Output 4 and 5

Learning outcomes and evaluation questions

Reflection and Portfolio

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1. Introduction reflection

Reflection has to due with thinking about yourself, the way you handle things,… A Mirror is used to reflect and look back at your own experiences and actions, to learn and act better in the future. As Calderhead and Gates (1993) already stated many years ago, the essence of reflection is that it enables professionals “to analyze, discuss, evaluate and change their own practice”. Indeed, in the work of practitioners, reflection is always linked to practice. In almost all approaches to reflection, one can distinguish a mutual relation between reflection and practice as depicted in Figure 1, a relation that is cyclic, because through reflection one develops new insights that help to improve one’s behavior in practice, behavior that can in turn be reflected on, etcetera (Korthagen & Vasalos, 2009).

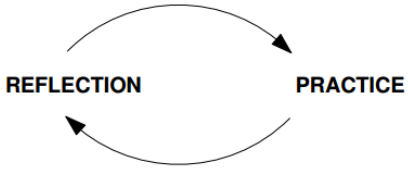

Figure 1: The cyclic relation between practice and reflection (Korthagen & Vasalos, 2009)

Korthagen (1982, 1985) published an adaptation of the model of Kolb and Fry, which has since been used in many teacher education programs throughout the world. Figure 2 shows the ALACT model, which aims at structuring reflection. It is named after the first letters of the five phases (Korthagen & Vasalos, 2005). This model describes the ideal process of learning in and from practice with the aid of five phases: (1) Action, (2) Looking back on the action, (3) Awareness of essential aspects, (4) Creating alternative methods of action,
and (5) Trial, which itself is a new action and thus the starting point of a new cycle (see Figure 2) (Korthagen & Vasalos, 2009).

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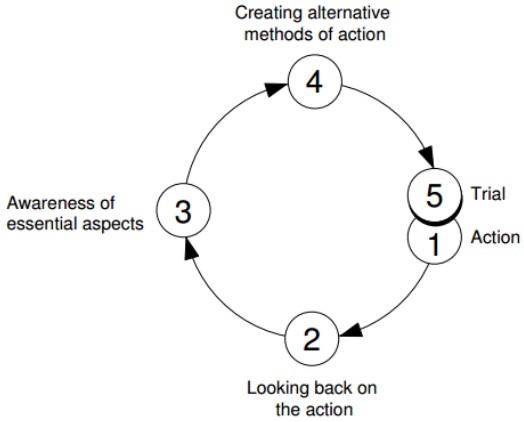

Figure 2: The ALACT model of reflection (Korthagen & Vasalos, 2009)

In phase 2, the questions presented in figure 3 can be helpful in promoting concreteness in the reflective process. The important final step in phase 2 is connecting the answers to the questions 1-8, in other words analyzing the circular process going on (Korthagen, Kessels, Koster, Lagerwerf & Wubbels, 2001).

0. What is the context?	
1. What did you want?	5. What did the other(s) want?
2. What did you feel?	6. What did the other(s) feel?
3. What did you think?	7. What did the other(s) think?
4. What did you do?	8. What did the other(s) do?

Figure 3: Concretizing questions for phase 2 of the ALACT model (Korthagen & Vasalos, 2009)

Over many years shifts took place and reflection of practitioners can be deepened. The traditional view of reflection, reflection from the past, to the ideal future, the resulting concept of Core Reflection (Korthagen & Vasalos, 2009). The onion model appeared not only an instrument for deepening the reflection process, but also for creating more flow in student teachers, and hence more enthusiasm for 'doing reflection', and for enhancing more effective teaching. A focus on strengths alone is not sufficient, but that what is needed is cognitive, emotional and motivational awareness of both one's strengths, and of one's *inner* obstacles to the actualization of one's strengths. The fact that ideals and core qualities are so closely connected is in line with the onion model. Ideals often resonate with the most inner level of mission: they have to do with our deepest desires, our sense of meaning in life, and thus with our core, our full potential as human beings (Korthagen, 2001b; Korthagen & Vasalos, 2005). The summarize of the development is represented in Figure 4.

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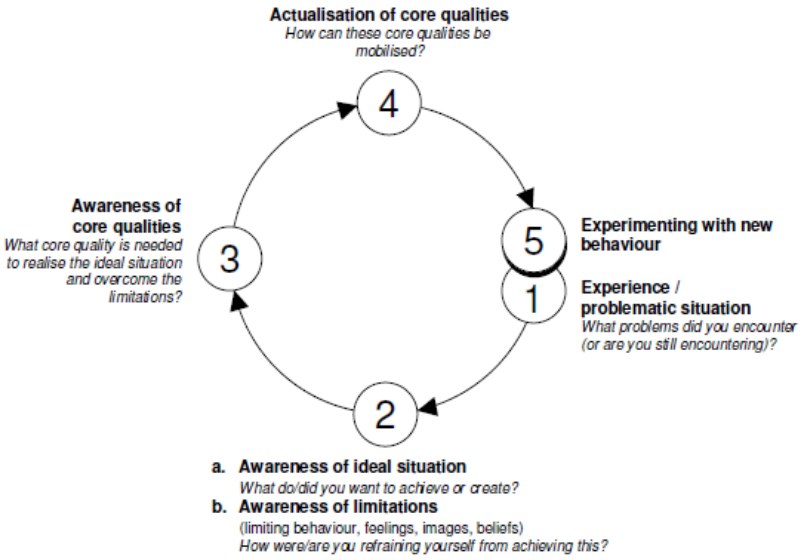

Figure 4: Phase model of Core Reflection (Korthagen & Vasalos, 2005)

What we are talking about here is the important shift from looking back on a situation to becoming aware of one's ideal and one's core qualities connected to it, which helps to create more professional fulfillment, and "vocational vitality". We can still call this reflection, but it is rather different from analyzing past experiences in order to learn from them (Korthagen & Vasalos, 2009).

Traditional view of reflection	*Core Reflection*
- Reflection on problems - Focus on the past - Focus on the situation - Focus on cognitive thinking/rationality - Focus on the outer levels of the onion model - Final goal: clear analysis of the situation	- Reflection on possibilities and ideals - Focus on the here-and-now and the future - Focus on personal strengths - Focus on presence as well as awareness of thinking, feeling, wanting and the environment - Focus on all levels of the onion model and their alignment - Final goal: being *in* the situation with full awareness of thinking, feeling and wanting, leading to a free flow of core qualities

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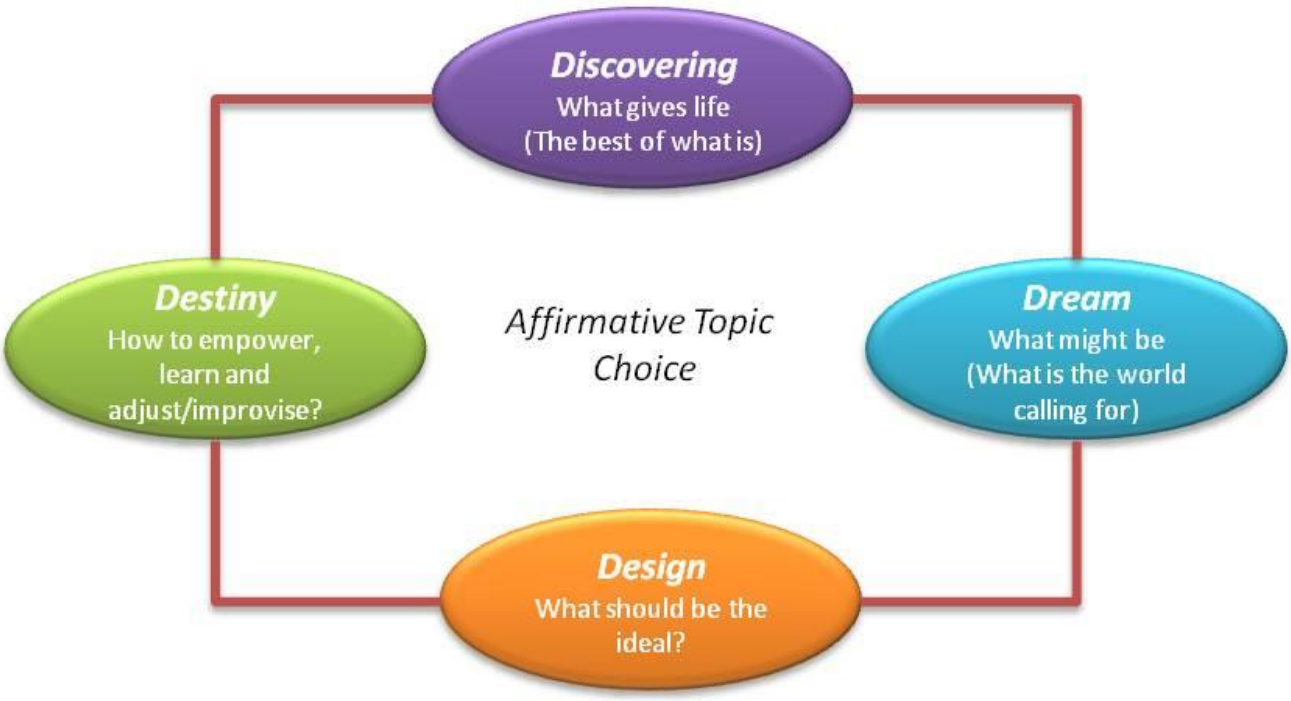
2. Portfolio in the literature (2015-2016)

Introduction

Next to the cases the MOOC wants to provide a portfolio where the student can reflect over his/her traject as a dietician. For this part of reflection the MOOC uses the model of Appreciative inquiery, with the tools of feedforward interview and solution focussed coaching and the pyramid of Miller.
Why this models? A new discipline in psychology: positive psychology, is aimed at the study and the development of the strong characteristics of people, groups, institutions.

