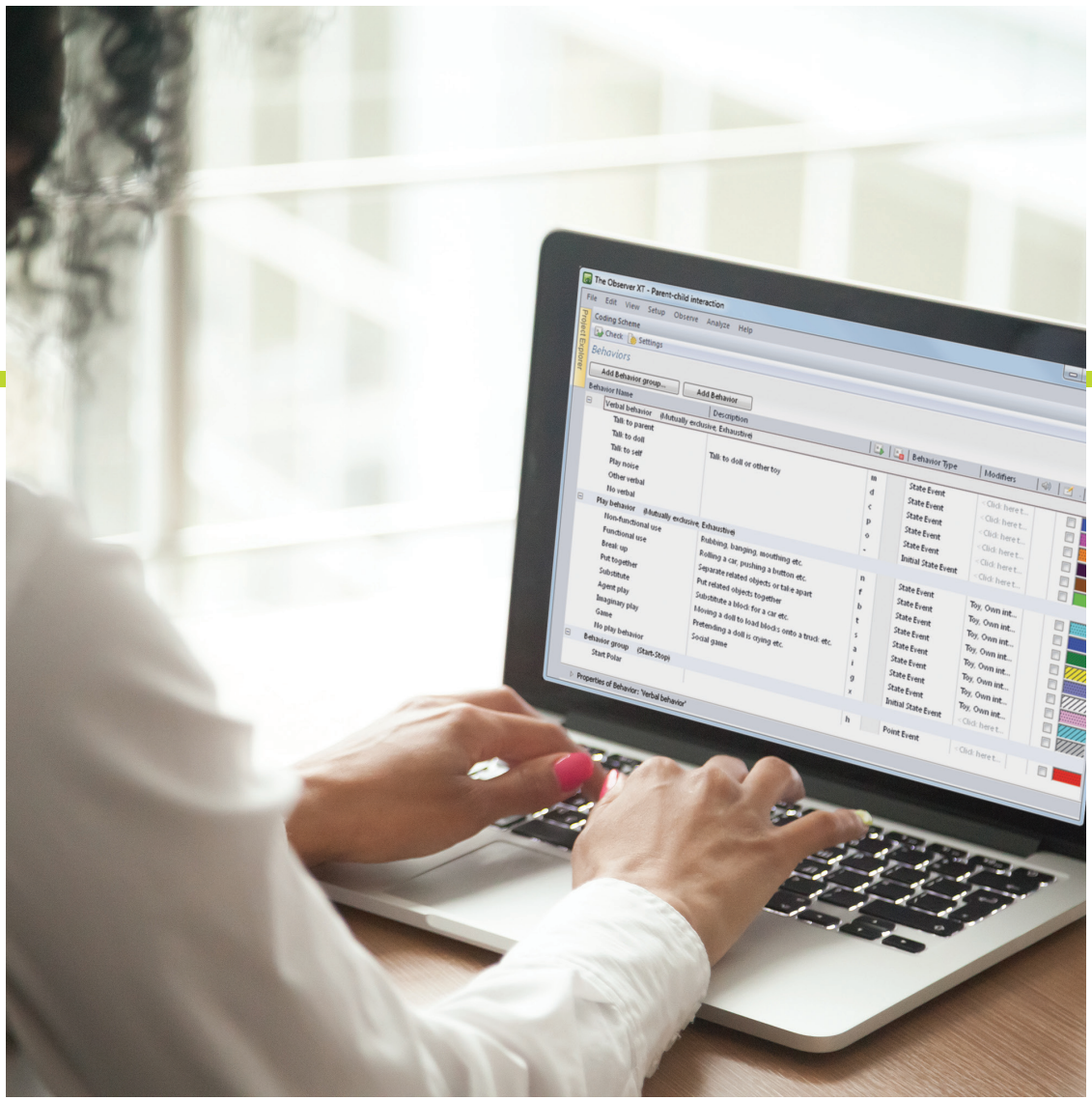


7 tips to set up a coding scheme

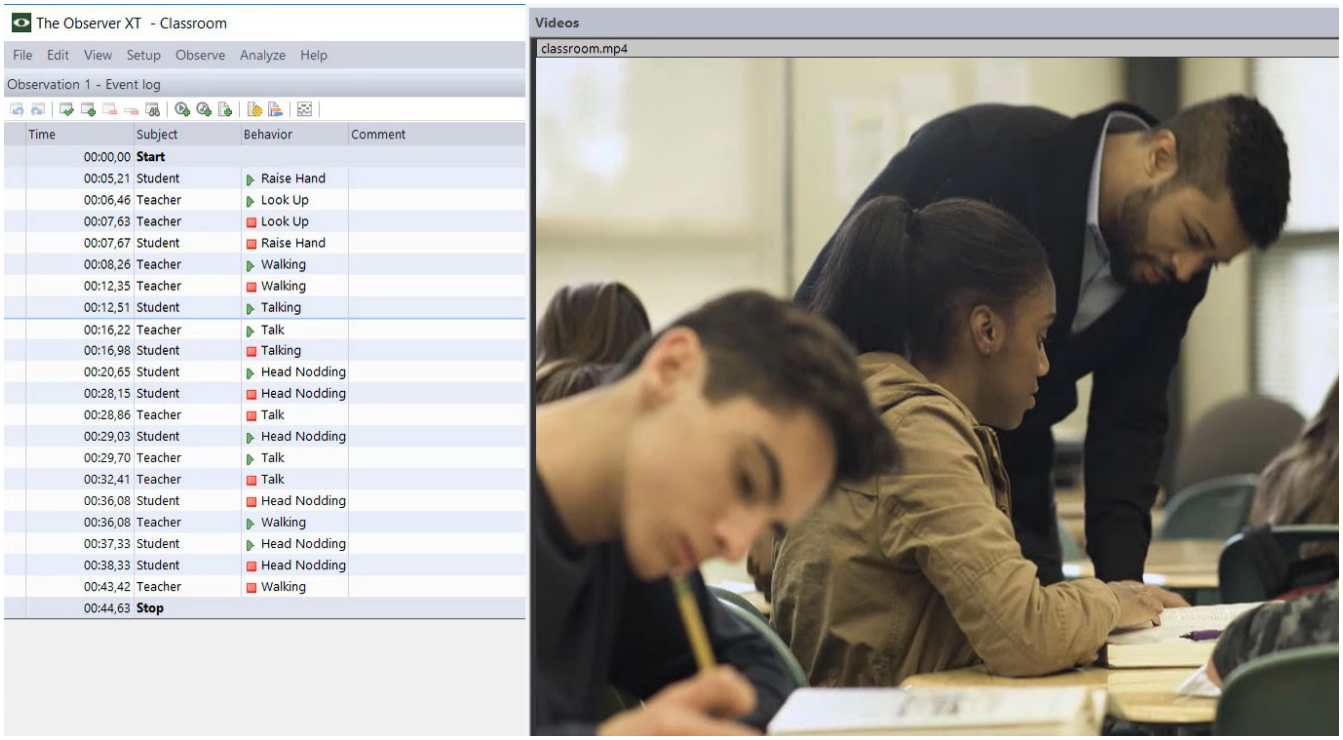
A white paper by Noldus Information Technology

7 TIPS TO SET UP A CODING SCHEME

In research, data coding is the initial step to analyze data. The data that is obtained from (video) observations, surveys, or experiments are in raw form. This data needs to be refined and organized to be able to evaluate and draw conclusions.

A code in qualitative research is a word or phrase describing the meaning and context of the captured data, for example a behavior, an answer, an event. Codes help quantify qualitative data and give meaning to raw data. After all, as a researcher you are looking for patterns, similarities, and relationships to explain why things happen. Coding is the process of categorizing data.

The purpose of data coding is not to just to eliminate excessive data but to summarize it meaningfully.



