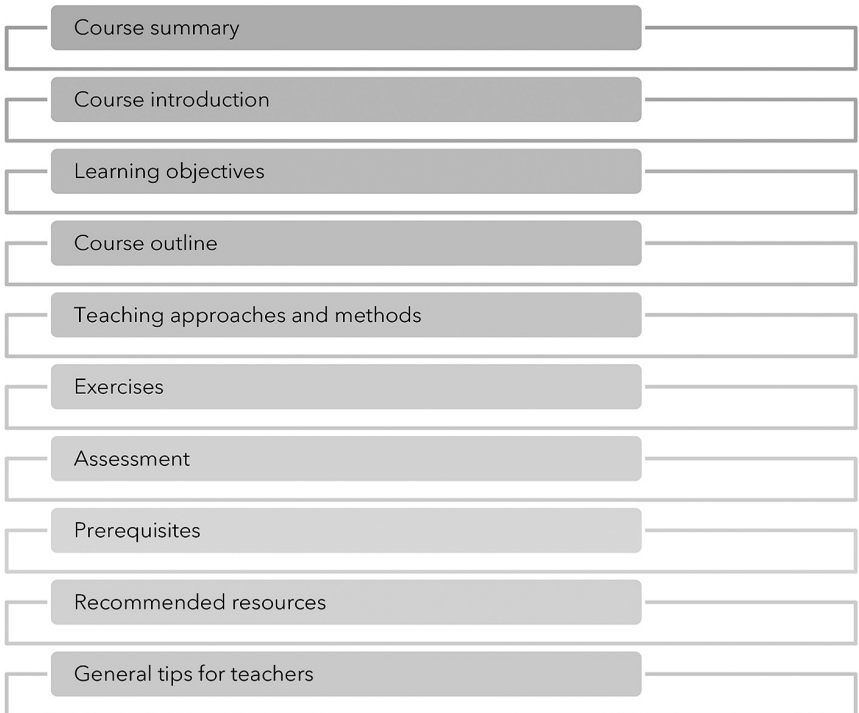*Silke Bustamante & Martina Martinovic*

Chapter 2. Describing Teaching Formats – the Framework

In order to enable readers of this book to implement the teaching formats/courses included and described in Part II (chapters 4 to 26) in their own Higher Education Institutions or other contexts, all of those chapters are structured in the same way and contain the ten subchapters that are depicted in Figure 2–1 and described in more detail below.

Figure 2–1: Structure of chapters on teaching formats

Course summary

Course introduction

Learning objectives

Course outline

Teaching approaches and methods

Exercises

Assessment

Prerequisites

Recommended resources

General tips for teachers

(1) Course summary

All chapters describing a teaching format start with the presentation of a course summary in the form of two tables.

In the first table fundamental information on

- *basic course characteristics* (including the audience and level of studies for which the course was created, e.g. for bachelor students, master students, doctoral students and/or professionals; the course size or respective the number of participants; the course duration in weeks; the credits awarded to students for the course participation in ECTS; the workload contained in hours and the primary course topics),
- main *course objectives*,
- the most important *pedagogies applied* (comprising the main teaching approaches and methods used) and the *learning environment* in which those are embedded (e.g., face-to-face classroom, virtual classroom, hybrid classroom and/or settings beyond classroom), as well as
- the *connection of the course to one or more specific Sustainable Development Goals* (SDGs) are provided.

The second table deals with the *pedagogical impact variables* presented above in chapter 1 (subchapter 1.3 "The Role of Pedagogical Approaches and Methods for Teaching Effectiveness") in detail. All of those variables are assessed in terms of their present degree by using a scale ranging from "none" to "high" and, in addition, short explanations for the chosen degree are given.

(2) Course introduction

The second subchapter gives the reader a short introduction into the course background, its topic, its main goal and further aspects considered of high relevance for this part by the authors.

(3) Learning objectives

The third subchapter focuses on the key learning objectives of each course. In a table format, the learning objectives are described and additionally classified according to the UNESCO (2017) framework in three domains: the cognitive, socio-emotional and behavioural domain. "The cognitive domain comprises knowledge and thinking skills...", "the socio-emotional domain includes social skills that enable learners to collaborate, negotiate and communicate ... as well as self-reflection skills, values, attitudes and motivations that enable learners to

develop themselves" and "the behavioural domain describes action competencies." (UNESCO, 2017, p. 11).

