**DE-CODE**

A Coding Scheme for Assessing Debriefing In- teractions

Coding Manual

Version 1.0 (2017)

(This Coding Manual complements Seelandt, Grande, Kriech & Kolbe,

DE-CODE: A coding scheme for assessing debriefing interactions.)

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**Purpose of DE-CODE**

The purpose of DE-CODE is to measure verbal communication of debriefers’ and learners’ during debriefings in simulation-based training via event or time-based coding.

This manual provides a guide to apply the DE-CODE. It includes information on the develop- ment and use of DE-CODE.

**Theoretical Background**

DE-CODE is based on the methodology of team interaction analysis1. It was developed both deductively and inductively, based on science on team learning and debriefing2-23 and on multiple analyses of debriefing conversations, respectively. It’s development is described in detail in the original publication.

**Architecture**

DE-CODE consists of separate codes for debriefers’ (Table 1) and learners’ (Table 2) commu- nication. The 32 codes for debriefers’ communication are structured according to Tobert and Taylor’s four types of speech (i.e., framing, advocating, illustrating, inquiring)24 and an addi- tional category *other* into framing (1.1), advocating (1.2), illustrating (1.3), inquiring (1.4), and other (1.5). The 15 codes for learners’ communication are similarly structured into ad- vocating (2.1), illustrating (2.2), inquiring (2.3), and other (2.4).

**Applicability**

DE-CODE is valid and reliable for both direct, on-site observation and video-based coding. It requires either event or time-based sampling.25 Until now, it has been applied via event- based sampling by using Interact coding software (for video-based coding) or the corre- sponding iOS app (for live coding).26 The duration of an event is registered by coding its be- ginning and end before it was allocated to a code.

**Practical issues**

**Technical requirements:** We recommend using coding software; an overview of suitable software tools can be found in Glüer.27

**Time required for training coders:** 30-35 hours for full DECODE version

**Times required for coding:** real time for on-site use, one hour coding for 15 minutes video- based material. For research purpose, we strongly recommend to perform live coding after having coded at least 30 videotaped debriefings.

**Code assignment:** Codes, descriptions, examples, and specific recommendations are provid- ed in Table 1 (for assessing debriefers’ communication) and Table 2 (for assessing learners’ communication).

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Table 1. Assessing debriefers' communication.

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**No.**

**Code**

**Description**

**Example**

**Specific recommendations for coding**

**Sample refer- ences**

***1.1***

***FRAMING***

**1.1.1**

Previewing

Debriefer explains purpose of the debriefing and introduces topics that will be dis- cussed during the debriefing.

“We would like to talk about shared leader- ship and communica- tion during stressful events.”

2 13 28

**1.1.2**

Previewing the content of a video se- quence

Debriefer explains purpose of a video sequence that will be subsequently shown.

“While watching the sequence, let’s have a look at the handover between Markus and Anna.”

Induc- tive

**1.1.3**

Structuring

Debriefer verbal- izes the structure or procedure of the debriefing.

“I would like to listen to Peter’s statement before talking about planning and initiat- ing actions.”

Includes all structuring statements except for previews, i.e. if debriefer announces what s/he would like to talk about codes as *preview.*

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**1.1.4**

Communica- tion between debriefer

Debriefers openly talk among each other about how to proceed in the debriefing.

“Shall we continue with…”

Addresses the co- debriefer.

23 29 30

***1.2***

***ADVOCATING***

**1.2.1**

Observation

Debriefer de- scribes what s/he has seen or heard a participant doing or saying during the simulation.

“I saw you checking the monitor … ”

Refers to observations made during the simulated scenario.

Code as *anecdote* if it con- tains observations that were made outside of the simulated scenario, e.g., during clinical work.

2 13 28

**1.2.2**

Pseudo- observation

Debriefer de- scribes what s/he has seen or heard that is, however, not observable (e.g., emotions, cognition, percep- tion).

“You were thinking that Albert should hurry up.”

Debriefer describes pro- cesses that are actually not observable, e.g., cognitions (“you were thinking that…” or “you forgot to….”) or emotions (“you were sur- prised ...”).

Induc- tive

**1.2.3**

Opinion

Debriefer ex- presses her/his point of view.

“I expected you to go out and get the defib- rillator.”

“I thought that was really good because …

.”

