The impact that educational apps could have in the classroom

These guidelines consist of 12 pages and 7 Annexures.
What is the PAT?

The PAT (Practical Assessment Task) in CAT (Computer Applications Technology) is an individual research project and involves extended independent work. It provides an opportunity to demonstrate your information management skills. You will also be required to demonstrate your ability to use the applications which you have studied during the year to produce quality outputs in the form of:

- A word-processing document with
  - a short description of the problem and the task
  - a focus question and a set of high quality questions
  - a list of appropriate information sources
  - information which has been sifted, evaluated and summarised
  - a questionnaire
- A spreadsheet which reflects the management, processing and analysis of data and information
- A report on your investigation presented as a presentation.

The PAT will be done in three phases as outlined in the Mark allocation table below:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Focus</th>
<th>Maximum Mark</th>
<th>Mark Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Find and access data and information – Word processing document</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>Process data and information - Spreadsheet</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Phase 3</td>
<td>Present information/solution – Presentation</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 1: Mark allocation table

Your teacher will provide you with dates and deadlines for each phase. It will be in your best interest to keep to the dates given.

The PAT counts 25% of your final mark for CAT, therefore it is vitally important that you strive to produce work of a high standard.

The PAT is a compulsory component of your final CAT mark.

You need to complete the PAT at least 3 weeks before you start your final Grade 10 examinations.

Read and take note of the sections referring to 'misconduct' and 'non-compliance'.

Refer to what you will need to complete the PAT section (see page 4) in this regard.
**Topic**

**The impact that educational apps could have in the classroom**

Mobile applications (mobile apps) are becoming an increasing part of our lives. Apps are valuable in assisting us with our day-to-day activities.

You are asked by your school’s Principal to investigate how educational apps can assist in the learning and teaching process and present your findings at a teacher’s symposium.

You need to choose a school subject and then research different educational apps and the possible impact it could have on that specific subject.

When doing your research for the particular subject you can look at the following (amongst other things):

- What an app is
- Different types of educational apps available
- Which devices/resources are needed for apps to be used
- Possible **advantages** and/or **disadvantages** of using educational apps in class
- Different apps for the subject of your choice
- How these apps may improve the quality of teaching and learning

The focus question that your school’s Principal wants you to answer is:

**How will using mobile applications improve the learning and teaching of (fill in subject name here)?**

You will need to:

- Decide on a subject that you want to focus on;
- Investigate different apps (available for that specific subject) by gathering and summarising relevant information from different sources;
- Investigate how the use of apps will influence the teaching experience;
- Administer a questionnaire (use Annexure B as an example) to at least 10 people (sample group of learners and teachers) to assist you in gathering information that could guide your investigation;
- Analyse the questions and interpret the data and information gathered from the questionnaire and research by making use of a spreadsheet;
- Prepare a presentation that you will use to present your findings at the teacher’s symposium.
Overview of tasks

Phase 1
(Planning, sourcing and summarising of information sources)
• Create a suitable folder structure
• Create a word-processing document
• Formulate a task definition
• Work with the given focus question
• Perform background research
• Draw up research questions to guide the process/research
• Identify sources to find quality information
• Gather and summarise relevant data and information
• Draw up and conduct a questionnaire/survey
• Capture questionnaire electronically
• Capture screenshot of folder structure
• Complete Declaration of Authenticity
• Hand in Phase 1 document

Phase 2
(Capturing, processing and analysis of data)
• Design and use a spreadsheet to analyse the survey results and other data/statistics gathered
• Create at least two graphs
• Summarise results for use in a presentation
• Complete Declaration of Authenticity
• Hand in Phase 2 spreadsheet

Phase 3
(Findings, conclusions and reporting)
• Prepare findings, conclusions and recommendations in your own words
• Use AutoShapes (SmartArt Graphics) and images (pictures) and graphs to present your information
• Create a presentation on the findings and recommendations
• References included
• Complete final Declaration of Authenticity
• Hand in Phase 3 presentation
Instructions for Phase 1

The purpose of this phase of the PAT is to determine:

- what the problem is and what needs to be done – get 100% clarity
- what the focus of your investigation will be
- what data and information you will need to answer the focus question
- where to find the information (sources)
- whether the information gathered is relevant

Define the task

To show that you understand why you are doing this investigation, you must be able to describe what you will investigate and what you are required to do in your own words (±150 words or half a page in font size 12 pt.). This is called the *task definition*.

