The Computer Practice Framework

The Computer Practice Framework (CPF) was developed by Dr Peter Twining (@PeterT) and is described in some detail online (http://www.med8.info/cpf/the_cpf.htm) and in Twining (2002). It was intended as a tool to enhance the planning process prior to ICT use. It can help you make some judgements about your planned use of ICTs for teaching.

The CPF is not a precise instrument for measurement, nor does it capture the full complexity of ICT integration. Its use here is to help scaffold your initial thinking. It’s been explicitly chosen for use because of its simplicity. Later in the semester we will examine some more complex models and frameworks.

An example of the CPF

Figure 1 is a diagrammatic representation of the CPF as it is used to analyse a particular application of ICTs to learning. The rest of this document will explain the diagram and through this introduce you to the CPF.

![Diagram of CPF](https://via.placeholder.com/150)

Figure 1. A diagrammatic representation of the CPF, adapted from Twinning (2002, p. 106)

The three dimensions

The CPF has three core dimensions. Each of the rectangles in Figure 1 represents one of the dimensions. The three dimensions are:

1. **Quantity;**
   How much of the available learning time included the use of ICTs?

2. **Focus;** and,
   What was the focus, purpose or objective of using the ICTs?

3. **Mode.**
   Did the use of ICTs change what was learned and/or how it was learned?

Each of these dimensions is now explained in more detail.
**The quantity dimension**

Quantity represents the amount of the available learning time is spent by learners using ICTs. In considering this, the CPF assumes that

1. The number of children using an ICT is irrelevant (for this dimension).
2. The number of ICTs in use is irrelevant (for this dimension).
3. If an ICT is being used with learners (even if they are not in control), that counts as it being used.

In Figure 1, you can see that ICTs are in use a little bit less than 25% of the available learning time.

Please note, when you sit down to plan your teaching the aim is not be using ICTs 100% of the time. The quantity dimension by itself does not tell use whether the use of ICTs is good or appropriate. It has to be considered with the other dimensions and the broader learning context. There will be times when the use of ICTs does not make sense.

**The focus dimension**

The focus dimension only applies for the times in which ICTs are being used. The focus dimension is interested in what you are trying to achieve with the use of ICTs. There are three categories for the focus dimension, including:

1. **IT**;
   
   Your focus is on helping learners develop their ability to use an ICT (e.g. how to operate a mouse, a word processor etc.). When you introduce the use of a particular ICT for the first time, you may need to have this focus.

2. **Learning tool**; and
   
   Your focus is to support non-IT learning. i.e. you actually hope that ICTs will help the learners learning. There can be three different sub-categories, they are:
   
   a. **Curriculum tool**;
      
      ICTs used to help learners develop skills, knowledge and understanding in a curriculum area (i.e. not an IT curriculum area). The aim is to use ICTs as a tool to enhance their learning.
   
   b. **Mathetic tool**; and,
      
      ICTs used to develop learner’s ability to learn and enhance their approaches to learning. e.g. to encourage collaboration, reflection, or to have them teach others.
   
   c. **Affective tool**.
      
      ICTs are used to support and enhance the affective aspects of children’s learning. e.g. to develop their self-confidence and/or self-esteem (e.g. a perceived ‘less able’ child allowed to teach other children how to use a new program) or for motivation.

3. **Other**.
   
   Any other focus goes here. This is typically where there is no direct connection to learning outcomes or where no learning is present. For example, allowing children to use an ICT as a reward or a holding activity while the teacher is otherwise engaged.

In Figure 1, the use of ICTs is broken down into
• An IT focus for a bit less than 20% of the time.
• A learning tool focus (there is no explicit breakdown into curriculum, mathetic or affective in Figure 1) for about 50% of the time.
• A focus on “other” for almost 30% of the time.

Generally speaking, the aim would be to maximise the time for which ICTs are used for a learning tool focus. However, there are valid reasons why you would need to focus on the other two categories. E.g. you may need to help the students to learn a new ICT before they can use it for learning.

**The mode dimension**

Is used to examine the impact of computer has on the curriculum including both

- the content; and,
  
  This goes beyond the explicit curriculum as per curriculum documents, but excludes the IT curriculum.
- the processes.

i.e. does the use of ICTs change any of the content and processes, or not? Based on this change, the mode dimension has three categories: **Support**, **Extend** and **Transform**. These are defined in Table 1. Table 2 offers a sequence of steps you can use to decide which mode applies.

**Table 1. A summary of the CPF mode dimensions. Adapted from Twining (2002, p. 104)**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Curriculum</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Content</td>
<td>Process</td>
</tr>
<tr>
<td></td>
<td>(What is being learnt)</td>
<td>(How it is being learnt)</td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td>Same</td>
<td>and Automated but otherwise essentially unchanged</td>
</tr>
<tr>
<td><strong>Extend</strong></td>
<td>Different – but does not require a ICTs</td>
<td>and/or Different – but does not require ICTs</td>
</tr>
<tr>
<td><strong>Transform</strong></td>
<td>Different – and requires ICTs</td>
<td>and/or Different – and requires ICTs</td>
</tr>
</tbody>
</table>
Table 2. Algorithm to identify the CPF mode for any activity. Adapted from Twining (2002, p. 106)

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer = No</th>
<th>Answer = Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ignoring and learning that relates specifically to operating the ICT, has <em>what</em> the learners are learning changed?</td>
<td>Go to 2</td>
<td>Go to 3</td>
</tr>
<tr>
<td>2. Is automation the only change to the <em>process</em> through which the learners learn this activity?</td>
<td>Go to 3</td>
<td><em>Mode is Support</em></td>
</tr>
<tr>
<td>3. Could you do this in a context without ICTs?</td>
<td><em>Mode is Transform</em></td>
<td><em>Mode is Extend</em></td>
</tr>
</tbody>
</table>

In Figure 1, the majority of the use of ICTs as a learning tool is spent in either the support or extend mode. In Figure 1, a bit under 25% of the use of ICTs as a learning tool is spent in the Transform mode.

There is nothing inherently wrong with each of these modes. There are, however, situations where a particular example of a mode may cause problems. For example, if you are meant to be following a specific curriculum document, changing what is being learnt might not be appropriate.

References