



Jordan ERfKE Support Project

Evaluation of the Youth, Technology and Career MIS Online Approach: Interim Report



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Table of Contents

Table of Contents.....	2
Introduction.....	3
Method.....	3
Student-level variables.....	5
Results.....	7
<i>Technical data</i>	7
<i>Demographic data</i>	8
<i>Pretest performance</i>	9
Conclusion	14
APPENDIX A:.....	16
APPENDIX B:	32

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Evaluation of the Youth, Technology and Career MIS Online Approach: Interim Report

Introduction

In Jordan, the current approach to teaching the Management Information (MIS) stream curriculum is a teacher-centered style to instructional delivery. The USAID-funded, ERfKE Support Program's (ESP) Youth, Technology and Career (YTC) team has developed a series of online modules that introduce students to the same MIS concepts and facts through a student-centered, project-based learning approach. In this MIS-Online approach, students are guided through the process of self-selecting a profit-making business enterprise, and then creating and modifying their own business plan, based on commonly used principles in the real-life business world. In the process of working through this business plan, the facts, terms and concepts, which the MIS curriculum requires students to master, are introduced, without reliance on textbooks and lecture alone. This approach operationalizes a constructivist view of education, theorizing that the placement of learning within a context that is relevant to real life, matched with students' individual interests, and with strong emphasis on the development of student problem-solving skills, produces a higher, deeper, and more long-lasting level of learning than an approach that is solely delivered through rote memorization.

There are two interrelated research questions for this evaluation:

- 1) Is the MIS-Online approach, as defined above, more effective at improving student skills and competencies than the more traditional, teacher-centered, non-online approach commonly used within the general MIS Stream?
- 2) If the results of the initial analysis demonstrate higher student skills and competencies for students in the MIS-Online pilot, are there specific characteristics of students, teachers, and/or schools which amplify, moderate, or suppress this effect?

Method

Research question 1: Measurement of student skills and competencies

To collect data that would answer the first research question, it was necessary to develop an instrument that could adequately measure "student skills and competencies." The constructivist theory informing this study suggests that the MIS-Online approach, with its emphasis on the practical application of facts, will lead to improvements in problem-solving capacity and critical thinking skills, as well as high retention of the factual knowledge presented to students through participation in the Storylines. Therefore, the assessment required the measurement of factual knowledge and critical thinking skills.

Factual knowledge

In June 2007, ESP staff identified 8 Community of Practice school teachers, requesting from each teacher that they send ESP copies of their final examination question papers for the MIS Curriculum. As a result of a request sent to each of these teachers, we obtained approximately 12 of the best final examinations in the MIS curriculum, from which the factual items on the pre/post assessment were drawn. An assessment and testing expert from the Ministry of Education assisted the team in identifying the best examinations and questions for inclusion in this study. These final examinations were reviewed, and items which corresponded to the material covered by Storyline 1 were highlighted. Further, we indicated which of three subject areas were reflected in these Storyline 1 items: MIS, Management, or Accounting. Finally, 48 items were selected, with 16 items from each of the three subject areas, and a pilot test was created.

The pilot test was administered at the beginning of summer camp 2007, to 106 students who had just completed Storyline 1 during the previous school year. Since these students had just completed the material, the pilot tested student's ability to respond to items had the highest validity among this sample of "experts."

A similar process was used to select and pilot items from Storyline 2. The sample used for the piloting of Storyline 2 consisted of students who had just completed Storyline 2 during summer camp, which comprised approximately 125 students.

Item analyses were run on the results of these pilots. The calculation of *p-values*¹ was the main method for determining which items had the highest validity. The result of these item analyses allowed for the selection of 18 items for use in the pre/post assessment. We selected 9 items each for Storylines 1 and 2. Within each Storyline, we selected 3 items for each of the 3 MIS subjects.

Since the scope of this study covers the entire 11th grade MIS curriculum, which is comprised of 5 units, it was necessary to select items for the pre/post assessment which covered materials from units 3 – 5 (Storylines 1 and 2 align with units 1 and 2 of the curriculum). Eighteen items were selected from the same final examinations collected at the end of the previous school year, with 6 items from each of units 3-5. Across these three units, we selected 6 items to represent each of the three subject areas.

As a result of the pilot, the team created an assessment consisting of 36 items, which will be the basis for measuring the growth in factual knowledge in the sample. This assessment was applied in late September 2007 and will be re-administered to the same students in May 2008 as a post-assessment. A copy of the assessment is attached in Appendix A. The correct answers to each question, and the unit and subject area covered by each question are also included in the appendix.

¹ *P-values* range from 0.00 to 1.00 and represent the correlation between each subject's performance on that item (correct or incorrect) and each subject's total score. When analyzing a test item, statistical significance indicates that performance on that item is a strong predictor of performance on the test as a whole.

Critical thinking items

Critical thinking questions were drawn from a pre-existing exam developed for the USAID-funded Egypt Reform Program. Researchers borrowed a series of items from the Egypt CAPS exam that focused on critical thinking, problem-solving, and team-building. These items were reviewed by a specialist in the Jordan MoE Curriculum Division and adapted to fit more appropriately into the Jordanian context. The MoE Curriculum Specialist then developed additional critical thinking questions which were added to the pre-test assessment. These questions were then reviewed by a psychometrician to ensure validity of the items.

Research question 2: Do characteristics of students, teachers or schools influence results?

In the original proposal, a set of fixed variables about the students, teachers and schools in the study was defined for use in determining how these variables might have influenced the results. A number of changes were made to this list of data for the following reasons: (1) In some cases, such as age, presence of disability, retention and self-reported reason student selected MIS Stream, the data for all students is identical. Since differential influences cannot be detected without variability, any data which contained no variability was eliminated; (2) In other cases, it was difficult for school staff to obtain accurate data on the number of Professional Development (PD) hours or number of hours of support for each teacher. Therefore, these data were eliminated; (3) ESP staff believed that some data not mentioned in the original proposal might be useful to collect (e.g. parent education) so these data will be added to the modeling procedures used at the end of the project. The following variables were collected, and will be used in the final report to determine the influence particular variables might have on student achievement gains:

Student-level variables

- Access to computers outside of school (home or cybercafe)
- Work of father
- Work of mother
- Education of father
- Education of mother
- Parent income level

School-level variables

- Proportion of 11th and 12th grade students enrolled in MIS Stream
- Presence of technology in the school (using Dajani school readiness data)
 - Proportion of new vs. old computers
 - Availability of broadband internet
 - Student:computer ratio
 - MIS Student:computer ratio
 - Students enrolled in the MIS Engineering path
 - Number of MIS labs
 - Number of labs
 - Number of printers/laptops/projectors

- Distance of school from District center
- Presence of learning teams
- Gender of school
- Urban vs. rural location
- Number of MIS classes

Teacher-level variables

- Current workload
 - Number of courses
 - Number of classes taught
 - Number of subjects taught
- Age
- Years of teaching experience

Sample

Two hundred students were selected for inclusion in this study. Twenty-five students were selected from each of the MIS-Online (treatment) and MIS-Curriculum (comparison) groups in four schools. The schools that will participate in this study are: Ahmad Touqan Secondary School for Boys (Amman), Ein Jalout Comprehensive School for Girls (Amman), Hussein Bin Talal School for Boys (Irbid, also known as Bushra school), and Al Balqa Comprehensive School for Girls (Salt).

School Selection

When looking at the schools which would take part in the study there were several elements which were considered. Firstly we were looking for schools which had classes for both MIS Online and MIS Curriculum running concurrently so that students in the study groups were fairly even at the beginning of the school year. This also reduced a number of other variables which would have needed consideration had we taken MIS Online and MIS Curriculum groups from different schools with perhaps different socio-economic catchment areas. Many schools which might have been considered only had classes in either MIS Online or MIS Curriculum but not both.

Secondly we were looking to have both boys and girls schools included in the survey.

We were also looking for schools outside of Amman as well as inside the capital.

Given these criteria only five schools were possible however one school in Aqaba was significantly behind the other schools in the teaching of MIS and coupled with a recent change of principal and some commensurate upheaval it was decided that this school should be excluded.

Focus groups

After the pretest was administered, student responses were entered into a database for analysis. Statistically significant findings were used as a basis for the creation of focus group protocols. Focus groups were administered in late October with the treatment and comparison groups in each of the four schools. The protocol for the focus groups is found in Appendix A.

