

## Coaching in design based learning: students experience questionnaire

Dr. M. R. van Diggelen (ID),

dr. K.I. Doulougeri & dr. ir. G.J.T. Bombaerts (IE & IS)

dr. R.J.A. Kamp (DPO-PD)

Funded by the 4TU/e Centre of Engineering Education

## **Coaching Project Deliverables**

2



Authors: M.R. van Diggelen ab\*, K. I. Doulougeri b, S.M. Gomez-Puente b, G. Bombaerts b, K. J. H. Dirkx a, R. J. A. Kamp b Coaching in Design Based Learning, a research study, which is granted by TU/E EDUCATION INNOVATION FUND 2018 of the 4TU.Centre for Engineering Education (4TU.CEE). Disclaimer: Work in progress: not to be used without permission of the authors.

## **Students' coaching experience questionnaire**

Students should rate each statement in Likert Scale where 1= complete disagree and 5= completely agree



<b>Goal-directed</b>	
coaching	
(cat-1:	
designing)	

- 1. The coaches explained their own expectations regarding the design process
- 2. The coaches explained the learning objectives of the project
- 3. The coaches explained our role and responsibilities during the project
- 4. The coaches assessed my own expectations about the design process
- 5. The coaches assessed my own expectations about learning outcomes
- 6. The coaches assessed my own expectations regarding the project
- 7. The coaches discussed the discrepancy between their expectation and my own expectations about the design process
- 8. The coaches discussed the discrepancy between their expectation and my expectations about learning outcomes
- 9. The coaches discussed the discrepancy between their expectation and my own expectations regarding the project
- 10. The coaches provided a clear structure for each meeting
- 11. I was able to set my/our own learning objectives

Goal-directed
coaching
(cat-2: design
thinking
and process)

- 12. The coaches constantly stimulated me to describe my underlying thinking
- 13. The coaches constantly stimulated me to explain the process of generating good work.
- 14. The coaches constantly stimulated me to explain why it is a good design
- 15. The coaches helped me to understand what I had to do and the reason why
- 16. The coaches helped me to understand the value of the different tasks involved in the project
- 17. The coaches provided me with useful feedback about my progress
- 18. The coaches encouraged me to think and reflect on my progress
- 19. The coaches recognized my efforts and goal achievements

## During the coaching sessions:

- 20. I was stimulated to take risks
- 21. I was stimulated to explore different alternatives
- 22. I was able to ask for clarifications
- 23. I was able to bring up dilemmas and concerns regarding the project

Goal-directed coaching (cat-3: self- regulation)	<ul> <li>During the coaching sessions, I was supported and/or challenged to:</li> <li>24. Structure my/our learning process</li> <li>25. Make choices</li> <li>26. See the current Level of my knowledge, skills and competencies clearer</li> <li>27. Gain (More) insight into the goals I need to set for realizing my Learning objectives/ambitions</li> <li>28. Adequately plan all the activities involved in the design process (steps to approach information, plan, implement and evaluate design tasks and activities)</li> <li>29. Gain (More) insight into how I was able to realize my learning objectives</li> </ul>
Goal-directed coaching (cat-4: professional identity)	<ul> <li>During the course, I was supported and/or challenged to:</li> <li>30. Explore different perspectives on design</li> <li>31. Develop my own perspective on design</li> <li>32. Understand how personal experiences, beliefs end actions affect the design process</li> <li>33. Explore what professional engineering entails</li> <li>34. See my ambitions and interests clearer</li> <li>35. Become more proactive in my professional identity development</li> <li>36. Gain insight into why I want to develop myself to the Engineer I want to become</li> <li>37. Become more certain of the Engineer I want to become</li> </ul>

Coaching	During the project I was supported/challenged to:
environment	38. Ask questions and make comments in the course
	39. Express my opinions
	40. Take responsibility by being an active participant
	41. The content of the project was interesting
	42. I had high motivation to study in the project
	43. I had the desire to succeed in the project
	44. I had desire to learn in order to understand
	45. I maintained persistence in the face of the high effort demanded
	46. I felt welcome in the project
	47. I experienced a supportive project climate
	48. I experienced the approachability of the teachers
	49. I felt I could trust teachers
	50. I was able to understand the project contents
	51. I had sufficient basis for participation in discussions in the project
	52. I was able to understand the constructs presented in the project
	53. I experienced the project contents as too challenging
	54. I felt I was lacking basic knowledge for understanding the project contents
	55. I experienced a need for revision of basic concepts prior to the project

Coaching dialogue	<ul> <li>During the caching sessions:</li> <li>56. The coaches supported me with the necessary instructions when needed</li> <li>57. The coaches supported and/or challenged me with feedback when needed</li> <li>58. The coaches supported and/or challenged me by asking open questions</li> <li>59. The coaches supported and/or challenged me by asking closed questions</li> <li>60. The coaches actively listened when needed</li> <li>61. The coaches supported me with tips or tricks when needed</li> </ul>
Learning Outcomes	The coaching sessions/ or the project, helped to develop the following skills: 62. Tolerate ambiguity
	63. Maintain sight of the big picture by including systems thinking and systems design;
	64. Handle uncertainty;
	65. Make decisions (based on too little information);
	66. Think as part of a team in a social process;
	67. Think and communicate in several languages of design.
	68. Formulating goals
	69. Planning procedures
	70. Designing skills
	71. Act as member of a team
	72. Communicating and understanding better my team members
	73. Presenting knowledge