Information Technology Systems

2010 ASSESSMENT REPORT

Technology Learning Area

Government of South Australia

SACE Board of SA

INFORMATION TECHNOLOGY SYSTEMS

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GENERAL COMMENTS

In 2010, schools were able to combine the two compulsory topics (Information Systems, and Computer and Communication Systems) with any two of the five option topics (Relational Databases, Application Programming, Website Programming, Multimedia Programming, and Dynamic Websites). This allowed schools to develop a teaching program based on the students' background knowledge and skills.

All schools completed Relational Databases as one of the option topics. The second option topic saw 60% of schools choosing the Multimedia Programming, while fewer schools offered the topics of Website Programming, Application Programming, or Dynamic Websites.

Student work submitted for moderation was generally accompanied by a task sheet, teacher solutions, and marking schemes, which made it clear to moderators how the overall mark for a student's work was determined, and this made the process of moderating and validating standards straightforward. In some instances, however, this documentation was not provided, which made it difficult to ascertain how the awarded mark had been derived.

Student written work was generally accompanied by a class compilation of electronic files organised on one school CD/DVD, which made accessing student work effortless. However, in some instances source files (namely, .fla files or non-compiled VB files) were not provided, making the process of viewing source code a difficult task to complete. Viewing source code is an essential phase in confirming the level of programming skills and constructs used.

ASSESSMENT COMPONENT 1: COURSE WORK

All schools chose to present four tasks for this assessment component; one task each for the two compulsory topics and the two option topics. All schools weighted each course work assessment task at 10%. Most assessment tasks were of sufficient depth and standard to appropriately reflect this 10% weighting.

Most schools assessed the compulsory Information Systems topic using a case study of an existing system. Students were able to adequately analyse, critique, and communicate their observations, effectively demonstrating their knowledge and understanding of information systems.

The compulsory Computer and Communication Systems topic was most often assessed using a test format. The standard and style of test questions were often modelled on samples from past Information Technology Studies papers and therefore were appropriate in standard and marking. Other assessment formats chosen for this topic, such as a set of questions, although based on research, did not at times allow students an opportunity to sufficiently demonstrate an understanding of computer and communication systems concepts or how these concepts apply to networks. It was also difficult for the student to demonstrate performance against the analysis or critique criteria.

Course work for option topics generally took the form of an essay or a presentation/kiosk format, and addressed the social responsibility section of the topic. The social responsibility section allowed for flexibility with the design of assessment tasks. Discussion of contemporary issues and impacts provided an opportunity to allow scope and depth of response. Well-received solutions described or explained the system of concern, and were able to analyse and critique the responsibilities of the developer, and the impact of the identified system on society.

ASSESSMENT COMPONENT 2: SKILLS TASKS

For this assessment component, most schools chose to present two tasks, one for each option topic chosen. These tasks were often divided into two parts to accommodate delivery in the classroom setting as dedicated blocks of time. The first part often focused on analysis and design techniques — tools and skills essential for designing a solution to a given scenario — while the second part focused on the application of knowledge, skills, and processes to produce a solution.

Often, the second part of the presented skills tasks required students to demonstrate practical knowledge and skills of the chosen option topic. This was either presented as program code or a situation that needed to be debugged and/or improved, or as a situation requiring the development of a solution from first principles. When the assessed knowledge and skills required were based on a subset of skills drawn from the appropriate project skills checklist, then the task was of sufficient depth and standard to allow students to demonstrate their skill acquisition and effectiveness in solving the given problem. In a few cases, the identified skills needed to solve the task problem were not of the required standard.

Successful tasks were often suitably constructed to allow students to demonstrate a variety of skills from simple to complex that went beyond repetitive constructs and calculations and were sufficiently demanding to be able to differentiate the cohort being assessed. There was significant reliance on skills tasks sourced from SACE website support materials that required students to demonstrate skills in smaller segments to solve a problem; however, there was little modification of these assessment tasks to suit more appropriately the school's program and cohort.

ASSESSMENT COMPONENT 3: PROJECTS

Students were required to complete two projects, one on each of the chosen option topics. Each project was modelled on the five stages of the systems development life cycle: problem definition, analysis, design, development and validation, and evaluation. Students were required to develop a test system that was supported by a documented report.

The documentation of the five stages must be within the word-limit of 1500 words, as prescribed in the curriculum statement. In general, student work was within the word-limit. A number of students used a variety of tools and multimedia options to supplement their written solution, including diagrams, flow charts, tables, data dictionaries, and storyboards to support analysis and design components.

Most projects had a clearly stated problem definition with outcomes that met and incorporated the requirements of the appropriate option's project skills checklist of interface, data entry, and processing of data to form a solution. Regardless of whether a student chose their own scenario or developed outcomes for a teacher-provided scenario, this link with the skills checklist was crucial to the overall success and standard of the project.

Analysis and design responses differed depending on the chosen topic. Analysis of the data required, processing steps, and desired outcome was on the whole successful for the relational database topic, where student documentation conveyed a clear understanding of concepts that underpinned the design of the database. For programming topics, however, the analysis and design of the solution was often superficial in detail and marked generously for the evidence that was provided. Although responses accurately documented the design of the interface and supplied detailed storyboards of element placement, responses lacked the rigour required for the programming design for processing outcomes. Often, project documentation indicated that students had completed the development phase first, and then had returned to document the design phase second by providing printout of code to indicate and justify, albeit somewhat erroneously, that this was the analysis and proposed design.

The development of programming projects was sometimes accompanied by a printout of code. Internal documentation and recommended practice and techniques were clearly evident in better-quality solutions. Validation of the solution was not always supported by a clear plan that identified the component being tested, the proposed data to use, and the expected and/or actual outcome. A number of projects were accompanied by video/screen capture evidence of the student using the system, but at times this evidence needed to be more closely linked with the validation plan for the testing of the system.

Evaluation of the project was often brief and poorly completed, and it was seldom that this section was linked back to the problem definition of the project and the cyclic nature of the system development life cycle. The evidence that was provided for this section was often marked generously. Only a small number of students attempted to evaluate the effectiveness of their solution against the problem definition and offered recommendation for improvement and modification.

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