincinnati's cooperative education program developed the first college-endorsed internship program in the USA in 1906. The program was developed based on the premise that college students pursuing a professional program of studies needed to find a way to finance their education. The first framework of managing the practical experience element was adapted in the field of education where a major requirement of the teaching certification is practice. Internships are career-oriented curricular endeavors of practical application. Internships also address the issue of "lack of practical application" by giving students an active learning experience in the workplace. Students are able to develop the various applied workplace skills they will need to enable them to make a smooth transition from the classroom to the world of business. Feedback from the aggregated evaluations can be used to revise the curriculum in order to improve student performance and meet employers' needs and expectations (Divine, Miller & Wilson, 2015). Internships are work-based learning experiences that relate to future professions. Students are placed as interns with a wide variety of sponsoring organizations based on their individual fields of interest. These organizations can serve internships in the arts, education, health, communications, business and industry, technology, and many other areas. Students are released from school for part of the school day or school year and work a variable number of required hours on a part-time basis for a designated period. Student interns receive on-the-job, one-on-one training in a work setting from skilled professionals, who provide the knowledge and expertise of their field. Students learn by doing in actual situations through direct, hands-on experiences. They are evaluated and assessed by both their school internship coordinator and their on-site professional supervisor or mentor using an authentic, competency- and performance-based model, portfolios, and exhibitions. Among the many positive educational outcomes of internships are practical experiences, new skills, and improved attitudes and behaviors (Merritt, 2008).

Bukaliya (2012) pointed out that internships are any carefully monitored piece of work or service experience in which an individual has intentional learning goals and reflects actively on what she or he is learning throughout the experience or duration of attachment. Hendrikse (2013) indicated that the benefits of completing an internship include gaining valuable work experience, having an edge in the job market, an opportunity to decide if this is the right career choice and it is a valuable way to build confidence and gain experience. Amir & Ismail (2014) indicate that the internship program plays a significant role in developing the interns' skills and makes them better prepared for a future career. They added that clear and achievable objectives, experienced site-supervisors, orientation, continuous evaluation and feedback throughout the internship period are major factors for a successful internship program.

Most definitions of the concept of internships have been consistent, making it simple to explain the term. According to Furco (1996), internships are defined as programs that engage students in service activities primarily to provide them with hands-on experience that enhances their learning or understanding of issues relevant to a particular area of study. Meanwhile, McMahon and Quinn (1995) noted that internships are supervised work experiences whereby students leave their institutions and become engaged in work-related programs, during which period they are closely supervised by experienced job incumbents. Internships are therefore any carefully monitored piece of work or service experience in which an individual has intentional learning goals and reflects actively on what she or he is learning throughout the experience or duration of attachment.

The internship program described in this study is designed for undergraduate students to gain work experience, that is, experience gained through the workplace as opposed to experiences students gain in lectures and classrooms. Thus, the term Work-Based Learning (WBL) will be broadly used to encompass these experiences, and the literature on WBL is also included to explore the importance of internship programs for undergraduates. Internships can be used as a pedagogical tool. Student interns are employed and receive on-the-job, one-on-one, practical training in hands-on learning experiences. They work with and learn from skilled professionals in a work setting, which provides them opportunities to

Omani Students' Application of the Second Standard for Technology Coaches in Internship Program
Ahmed Abdelraheem & Talal Amir

Vol.9 Issue 4, 2015

associate with the people and the resources that can make work real (Littke, 2004). The job-site professionals provide interns with assignments and responsibilities that will allow them to serve as assistants. Students are exposed to workplace environments, norms of the workplace, work expectations, and obligations (Wynn, 2003). Students participate in meetings and get a feel for what work days are like in their field of interest.

Although the majority of higher education institutions offer internship programs for their students, the exact nature of each program may differ based on the aims and objectives set by the respective institutions. However, all internship programs are mainly formed to provide undergraduates with the opportunity to experience and gain practical knowledge in authentic, professional environments before they graduate. In general, internship programs attempt to merge students' learning gained in a campus-based environment with a real-work environment. Thus, terminologies used to describe this relationship between learning and work become important. Terms such as work-related learning, workplace learning, and work-based learning (WBL) have been used to discuss and describe internship programs. However, the similarities and differences of these terms are not entirely clear (Streumer & Kho, 2006).

Barron, Dawson, & Yendol-Hoppey (2009) surveyed a Microsoft program workshop in Florida. The Survey results revealed that many coaches did not perceive that computers changed the role of the classroom teacher. This view suggests a lack of deep understanding about technology integration. They suggested that the program could be substantially improved by helping the coaches think more deeply about technology integration. In addition, most of the coaches and facilitators who attended the workshops were enthusiastic about the peer coaching concept and had positive attitudes about the integration of technology. However, the perpetual issues of adequate time and resources for the implementation of peer coaching and the integration of technology in K-12 classrooms were recurring themes.

Bradshaw (2002) concludes his study with recommendations for strengthening technology initiatives to increase the likelihood that they will result in better coaching of teaching and learning. Swan & Dixon (2006) investigated the influence of a mentor-supported model of technology training on mathematics teachers' attitudes and use of technology in the classroom. The treatment included six coaching sessions, informal focus groups, and mentor-provided support. The results indicated that mathematics teachers male and female participating in mentor-supported, professional development increased the amount and level of technology use in their practice. Teachers had a desire to learn about technology and understood it was important.

In a study by Holahan, Jurkat, and Friedman (2000), 34 teachers from 33 New Jersey schools were trained not only to use new technology but also to serve as coaches of other teachers at their home schools. The results showed that a mentor-based teaching model permitted greater efficiency as compared to traditional training approaches. The program emphasized mutual sharing, learning, and collaboration versus superior-subordinate relationships between the mentors and those who attended training. Felicen, Rasa, Sumanga & Buted (2014) utilized the descriptive qualitative design using 50 percent of the interns of second semester 2012-2013 as participants in the area of food and beverage and travel agencies. Results of the study revealed that interns have a satisfactory level of academic performance. In training performance they were rated as very good in terms of knowledge, skills, attitude and personality. Their study also revealed that there is no significant relationship between academic performance and training performance. Martinez, et al (2014) found that Mass Communication students obtained an excellent performance rating in their On-the-Job Training with a high academic performance rating in media marketing and average in advertising principle. Students with high academic performance in Advertising Principle also obtained high training performance except in adherence. Yeswa, Okaka, Mutsotso, Odera & Mumbo (2012) conducted a study in Kenya to assess whether the contextual factors influence the relationship between internship programs and performance of public healthcare institutions. They found a significant positive relationship between contextual factors and internship programs in public healthcare institutions (r=0.501; P <0.05).

Walo (2001) assessed students' perceptions of their level of management competence, before and after the internship component of their degree program. A self assessment instrument utilizing the management competencies within the competing values was used for the empirical stages of the study. The research implies that the internship program has proved effective in contributing towards the development of management competencies for this cohort of students. The study provides valuable insight into the relationship between internship and the development of students' management competencies and highlights the need for further research in this area.

Regarding students' academic performance and success on internship, Callanan and Benzing (2004) posit that there is evidence that students with higher GPAs are more likely to pursue an internship, although it is unclear whether or not they benefit to a greater extent than do students with lower GPAs. Kim, Kim, and Bzullak (2012) found 2.5 or higher to be the most popular GPA prerequisite for internship in accredited schools. Hergert (2011) found a strong correlation between the perceived value of the internship and the student's age and GPA, as older students with higher GPAs had higher perceived values of business internship than did younger students with lower GPAs at a large, public, USA university. On the other hand, Gault et al. (2000) found that major area of study, GPA, and gender were not correlated with the extrinsic measures of career success for the undergraduate business alumni. Hayes (1981) found no relationship between a student's GPA and the completion of required work experience. Also, Casado (1991) suggested that GPA is not a predictor of success or achievement in a hospitality curriculum. In terms of program preparedness Beard and Morton (1999) found academic preparedness to correlate with successful outcomes of a mass communication internship program. Cannon and Arrnold (1998), however, found that students with lower GPAs believed more strongly that an internship in marketing should lead to a full-time job.

Although the literature is rich with studies that investigated and assessed the value of internships in different settings, few studies empirically investigated the influence that individual characteristics could have on such a value. Furthermore, the findings of the limited

number of empirical studies that investigated that influence on the perceived value of internship appear to be inconsistent. Therefore, there is a need for more studies that empirically investigate the influence of the individual characteristics on the perceived value of internships in order to enhance our understanding of such influence and help design effective internship programs.

