The Project - ITGS

an overview
rubrics
checklists
examples and
ideas

The project   SL only   30%

Introduction

The emphasis of the project is on solving a problem, set firmly in a social context, that affects the ways in which individuals, organizations and groups access and use information. Only projects that solve an actual problem should be undertaken. Although a simple solution can often be an appropriate response to a particular problem, students are encouraged to undertake challenging tasks to develop their IT skills and increase their awareness of the social impact of providing a feasible IT solution to a specific social problem.

The making of the product, the writing of the report, and the keeping of the log book must be undertaken by the student on an individual basis. Collaborative work is not allowed.

In identifying a problem set in a social context, students can select any topic that interests them. It need not be related directly to any of the areas of impact in the syllabus and the problem identified can be inside or outside the school environment.

One approach that students may find helpful and that is quite acceptable is to draw on material from other parts of the Diploma Programme where an IT solution could be found to a social problem. Examples could include:

- providing an interactive presentation for the biology teacher (client/end-user) from information and photographs that were collected from a biology field study. The IT product will be used as preparatory material for the following year's students (end-users)

- creating an IT product for the theatre arts teacher (client/end-user) to map backstage activities for a drama production

- developing an IT product for the history teacher (client/end-user) to solve the problem of teaching facts about the impact of Hitler during the second world war to grade 7 students (end-users).

Requirements

The project consists of three parts (product, report, log book), all of which must be submitted for moderation.

Product

The end product is the IT solution to the problem identified in criterion G. This must include the integration of at least three different IT skills. All products must be submitted in electronic form on either CD-ROM or DVD. Products that are web sites should include the URL address within the report. Products that involve printed documents (ie database reports) or desktop published documents must be submitted in their final published form and electronically on CD-ROM or DVD. Students are encouraged to save their documents on CD-ROM or DVD in the original format as well as in another format (ie PDF document, QuickTime or other cross-platform format). For further description, please see "Assessing the project" on pages 44–45.

Report

The report is a document of 2,000–2,500 words describing the process involved in the development, testing and implementation of the project. The report must be written in the order of the assessment criteria and the assessment criteria headings must be used as sub-headings in the report.

Visual documentation from the product in the form of screenshots, graphs, storyboards, photographs and similar visual evidence must be integrated into the body of the report under the appropriate sub-headings. The text in the report should refer to the visual evidence.

Questionnaires must be used in the formal testing of the product and the completed questionnaires must be included in the appendices of the report. Any appendices will not be included in the word count of the report.

Log book

The log book is a chronological record of the entire process used by the student throughout the development of the product. The log book is assessed and maintaining it is mandatory.

The log book contains regular, dated entries from analysing, planning, testing, implementing and evaluating the process and product. Regular dated entries of the process and product must be recorded in the log book. These include references for information, sketches and designs, screenshots, evaluative comments, crossings out, subject statements and other appropriate entries. It will document the student's actions and thoughts throughout the development process. It is normal for the log book to be handwritten.

The log book is intended primarily as a means of improving skills of organization, documenting the process of development and as an aid to problem solving for the student.

Explanation of the process

Identifying a problem within a social context

The student must identify and describe a problem set in a social context, and the person(s) who will be the client/end-user of the IT solution. The client is the person(s) who needs the IT solution or product to be developed. The end-user is the person(s) who will actually be using the product. For some projects the client is also the end-user. The client would be involved in all stages of the process.

The following key questions should be considered.

- What is the present system? How does it work? What are the limitations of the current system?

- What is the problem?

- Who will benefit from an IT solution? A specific IT solution must not be identified at this stage.

- Has the need been determined through discussions with relevant people, including client(s), end-user(s) and other stakeholders?

Analysing the problem

The student will collect relevant information, identifying client/end-user needs, and explain **two** distinct IT approaches to meet these needs. For example, in order to publicize a particular project in a school, two distinct possible approaches would be:

- to produce a brochure by using a desktop publishing program

- to create a web site.