Your task definition should

- provide a clear statement of the problem (current situation) and the purpose of the investigation (desired outcome)
- indicate the focus of your investigation, i.e. give an overview of aspects to be investigated and covered
- indicate in broad terms how you will approach the task
- who the target audience is
- how you will present the information

Answer the following questions to help you write your own task definition:

- **Why** am I doing the investigation?
- **What** will the focus of my investigation be?
- **How** will I go about conducting the investigation?
- **Who** is the information for (target audience)?
- **How** must I present the information?

Ask questions that will guide your investigation

To be able to solve the problem and answer the focus question, you need to ask more questions to help you find appropriate data and information.

As a class activity, you are going to brainstorm questions to create a list of questions from the list in Annexure A as well as additional questions from the class, which can be used to guide your research.

- Read the focus question that you need to answer. The focus question should guide you to identify quality questions that will help you to find the data and information that you need.
  
  Keep in mind that you will also need data that would be appropriate to process using a spreadsheet.
As a class you are also going to brainstorm some headings which you can use to organise your questions and information.

- Identify headings related to the investigation which you can use to organise your questions and information.
- As a class, agree on which headings and questions are appropriate.
- You must now make your own selection of headings (choose at least 3) and questions (choose at least 10). You can use ones from the list which your class has suggested and/or add/use your own ones if you wish.
- Complete your list of questions (closed and open-ended questions) and headings. Place each question under an appropriate heading.
- Check your final list of headings and questions against the task definition and the focus question to make sure that you stay focused on the problem and the task.
- Rework or change questions should it be necessary and finalise your list of headings (at least three) and questions (at least ten) which you will use to complete your project.

---

**Gather and summarise information and data**

To solve the problem, you need to identify possible sources of information and gather quality information.

Use three headings (see number 7) with their relevant questions from your final list.

- For each heading, complete a table such as the one below.
- You must have at least 10 questions in total.
- For each question, write down a possible source where you are likely to find the information for that question (you need not give any details about the source at this stage).
- Use the Internet (two different websites) AND one other source, e.g. media (printed or electronic) such as newspapers, magazines, brochures, textbook, etc. or expert (using e-mail or conducting an interview), etc. You should also use a questionnaire to collect data from people (see next section, Administer questionnaire).

<table>
<thead>
<tr>
<th>Heading: __________________________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*Figure 1: Example of question and source table*

1. Save a copy of each website that you intend to use in an appropriate folder.
2. Gather all other information and data you will need to complete the project. Save electronic copies of the information and data.

3. To be able to use the data and information to find a solution, you need to critically work with the data and information, extract the relevant information and gain understanding by summarising the information in your own words. For each source (e.g. websites, an article in the magazine, etc.) summarise the information in the table below.

   **Note:** You may not copy and paste any information directly from the websites or another source into your document. If you do, you will not earn any marks for this section of the task.

4. Provide bibliographical information of the sources
   - For each website, complete a table similar to the one below:

     | Source 1 (or Source 2) |
     |------------------------|
     | Name of website        |
     | Name of web page       |
     | URL                    |
     | Author                 |
     | Date created/updated   |
     | Date accessed          |
     | Summary of source information |

   ![Figure 2: Example of source table – Website](image)

   - For each printed source such as a book or magazine complete a table similar to the one below:

     | Source 3 |
     |----------|
     | Title of book/magazine |
     | Article name/chapter/pages |
     | Author         |
     | Date published/issued |
     | Publisher       |
     | URL [only for electronic media such as articles uploaded to the web (electronic documents)] |
     | Summary of source information |

   ![Figure 3: Example of source table - Printed media](image)
5. Make sure that you have evidence of the source(s) you used.

6. Use hyperlinks in tables to link the source/title/name to the relevant source saved electronically (e.g. saved website) in the appropriate folder.

---

**Administer a questionnaire**

To collect data and information from people, you need to use a questionnaire.

7. The questions in the questionnaire should help you to gather data/information from people not likely found in other sources, e.g. opinions, preferences, such as
   - whether students make use of educational apps, etc.
   - why do they use educational apps, etc.
   - which educational apps they use, etc.
   - do they think educational apps will have a positive/negative impact on the classroom environment, etc.

8. Use the word processor and create the questionnaire provided in Annexure B (you may adapt it/add your own questions should you want to). Use appropriate word processing principles and techniques to give it a professional look. It should have at least **five** questions, excluding biographical data (e.g. name, gender, age, address) of the respondent and not exceed **one** page.

9. Distribute the questionnaire to at least **10** people. Try and include a variety of people in this group in terms of e.g. age, etc.

10. Receive/collect/scan/photograph the questionnaires after they have been completed and save them in an appropriate folder. Ensure that each questionnaire has an appropriate (different) file name.