Appreciative Inquiery

The basic idea of Appreciative Inquiery (AI) is to build organizations around what works, instead on fixing what's wrong. The purpose is to bring the positive aspects of students' experiences into focus and discover what processes work well. The students have to collect concrete successes. AI works in 4 steps:



Model of AI. (David Cooperrider and Ronald Fry)

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1. Discovering
   What went well? How becomes the story of the topic successful? What makes that it went well?

   From the feedforward protocol:
   “Could you please tell me a story about an experience as a dietician during which you felt at your best, full of life and in flow, and you were content even before the results of your actions became known?”
   “What did others do that enabled this story?”
   “What were the conditions in you, such as things you did, your capacities and your strengths that made this story possible?”

2. Dream
   What will I achieve in life in my professional carrier? What will I achieve with my studies? How my live will look like if I can show each day my capacities? In wich situation would it be? Can I do this alone or rather in a team? What’s the result of it and what’s the interest?

3. Design
   What can I do to become closer to this dream? What I have to do to make this dream come true and how many energy I will spent to it?

4. Destiny
   What can I do now to move forward? How can I use my strengths at this moment?

   From the feedforward protocol:
   “Think of your current actions, priorities and plans for the near future and consider to what extent they incorporate all of these conditions.

The reflection in the MOOC also wants to focus on the solution of a problem. There are several advantages to work with solution-focused coaching:

- Solution-based coaching works better to a result than other methods (DeJong & Berg, 2001; Lindfors, 1997)
- Solution-based coaching is less expensive than other methods becouse the result is faster. (Lindfors, 1997)
- Students will be more satisfied than with other methods. (LaFountain & Garner, 1996)
- The experts of the MOOC who lead the processes of the MOOC are less exhaustive, have the feeling that they can mean more to the students. (LaFountain & Garner, 1996)

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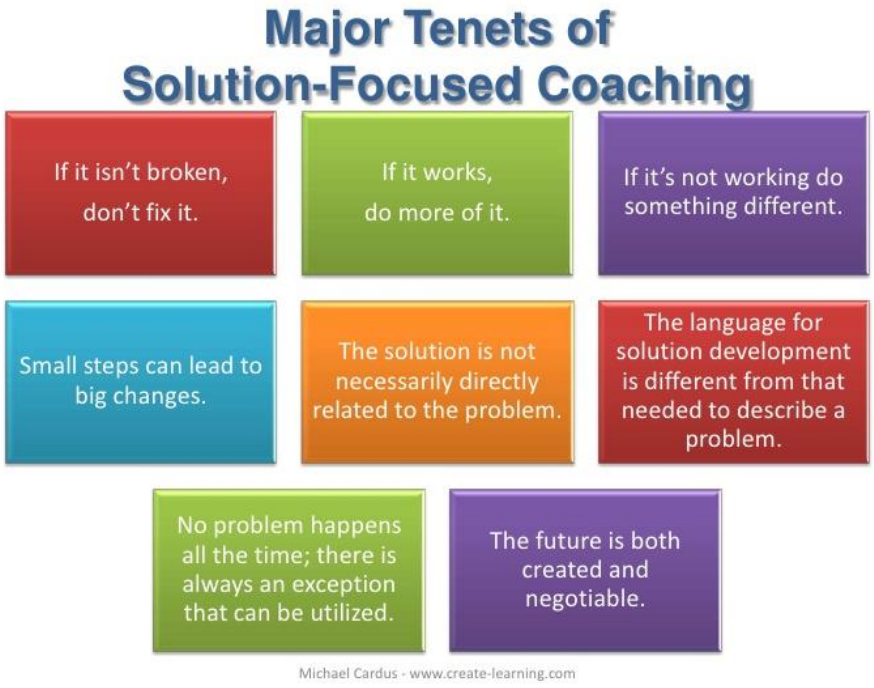
If the Mooc wants to be a solution-focused coach, there are several aspects that are important:

- Keep contact: attention and interest for the work of students is important and the basic of a good participation.
- Clear the context and recognise the problem: describe the situation where the problem exist, but don't try to find the cause.
- Formulate goals and describe successful situations: it's important to say that a goal is not just the absence of a problem.
- Discover resources: the resources are the strenghts of the students. Where are you good at? What feels good? What makes you proud?
- Identify and analyze positive exceptions: all problems come in different ways. When you can find exceptions, the start of a solution is probably there. Example: when is the problem not absent? What was different?
- Give compliments: the self-esteem of a student has an important value. It stimulates the collaboration and changes the focus form problems to solutions.
- Use scales: a great tool to use in solution-based coaching are scales from 0 (= the problem is at his worst) to10 (the goals are realised).
- Forward-looking: use the question of a miracle: the student has to discribe the situation when there would be a miracle where the problems are already solved. Visualize this situation. Try to make small steps to this situation. Small steps are important for the motivation of the student.



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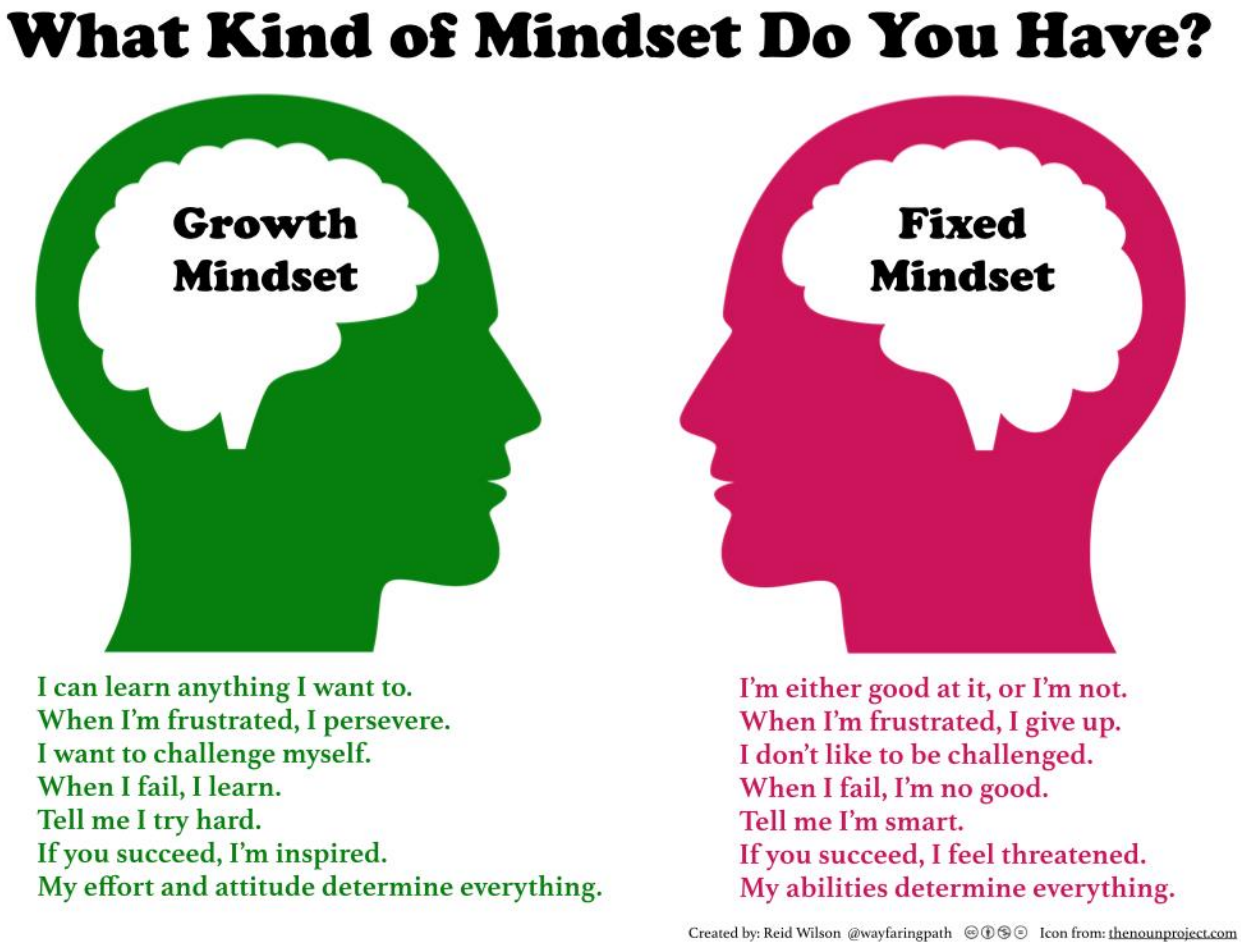
It's very important to achieve all of the prior aspects that students can have a growth mindset.



Clifton and Buckingham (2001) define a talent as 'each repetitious pattern of thinking, feeling or behave that can be used in a productive way'. Luc Dewulf (2011) add that acting from the talent can be recognised from the fact that there is little effort needed. Working from your talent is often related to experience the feeling of flow (Csíkszentmihályi, 1990).