Results

Several analyses were performed on pretest data in order to determine the strength of the assessment, and the degree of similarity between the treatment and comparison groups in the study. These analyses will be described in the following order: 1) technical data about the test; 2) demographic data about the two groups; 3) pretest performance for the two groups. Where applicable, focus group responses from students, and interview responses from principals and teachers will be provided to elaborate on test results.

Technical data

The first step in conducting the analysis is to determine the predictive validity² of the assessment. Each item was coded as correct or incorrect, and a total score was calculated for each student. Then, a *p-value* was obtained for each item. *P-values* range from 0.00 to 1.00 and represent the correlation between each subject's performance on that item (correct or incorrect) and each subject's total score. When analyzing a test item, statistical significance indicates that performance on that item is a strong predictor of performance on the test as a whole.

Since this test is in its first version, a criteria of $p < .10$ was used.³ Of the 36 multiple choice items, 31 were statistically significant predictors of test performance. The items which were not significant were items 6, 19, 21, 31, and 35 (see the assessment in Appendix A to review these items).

In addition to providing evidence that the pretest used was a valid test of student knowledge of MIS Curriculum information, these results also indicate the usefulness of the piloting that was done on the items for Storylines 1 and 2. Of the 18 items that were chosen from the summer piloting, only 1 (item 6) was found to be non-significant. The remaining 4 non-significant items were from units that were not piloted.

Similar item analysis procedures were used for judging the validity of the critical thinking items. Of the 8 critical thinking items, 7 were statistically significant predictors of test performance. Only item 1a was found to be non-significant (see the assessment in Appendix A to review this item). These results indicate that the critical thinking items were valid items that accurately measured student performance.

When this test is re-administered in the spring, item analyses will be recalculated. If any of these non-significant items are found to be non-significant again, data for that item will be excluded

² Predictive validity is a measurement of the degree to which performance on the assessment is related to the construct under investigation. In this study, we wished to measure the degree to which the individual items on the assessment were predictive of each student's overall performance on the assessment.

³ Due to the preliminary nature of pilot testing, a *p-value* of .10 is standard. After a measurement has been validated across several administrations, it is appropriate to use a stricter criterion of .05.

from the reporting of results. Such exclusion of consistently non-valid items is common practice in educational research studies, as we can only make inferential statements about items that are statistically predictive of the results under investigation. For the purposes of this study, the results of the validity check reported above should provide confidence that test performance increases across the pre/post administration period are a good indication of academic growth.

For each multiple choice item, students had five choices: A, B, C, D, and “Don’t know.” We provided this “Don’t Know” alternative in an attempt to minimize the number of missing answers, where students skipped the question instead of answering. The results show that 96% of students skipped no more than one question. Therefore, the data allow us to look at a larger pool of responses.

Since the students in the study were administered the pretest before exposure to the material, we should expect many “Don’t know” responses, as well as very low percentages of correct answers. Further, we should expect correct answer rates to be higher for the more basic questions, and lower for the more complicated questions. Pre/post test results will measure the degree to which lack of confidence decreases, by comparing the number of “Don’t know” responses by student at the end of the school year. The answer rates and patterns for the test match these expectations. Only 16.5% of students never selected “Don’t know.”

A review of correct percentage responses by unit number, where unit 1 is the most basic unit, and unit 5 is the most complex, shows that students found it increasingly difficult to answer questions correctly as the unit number increased. The average percentage of students who answered items correctly by unit number is provided below:

Unit 1	59.5% correct
Unit 2	49.4% correct
Unit 3	19.9% correct
Unit 4	26.9% correct
Unit 5	30.5% correct

These response rates provide further evidence of the validity of the test. Since our students had no exposure to the material covered by the test, we would expect the more difficult items to elicit response rates close to what we could expect by chance. In the case of items with 4 response choices, rates of 25% would be the expectation. Indeed, as questions became more difficult, response rates reflected the percentage we would expect from naïve subjects by random guessing.

Demographic data

At the beginning of the school year, demographic data about the students, teachers and schools in the sample were collected. When pre/post academic score differences are calculated at the end of the school year, these data will be used to determine whether any observed programmatic effects were associated with specific characteristics of students, teachers, and/or schools. Identification of such associations is useful to program replication, as it provides information about the degree to which programs interact with students in real-time. This information can be used to refine or

change the content or intention of the program, in order to produce increasingly positive results with students.

At this moment, the data collected is only available for descriptive purposes. A full discussion of the impact of these demographic data will be included in the final report. Appendix C contains eight tables, which compare students, teachers and schools on the key variables on interest, as described on pages 5-6 above.

Pretest performance

At the beginning of a comparative study of gains in knowledge, the results should show that performance on the academic measure is similar for the treatment and comparison groups. When performance between the two groups is similar on the pretest, it is easier to infer that any differential gains on the post-test by the treatment group are attributable to the program under investigation. In this case, the similarity in pretest performance between the Online (treatment) and Curriculum (comparison) groups is remarkable. Also interesting are the pre-existing differences between students from the four schools in the study. This section will present evidence that the study is investigating two groups that are very similar in academic ability, and also discuss some revealing differences between the students at different schools.

Treatment versus Comparison groups

Table 1 presents the overall results for the total test, and the two types of questions (Multiple choice and Critical thinking), by group:

Table 1: Online and Non-online Average Test Scores for all Schools Combined

Measure	MIS Status	N	Mean
Average Total Score	Online	100	41.46%
	Curriculum	100	40.30%
Average Total Critical Thinking Score	Online	100	50.63%
	Curriculum	100	49.26%
Average Total Multiple Choice Score	Online	100	39.62%
	Curriculum	100	38.64%

The comparison between the Online and Curriculum group for all three measures is statistically non-significant. The two groups appear to be starting at similar levels of academic ability.

Similar results are found when comparing the two groups by unit number (Table 2) and subject area (Table 3):

Table 2: Average Online and Non-online Test Scores per Unit for all Schools Combined

Measure	MIS Status	N	Mean
Average Total Unit 1 Score	Online	100	60.60%
	Curriculum	100	58.38%
Average Total Unit 2 Score	Online	100	49.31%
	Curriculum	100	49.41%
Average Total Unit 3 Score	Online	100	18.40%
	Curriculum	100	21.35%
Average Total Unit 4 Score	Online	100	27.00%
	Curriculum	100	26.77%
Average Total Unit 5 Score	Online	100	31.18%
	Curriculum	100	29.80%

Table 3: Online and Non-online Average Test Scores per Subject for all Schools Combined

Measure	MIS Status	N	Mean
Average Total Accounting Score	Online	100	45.15%
	Curriculum	100	44.62%
Average Total Management Score	Online	100	32.49%
	Curriculum	100	31.13%
Average Total MIS Score	Online	100	42.18%
	Curriculum	100	42.03%

Once again, the comparison between the two groups is non-significant.

When these analyses are split by school, the results for question type (Multiple Choice versus Critical Thinking) are the same as in the aggregate for three of the schools. However, in one school, Ahmad Touqan, the results reveal that the Online group outperformed the Curriculum

group by a larger margin than in the other three schools. Online students at Ahmad Touqan achieved 41.89% correct versus 36.69% for the Curriculum group, a statistically significant difference ($p=.044$). To understand why this difference occurred, interviews with the principals at the four schools included a question about how students were selected for the Online group. At the three schools where the results show similar performance between the two groups, students about to enter the MIS stream were asked if they wanted to participate in the Online program. The names of those who answered affirmatively were collected and twenty five names were then drawn randomly. These students were then placed in the Online program. In Ahmad Touqan, despite instructions to choose students for the program randomly, the principal chose “the best” students for the program. The results for Ahmad Touqan provide evidence of the different selection process for this school. When pre/post difference scores are analyzed, these pre-existing differences at Ahmad Touqan will be controlled using a Repeated Measures Analysis of Covariance (ANCOVA).⁴

Other findings included the following:

School-level analysis by unit number revealed no significant differences, with one exception: At Bushra school, the Curriculum group answered 21.13% of Unit 3 items correct, versus 12.27% for the Online group.

School level analysis by subject area revealed no significant differences, also with one exception: At Bushra school, the Curriculum group answered 46.87% of Accounting questions correct, versus 37.54% for the Online group.

Interviews with principals and teachers did not indicate any rational explanation for these differences at Bushra school. Therefore, it is likely that these differences are just chance occurrences. Nonetheless, when pre/post difference scores are analyzed, these pre-existing differences at Bushra school will be controlled using a Repeated Measures Analysis of Covariance (ANCOVA).