---

**Note:**

Ensure that you have:

- organised the information in a logical and coherent way
- checked the **Style guide (Annexure C)** and that you have used consistent formatting throughout, appropriate fonts, line and paragraph spacing, word spacing and that you have checked your grammar and spelling.
- copies of websites you have used; saved in an appropriate, separate folder
- copies of any other sources that you have used (not the entire book, only the pages you need)
- copies (electronic or hard copies) of all the completed questionnaires; saved in an appropriate, separate folder
- a screenshot showing the folder structure, including sub-folders, in Phase 1
- **your Declaration of Authenticity (Annexure E)** saved in the appropriate folder for Phase 1
To be handed in for Phase 1

Your teacher will give you the date on which to submit your Phase 1 work for assessment.

Once you have completed Phase 1 of the research project submit:

1. Your entire PAT folder to your teacher with the following in your Phase 1 subfolder:
   1.1. A single document (of 2 – 3 pages excluding cover, content pages and addenda) typed in a word processing application with a/an:
      1.1.1. Cover page
          Create a professional, well-structured, cover page using appropriate word processing principles and techniques. The cover page must display at least the following:
          • your name and surname
          • the name of your school
          • the subject name and grade
          • the PAT topic
          • the focus area/field
          • the date on which Phase 1 is presented
      1.1.2. Contents page
      1.1.3. Introduction
          • Your task definition
          o provide a clear statement of the problem (current situation) and the purpose of the investigation (desired outcome)
          o indicate the focus of your investigation, i.e. give an overview of aspects to be investigated and covered
          o indicate in broad terms how you will approach the task
          o who the target audience is
          o how you will present the information
      1.1.4. Focus question (given) and questions to gather information
          • A table with research/investigative questions (see Figure 1: Example of question and source table) for each of the headings
      1.1.5. Bibliographical information of sources
          • A table (see Figure 2: Example of source table - Website) for each website that you have used
          • A table for each other source (printed media) (see Figure 3: Example of source table – Printed media) that you have used
      1.1.6. Questionnaire (as addendum)
          • the original questionnaire that you created for your survey inserted as an annexure to the document
      1.1.7. Screenshot of folder structure for Phase 1 (with sub-folders) as addendum
   1.2. Subfolder with copies of the sources you have used
   1.3. Subfolder with completed questionnaires
   1.4. Declaration of Authenticity for Phase 1
Instructions for Phase 2

The purpose of this phase of the PAT is to:

- analyse the questionnaire results as well as any other relevant data in a spreadsheet
- analyse/manipulate other information gathered

Process data and analyse questionnaire results

Process and analyse all data (questionnaire data as well as other data, such as costs) with the use of a spreadsheet.

1. Import/capture the data in a spreadsheet with appropriate data types.
   - Use suitable formatting to ensure that anybody will be able to easily interpret the results.
     - Use of formatting features such as colour, borders, word wrap, and styles, etc.
     - Make sure that column and row headings are formatted differently to other data.

2. Use formulae and/or functions to process data and answer data questions posed in Phase 1.

3. Summarise the results that you will use in the sheet on a separate sheet.

4. Create appropriate, meaningful graphs on a separate sheet that are easy to read and interpret in your spreadsheet program that you will be able to use in your presentation to substantiate/support other information, claims or arguments.
   - Apply what you have learned in Mathematics/Mathematical Literacy when creating the graphs.
   - Ensure that the graphs are meaningful.
   - You should have at least two relevant graphs, although more would be useful.

5. Save the spreadsheet in your Phase 2 folder. Make sure that you use an appropriate file name.

Note:

✓ The level and the quality of the processing in the spreadsheet will be evaluated and marks assigned accordingly (see rubric)

To be handed in for Phase 2

Your teacher will give you the date on which to submit your Phase 2 work for assessment.

Once you have completed Phase 2 of the project:

1. Submit your entire PAT folder to your teacher. The following should be in your Phase 2 folder:
   1.1. the completed spreadsheet with the analysis of the data
   1.2. your Declaration of Authenticity (Annexure E) saved in the appropriate folder for Phase 2
Instructions for Phase 3

The purpose of this phase of the PAT is to:

- interpret data and information, manipulate, combine and adjust the information to show your understanding and insight and to answer the focus question

Presentation

To be able to share the knowledge and insight you have gained with your audience you need to create a presentation to include at least the following (See annexure D):