However, a brochure produced by a word processor and a desktop publishing program are **not distinct** approaches. Similarly, producing a web site by using two different methods are **not distinct** approaches. Projects that do not use two distinct approaches will be penalized (see criterion H).

The following key questions should be considered.

- What is the relevant information that is needed for solving the problem?

- Have all the relevant stakeholders been consulted?

- Has all the necessary information been collected?

- What information is available about other IT solutions that have been used in similar situations?

- What hardware and software are currently available?

- Have the two approaches been completely described? Students should relate each approach back to the way it would address the need and the requirements of the end-user(s).

- Have the advantages and disadvantages of each of the approaches been identified?

- Have two feasible and distinct IT approaches been identified?

Considering the feasibility of alternative IT solutions

The student is expected to compare the feasibility of two approaches. Assessing the feasibility means considering the appropriateness of the solution in this social context, the availability of technical and human resources and the cost effectiveness.

The following key questions should be considered.

- Which approach best meets the needs of the client/end-user(s)? It is possible that one approach best meets the needs of the client/end-user(s) but because of other advantages and disadvantages, the other approach is selected.

- Is it clear which approach will be selected and why?

Planning and developing the chosen IT solution

The IT solution must be one of the feasible approaches identified above. Based on research, the investigation of various solutions, and the factors involved (data, stakeholders, software, hardware, procedures and policies), a final plan is developed.

The following key questions should be considered.

- What data is required?

- Who are the client/end-users?

- What specific software (title, company, version) is required and is its choice justified?

- What hardware (model, specifications) is required and is its choice justified?

- What technical support is required?

- What are the details of the time line?

- Are storyboard(s), diagrams, or other design details required to make the product?

- Has the testing strategy (who, what, when, where for beta and end-user testing) been formulated?

- What are the client/end-user training requirements?

- What related procedures and policies are required?

- Is the design clear enough to allow replication by a third party?

The details of the final plan should be recorded in the project report under criterion I, even though they are recorded in the logbook. The logbook should contain the original plan. The final plan in the project report may contain necessary modifications of the original plan.

Making the product

The student creates the product and uses visual evidence or screenshots in criterion I to explain the process of how the product was made. During this process, the student modifies the product as necessary and collects informal testing information and opinions from the ITGS teacher and fellow students. This phase is considered alpha testing and an ongoing process until the students feels that the product is ready for beta testing (formal testing).

The following key questions should be considered.

- Does the product work technically?

- Does the product contain all the data that is required?

- Does the product meet the needs of the client/end-user(s)?

- Is the product effective and fully functional?

Testing and evaluating the solution

Formal testing is conducted by requiring the beta tester and the client/end-user to record their observations on a questionnaire. The completed questionnaires and the handwritten responses must be included in the appendices.

Within the report, the student must include the names of the persons who are involved in the beta testing and client/end-user testing and state why they are qualified to do this formal testing.

The student must explain the process by which the solution was beta tested (formally tested for technical flaws), refined and then beta tested again by a different person. The student must explain the modifications. Before and after screenshots can be included to assist in explaining how the change has improved the product.

The last phase of formal testing is by the client/end-user who was identified in the "identifying the problem" phase. The client/end-user must evaluate the solution to ensure that the product meets the social need.

The following key questions should be considered.

- Has the product been beta tested for technical and design flaws?

- Has the product been tested for content?

- Has the product been formally tested by the client/end-user?

- Have all testing processes been formally documented?

Assessing the social significance of the product

The student must identify and explain two distinct social impacts of the product.

- The observed social impact must emerge from the development or use of the product by client/end-user(s).

- The projected social impact arises from the student's perspective of how this product could be used in the future in a wider setting.

The social impact of the product may emerge as the student observes the client/end-user in the testing process and the reactions of the client/end-user when the final product is made available. Students should record their observations in the log book. The student should consider what the impact of the product would be if its use was expanded or used in a wider setting.

Assessing the project

The teacher must use the following assessment criteria and their descriptors to assess the student's project.