The difference between a talent and a competence is described below:

A talent is congenital, sustainable and connected with your hart, passion, necessary to make the difference, broader than organisation and work; also in family, context and leasure time.

Competence is learned, connected with what belonged, necessary to achieve performance, less sustainable, matched with work and organisation.

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Pyramid of Miller

We can use the pyramid of Miller to give the students an reflection tool for the EFAD competences. Miller's pyramid of competence (figure 5) is a framework for assessing levels of clinical competence back in 1990 (Miller, 1990). Underlying levels are the foundation for the layer above. The first layer 'Knows' stands for the control of knows some knowledge. The second layer "Know how" stands for students knows how to apply that knowledge. For example the dietician can formulate a dietetic diagnosis. These two levels test cognition. This is the area where students (or recently graduated dieticians) usually sit. The third layer "Shows" stands for showing how to apply that knowledge. A student who knows how to do something and can explain this. The evaluation of this performance objective is the most difficult to measure accurately and reliably. Artificial simulation exercises where the student has to demonstrate it to the teacher are often used. The last layer "Does" stands for the student who actually applies that knowledge in practise. An example of this layer is also observing of using video recordings of real consultations. The upper two levels test behaviour.

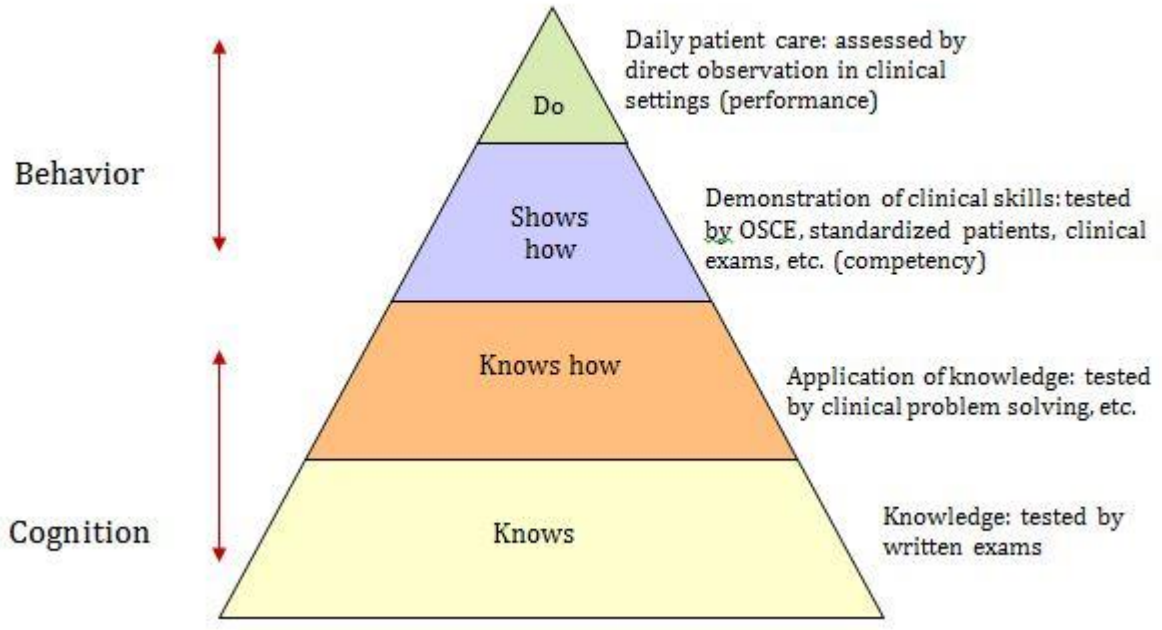

Figure 5: Framework for clinical assessment (Miller, 1990)

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EFAD competences

EFAD provided in 2009 a guidance to Higher Education and the work of a dietician. In this guidance learning outcomes are written down. This competence framework is the minimum level of knowledge, skills, understanding and competence that a Dietician has to obtain at the point of qualification in Europe. The Mooc can provide a reflection tool for students for the 8 major competenties of EFAD with the reflection of Miller.

Competences often used in higher education. The European Academic and Practitioner Standards for Dietetics (EDBS) were adopted by The European Federation of the Associations of Dietitians (EFAD) in 2009 to provide guidance to Higher Education (and others) on the work of the Dietitian in Europe and the expected education and learning outcomes.

This Competence Framework provides for the minimum level or baseline of knowledge, skills, understanding and competence of a Dietitian at the point of qualification in Europe. Higher Education Institutions working in conjunction with their dietetic colleagues in practice (Korthagen, 2009).

The 8 major topics of EFAD are:

- General
- Knowledge of Dietetics
- Dietetics process and professional reasoning
- Professional relationships and partnerships
- Professional autonomy and accountability
- Education Skills
- Research and Development in Dietetics and its science
- Management and promotion of Dietetics

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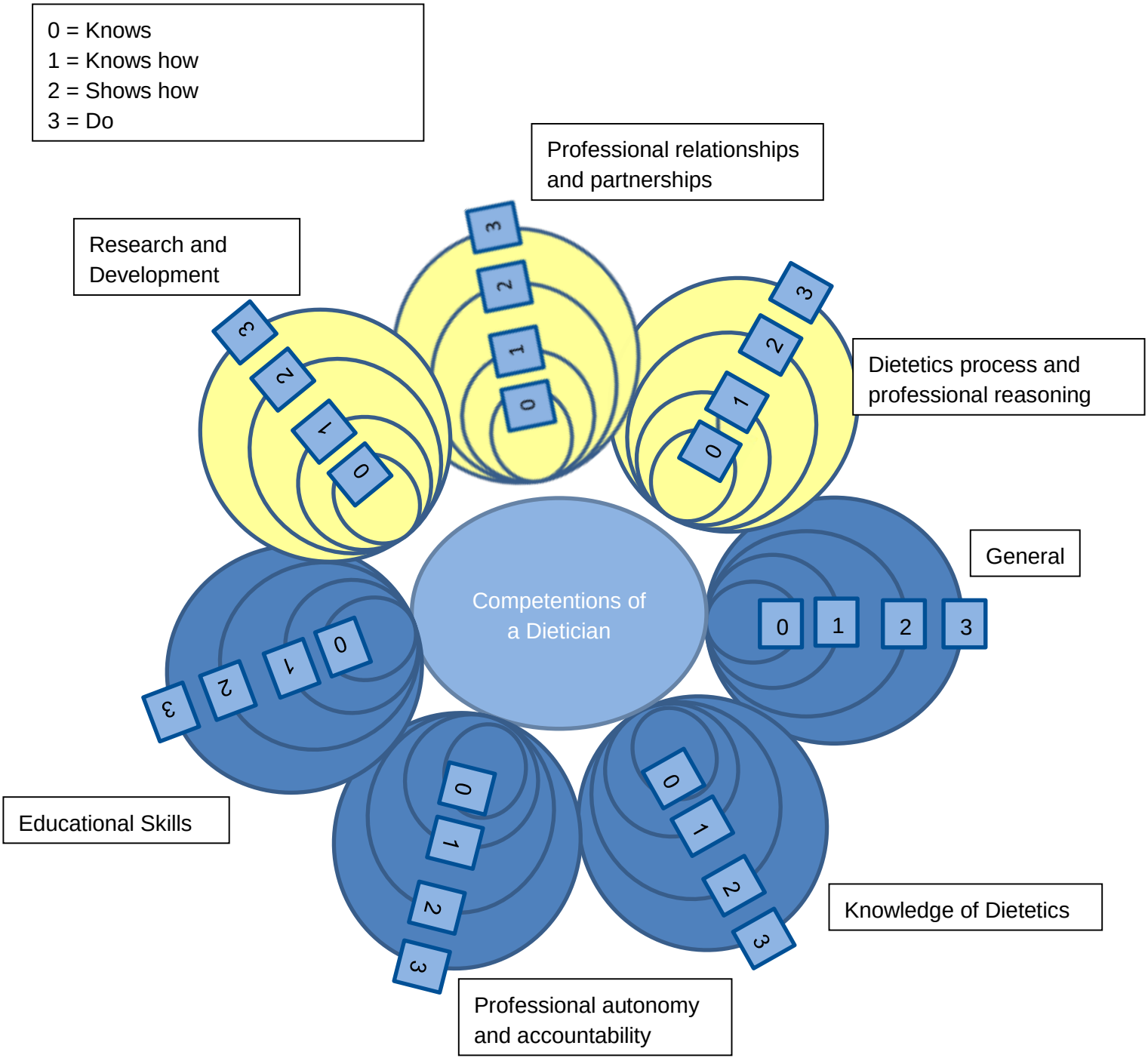
Competentions' model of a dietitian for IMPECD (version 2016)



