Chapter 8  
Support: The WAVES Strategy

As outlined in Section 7.4, the second part of the main research question - how can the evolution of systems thinking be improved in practice - is discussed in this chapter. The answers from the three refined research questions of the first part of the main research question show the direction to influence work activity towards a better learning environment particularly for systems thinking (see Figure 90). The developed intervention is a strategy, labelled WAVES (Work Activity for a Versatile Evolution of Systems engineering and thinking). Selected parts of the WAVES strategy, its implementation, and evaluation have been published in Moser (2013a) and Moser (2013b).

Fig. 90 Answers to the refined research questions of the first part provide the starting point for answering the second part of the main research question

Section 8.1 presents the development approach of WAVES. Section 8.2 presents the objectives, success criteria, and measurable success criteria of WAVES. Section 8.3 summarises the review on existing support where elements are taken from to construct WAVES. The concept and design of this support is presented in Section 8.4. The implementation of WAVES is described in Section 8.5 and the evaluation is presented in Section 8.6. Finally, the chapter is concluded in Section 8.7.
8.1 Development Approach of WAVES

WAVES was developed within a combined Intervention and Evaluation Study (IES) to allow iterative refinement of the intervention. IES is comprised of two parts. One part of IES was rather opportunistic and decisions were based on the then current findings of the ongoing empirical studies, on literature review, and existing support. The book author played the role of a change facilitator and promoter. Parts of the literature on existing support are presented in Section 8.3.

The other part of IES follows the main steps of a Prescriptive Study with an initial Descriptive Study II (Blessing & Chakrabarti, 2009). This part starts with clarification of the task.

- Objectives of the intended support are formulated and key factors to be influenced by the support are identified
- Existing support is identified in a literature research on methods enabling to influence the selected factors
- The concept of the intended support is formulated and a prototype developed
- Realisation with formulation of an introduction plan and definition of core functionalities
- Support evaluation is the final phase of the support development approach and covers the core functionalities

Such an approach has been employed in different areas of human technology interaction, e.g. in knowledge management (Schreiber et al., 2000) and artificial intelligence (Russell, Norvig, & Davis, 2010).

Figure 91 shows the second half of the research plan with IES covering the two stages Prescriptive Study (intervention) and Descriptive Study II (initial evaluation). Additional literature provides an insight into existing support.

![Fig. 91 Second half of the research plan](image-url)

8.2 Objectives of WAVES

Generally, the main objective of the intervention is the second part of the initial research question: improve the evolution of systems thinking in practice. The answers to the first part of the initial research question (How does systems thinking evolve in practice?) indicate the factors to be influenced.