- Criteria G, H, I, J and K must be assessed using evidence present in the project report. Evidence from the log book will not be considered in assessing these criteria. Completed questionnaires must appear in the appendix of the report to support the formal testing process described in criterion J.

Project Checklist

This checklist is an example of the kind of guidance the teacher can offer to students and covers all the criteria, G–M.

Criterion G: Identifying the Problem within a Social Context   3 marks

Have you identified a problem that requires an IT solution? ☐

Have you described the problem in a social context? ☐

Have you explained the shortcomings of the current situation? ☐

What could be the benefits or outcomes of an IT solution in this situation? ☐

Have you identified the end-users who will benefit from the IT solution? ☐

Has the need been determined through discussion with those involved? ☐

Have you mentioned creating any particular IT solution (for example, web site, database, published document)? If yes, it is **not** appropriate for this criterion. ☐

Criterion H: Analysis and Feasibility Study   4 marks

Have you considered two distinct IT approaches that address the problem identified in criterion G? ☐

Have you compared the advantages and disadvantages of each of the IT approaches? ☐

Have you justified which IT approach you are taking with reference to its feasibility? ☐

Have you explained how the IT approach solves the problem? ☐

Criterion I: Planning the Chosen IT Solution   10 marks

Will the product provide an IT solution for the problem described in criterion G? ☐

Is there a realistic plan and time line for managing the project that includes the gathering of necessary information, the making of the product and the testing process? ☐

Have all of the beta testers and end-user testers been identified? ☐

Is there a complete design (for example, storyboard, sketches, layout) for the product? ☐

Have you included sketches, diagrams, charts, screenshots and other evidence in your report that support your account of the development of the product? ☐

Is there a complete description of all the software (company, title and version) you have used in the making of the product? ☐

Is there a complete description of all the hardware (model and specifications) you have used in the making of the product? ☐

Is there a full description of how all of the data used in making the product was collected, including all relevant sources? ☐

Criterion J: Testing and Evaluating the Solution 6 marks

Were the technical aspects and the content of the product formally tested with written questionnaires for the testers to complete? ☐

Did you follow the beta test/refine/beta test/refine/end-user test/refine process? ☐

Was the product on completion formally tested by the end-user(s) specified in criterion G? ☐

Have you provided a complete description of the testers' evaluations of the product and the refinements that were made? ☐

Have you included before and after screenshots in order to document the changes you made? ☐

Has evidence from the questionnaires been included in the appendix of the project report? ☐

Criterion K: Assessing the Social Significance of the Product 3 marks

Have you considered the possible social effects of the product if it was available on a wider scale or to a wider audience? ☐

Criterion L: The Product 6 marks

Is the product a solution for the need identified in criterion G? ☐

Is the product technically fully functional? ☐

Is the content accurate and complete? ☐

Is the product a comprehensive solution for a complex task? ☐

Criterion M: The Log Book 3 marks

Was the log book started on the same day as the project? ☐

Does the log book contain regular, dated entries? ☐

Does the log book contain entries that cover the complete period of the project (analysing, planning, testing and evaluating)? ☐

Have you included a discussion of the informal testing and modification that you have carried out during the development phase? ☐

Assessment criteria for the project

The project is assessed against seven criteria that are related to the objectives of the ITGS course.

Criterion G	Identifying the problem within a social context	3 marks
Criterion H	Analysis and feasibility study	4 marks
Criterion I	Planning and developing the chosen IT solution	10 marks
Criterion J	Testing and evaluating the solution	6 marks
Criterion K	Assessing the social significance of the product	3 marks
Criterion L	The product	6 marks
Criterion M	The log book	3 marks
	Total	35 marks

G Identifying the problem within a social context

- If the problem is not set in a social context or the student does not identify a specific client or end-user(s), a mark of zero is awarded.

Level	Descriptor
0	Level 1 is not achieved.
1	The student outlines the problem in a social context and identifies an end-user.
2	The student describes the problem in a social context and identifies an end-user.
3	The student describes the inadequacies of the present situation, describes the problem in a social context, and identifies an end-user.