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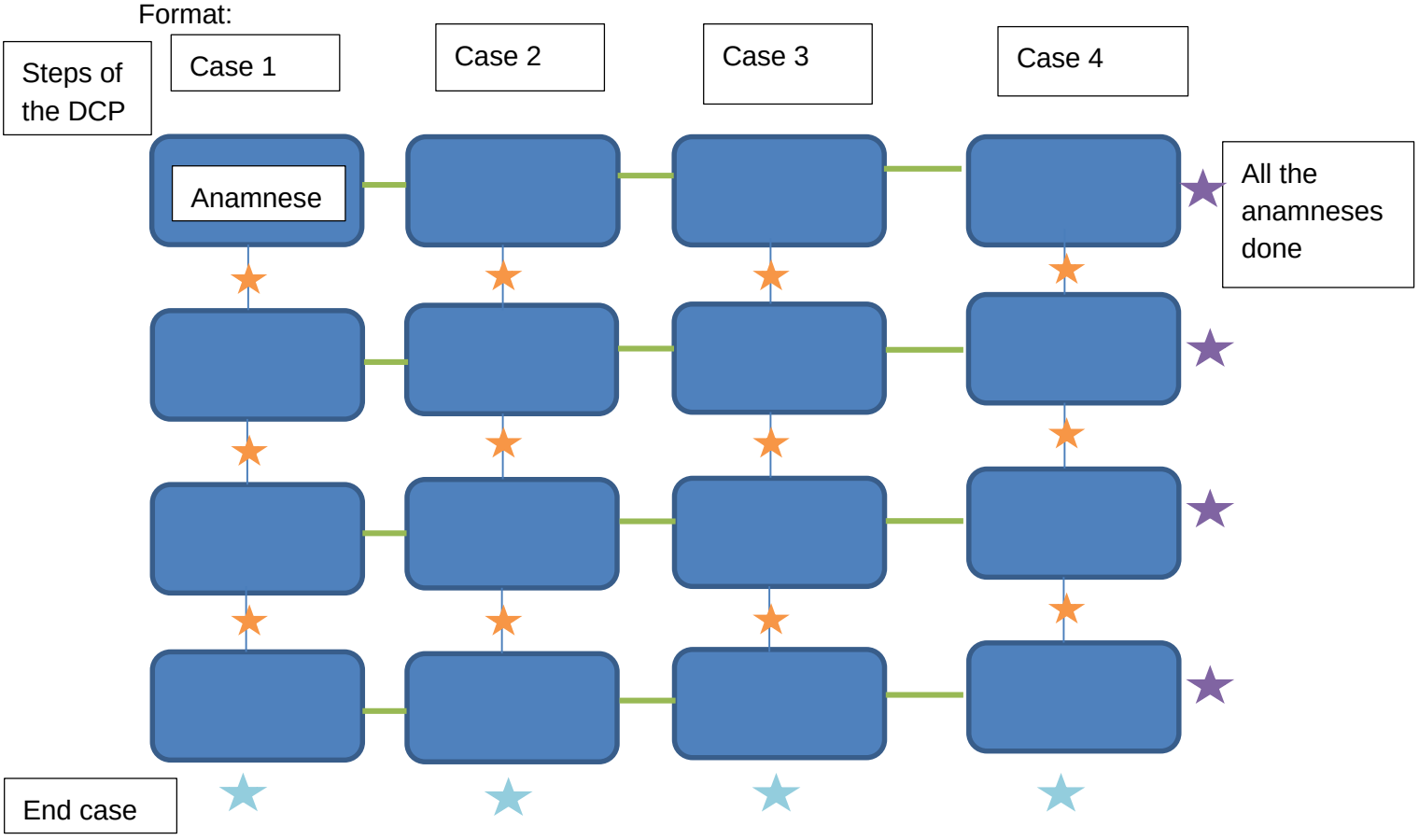
3. Possible format to reflect the cases (2016)

After each task in resolving the case-study, vertical and horizontal, the student/ learner has to fill in a reflection form. There are short and long reflection templates. After doing the whole case, the student have to fill in a long reflection template. This is called the vertical line. There is also a horizontal line, if the student has done a task from the DCP in all cases, the student will again have to fill in a longer reflection form. In the following figure the vertical and horizontal lines are presented.

Format:



Vertical tasks: Feedback after doing a task (this can be a test) + reflection (3 short questions)

Horizontal tasks: Feedback after doing a task + reflection (3 short questions)

One step of the DCP by all cases: After doing all the same steps of the DCP-model (ex. Anamneses) + longer reflection

One case: Feedback after doing a case + longer reflection

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The reflection templates are based partly on the model of Korthagen (2009) and on the competence matrix of Miller. The competences for a dietitian defined by EFAD are also included in the drafting of the reflection forms.

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4. Developing the IMPECD competences

4.1. Our approach for the development

For the impecd competences we used three different approaches. To start we used the AP-competences, the second approach was the EFAD competences and the third approach was the IPSIG competences. The three different approaches are presented first and in the second part of this chapter you can find our proposal for the IMPECD competences.

- The AP competences

The AP competences were studied. In our university of applied sciences nutrition and dietitian we work with five different competences. The first competence is in the “prevention” field which includes health promotion and nutritional research; the second competence is in the “curative” field which includes the nutrional assessment, diagnosis, diets, interdisciplinarity, motivation skills and nutrition policy; the third competence is in the field of “production”; the fourth competence is in the field of “intrapersonal” which includes problem analysis, methodology and reflection; the fifth compentece is in the field of “interpersonally” which includes communication, working together, care for the environment and stakeholder orientation. The specific competences are written down in dutch, we didn’t translate them but we used some of them to create our IMPECD competences. In the appendix you can find the total competence list used for students in Antwerp.

- The EFAD competences

The European Federation of the Associations of Dietitians (EFAD) and Thematic Network Dietitians Improving Education and Training Standards in Europe (DIETS) developed European Dietetic Competences and their Performance Indicators (EFAD, 2009). There are 8 major topics:

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1. Generic
2. Knowledge of Dietetics
3. Dietetics process and professional reasoning
4. Professional relationships and partnerships
5. Professional autonomy and accountability
6. Education Skills
7. Research and Development in Dietetics and its science
8. Management and promotion of Dietetics

- The IPSIG competences

In Antwerp the students learn to work in a multidisciplinary team. During one week the student dietitans work together with other students in health care ex. Medicine, physiotherapist, nurses, psychologists,… Each team has to work out a case and they have to work together. This is a very intense week and the students have to solve the case, do lots of reflections and have to fill in a peer assessment. There are 7 main topics:

1. Expert
2. Communicator
3. Teamplayer
4. Manager
5. Stakeholder (promotes the interests)
6. Long life learning
7. Professional

- Summary of the three different approaches: THE IMPECD COMPETENCES

IMPECD	EFAD	Highschool curriculum	IPSIG
Methodically practitioner (Evidence based) *Volgens een bepaalde methode te werk gaan (DCP content, MI, eigenheid ontwikkelen binnen de verschillende stappen)*	Dietetics process and professional reasoning + Professional autonomy and accountability	INTRAPERSOONLIJK **4.2 Methodologie** • Projectmatig werken. • Creativiteit. • Oplossingsgericht werken. • Ontwikkelen en toepassen van zinvolle oplossingsstrategieën. • Relevante gegevens verzamelen en interpreteren en geselecteerde	/

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		methodes en hulpmiddelen innovatief aanwenden om niet-vertrouwde complexe problemen op te lossen. • Functioneren met volledige autonomie en een ruime mate van initiatief. • Evidence-based werken. • Ondernemingsgericht.	
Knowledge of Dietetics *Labowaarden grenzen – gericht naar de casussen – inhoudelijke Kennis van de diëten*	Knowledge of Dietetics	CURATIEF **2.1 Nutritioneel assessment op individueel niveau** • Onderzoekt en analyseert het voedingspatroon/-gedrag van de cliënt. **2.2 Diagnose** • Stelt een diëtistische diagnose op basis van het nutritioneel assessment. **2.3 Diëten** • Geeft individueel voedingsadvies aangepast aan de noden van de cliënt.	Expert
Evidence based research	Research and Development in Dietetics and its science		
Reflection & critical thinking	Research and Development in Dietetics and its science (LLL)	**INTRAPERSOONLIJK** **4.3 (zelf-)Reflectie** • Vermogen tot kritische reflectie. • Ingesteldheid tot levenslang leren.	Levenslang lerende

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		• Internationale focus.	
Life long learning	Research and Development in Dietetics and its science	INTRAPERSOONLIJK **4.3 (zelf-)Reflectie** • Ingesteldheid tot levenslang leren.	Levenslang leren

4.2. The five IMPECD competences

1. Methodical practitioner

The learner is a project-based worker: sets measurable targets, create something in a controllable manner. He/she has a creative approach and works problem-solving. Develops and applies useful solution strategies. Collects and interprets relevant data, selects methods and tools innovative to solve unknown complex problems.
The learner operates in full autonomy and owns a large degree of initiative.

2. Knowledge of Dietetics (Diet expert)

The learner is an expert, owns the necessary knowledge of different diets. Explores and analyzes the diet/ dietary behavior. He/she sets a dietetic diagnosis based on the nutritional assessment and gives individual nutritional advice adapted to the needs of the client.

3. Evidence based research (Evidence based researcher)

The learner does research about development in dietetics and its science. He/she owns a critical vieuw at various (scientific) studies

4. Reflection & critical thinking

The lifelong learner acquires the necessary knowledge and skills to enable professional tasks in a rapidly changing society. He/ she owns the capacity for critical (self)reflection. Has an lifelong learning attitude.

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5. Life long learning

The learner has a lifelong learning attitude. Acquires the necessary knowledge, skills and attitudes. Develops his/her own expertise by consulting scientific literature and following extra training and can implement to develop its own expertise in its learning strategy. By critical reflection, he/ she ensures that continuous improvement, reframing and transforming are commonplace.