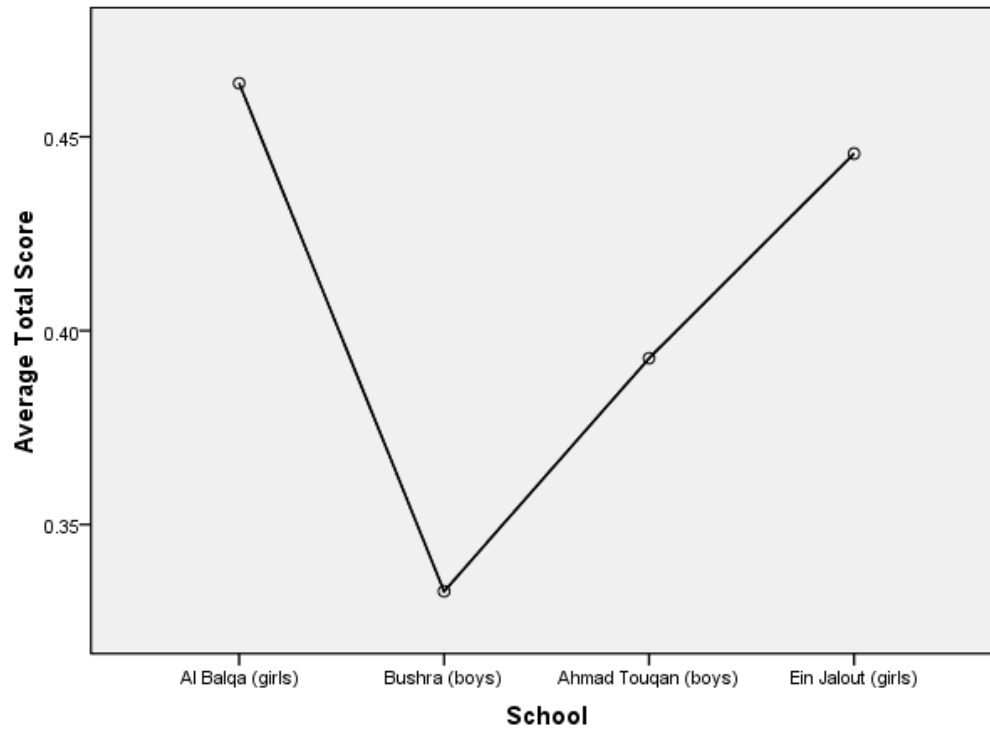
School comparisons

Comparisons by school reveal a consistent pattern of differences. In general, girls’ schools outperformed boys’ schools. The line graphs in Appendix B provide an illustration of this discovery of pre-existing differences between schools. Figure 1 below serves as a summary of

⁴ A Repeated Measures ANCOVA is a statistical technique that acknowledges pre-existing differences on some variable (in this case, pre-test scores), and controls for those differences in the analysis of pre/post test change scores.

the figures found in Appendix B. The pattern in Figures 2-6 is almost identical.

Figure 1: Average Total Score by School



In Figures 1 through 3, scores on the total test, multiple choice items, and critical thinking items, are presented. In every comparison but one, results for students at Al Balqa school and Ein Jalout school (both girls' schools) were similar to one another, but significantly higher than Bushra and Ahmad Touqan (both boys' schools).⁵

⁵ The exception was that the results for Ein Jalout were not significantly different than Ahmad Touqan for multiple choice items.

Figures 4-7 present school-level comparisons by unit number. The following is a summary of significant finding for each unit number. Only those comparisons which were significant are mentioned:

- Unit 1: Ein Jalout and Al Balqa scored significantly higher than Bushra; Ein Jalout scored significantly higher than Ahmad Touqan
- Unit 2: Al Balqa scored significantly higher than Bushra
- Unit 3: No significant differences were found (no Figure provided)
- Unit 4: Al Balqa scored significantly higher than Ein Jalout
- Unit 5: Al Balqa scored significantly higher than Bushra

Figures 8-10 present school-level comparisons by subject area. The following is a summary of significant findings for each of the three subjects. Only those comparisons which were significant are mentioned:

- Accounting items: Al Balqa scored significantly higher than Bushra
- Management items: Bushra scored significantly lower than the other three schools
- MIS items: Al Balqa scored significantly higher than Bushra

Discussion of gender differences

Given the highly consistent results presented in Figures 1-7, which point to significant gender differences in academic performance, we sought to find out from students why girls were outperforming boys. A list of representative student responses from focus groups at the four schools (which revealed no gender differences in content) is presented in Appendix D. Responses emphasized the wider array of non-academic career options available to boys, the greater flexibility boys have to participate in activities outside the home, the differences in competition between boys and girls, and the pressure girls feel to prove themselves deserving of their relatively recent access to higher education. These gender theories were heard from boys and girls, with a consistency that suggests astuteness. More in-depth study would need to be done to test these theories accurately.

Discussion of student predictions

One item of interest from our focus groups with students concerned their predictions about the MIS-Online program. Students in all four schools, representing both the Online and Curriculum groups, were asked what they thought the results would be at the end of the year. The following is a breakdown of their predictions:

The Online and Curriculum groups will post the same or similar results: 13 (7.03%)

The Curriculum group will post higher results than the Online group: 15 (8.11%)

The Online group will post higher results than the Curriculum group: 157 (84.86%)

When those who thought the Online group would do better were asked what would happen if the Online and Curriculum groups were switched, 100% of students agreed that the Online group would still perform better. These students were also asked to provide the reasons they thought

the Online program would produce such stellar results. The reasons students gave emphasized certain special characteristics of the Online program, such as: application of knowledge, the opportunity for students to solve problems, exposure to actual applications that provides additional information not given in the textbooks, the tying of concepts to the curriculum, the need for students to struggle with MIS knowledge instead of just memorize it, and the need for students to perform their own research, which will develop students' research skills and internet capacity. Students agreed that this method might not work with other subjects, but with MIS, it is essential that learning be done on the computers.

Those who thought the Curriculum program would do better gave the same general answer: *The Storylines and Online access will distract students away from the things that will be tested, whereas the Curriculum students will be focusing only on what they need to learn to do well on the test.* Those who thought the outcome would be the same for the two groups gave the same general answer: *The material covered will be exactly the same, so why should there be a difference?*

These student predictions will be discussed during focus groups at the end of the year, after results from the post-test have been collected and analyzed.

Conclusion

In Fall 2007, 200 students were administered an assessment of academic knowledge about the MIS curriculum. These students represent 4 schools, and two ways of experiencing the MIS material: traditional, teacher-directed and Online, student-directed. The main purpose of the study is to measure any differential impact on academic performance between these two groups.

The results of the early collection of data and information provide an excellent baseline for measuring academic growth across the school year because validity tests confirmed that the assessment developed to measure performance was a well developed test. Results showed that with few exceptions, there were no noticeable differences between performance on the pretest for students in the treatment and comparison groups. Thus, any differential increases or decreases in performance on the post-test are more confidently attributable to the Online program.

The most notable exception was in one school, where the Online students outperformed the Curriculum students to a significant degree. This school was the only one which selected its best students for the Online program (the other three schools selected their Online students randomly). Therefore, since the assessment was able to detect this pre-existing difference in ability at this school, this exception provides evidence of the validity of the assessment.

Differences between schools were notable across all ways of measuring performance. Girls outperformed boys to a highly significant degree. These results reflect gender differences in performance known anecdotally to educators in Jordan. When students were asked about these gender differences, many interesting, sociologically astute answers were given.

Students, principals and teachers seem to understand the reasons for predictions in favor of the Online program, attributing their belief to the contextualization of factual information, the

emphasis on problem-solving and self-directed learning, and the provision of extra information not given in textbooks alone.

Classroom observations to quantify the quality and degree of implementation of the MIS curriculum (with both groups) will be conducted in late February, followed by the administration of the post-test in May. Results from this post-test will be used to inform focus group conversations with our 200 students, to gather student opinions and beliefs about MIS in general and MIS Online after their experience in the MIS Stream. The culmination of the pre/post test will provide USAID and the MoE with solid evidence about the initial impact of the Online MIS stream on student performance and allow policy and decision-makers to refine plans for how the curriculum is implemented in future years.

APPENDIX A:

INSTRUMENTATION

- **Pre/post Assessment**
- **Focus Group Protocol**

In the name of God the Merciful

Name of student: _____ Name of school: _____

Circle the correct answer for the following questions.

1 - The name of the receipt that you get when you receive money or cheque's on a particular date is called?