H Analysis and feasibility study

- The student is expected to analyse two feasible and distinct IT approaches to the solution of the problem.

Level	Descriptor
0	Level 1 is not achieved.
1	The student describes two distinct IT approaches that address the problem.
2	The student describes two distinct IT approaches that address the problem, and compares their advantages and disadvantages.
3	The student satisfies the descriptor for 2 marks and justifies the chosen approach with reference to its feasibility.
4	The student satisfies the descriptor for 3 marks and justifies the chosen approach by explaining how it solves the problem.

I Planning and developing the chosen IT solution

- The student should provide the following information related to the planning of the IT solution. A maximum of 10 marks is available for this criterion. Each of the five areas listed below is marked independently.

Level	Descriptor
0–2	The student has provided a detailed schedule of the events and processes involved in the planning, making, implementation and testing of the product. This includes who does what, and when.
0–2	The student has provided visual evidence of the design and making of the product, either as a storyboard or as detailed diagrams and screenshots from the product.
0–2	The student has described the software required (including title, company, version) and described how it is used.
0–2	The student has described the hardware required (including model and specifications) and described how it is used.
0–2	The student has described the source and/or collection of appropriate data required for a comprehensive solution to the problem.

J   Testing and evaluating the solution

- These two types of testing are called beta testing and end-user testing. The student is required to use the cycle: beta test, refine, beta test, refine, end-user test, refine. For each stage of testing, the student must make appropriate revisions to the project, justifying the modifications. Evidence of the formal testing must appear in the appendix in the form of a questionnaire and responses from the testers. A mark of zero is awarded if there is no evidence of formal testing.

Level	Descriptor
0	Level 1 is not achieved.
1	The student describes testing by one beta tester and explains why they are a qualified beta tester, but there is no refinement to the product.
2	The student describes testing by one beta tester and explains why they are a qualified beta tester, and there is one justified refinement to the product.
3	The student describes testing by two testers (beta and end-user, or two beta) and explains why they are qualified testers, and there is one justified refinement to the product.
4	The student describes testing by two testers (beta and end-user, or two beta) and explains why they are qualified testers, and there are two justified refinements to the product.
5	The student describes testing by two beta testers and an end-user and explains why they are qualified testers, and there are two justified refinements to the product.
6	The student describes testing by two beta testers and an end-user and explains why they are qualified testers, and there are three justified refinements to the product.

K   Assessing the social significance of the product

Level	Descriptor
0	Level 1 is not achieved.
1	The student describes one social impact (observed or projected) of the project.
2	The student describes one observed and one projected social impact of the project.
3	The student explains one observed and one projected social impact of the project.

L The product

- The product is submitted with the project report and the log book. If no product is submitted or the product is not a solution to the problem identified in criterion G, a mark of zero is awarded for this criterion. Marks will be awarded by reference to the product, together with visual evidence contained within the project report and the 8–10 screenshots with documentation contained in the appendices. A maximum of 6 marks is available for this criterion. Each of the three areas listed below is marked independently.

Level	Descriptor
0–2	2 marks are awarded if the product is technically fully functional. 1 mark is awarded if the product is partially functional. A mark of 0 is awarded if the product is not functional.
0–2	The product is appropriately designed. A mark of 0 is awarded if the product is not appropriately designed.
0–2	The student has developed a comprehensive solution for a complex task. A mark of 0 is awarded for a simple solution.

M The log book

- The log book contains regular, dated entries from analysing, planning, testing, implementing and evaluating the process and product. These include references for information, sketches and designs, evaluative comments and other appropriate entries recorded throughout the entire process from criterion G through K.

Level	Descriptor
0	Level 1 is not achieved.
1	The log book contains regular, dated entries recording what the student has done throughout the whole period when the project was developed.
2–3	The requirements for 1 mark are met and there is evidence from each of the five stages (analysing, planning, testing, implementing and evaluating the process and product).

