

# Concept maps and CPDs

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## Abstract

Concept maps and concise process diagrams (CPD) consist of ‘text and arrows’, but have different conventions and purposes. Similarities and differences are explained and illustrated.

## 1 Introduction

Concise process diagrams (Perdicóúlis, 2010, pp.67–70) and concept maps (Perdicóúlis, 2011b, pp.98–99) are relatively simple ‘text-and-arrow’ or ‘node-and-edge’ graphical expressions, so they have similar appearance. Nonetheless, there are some differences between the two types of diagrams, and hence a need to maintain both and use them appropriately. Let us take a comparative and illustrated overview.

## 2 Concise process diagrams (CPD)

CPDs are conceived to represent processes as sequences of states and actions, following a set of simple rules (Perdicóúlis, 2011a, p.3). In a common configuration<sup>1</sup>, CPD nodes represent phases, stages, or outcomes of a process — whether partial or final — and are expressed as short text, typically contained in boxes. On the other hand, actions, tasks, or operations are represented by text on the arrows that link the nodes — Figure 1.

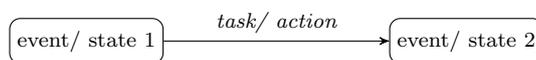


FIGURE 1 A generic CPD (Perdicóúlis, 2010, 2011a).

CPDs are streamlined to feature only the basic information regarding processes — i.e., states and actions. Additional information such as actors and methods can be later added to the CPDs, with appropriate notation (Perdicóúlis, 2011a).

<sup>1</sup>The content of nodes and arrows may interchange, but this must be made clear in advance.

### 3 Concept maps

Concept maps present the relationships between concepts. The concepts are located at the nodes, typically expressed as nouns. The relationships between concepts are represented by arrows, on top of which there are active or static verbs — Figure 2.



FIGURE 2 Generic concept map (Perdicóúlis, 2011b).

### 4 Discussion

The simplest type of concept maps employs static verbs, such as ‘is’ or ‘has’. This has significant utility in definitions or classifications, and produces ‘tree’-like diagrams — Figure 3.

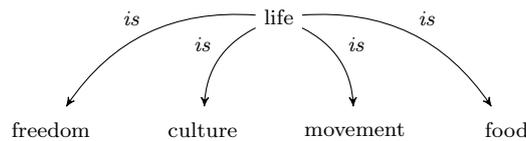


FIGURE 3 Static relationship (definition) as a concept map — adapted from Perdicóúlis (2011b).

Concept maps are analytical and rigorous, so they have potential utility in planning — e.g. for creating and communicating visions, and also for detailing those visions into intended outcomes and proposed action (Perdicóúlis, 2011b, p.99). Thus, concept maps can be useful for representing principles, assumptions, and working hypotheses — Figure 4.



FIGURE 4 Dynamic relationship as a concept map — adapted from Perdicóúlis (2011b).

It is the latter use of concept maps — i.e. when *active* verbs are being used — that creates resemblance to CPDs (cf. Figures 4 and 5).

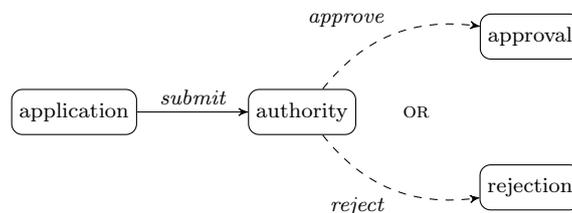


FIGURE 5 Concise process diagrams are created to describe processes — adapted from Perdicóúlis (2010).

While CPDs and concept maps may occasionally take similar form, as in Figures 4 and 5, the two reserve their ‘birth identities’: CPDs maintain the responsibility to describe processes, and never employ static verbs; on the other hand, concept maps maintain the responsibility to describe relationships, whether static or dynamic (i.e. involving action).

## 5 Conclusion

As a rule of thumb, concept maps are suitable to represent explicit *static* relationships between entities. For relationships that involve *action*, either diagram is eligible — but concise process diagrams (CPD) specialise in the description of step-by-step processes, and thus have provisions to host additional information if necessary.

## References

- Perdicoúlis, A. (2011a) Application manual for the ‘Systems Thinking’ book. *Systems Planner*, **2**.
- Perdicoúlis A. (2011b) *Building Competences for Spatial Planners: Methods and Techniques for Performing Tasks with Efficiency*. London: Routledge.
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