- a) Receipt voucher
- b) Payment/disbursement voucher
- c) Journal entry
- d) Invoice

Correct Answer – A

Unit – 1

Subj- Acct

2 - All skills related to interviews, writing reports and all company activities is called: skills of

- a) Guidance
- b) Communication
- c) Controlling
- d) Organizing

Correct Answer – B

Unit – 1

Subj - Mgmt

3 - To help the system discover its success in achieving its goals it requires:

- a) Continuous control
- b) Organized planning
- c) Feedback
- d) Developed inputs

Correct Answer – C

Unit – 1

Subj - Mgmt

4 - To guarantee the quality of information there should be a relation between the problem and the information needed for solving the problem. These characteristics are called:

- a) Revenue
- b) Source
- c) Correlation and matching
- d) Updated

Correct Answer – C

Unit – 1

Subj - MIS

5 - The accountant's statements and related documents are importance because?

- a) It is the main resource for journal entry
- b) They are internal control documents
- c) These document help you to resolve financial issues
- d) All of the above

Correct Answer – D

Unit – 1

Subj - Acct

6 - One of these are considered as an optional accountancy book:

- a) Incoming and outgoing book
- b) Debit book
- c) Daily transaction book
- d) Inventory book

Correct Answer – B

Unit – 1

Subj - Acct

7 - The importance of communication and its role in any enterprise comes through:-

- a) Participation and interaction
- b) Effectiveness
- c) Efficiency
- d) Creativity and accomplishment

Correct Answer – A

Unit – 1

Subj - Mgmt

8 - The user would feel that data is comprehensive if it was:

- a) Large
- b) Satisfied his data needs
- c) Broad
- d) Abstract data

Correct Answer – B

Unit – 1

Subj - MIS

9 - The decision making processes does which of the following:

- a) Classifies the available alternatives
- b) Chooses the best alternative from a set of available alternatives
- c) Develops available alternatives
- d) Maintains the alternatives

Correct Answer – B

Unit – 1

Subj - MIS

10 - Information technology is:

- a) The group of elements based on dealing with the data.
- b) The group of software that works on managing the computer and organizing its work.
- c) The renewed equipment that is used in dealing with the information and the data.
- d) The group of systems that are related in interactive relationships.

Correct Answer – C

Unit – 2

Subj - MIS

11 - The organization helps in transferring the managerial instructions and decisions to all the organization's departments through:

- a) Developing the individuals skills.
- b) The coordination in between all of the activities and events.
- c) Define the basic authority lines and the communication within.
- d) Define the manager and the employee.

Correct Answer – C

Unit – 2

Subj - Mgmt

12 - The degeneration and death is an inevitable result to:

- a) The isolation of the organization from the external environment surrounding it.
- b) The creative dominant culture.
- c) The margining of the organization in the local community.
- d) Tax paying.

Correct Answer – A

Unit – 2

Subj - Mgmt

13 - The cause of interest for the loaners in the accounting information is:

- a) To help in judging the financial situation of the organization and its abilities in paying back its obligations.
- b) Comparing the organizations' profits with other similar organizations.
- c) Provide the information in the same form of reports.
- d) Performing researches.

Correct Answer – A

Unit – 2

Subj - Acct

14 - The basic objective for the business organization is:

- a) Meeting its obligations / commitments.
- b) Providing accounting information.
- c) Performing financial analysis.
- d) Achieving profit.

Correct Answer – D

Unit – 2

Subj - Acct

15 - Assuring harmony with the organizations' plans and objectives is considered from the challenges of the _____ process:

- a) Planning.
- b) Organizing.
- c) Analyzing.
- d) Maintenance.

Correct Answer – A

Unit – 2

Subj - MIS

16 - The feasibility study that takes care of the benefits that are acquired from the system and the costs of developing it and making it work is called:

- a) Organizational.
- b) Technological.
- c) Economical.
- d) Processing.

Correct Answer – C

Unit – 2

Subj - MIS

17 - The organization that allows constructing relationships among the individuals from different levels and sections of the organization is:

- a) Managerial.
- b) Official.
- c) Basic.
- d) Unofficial.

Correct Answer – D

Unit – 2

Subj - Mgmt

18 - Achieving profit is considered the main objective for:

- a) Governmental organizations.
- b) Business organizations
- c) Consumers.
- d) Educational organizations.

Correct Answer – B

Unit – 2

Subj - Acct

19 - The most common indicator for measuring the organization's size is

- a) the sum of assets
- b) number of employees
- c) formality degree
- d) increasing the number of managerial levels

Correct Answer – B

Unit – 3

Subj - Mgmt

20 - The organization is pointed to as self management or self directed is:

- a) team organization
- b) matrix organization
- c) organization based on the process
- d) organization according to clients

Correct Answer – A

Unit – 3

Subj - Mgmt

21 - The principle that defines the responsibility and restricts or constraints it is the case of something going wrong, in addition to ensuring the coordination between the staff / personnel and the different managerial units

- a) the principal of dividing the workload
- b) the principal of managerial sequence (hierarchy)
- c) the principal of the supervision field
- d) the principal of the command unit

Correct Answer – D

Unit – 3

Subj - Mgmt

22 - In the organizational process steps, the step that proceeds "allocate the managerial units specialties and their relationships is:

- a) the similar activities and forming managerial units
- b) preparing the organizational chart of the organization
- c) knowing the required activities to achieve the organization's goals
- d) knowing the organization's objectives

Correct Answer – A

Unit – 3

Subj - Mgmt

23 - The state in which the organization hopes to reach in the future, that fulfill its objectives, directs its activities and future decisions is:

- a) the vision
- b) the letter ()
- c) the objective
- d) the values

Correct Answer – A

Unit – 3

Subj - Mgmt

- 24 - Each inventory settlement bond affects two lists:
- a) the income list and the ownership rights list
 - b) the income list and the financial position list
 - c) ownership rights list and the financial position list
 - d) ownership rights list and the inventory list

Correct Answer – B

Unit – 3

Subj - Acct

- 25 - From the components of the management systems in the database, the data's dictionary which does the following
- a) knowing the nature of each element in the database elements
 - b) processing information upon request
 - c) allocating the formatting structure for each file and the fields within
 - d) storing the database definitions, characteristics, ownership and its structural setup

Correct Answer – D

Unit – 4

Subj - MIS

- 26 - When the job description tasks are not clear and complexed, the best leading style is:
- a) the supportive leadership
 - b) accomplishment leadership
 - c) participation leadership
 - d) directing leadership

Correct Answer – D

Unit – 4

Subj - Mgmt

- 27 - The list used in installing the daily processes of the organization using ITAC is:
- a) helping programs
 - b) daily transactions
 - c) basic documents
 - d) reports

Correct Answer – B

Unit – 4

Subj - Acct

28 - From the examples on the short term obligation is:

- a) debit
- b) running assets
- c) fixed assets
- d) personal withdrawals

Correct Answer – A

Unit – 4

Subj - Acct

29 - The screen that contains the date of the frozen period is:

- a) the organizational information
- b) the systems ثوابت
- c) documents sequential
- d) cost centers

Correct Answer – B

Unit – 4

Subj - Acct

30 - The unavailable completed or finished accounts are represented in the _____ accounts:

- a) the address
- b) the sum
- c) accepting the move
- d) the cost center

Correct Answer – C

Unit – 4

Subj - Acct

31 - The amount given by the seller to the buyer when his purchases increased within a certain period of time is called:

- a) commercial discount
- b) cash discount
- c) amount discount
- d) the discount allowed

Correct Answer – C

Unit – 5

Subj - Acct

32 - The tactic planning deals with the information systems in the stage of:

- a) procession of the daily tasks
- b) implementing strategic planning
- c) readiness
- d) assessment

Correct Answer – B

Unit – 5

Subj - MIS

33 - The study that concentrates on the way to support the suggested system for the work strategy, its priorities and the extent of change that the organization's system will upgrade, is the feasibility study of:

- a) processes
- b) technological
- c) economical
- d) organizational

Correct Answer – D

Unit – 5

Subj - MIS

34 - The main schedule for the activities timetable that is used as a supervisory tool over the information systems aims for:

- a) allocate a timetable for the events and main activities in the information systems project
- b) allocate the time for employing the system
- c) allocate the activities tools
- d) allocate the inclusive abilities and resources

Correct Answer – A

Unit – 5

Subj - MIS

35 - The committee that steers the information systems team includes:

- a) the members from the (IS) division
- b) The main information controller (CIO)
- c) The financial manager (CEO)
- d) The executive manager (CFO)

Correct Answer – A

Unit – 5

Subj - MIS

36 - From the challenges of the planning process securing harmony in between the organization's plans and its goals, and this problem shows clearly in:

- a) big companies
- b) small companies
- c) medium companies
- d) both big and small companies

Correct Answer – A

Unit – 5

Subj - MIS

1. Boxing, along with other competitive sports have often been assumed by human to “build personality”. Recently, warnings began to be given that such competitive sports- due to their focus on competitive, victory and adversary, and winning a prize, caused a disregard for teaching traditional values and basic movement. Some psychologists view fighting sports, such as boxing, as leading to the development of antagonism since the sports establish the acceptability of harming others. Psychologists advise that competitive sports should focus more on the concepts of improving fitness and skills, and not rushing to gains. Generally, children are advised to try different types of sports so that they can discover the most suitable activity for them physically and psychologically.