The Project: Guidance for Teachers *and Students!*

What is it?
A project that identifies a problem affecting an individual or group and develops an IT-based solution to that problem. It must be a real problem, affecting real people, not something that is fictitious or artificial. The assessed work is detailed in a log book and a written report of between 2,000 and 2,500 words. The product (for example, a database, presentation, web site) is also assessed.

Who does it?
All ITGS students at SL.

How is the report structured?
The sections of the report must match the criteria laid down in the ITGS guide. Sub-headings must match the headings in the guide for criteria G, H, I, J and K. Criteria L and M are assessed using the product and the log book.

How many words should there be in each section?
This is not specified because projects vary in type and style. However, a suggestion is: criterion G 300–400, criterion H 400–500, criterion I 600–700, criterion J 400–500, criterion K 300–400. In addition, support material such as questionnaires and screenshots should be included in appendices where appropriate.

How many marks is it worth?
It is marked out of 35 and weighted at 20% of the final assessment.

When is it done?
It should be started in the second half of the first year, because a lot of internal assessment work is required for the IB Diploma Programme. If students do not start this early enough, it will conflict with work in other courses.

What can it be about?
Any genuine, real problem to which there is an IT-based solution. However, the teacher must agree it with the student.

What should the teacher do?

1. Explain how internal assessment works. Students should be given a copy of the instructions for the project from the "Internal Assessment" section of the ITGS guide.
2. Set a timetable for the different stages, for example, identifying the problem, analysis and feasibility.
3. Discuss possible project topics—there is a list of suggestions in this document.
4. Agree the project with the student. There is a project proposal form in this document that may be useful, although it is not compulsory to use it.
5. Give lessons on how to tackle the project, emphasizing in particular the importance of a well-defined problem that has a possible solution; the need for a careful analysis and feasibility study; and the production of a clearly documented plan **before** beginning to implement the solution.
6. Advise the students individually if and when necessary.
7. Check the student's log book regularly to make sure it is being maintained in a way that illustrates the progress being made.
8. Read the student's first draft and advise how work can be improved, but do not edit or annotate the draft heavily.
9. Check the progress that each student is making with the implementation of the solution and advise as necessary.
10. Assess all student work according to the criteria in the ITGS guide.
11. Complete the appropriate forms, 3/IA and 3/CS, which can be found in the *Vade Mecum*.
12. Send samples to the IBO for external moderation.

Frequently Asked Questions: The Project

- **Do project ideas have to be related to school?**

    Project ideas can come from school, business or individuals. The social need, however, must be a real problem and not fictitious.

- **How much class time should be allowed for work on the project?**

    The ITGS guide suggests 20 hours of the recommended 150 hours. Class time is necessary to provide adequate opportunity for the teacher to monitor a student's progress and to ensure that all of the work is the student's own. It is expected that students will spend time outside of class to complete the project.

- **What if the student does not know the software they need or want to use?**

    The student will either need to learn to use the software or adjust their IT solution or project idea. It is important for the students to ensure they have the necessary training in hardware and software to fulfill criteria H and I. This is also the reason why criteria G, H and I should be approved before the student begins to make the product.

- **Should the teacher make comments on the student's project report?**

    Yes. Teachers are encouraged to write in pencil, in the right-hand margin, explanations of how they arrived at their marks. It is of great value to the moderator to see how teachers have marked a student's work.

- **What is a product?**

    A product refers to the end result of a solution (a document, file, program, presentation, web site) that is used to address the social problem the student has identified.

- **When is the best time to start working on the project?**

    The day the teacher introduces the project is the best day to start. The first thing students should do is make an initial, dated entry in the log book. This entry could be as simple as: "May 10, 2003—Today our teacher asked us to think about project ideas and potential problems. My first idea is..."

- **When choosing a project idea, is it sufficient that the solution benefits one person?**

    Yes.