The above studies outline the value and variety of the benefits enjoyed by those students participating in internships, including a better understanding and knowledge of the tasks and practices performed by industry professionals, improved self-confidence, enhanced employment and professional growth opportunities, the ability to network within the industry by creating personal contacts, exposure to management activities, and the development of skills relevant to their particular career choice. Furthermore, internships provide an opportunity for students to apply classroom theories to practical issues in the actual business setting, and most importantly to evaluate whether their career choice is compatible with their interests and personality. These studies did not touch directly the topic investigated by this study, namely the International Society for Technology in Education (ISTE) standards application.

Recently, Sultan Qaboos University (SQU), the national university in the Sultanate of Oman, invested a considerable amount of money to purchase educational technology software and hardware (WebCT, blackboard learning systems, computer labs, and computers at every teaching room with different projectors) that will be used in teaching and learning. This development is accompanied by comprehensive revisions of the curriculum of the College of Education to obtain the accreditation of the National Council for Accrediting Teachers' Education (NCATE), which is changed to Council for Accrediting Educators' Programs (CAEP). All these efforts are expected to increase the productivity of the instructional process and the overall educational outputs of the university. Students are supposed to use these benefits and technologies in the learning process. Simply having the technology resources in the school does not necessarily mean that the staff will use them in their teaching. Educational planners wish to increase the use of technology by students when they leave school and enter the work life.

The Instructional and Learning Technologies Department (ILTD) in the College of Education, SQU, was established in 2005. The department strives to achieve excellence in its provision of teaching, research, and societal services in the field of instructional and learning technologies. Currently, the department is offering B.Ed in Instructional and Learning Technologies to meet the potential need for information technology teachers and learning resources centers at both basic education and general education levels in the Sultanate of Oman. The department program is undergoing an accreditation process by CAEP by the use of the ISTE standards for coaches.

Internship at the ILTD of the College of Education, SQU, started in the summer of 2008 with 18 students distributed among 6 government and private sector institutions. By the end of the summer 2014, the total number of students who were offered the internship opportunity increased to 211. The internship institutions reached 38 institutions. The main objective of this program is to provide students hands-on experience that relates to their future positions. The nature of the internship of ILTD is slightly different from the normal internship program. In this internship program, the students play two roles. They become trainees at the beginning of the program, and they become trainers at the second part of the internship period, which is two months. They play double roles. Students' evaluation was based on on-site professional supervisors' report, students' daily report, and the university faculty member who administers the program. The work of the intern is an integral part of the student's course of study. No grades are provided for this internship, but it is a required course for student graduation.

ISTE is a premier, nonprofit organization that serves educators and education leaders committed to empowering connected learners in a connected world. ISTE has five sets of standards for each individual who wants to work with technology. These standards are as follows:

- ISTE Standards for Students

- ISTE Standards for Teachers

- ISTE Standards for Administrators

- ISTE Standards for Coaches

- ISTE Standards for Computer Science Educators

Our emphasis in this study is on ISTE standards for coaches. These standards have eight dimensions, and specifically our focus is on the second standard. This second standard focuses on teaching, learning, and assessing technology. In this standard, technology coaches assist teachers in using technology effectively for assessing students' learning, differentiating instructions, and providing rigorous, relevant, and engaging learning experiences for all learners. Technology coaches help bridge the gap from where we are to where we need to be. The ISTE Standards **for coaches** describe the skills and knowledge they need to support their peers in becoming digital age educators.

Importance of the study

The importance of this study stems from the nature of the topic under study. It is the first study in this area to the best of the researcher's knowledge and there are no previous studies for the variables considered for this study. Coaching support for teachers is a powerful means of both modeling and harnessing the potential of technology to improve teaching and learning. Teachers who receive coaching in the use of technology tools to improve student learning, and who learn from and collaborate with peers via professional learning communities, will develop confidence and effectiveness in designing and supporting technology-rich environments that maximize student learning. Therefore, the importance of this study could be viewed as follows:

- It will cast light on the internship program by showing how technology coaches practice their roles at the internship institutions.

- The findings of this study will be useful for accreditation process by providing useful data on the application of the second standard for technology coaches.

- ILTD will benefit from this study in determining the weaknesses and strengths of the preparation program and take action where necessary.

- The findings of this study will help in showing if there are any differences in internship institutions, students' cohort,

and gender and how these differences could be treated.

Statement of the Problem

Internships have been hailed for integrating classroom education with practical experience in enabling graduates to develop their professional knowledge and professional skills (Beard, 1998). However, unlike the conventional system and owing to a diversity of factors in an educational setting, the concept has encountered challenges. The reason for evaluating internship is to determine its effectiveness. When the evaluation is done, we can hope that the results are positive and gratifying, both for those responsible for the program and for upper-level managers who will make decisions based on their evaluation of the program. Therefore, much thought and planning need to be given to the program itself to make sure that it is effective. The internship program at ILTD has never been evaluated in terms of ISTE standard since its establishment in 2008. This is the first time for this program to be evaluated according to the ISTE second standards for technology coaches (teaching, learning and assessment). As mentioned before, ILTD program is currently undergoing an accreditation process using ISTE standard as SPA (ISTE Standards for Coaches). Therefore, there is a need for this study especially at this time. The study might cast light on the current practice of the internship program in the second standard. This standard is central to the program since the graduates of this program will work in the future as information technology teachers or learning resources specialists. In both positions they are required to coach teachers at school in technology utilization. Therefore the study focuses on uncovering the extent to which the students apply the ISTE second standard for coaches (teaching, learning, and assessments of technology). Having these concerns in mind, this study seeks to answer the following research questions:

1. To what extent do student interns apply the ISTE second standard for technology coaches in internship institutions as viewed by their supervisor?

2. Do student interns' applications of the second standard vary according to student interns' gender, type of internship institution, academic specialization, GPA, and internship year (cohort)? NB:

cohort is a very old-fashioned word, little used these days. I'm not sure what you mean by this word. Maybe group? Intake?

Instrument

The ISTE second standard for technology coaches (Appendix 1) consists of eight elements (components), which have been broken down into twenty-three Liker-type items of five points (strongly agree to strongly disagree) to make assessments easier. They constitute the questionnaire (contact the authors for the questionnaire). The questionnaire was given to a panel of faculty members who specialized in educational technology to assess its face validity. They suggested minor revisions, and the researchers fixed them. The reliability coefficient of the instrument was found to be 0.89 based on Cronbach's alpha. The instrument also contains demographic information (gender, specialty, year of internship, and type of institution) about the students and their supervisors who participated in the study. Thereafter, the questionnaire was distributed to the population of the study to respond to its items. The researcher contacted the population through e-mail and telephone calls to urge them to respond to the questionnaire. Collecting the data from the population took two months.

Population

The population of this study consists of 171 student interns (50 male and 121 female), which is the total number for the last four years (2011 to 2014), and 53 on-site supervisors (35 male and 18 female). A total of 140 students obtained their internship at training institutions supervised by 39 supervisors, and 31 obtained their training at educational institutions supervised by 14 supervisors.

Results and Discussion

The means and standard deviations of the first question, namely, "To what extent do student interns apply ISTE second standard for technology coaches in internship institutions as viewed by their supervisor?" were calculated, as shown in Table 1:

Table 1 shows that the first element, element (a), has the highest mean (4.13), which means that the supervisors believe that the student interns did well in this element. This result could be attributed to the number of courses

(four courses) that deal with content and student technology standards in their degree plan. Element (h), which deals with research skills, came at second rank. This result could be explained by the fact that these students have been exposed to many courses that developed their research skills inside and outside the department. The elements with relatively low means are (d) and (f). Element (f) deals with instructional design skills, and this element has only two courses in the degree plan. Element (d) deals with creativity, higher-order thinking skills and processes, and mental habits. This element has no specific courses and is distributed over the whole program. Table 2 shows that the overall performance of the students in the second ISTE standard for technology coaches has a mean value of 3.88, which reflects a reasonable and accepted performance but not the target and desirable performance which is 5 points as indicated in the questionnaire. The ILTD program also requires more revisions to fix the weak areas

and reach the target performance. More work should be done in Coaching teachers in and modeling design and implementation of technology-enhanced learning experiences emphasizing creativity, higher-order thinking skills and processes, and mental habits (e.g., critical thinking, metacognition, and self-regulation.) Also an emphasis should be given to coach teachers in and model incorporation of research-based best practices in instructional design when planning technology-enhanced learning experiences.

To answer the second question which states: "Do student interns' applications of the second standard vary according to student interns' gender, type of internship institution, academic specialization, GPA, and internship year?", t-test was performed for the three variables of the second question, namely, gender, type of internship institution, and academic specialization. The results are shown in Table 2.