- A title slide
  - the PAT topic
  - the focus question
  - your name and surname
  - the date on which the presentation is presented
- Contents slides
  - Introduction (1 slide)
    - Provide background information that tells the reader what the presentation is about. Clearly state the problem, purpose and the focus of the investigation.
  - Body (3 – 6 slides)
    - Headings from Phase 1 with relevant, appropriate information under each heading discussing the investigation and providing arguments/making claims. All arguments/claims must be supported by evidence from the investigation and motivated/explained.
    - Supporting evidence such as graphs, tables, and data, where appropriate.
    - Interpret and integrate information where necessary.
- Findings and recommendations (1 Slide)
  - Provide findings/recommendations that clearly and effectively address the original problem/focus question.
- Conclusion (1 slide)
  - The conclusion should be drawn using the information and evidence presented and must address the original problem/focus question, appropriately summarised with no new information that you did not investigate.
- List of references (1 slide)
  - The information you need should be found in the summary documents you created in Phase 1.

Please Note:

Ensure that you have:

- Use of graphics and/or graphs should be relevant to the topic or purpose of the presentation and enhance understanding.
- Graphs, tables, data, summaries, etc. must be easy to read and interpret.
- Ensure that your slides are well laid out, readable, have a consistent appearance and that slides are not too ‘busy’.
- Use good ‘standard’ English and ensure there are no spelling and grammar mistakes.
- Acknowledge information and graphics used from other sources appropriately.
✓ The information you give must be written in your own words. Plagiarism is totally unacceptable. You will be heavily penalised if you copy and paste large chunks of text directly from the Internet or any other source. Be original and creative.
✓ Check the sequence and flow of the information. Organise the information in a logical and coherent way.

To be handed in for Phase 3
Your teacher will give you the date on which to submit your Phase 3 work for assessment.

Once you have completed Phase 3 of the project:

1. Submit your entire PAT folder (including the work for phase 1 and 2) to your teacher with the following correctly saved items:
   1.1. the questionnaires
   1.2. the electronic copies of sources
   1.3. the web pages used as sources
   1.4. the word processing document for Phase 1
   1.5. the spreadsheet for Phase 2
   1.6. the Declarations of Authenticity for Phases 1 and 2, and
   1.7. the presentation for Phase 3

2. Ensure that you have completed the final declaration (Annexure F) and that it is correctly saved.

3. Hand in the file containing any hard copy evidence you have collected and that could not be converted to electronic format.

NOTE: It is advisable to store the evidence electronically and not in hard copies.
Annexure A

Example of research questions

Computer networks

☐ What is an educational app?
☐ What role can educational apps play in the classroom?
☐ How can students benefit from using educational apps in the classroom?
☐ Which advantages/disadvantages are there to the use of using educational apps?
☐ What challenges could the students/teachers face?
☐ Possible reasons why apps might be suitable as a teaching tools?
☐ Which educational apps is available that will have an influence on teaching?

Remember that the answers to the research questions must assist you in answering the focus question.

Every time you ask a research question, ask yourself how the answer to this research question will help to answer the focus question!
Example of Questionnaire(s) questions

Possible questions for questionnaire:

Apps are a very real part of our day to day function. Can educational apps be used to enhance the teaching experience?

Please complete the following questionnaire to help us gather information on the use of mobile applications in the classroom, more specifically on mobile educational applications. The data we gather will help us understand the use of mobile applications in the teaching environment.

1. Do you think that apps are suitable for teaching?
   □ Yes
   □ No

2. Do you benefit from educational apps?
   □ Always
   □ Sometimes
   □ Never
   □ Other: please state_______________

3. Do you make use of educational apps?
   □ Yes
   □ No
   If yes, specify the app’s name__________

4. Do you have access to a mobile device allowing you to use apps?
   □ Yes
   □ No

5. Why do you use educational apps?
   □ For the fun of it
   □ To test apps
   □ To assist in my learning
   □ Other: state_____________________

Name:_____________________________

Date completed:_____/_____/2017
Style guide for word processing documents

Title page
- Use appropriate content controls to display information.
- Text should be typed using appropriate font sizes.
- This should be the only page on which you make use of a page border.
- Avoid ‘arty’ (fancy) borders and backgrounds.
- Do NOT use WordArt/Text Art.

Headings
- The font used should be easy to read, e.g. Cambria, Calibri, etc.
- Different levels of headings should be clearly distinguishable.
- Font size should vary between 12 to 18 pt.
- Ensure that headings stand out clearly from other text.
- Make use of heading styles where appropriate and to ensure that headings are formatted in a consistent way.