- **How long does the project report have to be?**

    The minimum number of words is 2,000 and the maximum is 2,500. However, this only includes the text of criteria G–K and does not count the text of the log book or information contained in the appendices. The report should also include examples of visual evidence (ie screenshots, diagrams, photos) illustrating all aspects of the process.

- **Does the project have to address a real problem or can it be fictitious?**

    The problem must be real, current and able to be implemented. The project should not address previously solved problems but rather real and current issues.

- **Does the project require programming skills?**

    No, programming skills are not required.

- **What is the IB moderator going to see?**

    They will see the product, the report and the log book. All three elements are sent for moderation.

- **Is a web page enough?**

    A web page does not constitute a product. Students using web-based solutions need to develop multiple pages (ie a web site) with active links that are clearly seen to address the outlined problem.

- **Is a poster or brochure enough for the product?**

    No. The product should be a substantial solution that clearly uses IT to address a problem. If the product seems to be a trivial solution, an alternative problem or product needs to be considered.
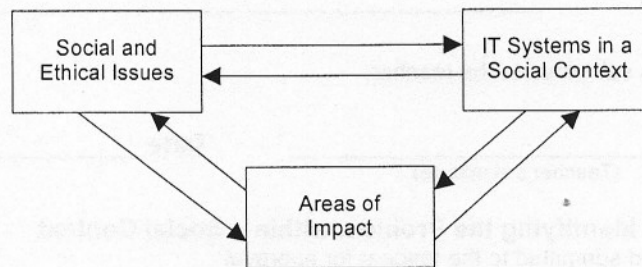
- **What goes in the log book?**

    The log book should contain regular, dated entries about what the student has done related to the project. Students are also encouraged to draw rough diagrams, sketches or paste copies of any associated printout documents in the log book that may not necessarily be included in the appendices. The log book should be checked regularly by the teacher, signed and dated.

- **Can the student make several products to satisfy the requirements for the product?**

    No. The product should be one item but may require supportive materials (for example, user instructions).

How to Approach the Project

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┌─────────────────┐                           ┌─────────────────┐
│   Social and    │ ────────────────────────► │  IT Systems in a│
│  Ethical Issues │ ◄──────────────────────── │  Social Context │
└─────────────────┘                           └─────────────────┘
         ╲                                           ╱
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            ╲──────────────► │  Impact  │ ◄───────╱
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It is important that the project is seen by both the student and the teacher from a human perspective. It is intended to sit as comfortably within the triangular framework above as do the other three assessment components.

▽ Students have a free choice as to which area of impact they wish to use for their project.

▽ Students will then discuss with the end-user and others the social and ethical issues raised by the problem and its IT solution.

▽ Students use IT skills within the social context that they develop in the early stages of the project in order to provide a solution to the problem.

A project can only belong in this course if it is approached from a human perspective.

The Timing of the Project

Teachers have total flexibility in the way the time for the project is organized. Some prefer to block a short, concentrated period of intensive work on the project. Others spread it out over two terms, interspersed with other work. A wide variety of combinations has been shown to be successful by other teachers. It is really the teacher's individual preference that is important.

There are two points that should be noted.

- Students should become familiar with the concepts and focus of the course before beginning to think about a project so it is not a good idea to start it early in the course.

- Some classroom time must be allocated to the project. This is necessary in order for the teacher to be able to supervise the student's work and monitor progress.

A form like the one below can be used by the teacher to approve the topic for the project. This should be done before any work on the project begins. Unsuitable topics can be identified at this stage.

Project Proposal

Candidate Name _____

Project Title _____

Project idea is submitted to the teacher.

Approved _____   **Date** _____   ☐
(Teacher's signature)

Criterion G: Identifying the Problem within a Social Context
Completed and submitted to the teacher for approval

Approved _____   **Date** _____   ☐
(Teacher's signature)

Criterion H: Analysis and Feasibility Study
Completed and submitted to the teacher for approval

Approved _____   **Date** _____   ☐
(Teacher's signature)

Criterion I: Planning the Chosen IT Solution
Completed and submitted to the teacher for approval

Approved _____   **Date** _____   ☐
(Teacher's signature)

Project Ideas

The following ideas are only suggestions of the types of projects that could be undertaken by students. Students should be encouraged to explore several problems before deciding on the one that they will develop. A possible IT approach is suggested for each idea, but it is not a definitive solution. Students should always be encouraged to think of a range of possible solutions to any problem.