Table 1
Means and standard deviations of students' responses

Elements of the second ISTE standard for technology for coaches	N	Mean	Std.
a. Coach teachers in and model design and implementation of technology-enhanced learning experiences addressing content and student technology standards.	171	4.13	.65
h. Coach teachers in and model effective use of technology tools and resources to systematically collect and analyze student achievement data, interpret results, and communicate findings to improve instructional practice and maximize students' learning.	171	4.01	.87
c. Coach teachers in and model engagement of students in local and global interdisciplinary units in which technology helps students assume professional roles, research real-world problems, collaborate with others, and produce products that are meaningful and useful to a wide audience.	171	3.96	.79
e. Coach teachers in and model design and implementation of technology-enhanced learning experiences using differentiation, including adjusting content, process, product, and learning environment based upon student readiness levels, learning styles, interests, and personal goals.	171	3.87	.69
g. Coach teachers in and model effective use of technology tools and resources to continuously assess student learning and technology literacy by applying a rich variety of formative and summative assessments aligned with content and student technology standards.	171	3.83	.77
b. Coach teachers in and model design and implementation of technology-enhanced learning experiences using a variety of research-based, learner-centered instructional strategies and assessment tools to address the diverse needs and interests of all students.	171	3.80	.80
d. Coach teachers in and model design and implementation of technology-enhanced learning experiences emphasizing creativity, higher-order thinking skills and processes, and mental habits (e.g., critical thinking, metacognition, and self-regulation).	171	3.77	.68
f. Coach teachers in and model incorporation of research-based best practices in instructional design when planning technology-enhanced learning experiences.	171	3.67	.73
Total		3.88	.46

Table 2
T-test for differences in means caused by gender, type of institutions and academic specialization

Variables	N	Mean	SD.	T	df	Sig.
Male	50	4.0137	.45825	.756	169	.450
Female	121	3.9537	.47643			
Educational	31	4.1795	.52219	2,776	169	.006
Training	140	3.9252	.44747			
IT teachers	145	3.9400	47480	-2.069	169	.040
LC specialists	26	4.1455	.41283			

Table 3 shows that no significant differences exist in the means between the male and the female (t_{169}=.756, p >0.05) (mean = 4.01 for male and mean = 3.95 for female). This result means that female and male students apply the ISTE standards for teaching, learning, and assessing technology in a similar way without differences. This result could be justified by the fact that both of them received the same training in the Department of Instructional and Learning Technologies. This result agrees with Gault, Redingtion, & Schlager (2000). They found that gender was not correlated with the extrinsic measures of career success for the undergraduate business alumni. This result is inconsistent with that of Ju, Emenheiser, Clayton, & Reynolds (1998), who found that gender was an important factor that influenced students' perception of their internship experiences. Males were more satisfied with their internship experiences than females. Males tended to have a stronger resolve to work in the hospitality industry than females. They added that in Korea, it may be very difficult for female college graduates to be offered management positions by hospitality and other companies. Many female hospitality management graduates are employed as entry-level employees even when they exhibit greater potential than male graduates.

Concerning the comparison between the training institution, Table 3 shows significant differences in means between institution type (t_{169}=2.77, p<0.05) (mean = 4.17 for educational institution and mean = 3.92 for training institution), which means that students who were offered the opportunity to undertake their internship at educational institutions showed greater application of the ISTE standard for teaching, learning, and assessing technology than their fellows who obtained their training at non-educational institutions. This result agrees with the findings of Yeswa, Okaka, Mutsotso, Odera, & Mumbo (2012). They found a significant positive relationship between contextual factors and internship program in public healthcare institutions. This means that contextual factors influence internship program in public training institutions and facilitate the use of internship program to achieve the intended objectives. This result could be justified by the fact that in educational institutions, students had the chance to show and apply their skills in the application of the ISTE standard more than their fellows in other institutions. This result could also be justified by the fact that the nature of the educational programs at educational institutions focuses on instructional topics, such as designing learning environments, instructional design, electronic management systems, and digital photography. These topics are fully covered in their study plan, whereas at non-educational institutions, the concentration is on topics such as special software serving their needs, networking, human resource development, and other systems for managing companies and institutions.

Concerning the comparison between students' track of study, IT teacher against learning center specialists in applying ISTE standards for teaching, learning, and assessing technology in internship program. Table 3 shows a significant difference in the application of ISTE standards (t_{169}=-2.06, p<0.05) between learning center specialists (mean = 4.1455) and instructional technology teachers (mean = 3.9400). This result disagrees with Parsa, Aghazadeh, Nejatisafa, Amini, Mohammadi, Mostafazadeh, & Moghaddam, (2010). They found that there was no significant difference between pediatrics, gynecology, psychiatry, and general practice among the two groups in medical internship program. Also, it disagrees with Gault et al. (2000) who found that major area of study, was not correlated with the extrinsic measures of career success for the undergraduate business alumni. This result could be justified by the fact that learning center specialists have more in technology courses, such as networking, multimedia, and more hands-on laboratory work. They usually take their internship in educational institutions that meet their interests.

To determine the differences in means between students' GPA and differences in students' cohort, the ANOVA test was used. Table 3 shows the results of the differences in means caused by the GPA variable.

Table 3
ANOVA test for students' GPA variable

Source	SS	df	MS	F	Sig.
Between Groups	5.466	2	2.733	14.263	.000
Within Groups	32.189	168	.192		
Total	37.655	170			

Grade point average in particular is important to examine for students participating in internships, due to both its link to retention and the link between retention and gainful employment. While the rationale for internships is focused on career-related outcomes, GPA plays an essential role in the link between internship participation and the job market. Table 3 shows that a significant difference exists in means between the students' application of ISTE standard for teaching, learning, and assessing technology caused by their GPA ($F_{2,168}$ =14.26 p < 0.05). The result agrees with Martinez et al, (2014) who found that students with high academic performance in advertising principle also obtained high training performance except in adherence to company policy. In addition, it agrees with Hergert (2011) and Callanan and Benzing (2004). But it disagrees with the findngs of Felicen, Rasa, Sumanga & Buted (2014), Buted, Felicen, & Manzano (2014), Casado (1991) and Hayes (1981) who found that there is no significant relationship between academic performance and training performance. Also, this study disagrees with Coutinho (2007) who found no relationship between performance goals and GPA. GPA might be one measure of success, but does not necessarily embody determination or career success as found by Beard and Morton (1999). Although Beard and Morton found that GPA was a less important predictor of internship success, Bacon (2006) found that GPA was a valuable indicator of job success.

In order to know which group of students perform better than others, Scheffe's multiple comparisons were used. Table 4 shows that the applications of the standard for teaching, learning, and assessing technology of students with high GPA were found to be significantly greater than those of their counterparts (aver-

age- and low-GPA students). The results also show that the applications of the ISTE standard for teaching, learning, and assessing technology of students with average GPA were found to be significantly greater than those of low GPA students. These results could be justified by the fact that during the program of study, high and average GPA students usually exerted more efforts on their studies, which were reflected in the internship program performance. Those students usually reflect on their performance and apply ISTE standards the way they should be applied. This implies that those students with high final grades in courses have also high performance on job training.

Table 4
Scheffe's multiple comparisons

(I) GPA mean	(J) GPA mean	Std. error	Sig.
1.00	2.00	.13680	.000
	3.00	.13138	.010
2.00	1.00	-.13680	.000
	3.00	.18272	.002
3.00	1.00	-.13138	.010
	2.00	-.18272	.002

In table 4, 1.00 stands for students with low GPA, 2.0 for average GPA, and 3.00 for high GPA.

Comparisons between cohorts help examine trends and provide historical context. To determine the differences caused by internship year (cohort), ANOVA was used. Table 5 shows that no significant difference existed in the cohort variable ($F_{2,50}$ =2.267 p >0.05).

Table 5
ANOVA test for the cohort variable

Source	SS	df	MS	F	Sig.
Between Groups	1.391	2	.696	2.607	.084
Within Groups	13.341	50	.267		
Total	14.732	52			

This result indicated that students' performance in the internship program was stable and consistent. This result could be attributed to the fact that in the last three years, students went to the same institutions that offer the same internship programs. The improvement of students' performance in these programs was minor. This result shows a need to revise the internship program because the natural thing for this program is to improve over the years, not to stay stable. This finding disagrees with Frenette's (2015) findings in which he

mentioned that a considerable rise in the prevalence and improvement of internships over years among arts graduates; in particular, that paid and unpaid internships were increasing at an equally common rate until a decade ago, when unpaid internships began growing more substantially. Among the many potential reasons for this shift is a greater demand for internships by students attempting to launch their careers during a recession. The rise in demand is also likely linked to demographic changes, especially the larger number of college-age youth. Also, the result of this study disagrees with Khalil (2015) who found that the year of the internship influenced the interns' satisfaction. Since technology is moving faster and faster, the ILTD needs to with the advancement in technology and incorporates that in the program curriculum in order to increase its effectiveness over time. Improvement in the internship program requires careful monitoring and selection of training institutions that guide students effectively. Also, students who enter the program should be selected carefully after sufficient screening and that might invite a good cohort who makes a difference. As with any worthwhile experience, developing a successful internship experience requires thought and planning. It could be beneficial if we help interns to be an integral part of the training institution from the very beginning. Providing professional networking opportunities to help a new cohort gain additional insights might increase their future performance in the internship.