HOW TO SET UP A CODING SCHEME

The coding scheme determines what data you collect and is, thus, an essential part of your behavioral study. The coding scheme is the actual measuring instrument.

Setting up a coding scheme is not as straightforward as it may seem. It often requires quite some thinking to define the perfect coding scheme.

In this white paper we will explain how to set up a coding scheme. Of course, you can set up your coding scheme on paper, but in this white paper we will use The Observer® XT software, a tool which can assist you in the entire workflow of an observational research project.

> *"The Observer XT has helped me capture children's natural behaviors in an unobtrusive manner and this has added value to the behavioral interpretations I could draw. This tool is best suited for observational research where subjects can be observed without their awareness, which adds to the authenticity of findings. It is easy to use and gives data that can well be statistically analyzed."*
>
> PROF. MAYURI | ACHARYA NG RANGA AGRICULTURAL UNIVERSITY, INDIA

SET UP A DRAFT CODING SCHEME

As a behavioral researcher you will recognize the need for a well-defined coding scheme. In many cases your coding scheme is not perfect at the beginning. Some behaviors may be too detailed and others may be missing.

The Observer XT software allows you to fine-tune your coding scheme while observing. Based on an iterative process, you can add elements during scoring and afterwards reorganize your coding scheme. This means that you can start your observations with a draft coding scheme and develop and refine it to bring it to perfection. You can also decide to start your observation with a coding scheme from a template and adjust it so it fits your research needs.

Note that you can only delete a coding scheme element or group when it has not been scored yet. When the element was scored in at least one observation, a question appears whether you want to inactivate it. If you want to delete the element anyway, you must first delete all the observations in which it was scored. When a coding scheme element is set to inactive, it is not used anymore although it is still present in the coding scheme.

1 SPECIFY YOUR SUBJECTS, BEHAVIORS, AND MODIFIERS

In the coding scheme you can define your subjects and behaviors and use modifiers to specify the behaviors of your subjects more precisely. Examples of modifiers are the number of words an infant utters when speaking or the object the infant is playing with or whether the infant is playing alone or together with its parent. Modifiers can be nominal or numerical.

The order in which you score the coding scheme elements is not fixed. You can score your data in the order you prefer, instead of subject - behavior - behavior modifier, you can score, for instance, behavior - behavior modifier – subject. It is not mandatory to score all three elements, you can use any combination you like, for instance, score subjects and behaviors without modifiers or score behaviors only. In fact, you can also decide to score none of the usual elements (subjects, behaviors, and modifiers), but record comments only.

You can start your study by registering comments, synchronized with video or in a live situation. Based on these comments you can make a draft coding scheme and use this to start scoring.

2 DEFINE YOUR BEHAVIOR GROUP

Depending on your research you may want to know the duration, frequency, and/or sequence of behavior. In The Observer XT you can define your behaviors as state or point events. State events have a duration, point events don't. Eye blinks for instance are often defined as point events because of a negligible duration. State events may be defined either as 'mutually exclusive' or 'start-stop'.

3 MUTUALLY EXCLUSIVE

Mutually exclusive means that you define a group of behaviors which exclude each other, for instance the behavioral group 'locomotion' with the behaviors 'standing' and 'walking'. The advantage of having mutually exclusive behaviors is that during coding you do not need to stop behaviors. When you start a new behavior, the previously coded behavior within the group automatically stops.

4 START-STOP

If you have to code behaviors that do not exclude each other, you may want to use start-stop behaviors (behaviors with a start code and a stop code). Setting up a coding scheme with start-stop behaviors requires little thinking. So, if you have rather simple coding work and you have little time to spend, start-stop behaviors may be a solution.

5 POINT EVENTS

If you are not interested in the duration but only in the frequency of the behaviors that you score, you can define them as point events, for example blinking an eye. Because point events do not have a duration, they only have a start code, no stop code. Setting up a behavioral study with only point events is quite straightforward.