1a. What do you think of the speaker’s evidence of negative impacts of fighting sports?

- a. Acceptable, as sportsmen’s bodies are bruised and badly injured.
- b. Acceptable, as psychological studies emphasize their impacts on social relations.
- c. Acceptable, as fighting sports develop enmity and hatred between people and players.
- d. Acceptable, as exercising fighting sports impacts a practicing player’s level.

Correct answer: B

1b. What is the general goal of the previous passage?

- a. Warning against participating in sports
- b. Importance of searching for hobbies other than sports games
- c. Focusing on high-level sports values
- d. Stressing the importance of fighting sports.

Correct answer: C

2. How pleasant a man's life, how comforted his heart, and how great his happiness and joy would be if he leaves choices and dispositions of hoping for more, fearing want, asking for health, or sparing an illness to God whom he knows is the sole chooser and disposer, and if he realizes that God's disposition for His creatures is better than their own for themselves; for God knows the good of his creatures more than they do, is much more capable of bringing this good to them than they do, plans for His creatures better than they do, and is more merciful to His creatures than they are. If he realizes that His determination is never earlier or later than what He has planned, so that he leaves himself to God and delivers all his matters to Him, and prostates himself before God as a weak slave before powerful and mighty king who freely dispose of his slaves affairs, while the slave is not entitled to dispose of them by any means; he shall feel comforted of all grief's, sorrows, thoughts, and regrets, and shall deliver his needs and interests to He who is never burdened by them, so that He would carry them for him.

If man refuses but to dispose of his matters and to make choices so that he disregard his duties towards his God, He would leave him and burden him with his cares, then he would feel sorrow, sadness, misery, fear, tiredness, and discomfort, and He would keep him from joy and delight; for he would be toiling in the world like a beast and is not rewarded.

2a. Which of the following statements is true, according to the passage?

- a. A person lazily depending on God believes he is unfree in all aspects of his life and has no right to choose.
- b. A happy person knows that what happens to him is done by God without his intervention.
- c. An unhappy person does not fear God in his choices
- d. A smart person believes in fearing God in words and actions.

Correct Answer: B

2b. What does the writer call for in the passage?

- a. Thorough thinking in all choices
- b. Fulfilling the best possible demands
- c. Contentment with God's determinism
- d. Rejecting choices that provoke God.

Correct Answer: C

3. A two-person paint and wallpaper crew is redecorating the first floor of a house for a family which has gone on vacation. The team has two days to finish the job. They have completed the dining room and family room. One team member is finishing the painting in the kitchen; the other has begun wallpapering the living room. The second team member finds that after the paste is applied, the wallpaper tears very easily when he is trying to adjust it on the wall and trim it to fit. They discuss the situation. The one who is painting suggests that both work on the wallpapering first and then finish painting the kitchen. She explains that one of them can hold up the bottom of the wallpaper strip while the other one does the trimming. This might prevent the tearing by eliminating the extra weight on the paper.

In this situation, the goal for the team can best be accomplished by:

- A. Asking for more time to complete the project.
- B. Buying extra wallpaper to allow for torn pieces.
- C. Continuing to work individually on each room.
- D. Working together on the wallpapering and painting in both rooms.

Correct Answer: D This action contributes the most task completion (finishing the job at the least cost) and also shows cooperative team relationship

4. A convenience store is staffed during the day by a manager and a team of four employees. One of the employees, a member of a minority group, has just been hired and happens to begin work on the day of a large snowstorm. Another employee is not able to get to work because of the weather, the manager. Who will be busy with other weather-related problems, asks the other two experienced workers to work together to orient the new employee.

One of the experienced workers is normally the cashier, and the second usually stocks shelves and helps customers. Feeling that he will probably be very busy, the cashier tells the stocker to help the new worker. The stocker, knowing that orientation will take extra time, resents having it pushed off on her. Since the store is very busy, she will need to restock the shelves more often than usual. With the other experienced worker absent, the stocker doesn't see how she can possibly get everything done that is expected of her. She spends more time than necessary in the storage room to avoid the new employee.

As a member of this team, the stocker could best support the team and get the work task accomplished by:

- A. Having the new employee help her stock shelves as she explains store procedures.
- B. Having the new employee learn by just watching the other employees.
- C. Telling the cashier to take care of training the new employee so the stocker can get her work done.
- D. Telling the manager that nothing is going right and that she doesn't have time to train the new employee.

Correct Answer: **A** this action contributes both to the goal of serving customers and also to maintaining good team relationships. This arrangement is probably the most effective training that can be done under the circumstances.

5. A small health club employs a receptionist, four instructors. The club opens at 9:00 am the instructors teach aerobics and weightlifting classes during the daytime and early evening hours. The custodian cleans the facilities in the early morning hours before the club open and does odd jobs during the rest of the day. One of the instructors is a young mother who took the job because she was told that she would be expected to work only during the hours that her children were in school. Another is a college student who takes classes in the morning and teaches weightlifting classes in the late afternoon and evenings. The other two instructors work a variety of hours. One of these instructors doesn't want to work any additional hours. Although the other one likes earning the extra money, she has commented that the other three instructors take advantage of her willingness to work extra hours and pressure her to work whenever no one else wants to.

The club has received requests from several of its clients for an early morning aerobics class. The manager has told the team to discuss how such a class could be added without hiring any more instructors. At the meeting, several objections are raised. The custodian argues that a class early in the morning would interfere with cleaning the club. The instructor who has the young children says that there is no way she could teach the class because she needs to get her children ready for school at that time. She suggests that perhaps the instructor who is usually eager for extra work could teach the early class. That instructor groans folds her arms, and does not reply or participate. The college student argues that, since the people requesting this class is already clients, the club will not really be gaining business by starting this class. The receptionist counters that there have been some calls from others about such a class. The fourth instructor is concerned that those clients who have requested this class may go elsewhere if it isn't offered.

As a member of this team, the instructors who usually work the extra hours should:

- A. Suggest that the fairest solution would be the team to vote on who should teach the early class.
- B. Suggest that the team tell the manager to forget about the early class; it isn't going to work.
- C. Voice her feeling and suggest that the manager reevaluate the whole schedule to see how the class might be covered.
- D. Walk out to protest her hours and let them find a solution without her help.

Correct Answer: **C** The instructor uses assertiveness to communicate her honest concerns, and still recognize that the goal of providing the early class is important

6. A daily newspaper is changing from an afternoon to a morning delivery schedule. This change affects every employee, from the editor to the delivery people. The paper will have a 10:00 pm press deadline, and the reporters will be unable to write complete stories for many evening sports events, cultural events, and community meetings. The editor has told the team of five reporters to propose a revised schedule of assignments. This schedule should take into account each reporters area of expertise and still ensure that all important stories are covered by the deadline.

When the team meets to discuss this schedule, a major concern is how to make the evening stories as timely as possible within the new time constraints. Team members offer several suggestions regarding how to shift assignments around to accommodate the deadline. One of the reporters insists on covering only the political stories, which are his particular interest. Another reporter argues that the political reporter should help out the spots writer by preparing background material in the afternoon for the evening's sports stories. The political reporter refuses, saying that he wasn't hired to work on sports and doesn't know anything about them. The sports writer complains that change to a morning edition is the whole problem, that coverage of evening sports events is going to be ruined, and that management doesn't know what they are doing. The cultural reporter agrees and adds that he is thinking about finding a job elsewhere. The society reporter retorts that he should do just that; she hates doing the society stories and would take the cultural assignment in a minute.

As a member of this team, the sportswriter can best support the team and accomplish the task by:

- A. Suggesting at all oh the reports work on background for all types of stories so that each can do final details and editing in his or her area expertise
- B. Suggesting the editor hire several part-time reporters to help cover sports stories
- C. Suggesting they keep their current assignments and accept a one-day delay in coverage of all evening stories
- D. Volunteering to tell management that the morning edition change is a mistake and should be withdrawn.