Conclusion and Implications

Internship practices will continue to play a significant role in educational degree programs. Educational institutions throughout the world must strive to develop a unique, triangular partnership between students, the industry and educational institutions, forming a relationship based on intrinsic motivators and the common interests of the industry. The aim should be for an innovative, educational experience that would best fit the personality traits of individuals and, as a result, committing them to the values governing the modern technology era. The challenge for all stakeholders is to further commit to the practice and embrace new and innovative approaches that can greatly improve the development of the next digital generation; a generation that will depend more on human relations and technological skills rather than impersonal,

financial considerations. Internships offer students a chance to gain a deeper understanding of one or more specialties within their chosen profession through actual work experience. As students move through their academics, classes expose them to new knowledge which stimulates their interest. They take more upper-division classes and build a skill set and some expertise within their major. This interest then manifests itself as a career option. In order to gain a better understanding of what this career option is like in reality, undergraduates participate in internship programs through their college or university. This study attempted to answer the following questions: (1) To what extent do student interns apply the second standard of ISTE for technology coaches in internship institutions as viewed by their supervisor? And (2) Do student interns' application of the second standard vary according to student interns' gender, type of internship institution, academic specialization, GPA, and internship year.

The findings of this study show that the overall performance of the students in the second ISTE standard for technology coaches has a mean value of 3.88 out of 5.00, which reflects a reasonable and acceptable performance but not the target and desirable performance. No significant difference was observed in the application of the ISTE standard caused by gender and cohort. This study also reveals the following significant differences: type of internship institution in favor of educational institution, student GPA in favor of high GPA and average GPA in favor low GPA, and students' academic specialization in favor of learning center specialists. Based on these findings, a number of salient implications can be obtained:

- To reach the target performance (5/5) in the application of the second standard of ISTE for technology coaches, ILTD should place more courses on two elements: (f), which deal with instructional design skills and have only two courses in the degree plan, and (d), which deal with creativity, higher-order thinking skills and processes, and mental habits and which have no specific courses and are distributed over the whole program.

- Students' performance in the internship during three years shows no improvement, and this result means there is a

need to revise the internship procedures and processes for the purposes of improvement.

- Information technology teachers require more courses on technology, such as school networking, hardware and multimedia.

- Students perform well in the use of technology tools and resources to systematically collect and analyze student achievement data, interpret results, and communicate findings to improve instructional practice and maximize students' learning. This performance should be reinforced and maintained.

- Technology integration into the classroom teaching, learning and assessment needs careful consideration when planning for effective use. Internship programs should support the innovation of technology as a tool that makes teaching more efficient and not as another layer in the curriculum.

- More research is needed in examining other standards for technology coaches.

- Further investigation could be carried on overall students' experiences on internship program.

References

Amir, T. & Ismail, O. (2014). An evaluation of the internship program at the college of education, Sultan Qaboos University, Muscat. *International Journal of Humanities, Social Sciences and Education,* 1(10), 5-10.

Bacon, D. R. (2006). GPA in research studies: An invaluable but neglected opportunity. *Journal of Marketing Education,* 28(1), 35-42.

Barron, A., Dawson, K. & Yendol-Hoppey, D. (2009). Peer coaching and technology integration: an evaluation of the Microsoft peer coaching program. *Mentoring & Tutoring: Partnership in Learning,* 17(1), 83–102.

Beard, D. F. (1998). The status of internships' cooperative education experiences in accounting education. *Journal of Accounting Education,* 15(2), 496 –505.

Beard, F., & Morton, L. (1999). Effects of internship predictors on successful field experience. *Journalism and Mass Communication Educator,* 53(4,) 42-53.

Bukaliya, R. (2012). The potential benefits and challenges internship programs in an ODL institution: a case for the Zimbabwe Open University. *International Journal on New Trends in Education and Their Implications,* 3(1), 118- 133. Retrieved July 22, 2014 from www.ijonte.org.

Buted, D. R., Felicen, S. S. Manzano, A.I. (2014). A Correlation Study between Student Performance in Food and Beverage Services Course and Internship in F&B Department of Hospitality Business, *International Journal of Academic Research in Business and Social Sciences,* 4(6), 54-66

Bradshaw, L. (2002). Technology for teaching and learning: Strategies for Staff Development and Follow-Up Support. *Journal of technology and teacher education,* 10(1), 131-150.

Callanan, G., & Benzing, C. (2004). Assessing the role of internships in the career-oriented employment of graduating college students. *Education and Training,* 46, 82-89.

Cannon, J. A., & Arrnold, M. J. (1998). Student expectations regarding collegiate internship programs in marketing: a 10-year update. *Journal of Education for Business,* 73(4), 202-205.

Casado, M. (1991). *Perceptions of corporate recruiters, alumni, and educators toward critical factors of hotel/restaurant management programs: A comparative study.* Unpublished doctoral dissertation. Ann Arbor: University of Michigan.

Coutinho, S. (2007). The relationship between goals, metacognition, and academic success. *Educate,* 7 (10), 39-47.

Divine, R., Miller, R. & Wilson, H. (2015). Analysis of Student Performance in an Internship Program in a U.S. University. *International Journal of Quality and Productivity Management,* 6 (1), 1- 14.

Driscoll, J. (2006). A century of internships: A quick history of internships and co-ops in the business world. *Journal of Accounting Education,* 16(3), 507–516. Retrieved March 16, 2015, from

http://news.pghtech.org/teq/teqstory.cfm?id=1573education.

Felicen, S., Rasa, L., Sumanga, J. ,& Buted, D. (2014). Internship performance of tourism and hospitality students: Inputs to improve internship program. *International Journal of Academic Research in Business and Social Sciences*, 4(6), 42-53.

Frenette, A. (2015). *The Internship Divide: The Promise and Challenges of Internships in the Arts*. SNAAP special report 2015. Retrieved September 8, 2015 from: http://snaap.indiana.edu/pdf/SNAAP15/SNAAP_Special_Report_2015.pdf

Furco, A. (1996). Service learning and school-to-work. *Journal of Cooperative Education*, 53(*1*), 7–14.

Gault, J., Redingtion, J., & Schlager, T. (2000). Undergraduate business internships and career success: are they related? *Journal of Marketing Education*, 22, 45-53.

Hayes, D. (1981). *The relationship of practicum to subsequent academic performance in a hospitality curriculum*. Unpublished Doctoral dissertation, Purdue University.

Hendrikse, J. (2013). *Teacher education by means of internship*: A case study. Unpublished master of education, University of South Africa.

Hergert, M. (2011). Student perceptions of the value of internships in business education. *American Journal of Business Education*, 2(8), 9e14.

Holahan, P., Jurkat, M., & Friedman, E. (2000, Spring). Evaluation of a mentor teacher model for enhancing mathematics instruction through the use of computers. *Journal of Research on Computing in Education,* 32(3), 336-350.

International Society for Technology in Education. (2012). ISTE standards for coaches. Retrieved March 1, 2015, from http://www.iste.org/standards/ISTE-standards/standards-for-coaches.

Ju, J., Emenheiser, D., Clayton, H., & Reynolds, J. (1998). Korean students' perceptions of the effectiveness of their internship experiences in the hospitality industry in Korea. *Asia Pacific Journal of Tourism Research*, 3(1), 37–44.

Khalil, O. (2015). Students' experiences with the business internship program at Kuwait University. *The International Journal of Management Education* 13, 202-217

Kim, E. B., Kim, K., & Bzullak, M. (2012). A survey of internship programs for management undergraduates in AACSB-accredited institutions. *The InternationalJournal of Educational Management,* 26(7), 696-709.

Littke, D. (2004). *The big picture: Education is everyone's business.* Alexandria, VA: Association for Supervision and Curriculum Development.

Cynthia Martinez ,C., Lontoc , J. Villena , A. & Laguador, J. (2014). Correlation of On-The-Job training performance on print media of AB mass communication students and academic performance in selected professional courses for school Year 2012-2013. *Journal of Education and Literature*,2 (3), 2 80-88

McMahon, U., & Quinn, U. (1995). Maximizing the hospitality management student work placement experience: A case study. *Education and Training*, 37, 13–17.