Besides those descriptions, information on which competencies are targeted by the course are included in the table by indicating which learning objective is related to which competency. While the contributions are referring thereby to competency frameworks chosen by each contribution´s author(s) and stated in the single chapters, most of the contributions referred to the framework of the UNESCO (2017), which was recommended by the editorial team. This framework contains eight so-called sustainability key competencies (see Table 2–1), which are seen as "…essential for individuals to transform their own lifestyles and to contribute to societal transformation towards sustainability" (Rieckmann, 2018, p. 42). As defined previously, competencies can be described as functionally linked patterns of different variables such as knowledge, values and attitudes, including cognitive, affective, volitional and motivational elements (Rieckmann, 2012; Wiek et al., 2011). The framework introduced in the publication of the UNESCO (2017) was set as a recommendation because it is based on different highly relevant key competency sets or respective frameworks (namely de Haan, 2010; Rieckmann, 2012; Wiek et al., 2011) and the collection of the contained key competencies was recently mostly confirmed by a Delphi study (Brundiers et al., 2021).

Table 2–1: Key competency framework

Key competency	Definition
Systems thinking competency	"the ability to recognize and understand relationships, to analyse complex systems, to perceive the ways in which systems are embedded within different domains and different scales, and to deal with uncertainty" (Rieckmann, 2018, p. 44)
Anticipatory competency	"the ability to understand and evaluate multiple futures – possible, probable and desirable – and to create one's own visions for the future, to apply the precautionary principle, to assess the consequences of actions, and to deal with risks and changes" (Rieckmann, 2018, p. 44)
Normative competency	"the ability to understand and reflect on the norms and values that underlie one's actions and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions" (Rieckmann, 2018, p. 44)
Strategic competency	"the ability to collectively develop and implement innovative actions that further sustainability at the local level and further afield" (Rieckmann, 2018, p. 44)
Collaboration competency	"the ability to learn from others; understand and respect the needs, perspectives and actions of others (empathy); understand, relate to and be sensitive to others (empathic leadership), deal with conflicts in a group; and facilitate collaborative and participatory problem-solving" (Rieckmann, 2018, p. 44)

Key competency	Definition
Critical thinking competency	"the ability to question norms, practices and opinions; to reflect on own one's values, perceptions and actions; and to take a position in the sustainability discourse" (Rieckmann, 2018, p. 44)
Self-awareness competency	"the ability to reflect on one's own role in the local community and (global) society, continually evaluate and further motivate one's actions, and deal with one's feelings and desires" (Rieckmann, 2018, p. 45)
Integrated problem-solving competency	"the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution that promote sustainable development – integrating the above-mentioned competencies" (Rieckmann, 2018, p. 45)

(4) Course outline

Within the fourth subchapter the course outline is presented. While all contributions are depicting this information in a table format, the tables themselves differ in terms of structure and content in order to capture the main and relevant information needed by readers.

(5) Teaching approaches and methods

The fifth subchapter focuses on the pedagogies that were applied in the single teaching formats: authors describe how and why they utilized specific pedagogical approaches and methods. While pedagogical approaches were thereby defined as being placed at a more general level, representing "...the general character or guiding principles of designing learning processes..." (UNESCO, 2017, p. 54), pedagogical methods were understood as being placed at a more specific level, "...needed to facilitate the learning process" (UNESCO, 2017, p. 54). Within the book, an emphasis was put on the teaching approaches presented in Table 1–1 and the teaching methods introduced in Table 1–2 in chapter 1 (subchapter 1.3 "The Role of Pedagogical Approaches and Methods for Teaching Effectiveness"). However, as those are representing only the core pedagogies, in some chapters other, additional approaches and/or methods are described.

(6) Exercises

In the sixth subchapter, authors provide a description of different exercises that are implemented in their courses with a special focus on those exercises that best reflect the applied pedagogical approaches and methods.

(7) Assessment

The seventh subchapter presents information on the assessment principles and forms that were utilized in the single courses.

(8) Prerequisites

The eighth subchapter introduces existent prerequisites for each course related to students (e.g. prior knowledge that is required from students), lecturers/instructors (e.g. core competencies that are required from lecturers), and tools (required tools such as online collaboration platforms or video editing tools).

(9) Recommended resources

In the ninth subchapter a list of recommended resources is provided (including readings, videos or other available material).

(10) General tips for teachers

All chapters end with a short section presenting general tips of authors regarding the implementation of the teaching formats/courses, which are of high importance to those readers aiming at implementing them within their own institution or other educational context.

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