May contain ‘positive’ and/or ‘negative’ critique. Code as *previewing* if de- briefer verbalizes what s/he is going to talk about (e.g., I would like to talk about leadership).

If debriefer says “I would like to talk about leader-

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ship because I think this is an important topic”, code says “I would like to talk about leadership…” as *previewing* and because “… I think this is an important topic” as *opinion*.

**1.2.4**

Appreciation

Debriefer verbal- izes appreciation for learners’ ac- tions.

“That was great.” “Thank you for shar- ing your thoughts.” “Thank you for partic- ipating in this simula- tion.”

Includes explicit, stand- alone appreciations.

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***1.3***

***ILLUSTRATING***

**1.3.1**

Input simula- tion

Debriefer provides more detailed information about the development and/or back- ground of the scenarios.

“Our scenarios are based on cases that were reported as an incident.”

Includes the provision of any background infor- mation of the respective simulation scenario.

Code as *psychological input* if given information in- cludes input on psychologi- cal models or evidence relevant for learning objec- tive.

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**1.3.2**

Anecdote

Debriefer talks about personal experience.

“I was in a similar situation last week.”

May include recollections of other training situations.

Induc- tive

**1.3.3**

Medical input

Debriefer provides detailed medical information.

“The resuscitation algorithm includes….”

2 13 28

**1.3.4**

Psychological input

Debriefer provides information on psychological research or psy- chological phe- nomena.

“Research has shown that communication in medical teams…”

Code as *psychological input* if communication adds information on psychologi- cal research and phenom- ena. Code as *input simula- tion*

communication referred to the scenario design*.*

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**1.3.5**

Demonstration

Debriefer demon- strate a certain behavior or com- munication style.

“One example for speaking up would be to…”

Debriefer actively shows a particular behavior. If s/he invites learners to actively practice a respective be- havior, code as *role play*.

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***1.4***

***INQUIRING***

**1.4.1**

Emotion

Questions related to learners’ feel- ings and reactions.

“How did you feel during the simula- tion?”

2 13 15 28

**1.4.2**

Realism

Questions related to the perceived realism of the scenario.

“How realistic was the scenario for you?”

Induc- tive

**1.4.3**

Behavior

Behavior-related question.

“What happened?”

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**1.4.4**

Cognition

Cognitive-driven

“What was on your

2 13 28 29

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question.

mind in this situa- tion?”

**1.4.5**

Knowledge

Knowledge-driven question.

“How do you manage a difficult intuba- tion?”

**1.4.6**

Circular

Questions based on circular as- sumptions.

“What do you think Sandy would have needed from Albert to tell her worries?”

11 31 32

**1.4.7**

Idea or solu- tion

Inviting learners to establish a link from simulation to real world context and the clinical setting.

“Which aspects of this case are similar to your daily work in the operating room?”

In contrast to *cognition,* the debriefer inquires for something new or hypo- thetical in nature and ex- plicit addresses clinical work.

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**1.4.8**

Guess-what –I- am-thinking

Questions implicit- ly imposing the debriefer’s point of view on the learner.

“What could have been done better?“ “Wouldn’t it have been better to …”?

2 13 28 32

**1.4.9**

Clarification

Debriefer asks learners about missing facts or unclear points in order to find out more.

“Did you do that be- fore Sandy came in?”

Debriefer aim to get a better understanding of context or to clarity misun- derstandings. If the de- briefer seems to imply a certain answer, code as *Guess-what-I-am-thinking*.

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**1.4.10**

Conclusion

Debriefer asks learners what they have learned from the scenario and debriefing.

“What is your take home message?”

2 13 28

**1.4.11**

Inquiry

Debriefer invites learners to ask questions about missing facts or unclear points.

“Are there any further questions regarding the medical case?”

Debriefer explicit invites learners to ask questions.

Induc- tive

***1.5***

***OTHER***

**1.5.1**

Summarizing

Debriefer summa- rizes the debrief- ing.

“In sum, we talked about communication between and within disciplines.”

May occur at the end of a debriefing but also during the debriefing, e.g., before a new topic is being dis- cussed.

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**1.5.2**

Normalizing

Debriefer com- ments on learners’ reac- tions/experiences as being normal.

“Yes, and I think that this is normal.”

2 13 28

**1.5.3**

Paraphrasing

Debriefer repeats in his/her own words what was said.

“If I understand you correctly, you empha- size the importance of having checklists in the operating room.”