Merritt, R. (2008). Student internships. EBSCO research starters. Retrieved September 30, 2015 from https://www.ebscohost.com/uploads/imported/thisTopic-dbTopic-1072.pdf

Parsa, S., Aghazadeh , A., Nejatisafa, A., Amini, H., Mohammadi, M., Mostafazadeh , B., Moghaddam, Y. (2010). Freshmen versus Interns' Specialty Interests. *Archives of Iranian Medicine,* 13(6), 509-514.

Streumer, J. N., and Kho, M. (2006). The world of work-related learning. In Streumer, J. N. (ed.), *Work-Related Learning*, pp 211-230, Springer.

Swan, B. & Dixon, J (2006). The effects of mentor-supported technology professional development on middle school mathematics teachers' attitudes and practice. *Contemporary Issues in Technology and Teacher Education* [Online serial], *6*(1). Retrieved September 8, 2015 from http://www.citejournal.org/vol6/iss1/mathematics/article1.cfm.

Thiel, G. & Hartley, N. (1997). Cooperative education: A natural synergy between

business and academia. *SAM Advanced Management Journal*, 62, 19-24.

Walo, M. (2001).Assessing the contribution of internship in developing Australian tourism and hospitality students' management competencies. *Asia Pacific Journal of Cooperative Education*, 2 (2), 12-28. retrieved September 9, 2015 from http://www.apjce.org/files/APJCE_02_2_12_28.pdf , Asia Pac

Wynn, J. R. (2003), High school after school: Creating pathways to the future for adolescents. *New Directions for Youth Development*, 97, 59–74. doi: 10.1002/yd.35

Retrieved February 16, 2015, from http://onlinelibrary.wiley.com/doi/10.1002/yd.35/epdf.

Yeswa, E., Okaka, O., Mutsotso, S., Odera, O. & Mumbo, H. (2012). Impact of Internship Programme on the Performance of Public Health Care Institution. *Global Journal of human social science arts & Humanities*, 12 (13) 1, 39-44**.**

Appendix 1

ISTE Second standard for technology coaches

Teaching, Learning, and Assessments of Technology

Technology coaches assist teachers in using technology effectively for assessing student learning, differentiating instructions, and providing rigorous, relevant, and engaging learning experiences for all students.

a. Coach teachers in and model design and implementation of technology-enhanced learning experiences addressing content and student technology standards.

b. Coach teachers in and model design and implementation of technology-enhanced learning experiences using a variety of research-based, learner-centered instructional strategies and assessment tools to address the diverse needs and interests of all students.

c. Coach teachers in and model engagement of students in local and global interdisciplinary units in which technology helps students assume professional roles, research real-world problems, collaborate with others, and produce products that are meaningful and useful to a wide audience.

d. Coach teachers in and model design and implementation of technology-enhanced learning experiences emphasizing creativity, higher-order thinking skills and processes, and mental habits (e.g., critical thinking, metacognition, and self-regulation).

e. Coach teachers in and model design and implementation of technology-enhanced learning experiences using differentiation, including adjusting content, process, product, and learning environment based upon student readiness levels, learning styles, interests, and personal goals.

f. Coach teachers in and model incorporation of research-based best practices in instructional design when planning technology-enhanced learning experiences.

g. Coach teachers in and model effective use of technology tools and resources to continuously assess student learning and technology literacy by applying a rich variety of formative and summative assessments aligned with content and student technology standards.

h. Coach teachers in and model effective use of technology tools and resources to systematically collect and analyze student achievement data, interpret results, and communicate findings to improve instructional practice and maximize students' learning.

Academic Delay of Gratification and its Relationship to Motivational Determinants, Academic Achievement, and Study Hours among Omani High School Students: A Path Analysis

Sabry M. Abd-El-Fattah* & Sahar El Shourbagi
Sultan Qaboos University, Sultanate of Oman

Abstract: This study was aimed at investigating the relationships of academic delay of gratification to motivational determinants, academic achievement, and study hours. The sample of the study included 200 Omani high school students. A path analysis showed that motivational determinants were positively related to academic delay of gratification which in turn was positively related to academic achievement and study hours. A mediational analysis showed that academic delay of gratification mediated the relationships among motivational determinants and academic achievement and study hours. There were significant gender differences in academic delay of gratification which favored females.

Keywords: Motivational determinants, academic delay of gratification, academic achievement, study hours, high school students

تأجيل الإشباع الأكاديمي وعلاقته بالمحددات الدافعية و التحصيل الأكاديمي وساعات الاستذكار لدي طلاب المرحلة الثانوية ﰲ سلطنة عمان: تحليل المسار

صبري عبد الفتاح* وسحر الشوربجي
جامعة السلطان قابوس، سلطنة عمان

مستخلص: هدفت الدراسة الحالية إلى فحص تأجيل الإشباع الأكاديمي وعلاقته بالمحددات الدافعية والتحصيل الدراسي وساعات الاستذكار لدى عينة من ٢٠٠ طالب وطالبة بالمرحلة الثانوية ﰲ سلطنة عمان. وقد أظهر تحليل المسار أن المحددات الدافعية ترتبط إيجابيا بتأجيل الإشباع الأكاديمي الذي بدوره يرتبط إيجابيا بالتحصيل الدراسي وساعات الاستذكار. وأظهر تحليل التوسط أن تأجيل الإشباع الأكاديمي يتوسط العلاقات بين المحددات الدافعية والتحصيل الدراسي وساعات الاستذكار. كذلك كانت هناك فروقا دالة إحصائيا ﰲ تأجيل الإشباع الأكاديمي لصالح الإناث.

الكلمات المفتاحية: تأجيل الإشباع الأكاديمي، المحددات الدافعية، التحصيل الدراسي، ساعات الاستذكار، طلاب المدرسة الثانوية

*sabryamin@squ.edu.om

A path analysis

Beginning in the late 1960s and continuing into the *early 1970s,* Walter Mischel and his colleagues (Mischel, 1961; Mischel, Ebbesen, & Zeiss, 1972) conducted a series of studies, known as the Stanford marshmallow experiment, to measure children's willpower to defer gratification. In these experiments, a pre-schooler would be given two marshmallows if she waited until the researcher returned to the room. The length of time individual children waited until ringing the bell was taken as a measure of their ability to delay gratification. According to Mischel and his colleagues (Mischel, 1981; Mischel & Metzner, 1962; Mischel, Shoda, & Peake, 1988), delay of gratification represents people's attempts to delay an attractive, immediately obtainable goal (e.g., get one marshmallow immediately) with that of pursuing   long-range objectives (e.g., wait for few minutes and get two marshmallows). Delay of gratification has been conceived as an ability or competence (Mischel et al., 1988) that children develop over time and as a relatively stable generalized disposition (Funder, Block, & Block, 1983).

From an academic perspective, many students strive to remain goal oriented and committed to tasks while facing distractions that are typical features of learning contexts. These distractions may include turning to more enjoyable activities such as going out to a party with friends, shopping, and going to the cinema or theater. Because remaining goal oriented and committed to tasks often involves foregoing an attractive, immediately obtainable goal (e.g., going to a party) in order to pursue long-range academic objectives (e.g., obtain a high score on a test), this process can be linked to a delay of gratification (Mischel 1961, 1981). Bembenutty and   Karabenick (1998, p. 329) defined academic delay of gratification as students postponement of immediately available opportunities to satisfy impulses in favor of pursuing chosen important academic rewards or goals that are temporally remote but ostensibly more valuable."

Gender differences in academic delay of gratification

With respect to gender differences and their impact on academic delay of gratification, Bembenutty and Karabenick (1998) reported that female college students had higher levels of academic delay of gratification than their

male counterparts. Likewise, Bembenutty (2007) found in a sample of college students that minority females had higher levels of academic delay of gratification than Caucasian males. Bembenutty (2009) reported that gender was a significant predictor of academic delay of gratification of college students with female students reporting higher levels of academic delay of gratification than their male counterparts.   In addition, Villarroel (2008), using a sample of Spanish undergraduates, found that females reported higher levels of academic delay of gratification than their male counterparts. This is confusing as first Bembenutty states gender is a significant predictor then in this sentence he does not. Perhaps make it clear that this was an earlier study.