Correct Answer: **A** this action meets the criteria established by the editor. The action exhibits the Level 6 skills of structuring and flexibility.

Focus Group Protocol for Oct 2007: ESP Project

School:

Online or Curriculum Group?:

Intro – confidential; won't affect your grades

What makes for a good student?

How many believe intelligence is Innate vs. Effort?

What makes for a good teacher? [Students imagine the best teacher they ever had]

What do you think a teacher of adolescents should know?

What factors affect learning? Do you think these affect your school?

If you were given the job of teaching MIS, what methods would you use to teach it most effectively?

Why are you in MIS? How were you selected? [Choice between school, parents or self]

NOTE: This question was also posed of the principal, to ascertain differences in selection process at the school level.

How many students wanted to be in the online program when it was announced?

How confident are you that MIS will give you tools for success?

Why do you suppose there is such a difference between scores for boys vs. girls?

How is MIS being taught to you now? [Students select between balance of teacher/computer as perfect, more teacher desired, or more computer desired]

NOTE: These ratios will be verified during classroom observations in March, and asked of students again at program end.

What do you think will happen with the two groups? [Students select between same, Online or Curriculum]

If the two groups were switched, which group would do better?

APPENDIX B:

SCHOOL-LEVEL COMPARISON GRAPHS

- **By question type**
- **By Unit number**
- **By Subject area**

Figure 1: Average Total Score by School

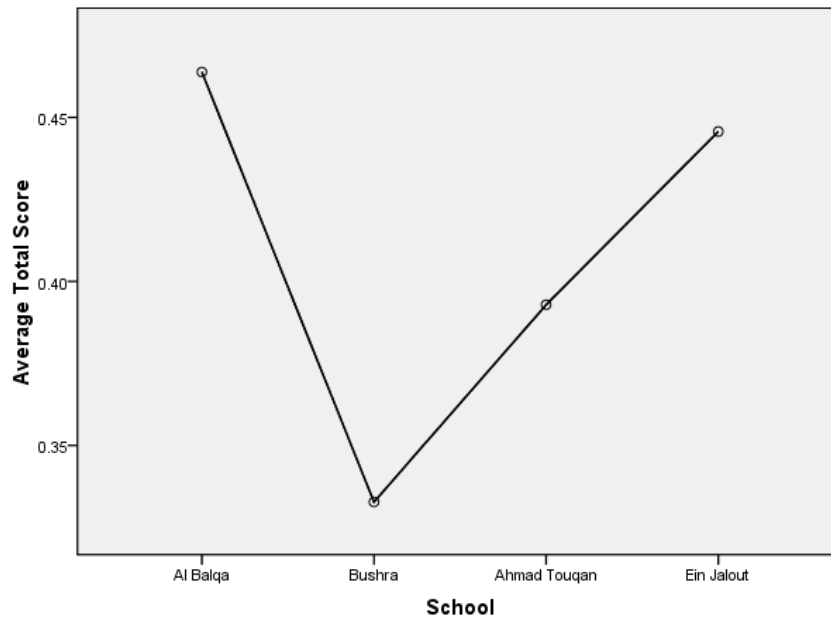


Figure 2: Average Score on Multiple Choice Items by School

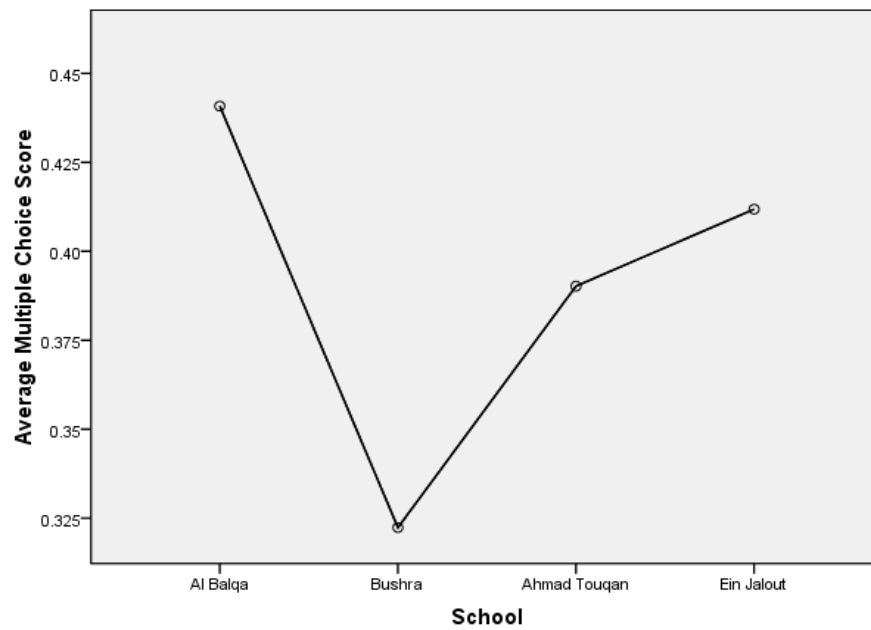


Figure 3: Average Score on Critical Thinking Items by School

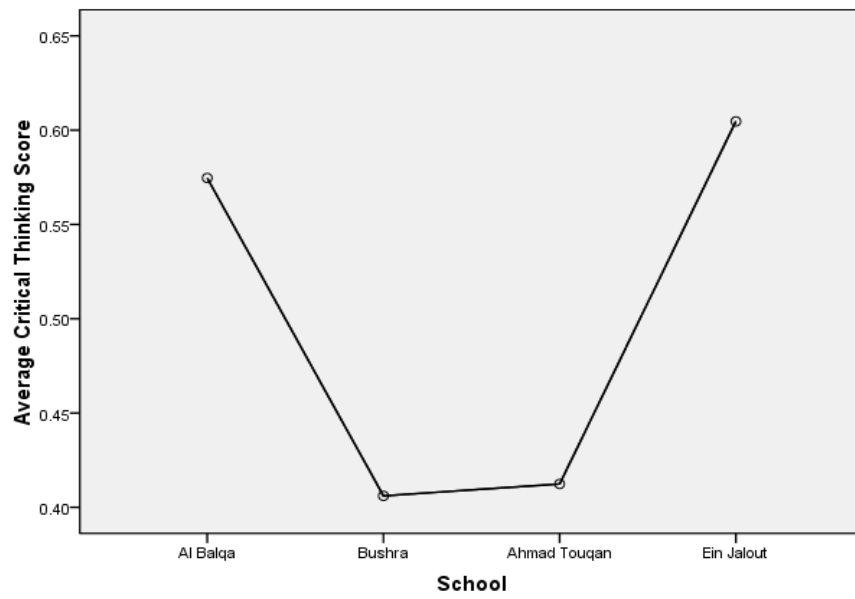


Figure 4: Average Score on Unit 1 Items by School

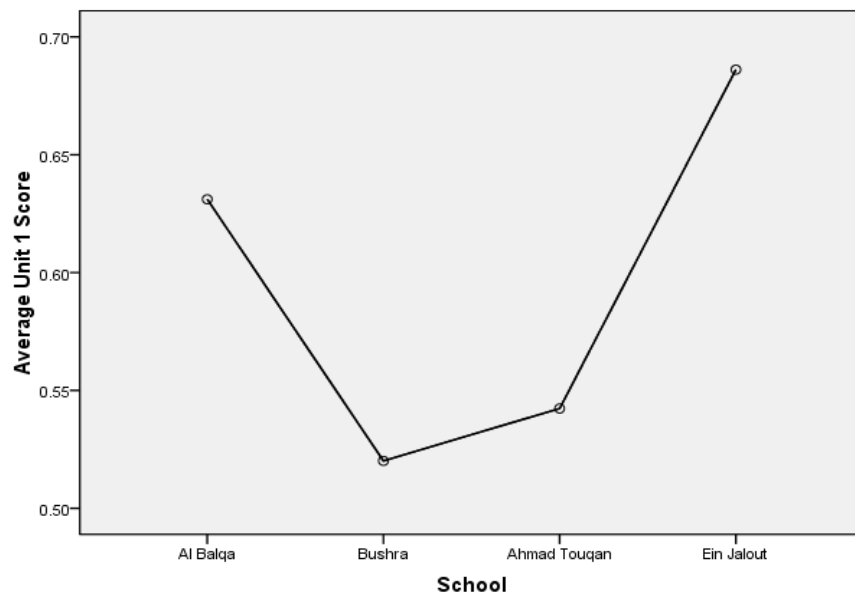


Figure 5: Average Score on Unit 2 Items by School

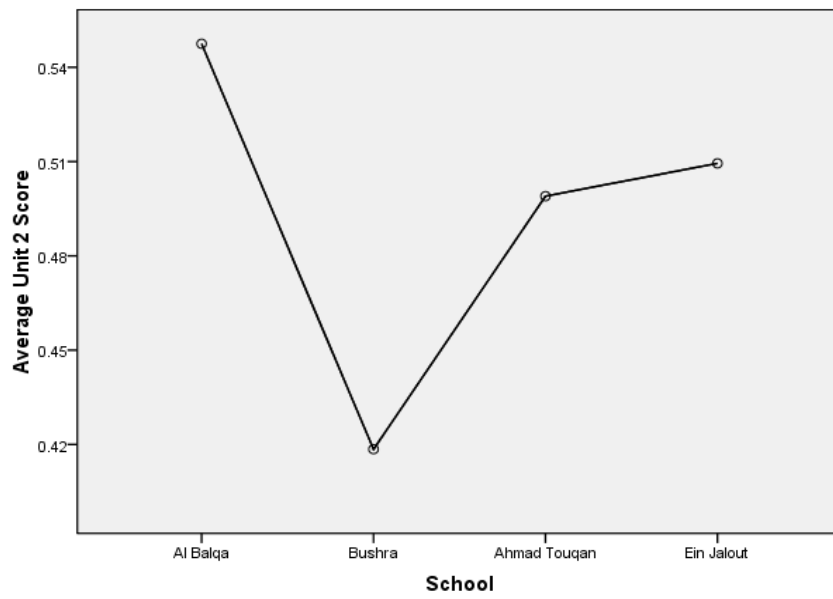


Figure 6: Average Score on Unit 4 Items by School

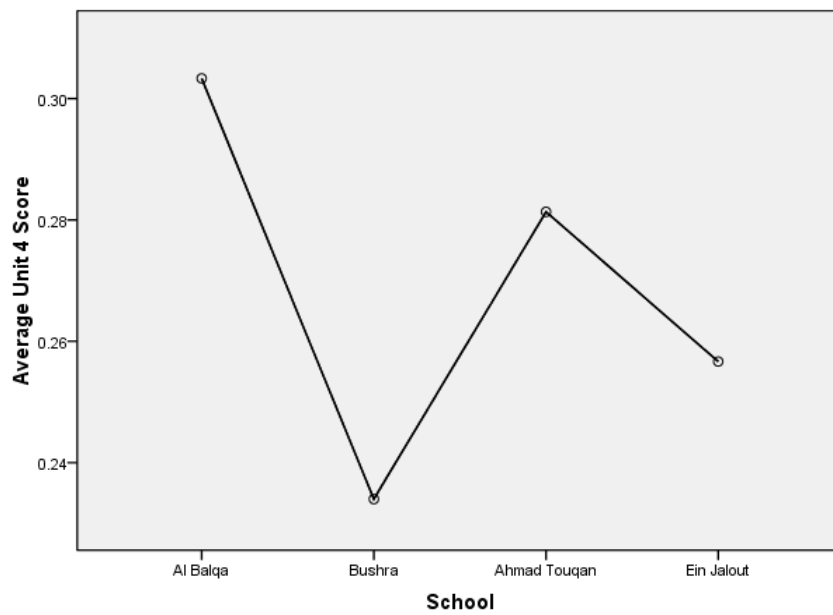


Figure 7: Average Score on Unit 5 Items by School

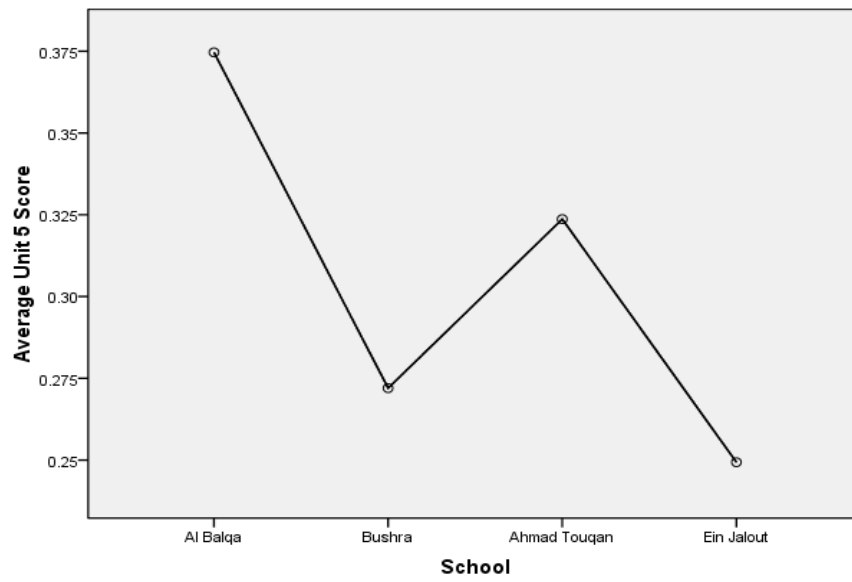


Figure 8: Average Score on Accounting Items by School

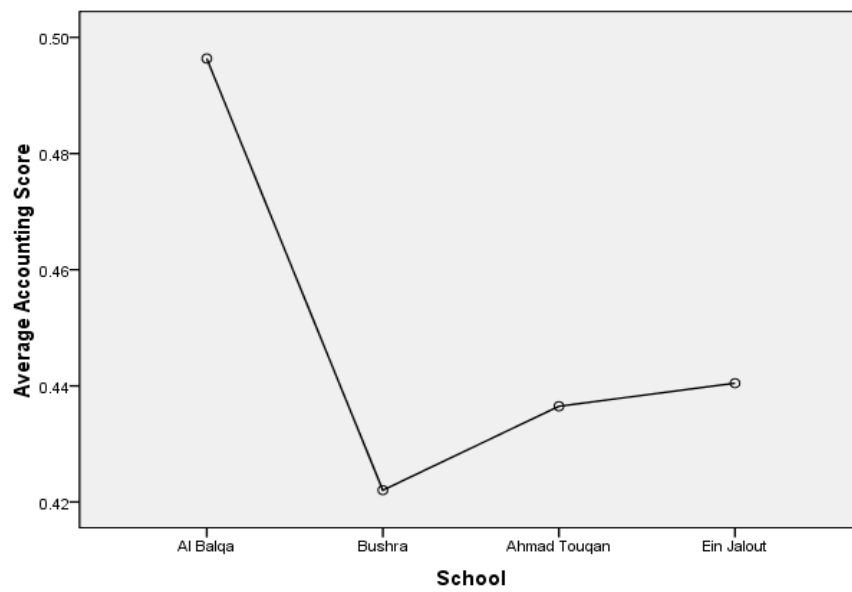


Figure 9: Average Score on Management Items by School

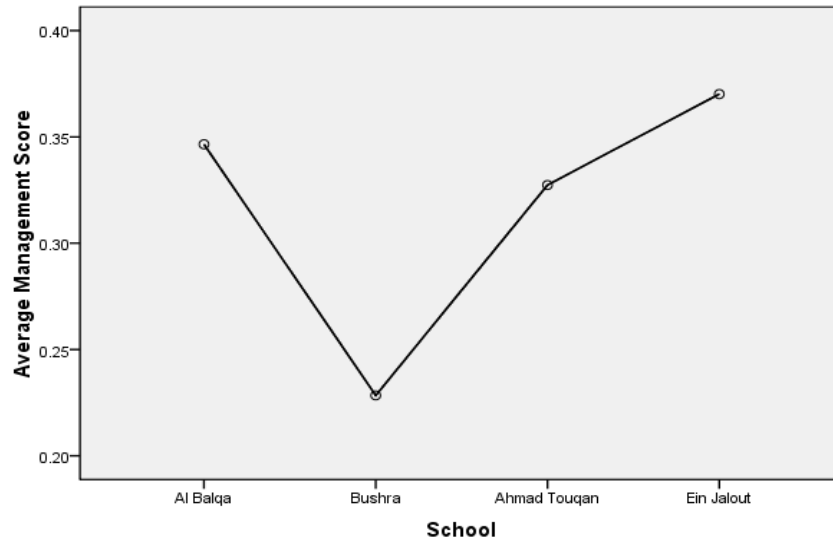
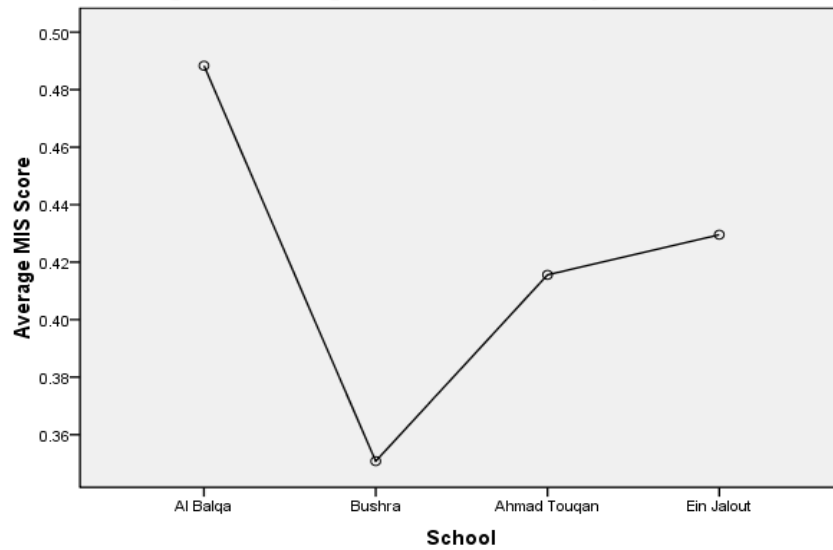