If debriefer summarizes learners’ statement, code as *summary*.

Induc- tive

**1.5.4**

Repeating

Debriefer repeats what learner said.

“As I heard you saying earlier in the debrief- ing…”

Contrary to *paraphrasing*, *repeating* is closer to the learners’ original wording.

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**1.5.5**

Irony and hu- mor

Debriefer tells a joke.

Debriefer tells a joke about stereotypes in medicine.

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**1.5.6**

Laughing

Debriefer laughs.

Debriefer laughs be- cause of a joke a learner was telling.

Laughing must be audible. Code as *irony or humour* if debriefer makes a joke.

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**1.5.7**

Addressing somebody by name

Debriefer calls learners by name.

“Peter, ….”

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**1.5.8**

Role play

Debriefer initiates role play to prac- tice certain skills.

“Let’s give it a try and use a circular ques- tion to explore your colleagues’ percep- tions.”

Debriefer invites learners to actively practice a re- spective behavior. If s/he actively shows a particular behavior, code as *demon- stration*.

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Table 2. Assessing learners' communications.

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**No.**

**Code**

**Description**

**Example**

**Specific recommendations for coding**

**Sam- ple refer- ence**

***2.1***

***ADVOCATING***

**2.11**

Feeling

Learner expresses his/her feelings.

“I’m feeling over- whelmed.”

15 30

**2.12**

Description

Learner describes what happened.

“We waited al- most 10 minutes before I called the surgeon.”

Includes recollection of be- havior / actions but no re- flection thereof.

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**2.13**

Evaluation of learners’ ac- tion

Learner evaluates what was good or bad about his/her actions.

“I think it was great to perform ABC together.”

If debriefing is conducted with multiple team members and includes learners who observed but did not partici- pate in the scenario, coders are advised to remember who had been involved in the scenario, resulting in additional cognitive load during coding. Making re- spective notes prior to the debriefing might provide a remedy.

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**2.14**

Evaluation of team mem- bers’ action

Learner evaluates what was good or bad about his/her team colleagues’ actions

“For me it was exceptional be- cause I was not included in this conversation.”

See 2.3

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**2.15**

Explanations

Learner analyses why something happened.

“I thought the cable is connect- ed.”

Contains an explanation why learner did something during scenario without reflection.

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**2.16**

Mental mod- els

Learner verbalizes his/her internal thought processes, schemes or as- sumptions.

“I learned that….” “I’m used to do…”

*Mental models* go beyond *explanation* in the way that contains learners’ beliefs, values, or assumptions about how something worked dur- ing the scenario.

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**2.17**

Conclusions

From the discussion the learner con- cludes other ac- tions that s/he could have done.

“I could have asked for help.”

Contains lessons learned or AHA-moments.

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**2.18**

Action plan

Learner describes what s/he will do differently in the future.

“I will speak up next time when I have a question regarding the medication dos- age.”

Contrary to *conclusion, ac- tion plan* is more specific and future-oriented.

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**2.19**

Positive rele- vance

Learner verbalizes his/her perception that the simulation

“I know this from my daily routine.”

In- duc- tive

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is connected to their daily working setting or their behavior in the clinical context.

**2.110**

Negative rele- vance

Learner verbalizes his/her perception that the simulation is not connected to their daily working setting or their behavior in the clinical context.

“I would not have done the same in the operating room.”

In- duc- tive

**2.111**

Positive eval- uation of the simulation

Learner evaluates what s/he liked about the simula- tion.

“I perceived it as realistic.”

In- duc- tive

**2.112**

Negative evaluation of the simulation

Learner evaluates what s/he did not like about the simu- lation.

“I was not able to get into it.”

In- duc- tive

***2.2***

***ILLUSTRATING***

**2.2**

Learners’ anecdote

Learner talks about experience or per- sonal moments.

“During my medi- cal education, I was in a similar situation….”

Less reflective than *mental model*, more a recollection of something that had hap- pened.

In- duc- tive

***2.3***

***INQUIRING***

**2.3**

Learners’ inquiry

Learner inquires about missing facts or unclear points.

“I don’t under- stand, what do you mean by “closed-loop communication”?”

In- duc- tive

***2.4***

***OTHER***

**2.4**

Expressions of humor

Learner laughs or tells a joke.

Learners are laughing.

Includes laughing and / or telling a joke.

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