Academic delay of gratification and motivational determinants

One important framework that proves to be helpful in explaining learners' preferences for diverse alternatives of action in an academic delay of gratification situation is the expectancy-value theory (Eccles, 2005, 2007; Wigfield, & Eccles, 2000). In this theory, achievement outcomes, such as task performance and future aspirations, are primarily influenced by internalized perceptions of outcome expectancies and the value of specific tasks or domains. The expectancy component corresponds to beliefs about one's own competence and self-efficacy. The value component refers to the reasons for engaging in a specific task and includes four principal components: attainment value, intrinsic value, utility value, and cost. Attainment value is defined as the personal importance of doing well on a task, whereas intrinsic value refers to the enjoyment an individual gets from performing an activity, or to the subjective interest an individual has in a subject or activity. Utility value is determined by how well a task or domain relates to current and future goals, such as career goals and academic aspirations. Finally, cost is conceptualized in terms of the negative aspects of engaging in a task, such as performance anxiety and fear of both failure and success, as well as the amount of effort needed to succeed and the lost opportunities that result from making one choice rather than another (Eccles, 2005; Eccles & Wigfield, 2002).

Mischel (1996) has assessed motivational determinants of delay of gratification, such as relevance, value, and expectancy for an im-

Academic Delay of Gratification and its Relationship to Motivational Determinants
Sabry Abd-El-Fattah & Sahar El Shourbagi

Vol.9 Issue 4,
2015

mediate reward versus delayed reward option. His research has suggested that students' willingness to delay gratification depends upon the relative value placed on the competing alternatives. In addition, students' choice to delay gratification depends upon their expected likelihood of successful performance, given that they devote their time to this academic goal instead of a more immediate reward. Bembenutty and his colleagues (Bembenutty, 1999, 2008, 2009; Bembenutty & Karabenick, 1998) have demonstrated a relationship between academic delay of gratification and several motivational determinants. For example, Bembenutty (2008) found that college students were more likely to engage in academic delay of gratification when they liked the delay alternative, considered the delay alternative more important than the non-delay alternatives, and had higher expectations that the delay alternative would provide better outcomes than the non-delay alternatives. Further, after controlling for gender, importance of the delay alternative versus immediate alternative was a significant predictor of academic delay of gratification.

Academic delay of gratification and academic achievement

There is compelling research evidence that individual differences in children's delay preferences are associated with subsequent higher academic achievement, intelligence, and the need for achievement (Mischel, 1961; Mischel et al., 1988). Bembenutty and Karabenick (1998) reported that academic delay of gratification correlated positively with expected and obtained final course grades in a sample of college students. Bembenutty (2007) found a positive relationship between academic delay of gratification and final course grade for Caucasian male and female college students. Bembenutty (2009) demonstrated that the positive relationship between academic delay of gratification and academic achievement held even after controlling for the effects of students' ratings of the course, expected grades, and the degree of interest, importance, and utility of the academic task.

Academic delay of gratification and study time allocation

Bembenutty and his colleagues (Bembenutty, 2007, 2009; Bembenutty & Karabenick, 1998) reported a positive association among college students between academic delay of gratification, time management and study environment. However, there is insufficient evidence of a link between academic delay of gratification and self-reported intentions and behavior that is indicative of academic delay of gratification, such as the actual time high school students devote to their study. In a recent study, Zhang, Karabenick, Maruno, and Lauermann (2011) assessed Chinese elementary school children's willingness to delay gratification, and the time they devoted to non-school study and playtime during an extended interval prior to taking a high stakes final exam. They found that children who exhibited a higher willingness to delay gratification were more likely to spend time studying and less time playing several weeks prior to the exam in contrast to those children with a lower willingness to delay gratification.

Aim and rational of the present study

Several studies have sought to investigate the relationships of academic delay of gratification to motivational determinants, academic achievement, and management of study time in college student samples using correlational and regression analyses techniques despite the fact that these statistical procedures do not provide a complete picture of any intercausal connections among the variables (*Pedhazur, 1997*).

Furthermore, although early writings on academic delay of gratification are rooted in cross-cultural psychology (Gallimore, Weiss, & Finney, 1974), the vast majority of academic delay of gratification research has been conducted in Western cultures. Thus, there is a need for more research to be conducted on how participants from different cultures construe academic delay of gratification, and how academic delay of gratification is related to other psychological constructs within non-Western cultures.

Given these insights/perceptions, the present study extends the existing literature on the relationships of academic delay of gratification to motivational determinants, academic achievement, and management of study time in several ways. Firstly, the present study explores the relationships among these variables in a non-Western, Middle Eastern Arab cultural context and as such, it provides evidence of the applicability of motivational constructs

based on the theories largely developed in the West. The cultural variation in construing human behavior important for the study of academic delay of gratification because some cultures may be more conducive to *academic delayed gratification than others*. This may be true because cultures differ in educational opportunities, available attractive alternative activities that are typical features of learning contexts, and the values associated with academic tasks. For example, in societies with stronger collectivistic values, students have greater filial allegiances that result in stronger incentives for higher academic performance and academic delay of gratification (Ratner & Hui, 2003).

Secondly, the present study provides a test of a theoretical model combining variables derived from the expectancy-value theory and the theory of self-regulated learning using a path analysis technique. One of the strengths of the path analysis is that it estimates a system of equations that specifies all the possible causal linkages among a set of variables. In addition, path analysis enables researchers to break down or deconstruct correlations among variables into causal (i.e., direct and indirect) and noncausal (e.g., superious) components. Thus, path analysis helps researchers disentangle the complex interrelationships among variables and identify the most significant pathways involved in predicting an outcome. Furthermore, researchers using nonexperimental, quantitative, or correlational data can test whether their hypotheses regarding the relationships among variables are plausible and supported by the data and represent underlying (causal) processes (Pedhazur, 1997).

Thirdly, although the findings of several studies have shown that college students higher in academic delay of gratification are more likely to manage their time and study environment, there is insufficient evidence for the link between academic delay of gratification and self-reported intentions and behavior that is indicative of academic delay of gratification, such as the actual time students devote to their study. One of the most important issues, especially for high school students, would be whether students higher in academic delay of gratification devote adequate out-of-school time to academic tasks. This may be true given that high school represents a highly competitive and *academically demanding* educational stage that contributes decisively towards students' academic and career future.

To summarize, the aim of the present study is to test a path analysis model that can articulate the relationship of academic delay of gratification to motivational determinants, academic achievement, and study time allocation in a sample of Omani high school students. It was predicted that: (a) motivational determinants will be positively related to academic delay of gratification, (b) academic delay of gratification will be positively related to academic achievement, (c) academic delay of gratification will be positively related to study time allocation, (d) academic delay of gratification will mediate the relationship between motivational determinants and academic achievement, and (e) academic delay of gratification will mediate the relationship between motivational determinants and study time allocation. Given that motivational determinants are expected to predict academic delay of gratification, and academic delay of gratification, in turn, is expected to predict academic achievement and study time allocation, it is possible that academic delay of gratification mediates the relationship between the antecedents and the consequences.

Participants

A total of 200 Omani students (110 males and 90 females) from 5 public secondary schools in four governorates in Oman (Musandam, Muscat, Ad Dakhiliyah, and Dhofar) participated in this study. All participant students were at Year 11 and were chosen using a multistage stratified sampling strategy. All schools were located in metropolitan areas and had single-gender populations (three male schools and two female schools). The mean sample ages were 16.68 (SD = .76) and 16.23 (SD = .44) for boys and girls, respectively. Only students with complete data were retained for the present study. The percentage of missing data was 2% which represents those students who left several items blank on the Academic Delay of Gratification Scale (ADGS) and the Motivational Determinants Scale (MDS). The analysis of demographic data showed that participant students were from the same ethnic background and that 97% of them were from the working and lower social class strata. Arabic was the native language of all participant students.

Academic Delay of Gratification and its Relationship to Motivational Determinants
Sabry Abd-El-Fattah & Sahar El Shourbagi

Vol.9 Issue 4,
2015

Measurements

Academic delay of gratification

Bembenutty and Karabenick (1998) developed the 10-item ADGS to assess college students' tendencies to delay gratification within specific academic situations. For each situation, the students rated their preference for an option that offered immediate gratification, such as "*Miss several classes to accept an invitation for a very interesting trip*" or a delay gratification option such as "*Delay going on the trip until the course is over.*" Students responded to each item on a 4-point scale: *Definitely choose A*; *Probably choose A*; *Probably choose B*, or *Definitely Choose B*. Abd-El-Fattah and Al-Nabhani (2012) translated the ADGS from English into Arabic using a sample of 195 Year 11 students in Oman. They reported that an exploratory factor analysis with principal components of responses retained a 10-item single factor (Cronbach's alpha = .87)

Motivational determinants

Students were asked to report how strongly they agreed or disagreed with statements that described motivation-related features of the delayed and immediately-available alternatives. These motivational-related features were as follows: Liking (e.g., ''This is something that I would like to do''); Importance (e.g., ''This is something that is important to me''); Expectancy (e.g., ''This is something that would help me to achieve my academic goals''); Utility (e.g., ''This is something that can be useful to me''), Negative Consequences (e.g., ''This is something that can have negative consequences to me''), and Time/Effort (e.g., ''This is something that can be costly in time or effort to me). Students responded to all items of the Motivational Determinants Scale on a 4-point Likert-type scale ranging from 1 (*Strongly Disagree*) to 4 (*Strongly agree*). Differences in scores between motivation for the delay and immediate preferences were obtained by subtracting responses to the immediate alternative from the delay alternative for the four items (e.g., liking of the delay alternative minus liking for the immediate alternative = difference in liking). Higher scores were thus indicative of greater liking, importance, expectancy, utility, and time/effort for the delay versus non-delay alternatives. Scores on these motivational features were summed up to form a single index of motivational deter-minants (Eccles, Wigfield, Harold, & Blumenfeld, 1993).