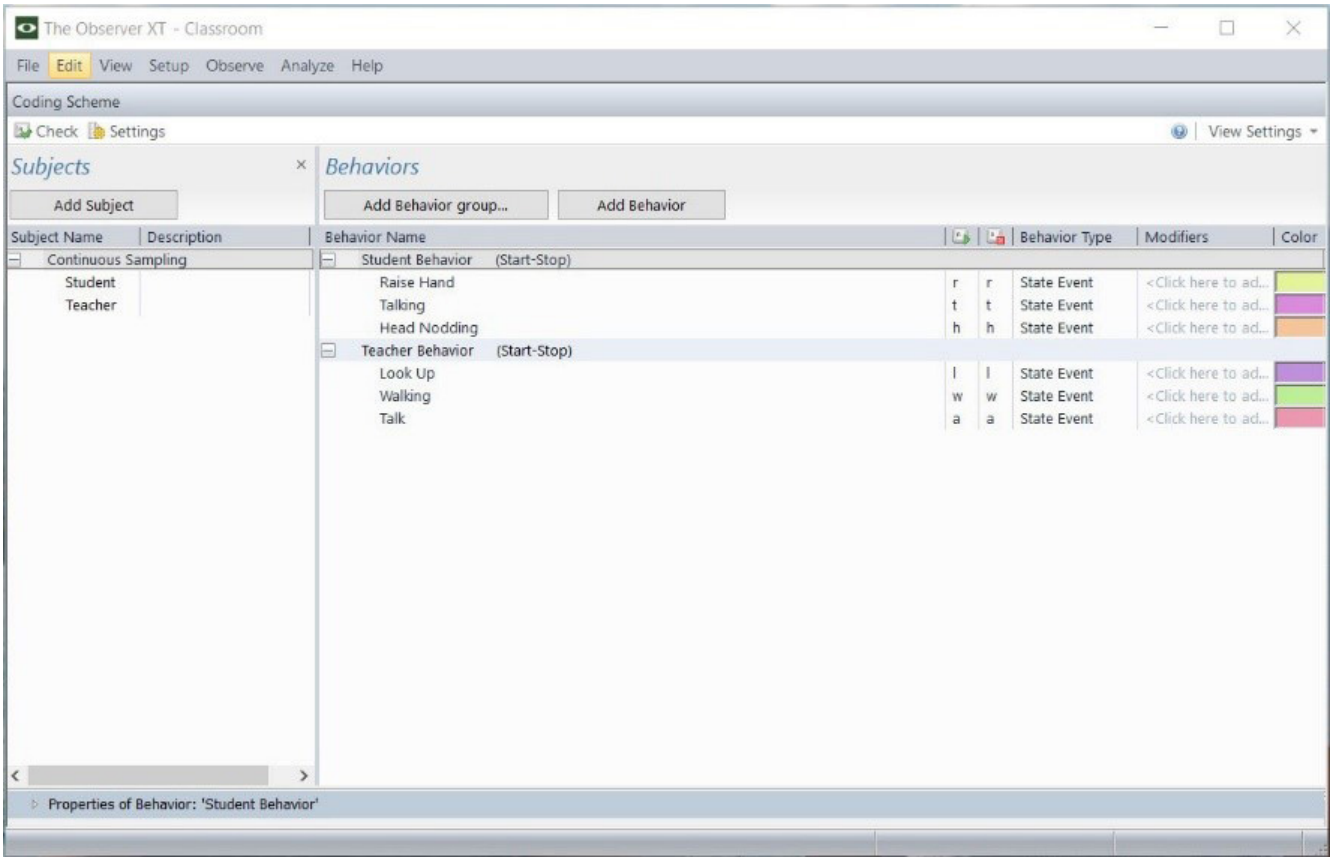
6 CODING FROM A DIVERSITY OF SOURCES

The Observer XT allows you to score from various sources. You can choose to score live, from one or more videos simultaneously. Live scoring has the advantage that you can see the context of the behavior that you score. Scoring video is practical when your coding scheme is more complex. You can playback the video as often and at the speed you like so you cannot miss anything. You can combine these two methods by first scoring live while a recording is made and coding the video in detail afterwards. When you use multiple media files (from multiple cameras) you have the opportunity to observe your subjects from different angles. The Observer XT even allows you to add behaviors or even complete behavioral groups while scoring. This allows you to begin your coding scheme with one behavior and add other behaviors during the observation.