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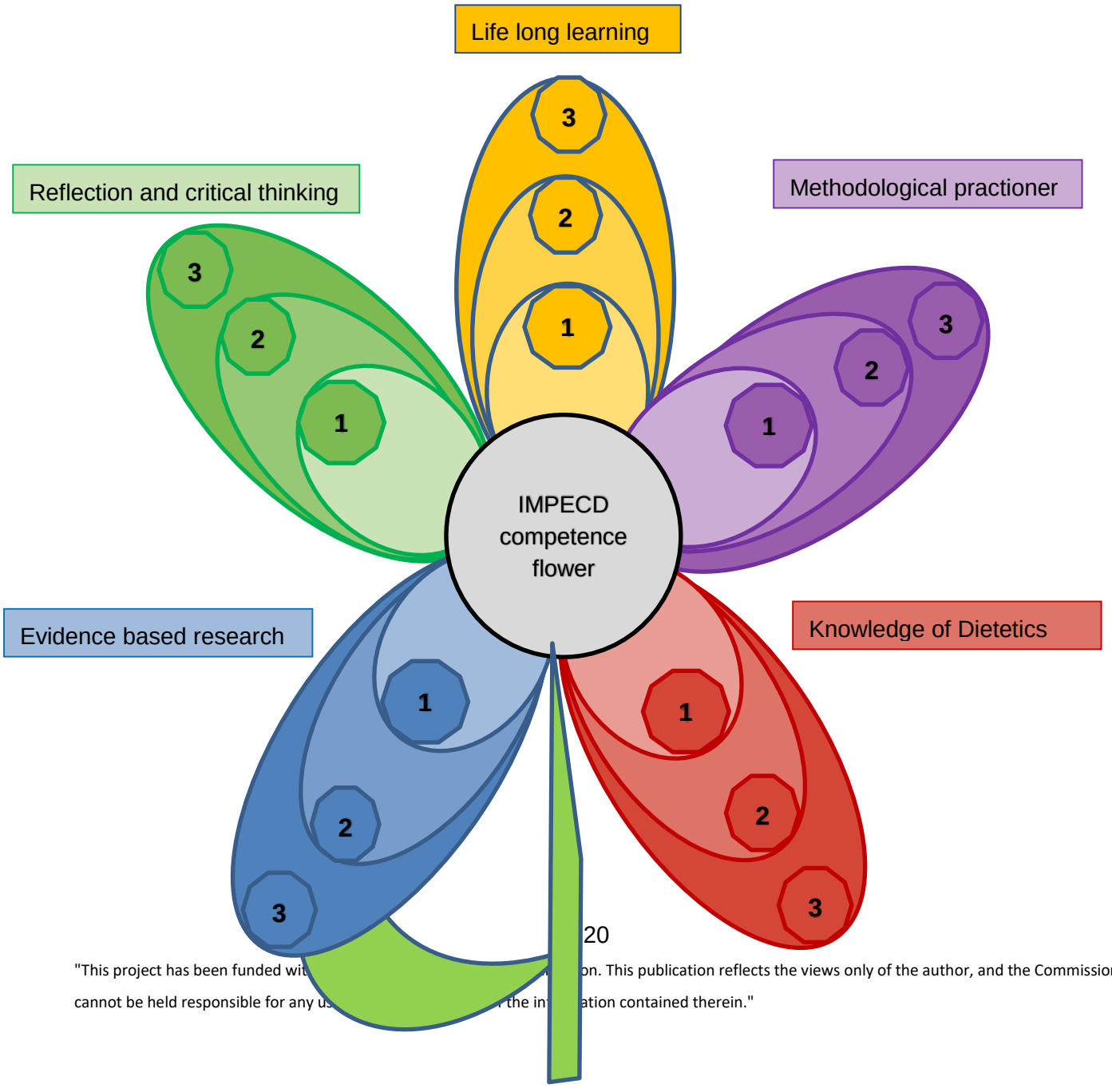
4.3. IMPECD Competence Flower (2017)

There are five competences:

1. Knowledge of Dietetics
2. Methodological practioner
3. Evidence based research
4. Reflection and critical thinking
5. Life long learning

Different levels:
1 = Knows
2 = Knows how
3 = Shows how
* = Do (not possible in the MOOC, during internship,…)



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- Achieving the IMPECD competences – GROW :

1. Knowledge of Dietetics

The learner is an expert, owns the necessary knowledge of different diets. Explores and analyzes the diet/ dietary behavior. He/she sets a dietetic diagnosis based on the nutritional assessment and gives individual nutritional advice adapted to the needs of the client.

Choice options

- ⇨ Suggestion 1→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions correctly:
  - If all evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 1 applied succesfully → FLOWER LEVEL 1 will be colored
  - If all evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 2 applied succesfully → FLOWER LEVEL 2 will be colored
  - If all evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 3 applied succesfully → FLOWER LEVEL 3 will be colored
- ⇨ Suggestion 2→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 80 % correctly:
  - If 80 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 80 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 80 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored
- ⇨ Suggestion 3→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 60 % correctly:
  - If 60 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 60 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 60 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored
- ⇨ Suggestion 4→ If a student went through all the cases + a 'variable level'of replying the evaluation questions correctly:
  - If 90 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 70 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 50 % of the evaluation questions concerning the LO's' knowledge of dietetics' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored

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2. Methodological practioner

The learner is a project-based worker: sets measurable targets, create something in a controllable manner. He/she has a creative approach and works problem-solving. Develops and applies useful solution strategies. Collects and interprets relevant data, selects methods and tools innovative to solve unknown complex problems. The learner operates in full autonomy and owns a large degree of initiative.

Choice options

- ⇨ Suggestion 1→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions correctly:
  - If all evaluation questions concerning the LO's' Methodological practioner' LEVEL 1 applied succesfully → FLOWER LEVEL 1 will be colored
  - If all evaluation questions concerning the LO's' Methodological practioner' LEVEL 2 applied succesfully → FLOWER LEVEL 2 will be colored
  - If all evaluation questions concerning the LO's' Methodological practioner' LEVEL 3 applied succesfully → FLOWER LEVEL 3 will be colored
- ⇨ Suggestion 2→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 80 % correctly:
  - If 80 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 80 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 80 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored
- ⇨ Suggestion 3→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 60 % correctly:
  - If 60 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 60 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 60 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored
- ⇨ Suggestion 4→ If a student went through all the cases + a 'variable level'of replying the evaluation questions correctly:
  - If 90 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 70 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored

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- If 50 % of the evaluation questions concerning the LO's' Methodological practioner' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored

3. Evidence based research

The learner does research about development in dietetics and its science. He/she owns a critical view at various (scientific) studies

For the competence 'Evidence based research' we can examine per case if the student has to consult certain guidelines and connect this also to LO's or we don't necesary have to link this competence to LO's because when they go through all the cases they have to go through the literature anyway. Questions about the DCP can also count in achieving a certain level of this competence and / or we can set up some additional questions to check if they really did consult the guidelines or scientific articles.

Choice options

- ⇨ Suggestion 1→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions correctly:
  - If all evaluation questions concerning the LO's' Evidence based research' LEVEL 1 applied succesfully → FLOWER LEVEL 1 will be colored
  - If all evaluation questions concerning the LO's' Evidence based research' LEVEL 2 applied succesfully → FLOWER LEVEL 2 will be colored
  - If all evaluation questions concerning the LO's' Evidence based research' LEVEL 3 applied succesfully → FLOWER LEVEL 3 will be colored
- ⇨ Suggestion 2→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 80 % correctly:
  - If 80 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 80 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 80 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored
- ⇨ Suggestion 3→ If a student went through all the cases **AND** if he /she replied to all the evaluation questions for 60 % correctly:
  - If 60 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 60 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 60 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored

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- ⇨ Suggestion 4→ If a student went through all the cases + a 'variable level'of replying the evaluation questions correctly:
  - If 90 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 1 applied succesfully → flower LEVEL 1 will be colored
  - If 70 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 2 applied succesfully → flower LEVEL 2 will be colored
  - If 50 % of the evaluation questions concerning the LO's' Evidence based research' LEVEL 3 applied succesfully → flower LEVEL 3 will be colored

4. Reflection and critical thinking

The lifelong learner acquires the necessary knowledge and skills to enable professional tasks in a rapidly changing society. He/ she owns the capacity for critical (self)reflection. Has an lifelong learning attitude.

For the competence 'Reflection and critical thinking': the student makes several reflections (see later: deep reflection, short reflection, short reflection after the wrong choice and general reflection) after going through a case. The student keeps up these reflections in his/ her portfolio. Team Antwerp will set up the LO's for the portfolio (also different levels (1,2,3)) and will link the reflections of the student to the LO's and levels.

Different levels:
1 = Knows
2 = Knows how
3 = Shows how
* = Do (not possible in the MOOC, during internship,…)

Suggestion → If a student went through all the cases **AND** if he /she filled up all the reflective questions (short reflection, deep reflection, short reflection after wrong way, general reflection) completely:

- If all reflective questions concerning the LO's' Reflection and critical thinking' LEVEL 1 filled up completely → FLOWER LEVEL 1 will be colored
- If all reflective questions concerning the LO's' Reflection and critical thinking' LEVEL 2 filled up completely → FLOWER LEVEL 2 will be colored
- If all reflective questions concerning the LO's' Reflection and critical thinking' LEVEL 3 filled up completely → FLOWER LEVEL 3 will be colored

Other possibilities are taken into account (work in progress).