Academic achievement

Students' academic achievement scores were obtained from their school records at the end of the academic year. These were the courses aggregated total scores, that is, the sum of on-course assignments and midterm and final examination scores and were expressed as a percentage.

Study hours

Students were requested to respond to one question concerning their study time allocation "On average, how many hours a day do you spend studying?".

Procedure

Approval was obtained to conduct the research investigation at the schools prior to data collection. Students were recruited to participate in the present study during their normal classes at their schools. All students agreed by signing a consent form prior to their participation in the present study that stated that they were willing to respond to the ADGS, the Motivational Determinants Scale, and one question concerning their study time allocation. The consent form also indicated that participant students agreed that their end-of academic year achievement scores could be obtained from their school records. Students first responded to the ADGS, then the Motivational Determinants Scale, and finally to the question concerning study time allocation. The measures were administered by trained according to standardized instructions. Students were informed that participation was voluntary and that confidentiality of their answers would prevail at all times. Only certain classes in each school participated in the present study depending on students' classroom schedules on the day and time of the administration of the measures. Students completed the three measures in 15 to 20 minutes.

Path analysis

Given that the data appear normally distributed at univariate and multivariate levels, the full information maximum likelihood estimation was used to analyze the variance-covariance matrices and estimate the path analysis model parameters and obtain fit indexes using the path analysis technique (Byr-

ne, 2010; Kline, 1998). The AMOS 7.0 program (Arbuckle, 2006) was used to run all analyses. In this path analysis model, depicted in Figure 1, motivational determinants were set as a positive predictor of academic delay of gratification, and academic delay of gratification was set as a positive predictor of academic achievement and study hours. Several absolute and relative goodness-of-fit indexes were used to evaluate the path model's goodness-of-fit to the data. Absolute fit indices included Chi-square (χ^2), Standardized Root Mean-Square Residual (SRMR), and Root-Mean-Square Error of Approximation (RMSEA). Relative fit indices included Comparative Fit Index (CFI) and Nonnormed Fit Index (NNFI). When modeling normally distributed data, SRMR values of approximately .08 or below, RMSEA values of approximately .06 or below, CFI values of approximately .95 or above, and NNFI of approximately .95 or higher suggest

adequate model-data fit (Byrne, 2010; Hu & Bentler, 1998). Because the χ^2 is sensitive to sample size, Hoelter (1983) recommended reporting the χ^2/df ratio and suggested that ratios below 2.0 indicate a reasonable fit.

The analysis showed that the path model fitted the data adequately (χ^2 = 5.31, df = 3; χ^2/df = 1.77, RMSEA = .04 (CI. .02 - .07), CFI = .98, SRMR = .06, NNFI = .97). The full set of significant paths is presented in Figure 2 along with the associated variance explained (R^2) for each criterion variable. In line with our hypotheses, the analysis showed that motivational determinants positively predicted academic delay of gratification (β = .37). Academic delay of gratification positively predicted academic achievement (β = .32) and study hours (β = .28,). Motivational determinants positively predicted academic achievement (β = .29) and study hours (β = .33).

Table 1
Descriptive statistics, Pearson's correlation, and Cronbach's alpha for motivational determinants, academic delay of gratification, academic achievement, and study hours

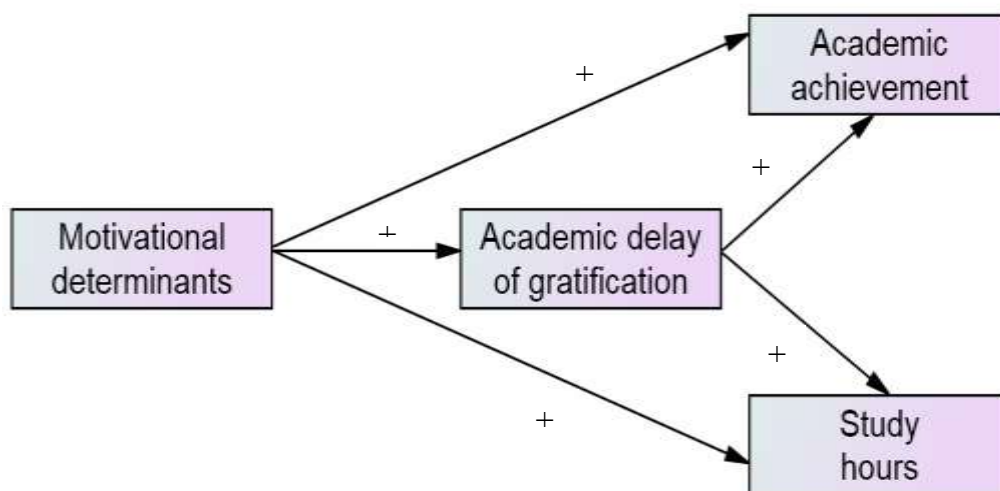| Variable	1	2	3	4	M	SD	Skew-ness	Kurto-sis	Cronbach's alpha
1. Motivational determinants	-				3.1	.85	1.33	.95	.84
2. Academic delay of gratification	.35	-			3.3	.73	1.12	.83	.89
3. Study hours	.30	.32	-		4.4	.80	.63	.22	NA
4. Academic achievement	.39	.36	.34	-	86.6	1.7	1.51	1.20	NA

Note. NA = Not applicable

Figure 1

A hypothesized path analysis model of the relationships among motivational determinants, academic delay of gratification, academic achievement, and study hours (positive '+' indicates a positive effect of an independent variable on a dependent variable when all other independent variables in the model are held constant)

Academic Delay of Gratification and its Relationship to Motivational Determinants
Sabry Abd-El-Fattah & Sahar El Shourbagi

Vol.9 Issue 4,
2015

Mediation analysis

Given the findings of the path analysis model, we proceeded to test whether academic delay of gratification mediates the relationship between motivational determinants and academic achievement and study hours. In this analysis, we simultaneously regressed academic achievement and study hours on academic delay of gratification and on motivational determinants. Gender was set as a covariate. We ran the mediation analysis using the SPSS script that accompanies the paper by Preacher and Hayes (2008) on the usage of the bootstrapping method to test mediation models. The bootstrapping method involves repeated random repeated random sampling observations with replacement from the dataset to compute the desired statistic in each resample (Chernick, 1999). In the present study, we set the estimation convergent index to 1000 bootstrap samples to allow for the convergence of the indirect effect estimates. The bootstrapped estimates of the indirect effects, along with the bias-corrected accelerated (BCA) 95% confidence intervals (CI), were calculated.

The analysis showed a significant indirect effect of motivational determinants on academic achievement through academic delay of gratification (indirect effect = .13; BCA 95% CI lower bound = 0.10, BCA 95% CI upper bound = 0.17). This finding indicated that academic delay of gratification mediates the relationship between motivational determinants and academic achievement. The analysis also showed a significant indirect effect of motivational determinants on study hours through academic delay of gratification (indirect effect = .11; BCA 95% CI lower bound = 0.08, BCA 95% CI upper bound = 0.15). This finding indicates that academic delay of gratification mediates the relationship between motivational determinants and study hours.

Discussion

The aim of the present study was to investigate the relationships among motivational determinants, academic delay of gratification, academic achievement, and study hours and whether academic delay of gratification mediates the relationship between motivational determinants and academic achievement and study hours. Descriptive analyses showed that females reported higher tendencies of academic delay of gratification than males. This find-

ing is in line with the findings reported by Bembenutty and his colleagues (Bembenutty, 2007, 2009; Bembenutty & Karabenick, 1998) using samples of college students. This finding is noteworthy since it suggests that males and females can show differences in the way they manage academic situations by remaining goal oriented and committed to tasks while facing distractions that are typical features of learning contexts. However, this finding should not be interpreted as suggesting that males and females are inherently different in ways that lead them to engage in academic endeavors in a particular way. The socialization process and classroom contexts, including academic tasks, reward structures, instructional methods, and instructors' behaviors, may be associated with the patterns of the academic behavior reported by the students in the present study.