7 THE OBSERVER XT

The Observer XT supports the entire process of refining and re-arranging the coding scheme by allowing you to build your coding scheme during scoring. Also the possibilities to score subjects or comments only, make that you can arrange your coding scheme any way you like it.

This flexibility is one of the key features of The Observer XT.



EXAMPLES OF STUDIES USING CODING SCHEMES

Using The Observer XT, researchers conduct systematic observations to identify, code and analyze the data according to frequency, duration, timing, and sequence of the behaviors.

CAPTURE BEHAVIORS DURING TRIADIC CONSULTATIONS

To identify specific triadic communicative strategies that are effective in improving children's engagement and reducing their distress in the dental setting, Yuan and her research team used a communication coding system as a tool. Based on an iterative process, the research team developed the Paediatric dental triadic interaction coding scheme (PaeD-TrICS). The team sought for behavior codes that:

- Captured the specifics of the triadic interactive features, such as the conversation flow between child & professional, child & parent, or professional & parent
- Embodied the typical communicative behaviors that were exhibited in a dental setting and were representative of different participants
- Reflected the specific features of this clinical context

The result contained a list of 45 adult and child behaviors such as social talk, tell-show-do (TSD) talk, information giving, reassuring, rewarding (stickers), crying, withdrawing, and agreeing. With help of The Observer XT, the researchers conducted systematic observations to identify, code and analyze the data according to frequency, duration, timing, and sequence of the behaviors.

OBSERVING AND CODING THE BEHAVIOR OF SIBLINGS

A team led by Schinkel conducted a study that included a sample of 92 sibling dyads between the ages of eight and 12 years old. The siblings were asked to complete two tasks: a tower-building task, and the cold-pressor-task (CPT): put a hand into a bucket of cold water for as long as possible (even if it was uncomfortable), until it becomes too uncomfortable or hurt too much.

Both tasks were video and audio recorded, and the behaviors of the siblings was subsequently coded with The Observer XT to provide an observational measure of sibling relationship quality. The behaviors were grouped by the researchers into attending (e.g. "Don't worry, you're going to be fine"), non-attending (e.g. "Let's ask mom if we can get a pizza for dinner"), coping/encouragement (e.g. "You're doing a great job"), and other behaviors (e.g. "Let's see who can do it longest"). The examples given here relate to the observing sibling.

WORKING MEMORY AND EMOTION REGULATION

Tarle and her colleagues included 36 children with ADHD and 32 typically developing children in their study. The research team studied children in conditions of high and low demand on working memory, and studied their effects on emotion regulation.

Children's behaviors were observed and coded using The Observer XT. Specifically, the researchers were interested in behaviors that showed decreased regulation of emotions. This included self-criticism, emotion ventilation, solicitations with the examiner, positive emotion expression, and more.

The Observer XT is designed to reduce the amount of work and simplify behavioral coding! Request the free trial to try it yourself. Or contact us for more detailed information.

www.noldus.com

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INTERNATIONAL HEADQUARTERS

Noldus Information Technology bv
Wageningen, The Netherlands
Phone: +31-317-473300
Fax: +31-317-424496
E-mail: info@noldus.nl

NORTH AMERICAN HEADQUARTERS

Noldus Information Technology Inc.
Leesburg, VA, USA
Phone: +1-703-771-0440
Toll-free: 1-800-355-9541
Fax: +1-703-771-0441
E-mail: info@noldus.com

REPRESENTATION

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