1. Problem: There is no organized system of seating in the school auditorium for plays and concerts. There is no system for reserving seats in advance, printing tickets, or keeping records of ticket sales.

Possible IT approach: spreadsheet

2. Problem: A community orchestra has existed for many years without a formal record of pieces performed. There is no record of performances, sponsors or music performed and transposed parts added or removed.

Possible IT approach: database

3. Problem: The volleyball team and coach have no system in place to record game statistics on both team and individual efforts. These statistics would be useful to assist the coach in determining the weaknesses and strengths of the team as well as those of individual players. These statistics would help the coach to plan appropriate practice drills and strategies that address specific individual and team needs.

Possible IT approach: spreadsheet

4. Problem: The school's sports department relies currently on weekly assemblies, monthly newsletters and occasional letters home to parents to communicate game and training schedules as well as results from previous games. There is no means to inform the community more regularly about past, current and future sports news at school.

Possible IT approach: web site

5. Problem: Students do not have a convenient means to record their arrival and departure from school during the school day. Currently, students must sign a sheet of paper, which takes time and does not allow for accurate data about the student's identity, date, time and reason the student has left.

Possible IT approach: database

6. Problem: Students who arrive late at school often miss the morning announcements that are read at the start of the school day during their first class. These students have no way of finding out what important announcements they have missed.

Possible IT approach: presentation on mounted monitors

7. Problem: The art teacher currently has no means of recording previous art assignments. Although examples of previous student work are available, the best pieces are very often kept by the students when they leave the school.

Possible IT approach: database

8. Problem: The creativity, action, service (CAS) coordinator currently maintains only written records of students' CAS activities and hours. The coordinator must write new lists each time she updates the record of students' CAS activities and the number of hours remaining.

Possible IT approach: database

9. **Problem:** Currently kindergarten teachers purchase and maintain their own supplies for the classroom. Inventory records are kept by hand on paper in a variety of formats. This has resulted in the problem of running short of supplies without enough time to re-order for scheduled activities. A large variety of materials is consumed throughout the year and the present system does not account efficiently for their consumption and replacement.

Possible IT approach: database

10. **Problem:** It is currently difficult for students of IB Diploma Programme mathematical methods to keep track of assignments, deadlines and explanations. Students would benefit from a resource that would provide current information regarding deadlines as well as previous explanations of methods and theories.

Possible IT approach: web site

11. **Problem:** Students embarking on their extended essay do not have examples readily available that they can browse and use to obtain ideas as well as an appreciation of the scope of the task. Without examples on a variety of topics, students are in the dark with respect to the expectations of the assignment.

Possible IT approach: web site

12. **Problem:** The kindergarten places children's lunch orders and takes morning attendance using slips of paper that are collected by the school nurse and taken to the office to be recorded, tabulated and used for ordering lunches. The current system is labour intensive, slow and unreliable.

Possible IT approach: database

13. **Problem:** A school typically has many sports trophies scattered around the school and in students' homes. Who, what, when and where are often forgotten.

Possible IT approach: database

14. **Problem:** Restaurant guides often focus on the tastes of adults and people with more financial resources than students. Students need a list of recommended restaurants that cater for their needs.

Possible IT approach: desktop published booklet

15. **Problem:** Encouraging spectators to attend basketball games is difficult. Posters and signs are often ignored because there are so many events advertised in this manner.

Possible IT approach: digital video broadcast on mounted monitors and/ or web site

Using the Criteria Headings for the Report

The assessment criteria G–K must be used as sub-headings in the report. This method enables students to present their work in a structured and coherent way.