Figure 10: Average Score on MIS Items by School



Students' reported access to computers by school and MIS Status

MIS Status		Access to computers				Total
		No answer	Home access	Internet Cafe	No access	
Non-online curriculum-based	Al Balqa	1	1	0	23	25
	Bushra	0	25	0	0	25
	Ahmad Touqan	0	5	17	3	25
	Ein Jalout	0	15	10	0	25
	Total	1	46	27	26	100
Online	Al Balqa	1	8	0	16	25
	Bushra	0	25	0	0	25
	Ahmad Touqan	1	9	15	0	25
	Ein Jalout	1	19	5	0	25
	Total	3	61	20	16	100

Students' reported work of mother by school and MIS Status

MIS Status		Work of mother				Total
		No answer	Blue collar	No paid work	White collar	
Non-online curriculum-based	Al Balqa	0	6	16	3	25
	Bushra	1	0	24	0	25
	Ahmad Touqan	25	0	0	0	25
	Ein Jalout	0	1	20	4	25
	Total	26	7	60	7	100
Online	Al Balqa	1		16	8	25
	Bushra	0		25	0	25
	Ahmad Touqan	0		23	2	25
	Ein Jalout	1		22	2	25
	Total	2		86	12	100

Students' reported work of father by school and MIS Status

MIS Status			Work of father				Total
			No answer	Blue Collar	No paid work	White Collar	
Non-online curriculum-based	School	Al Balqa	1	13	7	4	25
		Bushra	0	6	9	10	25
		Ahmad Touqan	3	3	10	9	25
		Ein Jalout	1	12	4	8	25
	Total		5	34	30	31	100
Online	School	Al Balqa	1	12	6	6	25
		Bushra	0	11	6	8	25
		Ahmad Touqan	4	8	3	10	25
		Ein Jalout	1	4	1	19	25
	Total		6	35	16	43	100

Students' reported level of family income by school and MIS status

MIS Status			Fluctuates	Categories of family income				Total
				240 JD and lower	241 to 350 JD	351 to 550 JD	551 JD and higher	
Non-online curriculum-based	School	Al Balqa	6	4	8	1	2	21
		Bushra	0	18	6	0	1	25
		Ahmad Touqan	0	3	7	4	7	21
		Ein Jalout	0	0	1	6	17	24
	Total		6	25	22	11	27	91
Online	School	Al Balqa		5	7	8	4	24
		Bushra		15	9	1	0	25
		Ahmad Touqan		3	2	12	7	24
		Ein Jalout		0	4	11	8	23
	Total			23	22	32	19	96

Students' reported education of father by school and MIS Status

MIS Status		Education of Father							Total
		No answer	10th grade	HS without tawjihi	HS completion	2 years of college	Bachelor's	Post-graduate	
Non-online curriculum-based	Al Balqa	4		1	14	5	0	0	25
	Bushra	0		0	14	2	9	0	25
	Ahmad Touqan	3		0	12	1	9	0	25
	Ein Jalout	1		0	4	3	15	2	25
	Total	8		1	44	11	33	2	100
Online	Al Balqa	1	0		9	2	5	5	25
	Bushra	0	0		18	0	7	0	25
	Ahmad Touqan	4	3		5	4	7	2	25
	Ein Jalout	1	0		6	7	10	1	25
	Total	6	3		38	13	29	8	100

Students' reported education of mother by school and MIS Status

MIS Status		Education of Mother							Total
		No answer	10th grade	HS completion	2 years of college	Bachelor's	Post-graduate	Elementary	
Non-online curriculum-based	Al Balqa	4		13	5	2	0	1	25
	Bushra	0		23	0	2	0	0	25
	Ahmad Touqan	4		15	0	4	1	0	25
	Ein Jalout	1		13	4	7	0	0	25
	Total	9		64	9	15	1	1	100
Online	Al Balqa	2	0	7	4	7	1		25
	Bushra	0	0	25	0	0	0	0	25
	Ahmad Touqan	1	3	14	6	0	1		25
	Ein Jalout	1	0	12	8	4	0	0	25
	Total	4	3	58	18	11	2	4	100

APPENDIX C:
DEMOGRAPHIC DATA

- Student-level
- School-level
- Teacher-level

School-level variables

	Al Balqa	Ahmad Touqan	Bushra	Ein Jalout	Average for all schools
% of 11th grade students in MIS Stream	50.70%	65.00%	91.67%	10.57%	36.67%
Number of 11th grade MIS classes	1	3	2	4	2.5
Number of students per computer	5	10	3	3	5.25
Number of computers per MIS student	3	2	3	3	2.75
% of new computers	45.71%	41.12%	60.00%	19.35%	36.55%
Number of MIS labs	1	4	0	1	1.5
Number of labs (general)	3	5	1	5	3.5
Number of printers	3	2	1	3	2.25
Number of laptops	16	1	60	5	20.5
Number of projectors	2	4	2	9	4.25
Distance of school from District center (Km)		2	3.5	5	
Presence of learning teams?	N	Y	Y	Y	75% Yes
Gender of school?	F	M	M	F	50:50 M:F
Urban or rural location of school?	U	U	R	U	75% Urban
Availability of internet?	Y	Y	N	Y	75% Yes
Any students in the MIS Engineering path?	N	Y	N	N	25% Yes

MIS Teacher-level variables

	Al Balqa (n=4)	Ahmad Touqan (n=4)	Bushra (n=3)	Ein Jalout (n=3)	All schools (n=14)
Average number of courses taught	2	1.75	1.67	2.33	1.93
Average number of classes taught	11.75	7.75	12.67	4.67	9.29
Average number of subjects taught	1.5	2	2	2.33	1.93
Average age	38.75	35.5	32	29.33	34.36
Average years of teaching experience	14.75	3.75	5.33	6	7.71

APPENDIX D:
Focus Group Responses to Gender Differences
In Academic Performance

Student Responses to Gender Differences in Academic Performance

- Boys don't have to care about studying, because they have many non-academic career options. Girls must have a certificate to succeed professionally;
- Girls must be exceptional to get ahead, so they must study hard. Boys have an easier time getting a break;
- Girls are interested in planning their future more;
- Parents push girls more;
- Girls appreciate the opportunity to get advanced learning more than boys, because it is a newer opportunity for them;
- Girls are rising to the challenge – from early on, they hear that boys are better. They want to prove this wrong;
- Boys are interested in activities outside the house, and have more freedom to pursue them. Girls are “stuck” inside, which gives more time for study;
- Boys are more likely to be required to do work to support the family, which makes it harder to keep up in school, or prioritize education;
- Boys prioritize play over study;
- Interaction between teacher and student is more friendly and supportive in girls' schools;
- The competition between boys is more diverse, and tends toward physical prowess. Competition between girls is more focused on educational accomplishment;
- Boys are more distracted by outside things: fun, cigarettes, outside activities, mobile phones, etc.;
- Boys are not as serious as girls are. More easily distracted;
- Boys have more energy – harder for them to sit still and study as long as girls;
- Girls want to prove themselves, because of the long history of being second-class citizens;
- Girls will have to teach their children, so they are more motivated to learn;
- Girls have a limited array of career opportunities, meaning heavy competition for work. Must study to get ahead;
- Boys who do well in school represent a smaller pool of candidates for work, so they don't have to be as excellent as girls do (because competition is more severe for “female” jobs).