Body text
- Use a font that is easy to read and that is the same as the heading font or matches the heading font, e.g. Cambria, Calibri.
- Font size should not be larger than 12 pt and not smaller than 10 pt.
- Ensure that different paragraphs are clearly distinguishable.
- Use appropriate word processing principles and techniques to create white space and enhance readability (e.g. line and paragraph spacing, pagination such as widow/orphan control, etc.).
- Ensure that all body text is formatted in a consistent way. The use of styles would help to ensure consistency.
- Body text should be distinguishable from headings.
- Body text should be left aligned.

Page layout
- Use word processing functions to add page numbers.
- Make use of page/section breaks to start new pages/sections.
- Make use of lists where appropriate to support readability.
- Use sufficient white space.
- Tables, graphs and other graphics should have appropriate captions.

General formatting and editing
- Keep it simple—this is not an art or design competition—it is the quality of the content that matters!
- Use the Spelling and Grammar function of your word processor to review and correct your document. Professional documents should be error-free!
# Framework of a presentation

<table>
<thead>
<tr>
<th>Title slide</th>
<th>Contents slide</th>
<th>INTRODUCTION (slide 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name &amp; Surname&lt;br&gt;Name of School&lt;br&gt;PAT topic&lt;br&gt;Focus question&lt;br&gt;Presented on (date of completion)</td>
<td>Introduction……………… slide1&lt;br&gt;xxxxxxxxxxxx……………… slide2&lt;br&gt;xxxxxxxxxxxx……………… slide 3&lt;br&gt;xxxxxxxxxxxx……………… slide 4&lt;br&gt;Findings/Recommendation(s) … slide 5&lt;br&gt;Conclusion……………… slide 6</td>
<td>(use info from the task definition)&lt;br&gt;Maximum of 4 sentences&lt;br&gt;• What is the problem?&lt;br&gt;• The purpose of the investigation?&lt;br&gt;• What was the focus?&lt;br&gt;• What did you investigate?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slide 4/5</th>
<th>Slide 6/7</th>
<th>Slide 8/9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MAIN HEADING&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxx</td>
<td>2 MAIN HEADING&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxx</td>
<td>3 MAIN HEADING&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx&lt;br&gt;xxxxxxxxxxxxxxxxxxxxxxxx</td>
</tr>
<tr>
<td>(Use info from the research. Include graphs/tables/data, where appropriate)&lt;br&gt;(arguments and claims supported by evidence)</td>
<td>(Use info from the research. Include graphs/tables/data, where appropriate)&lt;br&gt;(arguments and claims supported by evidence)</td>
<td>(Use info from the research. Include graphs/tables/data, where appropriate)&lt;br&gt;(arguments and claims supported by evidence)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slide 10</th>
<th>Slide 11</th>
<th>Slide 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINDINGS/RECOMMENDATION(S)</td>
<td>CONCLUSION</td>
<td>List of references</td>
</tr>
<tr>
<td>(provide findings/recommendations that clearly address the focus question/problem)</td>
<td>(Drawn from the info and evidence presented – must address the problem/focus question, summarised with no new information that you did not investigate.)</td>
<td>(Use Harvard or APA referencing style)</td>
</tr>
</tbody>
</table>
Learner declaration – Phase _____

I understand that work submitted for assessment must be my own.

Did you receive help/information from anyone to complete this work/project?

☐ No  ☐ Yes (provide details below)

<table>
<thead>
<tr>
<th>Help/information received from (person):</th>
<th>Nature of the help/information (provide evidence):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I hereby declare that the contents of this assessment task are my own original work (except where there are clear acknowledgement and appropriate reference to the work of others) and that I have not plagiarised, copied from someone else or used work previously submitted for assessment by anyone else.

_________________________  ___ / ___ / 2017
Signature of Learner  Date

**Note:**

A Declaration of Authenticity (Annexure E) must be completed and handed in with each Phase of the PAT, i.e. one for Phase 1 and one for Phase 2 and then a **Final Declaration** (Annexure F) must be handed in for Phase 3.
### Annexure F

#### Final Declaration of Authenticity

<table>
<thead>
<tr>
<th>Learner name and surname</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject</th>
<th>Practical Assessment Task (PAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer Applications Technology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher</th>
</tr>
</thead>
</table>

I hereby declare that the content of this assessment task is my own original work (except where there are clear acknowledgement and appropriate reference to the work of others) and has not been plagiarised, copied from someone else or previously submitted for assessment by anyone else.

_________________________  ___ / ___ / 2076
SIGNATURE OF LEARNER  DATE
### Example of a K-W-L-S Chart

<table>
<thead>
<tr>
<th>K</th>
<th>W</th>
<th>L</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I already know</td>
<td>What I want to know</td>
<td>What I learned</td>
<td>What I still want to know</td>
</tr>
</tbody>
</table>