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5. Life long learning

The learner has a lifelong learning attitude. Acquires the necessary knowledge, skills and attitudes. Develops his/her own expertise by consulting scientific literature and following extra training and can implement to develop its own expertise in its learning strategy. By critical reflection, he/ she ensures that continuous improvement, reframing and transforming are commonplace.

For the competence ‘Life long learning’: work in progress ! Maybe we can set up LO’s for this competence and link them to existing LO’s / case. Maybe it is possible in the MOOC to registrate if a student opens a scientific article or looks at an illustrative film ??? (visit St Pölten)

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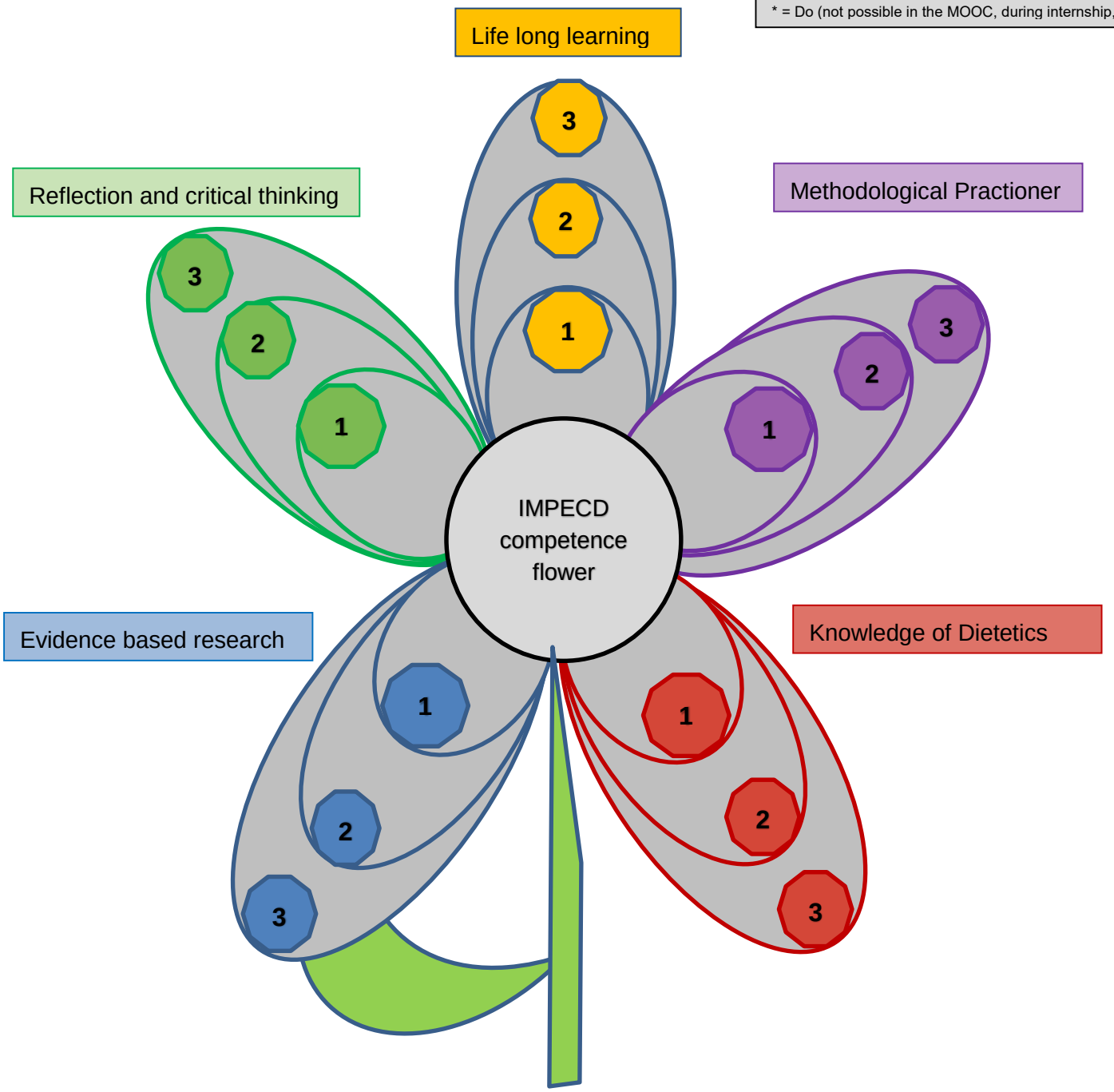
- Start of the MOOC; no impecd competences achieved:

Different levels:
1 = Knows
2 = Knows how
3 = Shows how

* = Do (not possible in the MOOC, during internship,…)



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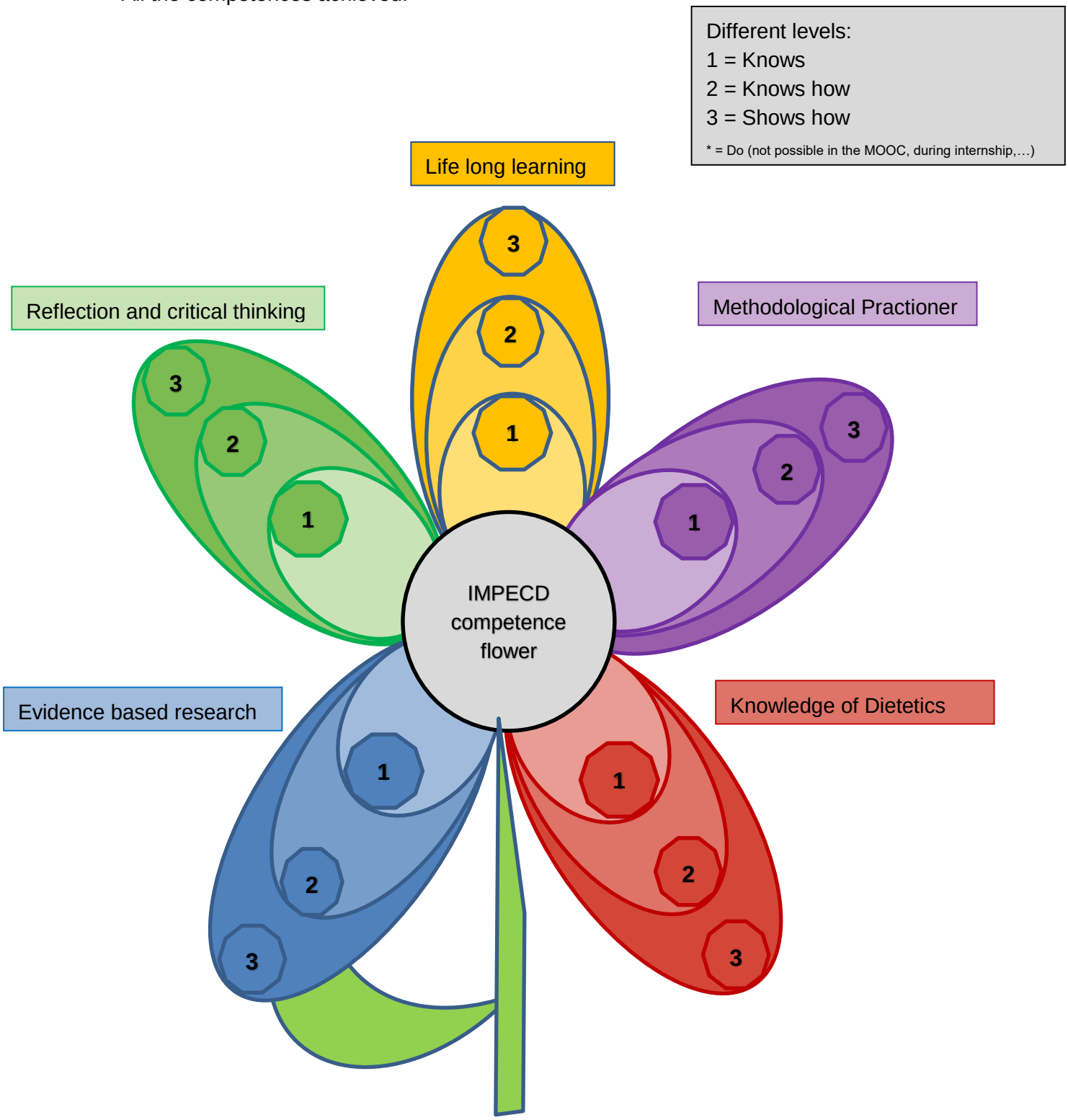
- All the competences achieved:



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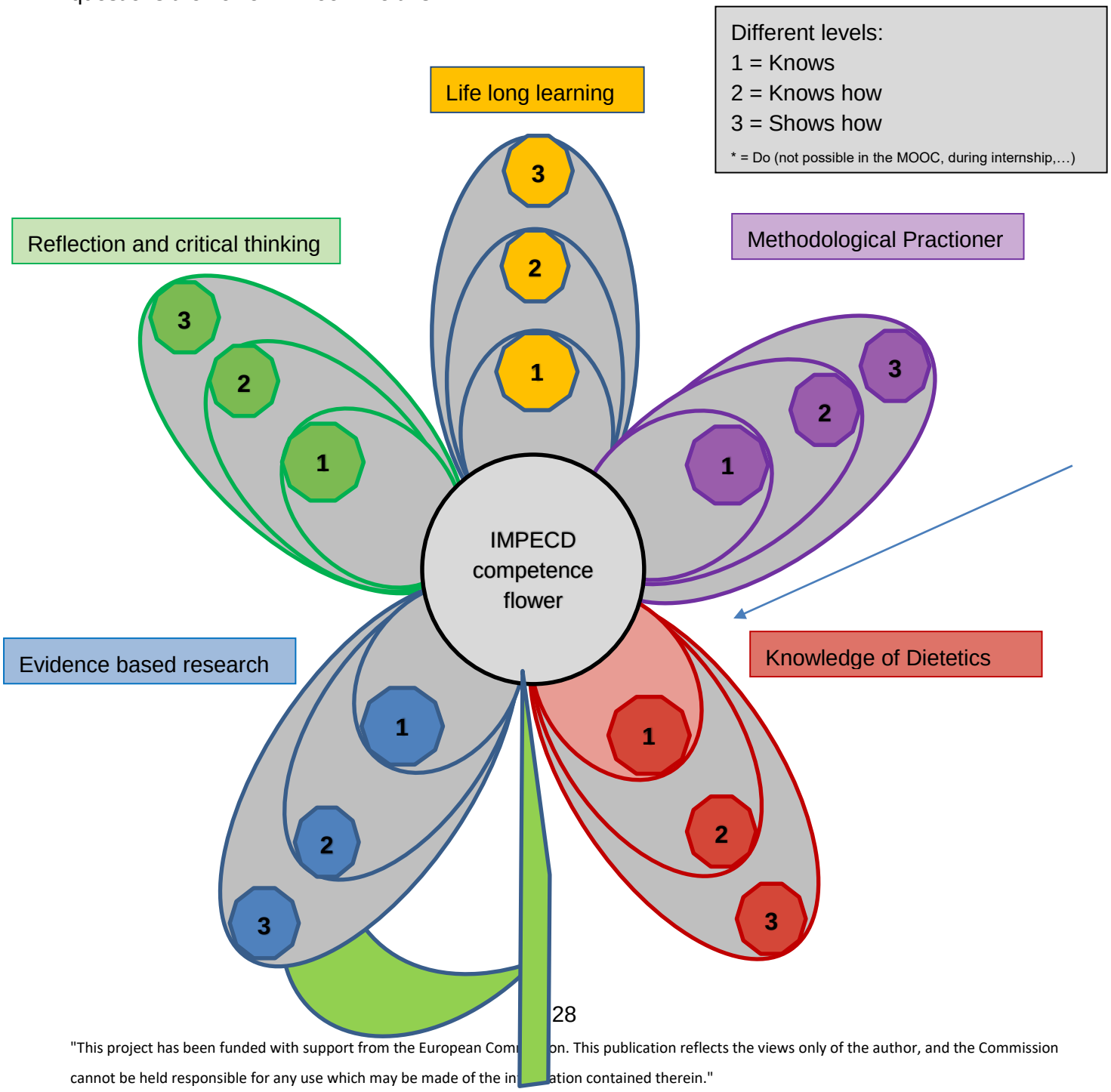
- Example of the competence flower in the Mooc

All the evaluation questions are divided in one of the five competences. Each evaluation question is also divided in a level of that competence. We can decide that a student has the level of the competence if he/she succeeds in half of the questions of that level.
For example: there are 6 evaluation questions in the mooc for the competence “knowledge of dietetics” on the level of knows how (level 1). If the student succeed for 3 of the 6 evaluation questions the flower will look like this:



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5. Connecting the learning outcomes to the competences

Work in progress

- ⇨ Building two types of a MATRIX (excel file):
  1. Matrix 1: Competences and Learning Outcomes (LO)
  2. Matrix 2: Learning Outcomes (LO) and Evaluation Questions

There are five competences (see also 4.2.):

1. Knowledge of Dietetics

The learner is an expert, owns the necessary knowledge of different diets. Explores and analyzes the diet/ dietary behavior. He/she sets a dietetic diagnosis based on the nutritional assessment and gives individual nutritional advice adapted to the needs of the client.

2. Methodological Practioner

The learner is a project-based worker: sets measurable targets, create something in a controllable manner. He/she has a creative approach and works problem-solving. Develops and applies useful solution strategies. Collects and interprets relevant data, selects methods and tools innovative to solve unknown complex problems.
The learner operates in full autonomy and owns a large degree of initiative.

3. Evidence based research

The learner does research about development in dietetics and its science. He/she owns a critical vieuw at various (scientific) studies

4. Reflection and critical thinking

The lifelong learner acquires the necessary knowledge and skills to enable professional tasks in a rapidly changing society. He/ she owns the capacity for critical (self)reflection. Has an lifelong learning attitude.

5. Life long learning

The learner has a lifelong learning attitude. Acquires the necessary knowledge, skills and attitudes. Develops his/her own expertise by consulting scientific literature and following extra training and can implement to develop its own expertise in its learning strategy. By critical reflection, he/ she ensures that continuous improvement, reframing and transforming are commonplace.

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5.1. Matrix 1: Competences and Learning Outcomes (LO)

COMPETENCES	LEARNING OUTCOMES: LEVELS	DCP content	Case 1	Case 2	Case 3	Case 4	Case 5
Methodical practitioner	Level 1: knows						
	level 2: knows how						
	level 3: shows how						
Knowledge of Dietetics (Diet expert)	Level 1: knows						
	level 2: knows how						
	level 3: shows how						
Evidence based research	Level 1: knows						
	level 2: knows how						
	level 3: shows how						
Reflection & critical thinking*	Level 1: knows						
	level 2: knows how						
	level 3: shows how						
Life long learning*	Level 1: knows						
	level 2: knows how						
	level 3: shows how						

* for ‚reflection and critical thinkging and life long learning there are seperate learning outcomes. It isn't neccessary to achieve these outcomes by getting trough a case.

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■ Example

COMPETENCES	LEARNING OUTCOMES: LEVELS	DCP content	Case 1	Case 2	Case 3	Case 4	Case 5
Methodical practitioner	Level 1: knows	x	x		x		
	level 2: knows how	x	x			x	
	level 3: shows how	x	x				x
Knowledge of Dietetics (Diet expert)	Level 1: knows	x	x		x		
	level 2: knows how	x	x		x		
	level 3: shows how	x			x		
Evidence based research	Level 1: knows	x				x	x
	level 2: knows how	x		x		x	x
	level 3: shows how	x				x	x
Reflection & critical thinking*	Level 1: knows	x					
	level 2: knows how					x	
	level 3: shows how						
Life long learning*	Level 1: knows			x			
	level 2: knows how						x
	level 3: shows how		x				

* for ,reflection and critical thinkging and life long learning there are seperate learning outcomes. It isn't neccessary to achieve these outcomes by getting trough a case.

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5.2. Matrix 2: Learning Outcomes (LO) and Evaluation Questions

casus 2:Gestional diabetes			
Antwerp			
Reviewer:			
STEP 1	Learning Outcomes	Evaluation questions	Answer
level 1 knows	Learners knows the ranges of the lab data	Which of following lab data of Caroline is wrong ?	multiple choice
level 2 knows how	Learners ~~can~~ demonstrate which test is adequate to diagnose gestational diabetes .	Which test is needed to diagnose gestational diabetes ?	multiple choice
level 3 shows how	Learners ~~can~~ evaluate the results of the HbA1c.	This morning (preprandial) Caroline tested her blood sugar. Her blood glucose level was 7.2 mmol/L. One hour after her breakfast she tested again and her blood glucose level was 7.7 mmol/L. What can you conclude?	multiple choice
STEP 2	Learning Outcomes	Evaluation questions	Answer
level 1 knowss	Learners ~~can~~ justify the weight they have to use for the patient.	which of the following weights do you use to calculate the requirements of the woman?	multiple choice

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level 2 knows how	Learners ~~can~~ interpret the guidelines of energy intake which are given.	: Answer the following question by using the given guideline. http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2013.3005/epdf , How many extra calories are recommended in this current trimester of pregnancy?	multiple choice
level 3 shows how	Learners can complete the ICF-model.	Fill in the missing link of the ICF-model. Combine the answers.	Fill in and link
STEP 3	Learning Outcomes	Evaluation questions	Answer
level 1 knowss	Learners ~~can~~ declare which are the most important objectives of the diet to the client.	The frequency and amount of which foods would you inquire taking into account the pregnancy? Multiple answers might be possible.	multiple choice
level 2 knows how	Learners can enumerate all the important micro- and macronutrients whit a pregnant patient.	Are there important micronutrients that we have to take into account in case of a pregnancy?	multiple choice
level 3 shows how	Learners can decide which nourishment contains the most carbohydrates.	Which of the two options contains the most carbohydrates?	Right/ wrong
STEP 4	Learning Outcomes	Evaluation questions	Answer
level 1 knowss	Learners can identify the correct dietetic treatment for the patient.	Which of following dietetic treatments would you choose to treat this patient with?	Right/ wrong
level 2 knows how	Learners can motivate what to do in case of a hypo.	What is the first thing a diabetic should eat when he or she has a hypoglycaemic episode? Multiple answers might be possible.	multiple choice
level 3 shows how	Learners recommends the right food for patients with gestational diabetes..	If you look at the diet treatment for this patient, which food would be recommend? Drag the different kinds of food to the right place for this diet. (allowed/ not allowed)	Matching questions