The path analysis showed that motivational determinants were positively related to academic delay of gratification. This finding firmly embeds academic delay of gratification within the framework of the expectancy–value theory (Eccles & Wigfield, 2002; Eccles et al., 1993) and the motivational view of delay of gratification (Mischel, 1996). Within hindsight, this appears to be a readily understood relationship: students' willingness to delay gratification in order to pursue long-term academic goals is associated with their motivation-related judgments of delay vs. non-delay alternatives as articulated by incentive value, such as the benefits, or rewards associated with the academic alternatives and the tempting alternatives. Thus, an expectancy-value mechanism seems to underlie the subjective calculation and ultimately the decision of whether the value and feasibility of attaining a delayed reward, relative to the value of the immediately available one, is high enough to warrant a choice between waiting or working to attain it. This finding is consistent with the findings of Bembenutty and his colleagues (Bembenutty, 1999, 2008, 2009; Bembenutty & Karabenick, 1998). For example, Bembenutty (2009) reported that value based incentives were positively associated with how important, useful, and interesting college students perceived the delay alternative to be, but were inversely related to students' consideration of negative consequences associated with

possible selection of the immediate alternatives versus delay alternatives.

The path analysis also showed that academic delay of gratification is positively related to academic achievement and study hours. This relationship can be explained within the framework of the self-regulated learning theory because academic delay of gratification has commonly been conceptualized as involving successful self-regulated learning (Bembenutty & Karabenick, 1998; Zimmerman, 1998). According to Bembenutty (2007, 2009), successful self-regulated learners engage in academic delay of gratification by deferring attractive activities in order to achieve long-term goals. Those students also orchestrate their study environment to serve an adaptive purpose that facilitates academic achievement and self-imposed constraints of their own actions in order to devote more time to their study. In contrast, less-skilled self-regulated learners engage in immediate gratification that could preclude them from academic success. Mischel (1996) conceptualized the ability to delay gratification as part of the self-regulatory system necessary to guide behavior without external controlling stimuli. He suggested that the ability to delay gratification is a process of a self-regulatory system of willpower that orchestrates repetitive—used this word before maintenance of motivation and engagement in goals. Zimmerman (1998) argued that less-skilled self-regulated learners "must generate extraordinary personal motivation to delay of gratification until distal goals are achieved." (p. 6). In line with this finding, Bembenutty and his colleagues reported a positive relationship between academic delay of gratification and the control of time and study environment (Bembenutty, 2007; Bembenutty & Karabenick, 1998) and that of academic achievement (Bembenutty, 2007, 2009; Bembenutty & Karabenick, 1998).

The mediation analysis also showed that academic delay of gratification mediated the relationship between motivational determinants and academic achievement and study hours. Specifically, motivational determinants were positively associated with academic delay of gratification which in turn was positively associated with academic achievement and study hours.

The major limitation of the present study was the cross sectional nature of the data. As a result, definitive conclusions about the relationship among motivational determinants, academic delay of gratification, academic achievement, and study hours could not be drawn. A different method for understanding the developmental precursors and consequences of academic delay of gratification would be to examine them over time rather than at a single point in time. The second limitation was the use of self-reported measures of motivational determinants, academic delay of gratification, and study hours. Although self-ratings of these constructs remain the standard used by most studies, future studies should assess behaviors associated with these constructs either as observed by others or by researchers' direct observations. Until such studies are conducted, these constructs will remain largely defined as cognitive self-construal processes rather than observable traits.

To summarize, the current findings provide further insight into the dynamics which underpin students' academic delay of gratification. It could be argued that motivational determinants are associated indirectly and positively with academic achievement and study hours because they encourage positive mediating factors (i.e., academic delay of gratification) that facilitate important educational outcomes.

References

Abd-El-Fattah, S. M., & Al-Nabhani, H. Z. (2012). From self-theories of intelligence to academic delay of gratification: The mediating role of achievement goal. *Australian Journal of Educational and Developmental Psychology, 12*, 93 - 107.

Arbuckle, J. L. (2006). AMOS (Version 7.0) [Computer Program]. Chicago, IL: SPSS.

Bembenutty, H. (1999). Sustaining motivation and academic goals: The role of academic delay of gratification. *Learning and Individual Differences, 11*, 233-257.

Bembenutty, H. (2007). Self-regulation of learning and academic delay of gratification: Gender and ethnic differences among college students. *Journal of Advanced Academics, 18*, 586-616.

Bembenutty, H. (2008). Academic delay of gratification and expectancy-value. *Personality and Individual Differences, 44*, 193-202.

Academic Delay of Gratification and its Relationship to Motivational Determinants
Sabry Abd-El-Fattah & Sahar El Shourbagi

Vol.9 Issue 4,
2015

Bembenutty, H. (2009). Academic delay of gratification, self-regulation of learning, gender differences, and expectancy value. *Personality and Individual Differences, 46,* 347-352.

Bembenutty, H., & Karabenick, S. A. (1998). Academic Delay of Gratification. *Learning and Individual Differences, 10,* 329-346.

Chernick, M. R. (1999). *Bootstrap methods: A practitioner's guide (Wiley series in probability and statistics).* New York, NY: Wiley.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

DeCarlo, L. (1997). On the meaning and use of kurtosis. *Psychological Methods, 2,* 292-307.

Eccles, J. S. (2005). Subjective task value and the Eccles et al. model of achievement related choices. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105-121). New York, NY: Guilford Press.

Eccles, J. S. (2007). Motivational perspective on school achievement: Taking responsibility for learning and teaching. In R. J. Sternberg & R. F. Subotnik (Eds.), *Optimizing student success in schools with the new three Rs* (pp. 199-202). Charlotte, NC: Information Age.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53,* 109-132.

Eccles, J. S., Wigfield, A., Harold, R., & Blumenfeld, P. B. (1993). Age and gender differences in children's self- and task perceptions during elementary school. *Child Development, 64,* 830-847.

Finney, S. J., & DiStefano, C. (2006). Nonnormal and categorical data in structural equation models. In G. R. Hancock & R. O. Mueller (Eds.), *A second course in structural equation modeling* (pp. 269-314). Greenwich, CT: Information Age.

Funder, D. C., Block, J. H., & Block, J. (1983). Delay of gratification: Some longitudinal personality correlates. *Journal of Personality and Social Psychology, 44,* 1198-1213.

Gallimore, R., Weiss, L. B., & Finney, R. (1974). Cultural differences in delay of gratification: A problem of behavior classification.

Journal of Personality and Social Psychology, 30, 72-80.

Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. (1995). *Multivariate Data Analysis* (3rd ed.). New York, NY: Macmillan.

Hoelter, J. W. (1983). The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods and Research, 11,* 325-344.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3,* 424-453.

Kline, R. (1998). *Principles and practice of structural equation modeling.* New York, NY: Guilford Press.

Mischel, W. (1961). Preference for delayed reinforcement and social responsibility. *Journal of Abnormal and Social Psychology, 62,* 1-7.

Mischel, W. (1981). Metacognition and the rules of delay. In J. H. Flavell & L. Ross (Eds.), *Social cognitive development: Frontiers and possible futures* (pp. 240- 271). Cambridge, England: Cambridge University Press.

Mischel, W. (1996). From good intentions to willpower. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognitions and motivation to behavior* (pp. 197-218). New York, NY: Guilford Press.

Mischel, W., Ebbesen, E. B., & Zeiss, A. R. (1972). Cognitive and attentional mechanisms in delay of gratification. *Journal of Personality and Social Psychology, 21,* 204-218.

Mischel, W., & Metzner, R. (1962). Preference for delayed reward as a function of age, intelligence, and length of delay interval. *Journal of Abnormal and Social Psychology, 64,* 425-431.

Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology, 54,* 687-696.

Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd ed.). Fort Worth, TX: Harcourt Brace.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models

Behavior Research Methods, 40, 879-891.

Ratner, C., & Hui, L. (2003). Theoretical and methodological problems in cross-cultural psychology. *Journal for the Theory of Social Behavior, 67-94*, 33.

Villarroel, J. R. (2008). An examination of the psychometric properties of the Spanish version of the academic delay of gratification scale. *Advances in Applied Developmental Psychology, 2*, 156-167.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*, 68–81.

Zhang, L., Karabenick, S. A., Maruno, S., & Lauermann, F. (2011). Academic delay of gratification and children's study time allocation as a function of proximity to consequential academic goals. *Learning and Instruction, 21*, 77-94.

Zimmerman, B. J. (1998). Developing self-fulfilling cycles of academic regulation: An analysis of exemplary instructional models. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 1-19). New York, NY: Guilford.