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STEP 5	Learning Outcomes	Evaluation questions	Answer
level 1 knows	Learners can mention the most important elements which should be executed during the follow-up.	Caroline said that the main meal portions were too big, and therefore she ate less. Consequently she became hungry between the meals and she took different snacks (cookies or chocolate). What will be the influence for her glycaemia?	multiple choice
level 2 knows how	Learners can analyse the blood glucose levels before and after a meal.	If Caroline would check her glycaemia 1 hour after consuming lunch which ~~-~~glycaemia-value should she be having?	multiple choice
level 3 shows how	Learners can evaluate the results of the case.	At the moment Caroline is in her 3~~th~~rd trimester of her pregnancy. Even though her efforts and following her diet she could not keep her glycaemia within range. The doctor decided to switch from one to three insulin injections a day. Will there be any difference in the treatment?	multiple choice

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6. Portfolio

6.1. General data of the student

PUBLIC INTRODUCTION

General data (name, country, school,..)
Link naar sociale media (facebook –linked in)
Short creative presentation of themself (use an alternative media like short video / photo / prezi /…)

PRIVATE

- What is your motivation to go through the MOOC?
- Which competences do you want to reach after completing the MOOC?
- Which goals (short and long goals) do you want to reach after completing the MOOC?

6.2. Reflection formats

We follow the vertical way: this means going through each step of the DCP for one case, than start the next case. After several steps in the DCP the student fills up certain reflective questions.There are four forms of reflection:

1) Deep reflection
2) Short reflection
3) Short reflection after the wrong choice
4) General reflection of all cases

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1) DEEP REFLECTION	2) SHORT REFLECTION	3) SHORT REFLECTION AFTER THE WRONG CHOICE (bad scenario)	4) GENERAL REFLECTION OF ALL CASES
Portfolio structure: *Step 1 – 3* *Reflection questions* *Step 4 -6* *Reflection questions*	*Short reflective questions after each step but nut always necessary, only when relevant.* *For exaple:* *This task I find difficult* *0-1-2….-9-10* *This task is relevent* *…* *This can be indicated with* *Yes/ no* *Figures* *smileys*	*Reflection question (short) after the wrong choice (bad scenario)*	*General reflection (IMPECD flower)*

6.2.1. Deep reflection

Case 2: Gestational Diabetes

Step 1-3

- A.Evaluate the general progress of step 1-3.

What went wrong? Give a concrete example. What went right? Give a concrete example.

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- B. When you look back to step 1 – 3 of the DCP what would you do different in the future by solving the same/ similar case. With what result would you be satisfied?

Step 4-6

- On a scale of 0 to 10 indicate how satisfied you are with your achieved results, where 0 is very dissatisfied and 10 stands for very satisfied. Explain.

- Evaluate the general progress of step 4-6.

What went wrong? Give a concrete example. What went right? Give a concrete example.

- What did you definitely learn from this exercise? Choose three of the following items and explain why you choose them.

Evidence based research – Main goals and sub goals - critical thinking – the different steps of the DCP – Methodically handling – work independently – creativity – Lab Analyse – making a correct dietetic diagnosis – set priorities - reflective thinking

- What has hindered you in solving the case (step 1-6)?

- What helped you in solving the case (step 1-6)?

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6.2.2. Short reflection

On a scale of 0 to 10 indicate how difficult you found this exercise, where 0 is very easy and very difficult 10.

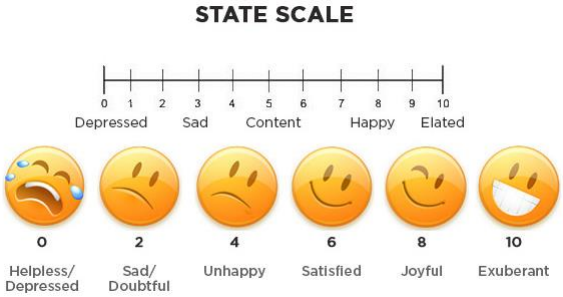
0-1-2-3-4-5-6-7-8-9-10

On a scale of 0 to 10 indicate how deep you went into the literature to solve the evaluation questions. where 0 is on surface and 10 is very profound.

0-1-2-3-4-5-6-7-8-9-10

6.2.3. Short reflection after the wrong choice (Bad scenario)

- You made a wrong choice in treating the client. Imagine yourself this is for real. You work as a registered dietitian in the hospital where this client is treated. On a scale of 0 to 10 indicate how you feel by making this wrong choice(s).



- What will you do to improve yourself to make the right choice in the future?

- How motivated are you to continue this case? Fill in the scale.

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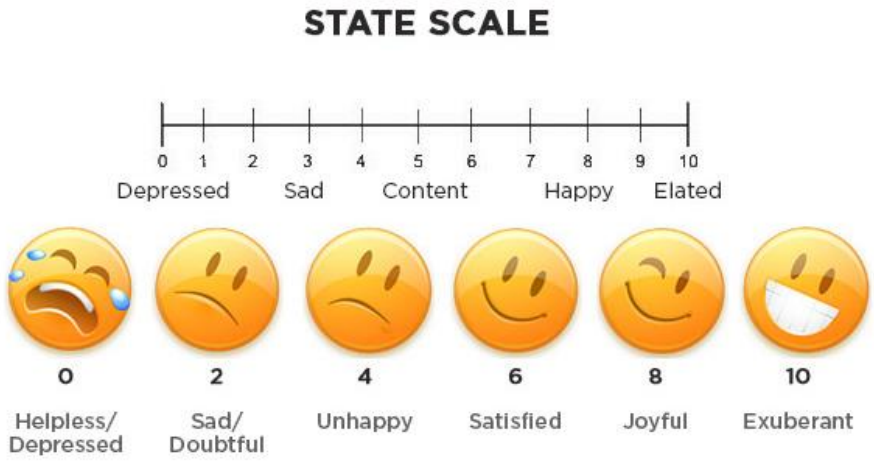

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6.2.4. General reflection

IMPECD FLOWER

- Take a look at the IMPECD flower. Which of the competences did you achieved the most?

IMPECD COMPTENCE FLOWER:

- A.Take a look at the IMPECD flower. Which of the competences did you think, are important to make more progress for yourself?

IMPECD COMPTENCE FLOWER:

- *B. Describe in SMART terms how you are going to achieve this goal.*

IMPECD COMPTENCE FLOWER:

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Appendix

Ap competences (in dutch)

Curatief - secundaire (complicaties voorkomen) en tertiaire (opnieuw voorkomen van een gezondheidsprobleem) preventie,

2.1 Nutritioneel assessment op individueel niveau

• Onderzoekt en analyseert het voedingspatroon/-gedrag van de cliënt.

2.2 Diagnose

• Stelt een diëtistische diagnose op basis van het nutritioneel assessment.

2.3 Diëten

• Geeft individueel voedingsadvies aangepast aan de noden van de cliënt.

2.4 Interdisciplinair

• Overlegt in intra- en interdisciplinaire zorgteams.

2.5 Motiveren

• Motiveert de cliënt tot gedragsverandering in het voedingspatroon.

2.6 Voedingsbeleid

• Stippelt een concreet en haalbaar voedingszorgplan uit.

4. Intrapersoonlijk

4.1 Probleemanalyse

• Denk- en redeneervaardigheid.
• Verwerven en verwerken van informatie.
• Zelfstandig definiëren en analyseren van complexe probleemsituaties.
• Kennis en inzichten uit een specifiek domein kritisch evalueren en combineren.
• Complexe gespecialiseerde vaardigheden toepassen, gelieerd aan onderzoeksresultaten.

4.2 Methodologie

• Projectmatig werken.
• Creativiteit.
• Oplossingsgericht werken.
• Ontwikkelen en toepassen van zinvolle oplossingsstrategieën.
• Relevante gegevens verzamelen en interpreteren en geselecteerde methodes en hulpmiddelen innovatief aanwenden om niet-vertrouwde complexe problemen op te lossen.
• Functioneren met volledige autonomie en een ruime mate van initiatief.
• Evidence-based werken.
• Ondernemingsgericht.

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4.3 (zelf-)Reflectie
• Vermogen tot kritische reflectie.
• Ingesteldheid tot levenslang leren.
• Internationale focus.

5. Interpersoonlijk
5.1 Communicatie
• Het vermogen tot communiceren van informatie, ideeën, problemen en oplossingen zowel aan specialisten als aan leken.

5.2 Samenwerken
• Teamgericht werken.
• Medeverantwoordelijkheid opnemen voor het bepalen van collectieve resultaten.
• Uitvoeren van eenvoudige leidinggevende taken.

5.3 Zorg voor omgeving
• Besef van maatschappelijke verantwoordelijkheid samenhangend met de beroepspraktijk.

5.4 Stakeholdergerichtheid (belanghebbenden)
• Medeverantwoordelijkheid opnemen voor het bepalen van collectieve resultaten.
• Besef van maatschappelijke verantwoordelijkheid samenhangend met de beroepspraktijk.

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